

TABLAS DE CORRECCIÓN DE ALTURAS DE 10° - 90° DEL SOL, ESTRELLAS Y PLANETAS (A₂)

OCT. - MAR. SOL			ABR. - SEP.			ESTRELLAS Y PLANETAS				DEPRESIÓN (DIP)				
Aap.	Limbo Inf.	Limbo Sup.	Aap.	Limbo Inf.	Limbo Sup.	Aap.	Corr.	Aap.	Correcc. Adicional	Eo	Corr.	Eo	Corr.	
° /	'	'	° /	'	'	° /	'		2014	m		pies	m	'
9 33	+10·8	-21·5	9 39	+10·6	-21·2	9 55	-5·3		VENUS	2·4	-2·8	8·0	1·0	-1·8
9 45	+10·9	-21·4	9 50	+10·7	-21·1	10 07	-5·2		1 Ene. - 9 Ene.	2·6	-2·9	8·6	1·5	-2·2
9 56	+11·0	-21·3	10 02	+10·8	-21·0	10 20	-5·1		13 Ene. - 31 Ene.	2·8	-3·0	9·2	2·0	-2·5
10 08	+11·1	-21·2	10 14	+10·9	-20·9	10 32	-5·0	° /		3·0	-3·1	9·8	2·5	-2·8
10 20	+11·2	-21·1	10 27	+11·0	-20·8	10 46	-4·9	0	+0·5	3·2	-3·2	10·5	3·0	-3·0
10 33	+11·3	-21·0	10 40	+11·1	-20·7	10 59	-4·8	26	+0·4	3·4	-3·3	11·2	Ver tabla ←	
10 46	+11·4	-20·9	10 53	+11·2	-20·6	11 14	-4·7	46	+0·3	3·6	-3·4	11·9		
11 00	+11·5	-20·8	11 07	+11·3	-20·5	11 29	-4·6	60	+0·2	3·8	-3·5	12·6	m	'
11 15	+11·6	-20·7	11 22	+11·4	-20·4	11 44	-4·5	73	+0·1	4·0	-3·6	13·3	20	-7·9
11 30	+11·7	-20·6	11 37	+11·5	-20·3	12 00	-4·4	84		4·3	-3·7	14·1	22	-8·3
11 45	+11·8	-20·5	11 53	+11·6	-20·2	12 17	-4·3		10 Ene. - 12 Ene.	4·5	-3·8	14·9	24	-8·6
12 01	+11·9	-20·4	12 10	+11·7	-20·1	12 35	-4·2	0	+0·6	4·7	-3·9	15·7	26	-9·0
12 18	+12·0	-20·3	12 27	+11·8	-20·0	12 53	-4·1	24	+0·5	5·0	-4·0	16·5	28	-9·3
12 36	+12·1	-20·2	12 45	+11·9	-19·9	13 12	-4·0	41	+0·4	5·2	-4·1	17·4	30 - 9·6	
12 54	+12·2	-20·1	13 04	+12·0	-19·8	13 32	-3·9	54	+0·3	5·5	-4·2	18·3		
13 14	+12·3	-20·0	13 24	+12·1	-19·7	13 53	-3·8	65	+0·2	5·8	-4·3	19·1	32	-10·0
13 34	+12·4	-19·9	13 44	+12·2	-19·6	14 16	-3·7	76	+0·1	6·1	-4·4	20·1	34	-10·3
13 55	+12·5	-19·8	14 06	+12·3	-19·5	14 39	-3·6	85		6·3	-4·5	21·0	36	-10·6
14 17	+12·6	-19·7	14 29	+12·4	-19·4	15 03	-3·5		1 Feb. - 16 Feb.	6·6	-4·6	22·0	38	-10·8
14 41	+12·7	-19·6	14 53	+12·5	-19·3	15 29	-3·4	0	+0·4	6·9	-4·7	22·9	40 - 11·1	
15 05	+12·8	-19·5	15 18	+12·6	-19·2	15 56	-3·3	29	+0·3	7·2	-4·8	23·9		
15 31	+12·9	-19·4	15 45	+12·7	-19·1	16 25	-3·2	51	+0·2	7·5	-4·9	24·9	42	-11·4
15 59	+13·0	-19·3	16 13	+12·8	-19·0	16 55	-3·1	68	+0·1	7·9	-5·0	26·0	44	-11·7
16 27	+13·1	-19·2	16 43	+12·9	-18·9	17 27	-3·0	83		8·2	-5·1	27·1	46	-11·9
16 58	+13·2	-19·1	17 14	+13·0	-18·8	18 01	-2·9		17 Feb. - 10 Mar.	8·5	-5·2	28·1	48	-12·2
17 30	+13·3	-19·0	17 47	+13·1	-18·7	18 37	-2·8	0	+0·3	8·8	-5·3	29·2	pies	'
18 05	+13·4	-18·9	18 23	+13·2	-18·6	19 16	-2·7	34	+0·2	9·2	-5·4	30·4	2	-1·4
18 41	+13·5	-18·8	19 00	+13·3	-18·5	19 56	-2·6	60	+0·1	9·5	-5·5	31·5	4	-1·9
19 20	+13·6	-18·7	19 41	+13·4	-18·4	20 40	-2·5	80		9·9	-5·6	32·7	6	-2·4
20 02	+13·7	-18·6	20 24	+13·5	-18·3	21 27	-2·4		11 Mar. - 30 Abr.	10·3	-5·7	33·9	8	-2·7
20 46	+13·8	-18·5	21 10	+13·6	-18·2	22 17	-2·3	0	+0·2	10·6	-5·8	35·1	10	-3·1
21 34	+13·9	-18·4	21 59	+13·7	-18·1	23 11	-2·2	41	+0·1	11·0	-5·9	36·3	Ver tabla ←	
22 25	+14·0	-18·3	22 52	+13·8	-18·0	24 09	-2·1	76		11·4	-6·0	37·6		
23 20	+14·1	-18·2	23 49	+13·9	-17·9	25 12	-2·0		1 May. - 31 dic.	11·8	-6·1	38·9	pies	'
24 20	+14·2	-18·1	24 51	+14·0	-17·8	26 20	-1·9	0	+0·1	12·2	-6·2	40·1	70	-8·1
25 24	+14·3	-18·0	25 58	+14·1	-17·7	27 34	-1·8	60		12·6	-6·3	41·5	75	-8·4
26 34	+14·4	-17·9	27 11	+14·2	-17·6	28 54	-1·7			13·0	-6·4	42·8	80	-8·7
27 50	+14·5	-17·8	28 31	+14·3	-17·5	30 22	-1·6		MARTE	13·4	-6·5	44·2	85	-8·9
29 13	+14·6	-17·7	29 58	+14·4	-17·4	31 58	-1·5		1 Ene. - 9 Feb.	13·8	-6·6	45·5	90	-9·2
30 44	+14·7	-17·6	31 33	+14·5	-17·3	33 43	-1·4		30 Jun. - 31 Dic.	14·2	-6·7	46·9	95	-9·5
32 24	+14·8	-17·5	33 18	+14·6	-17·2	35 38	-1·3	0		14·7	-6·8	48·4	100 - 9·7	
34 15	+14·9	-17·4	35 15	+14·7	-17·1	37 45	-1·2	0	+0·1	15·1	-6·9	49·8		
36 17	+15·0	-17·3	37 24	+14·8	-17·0	40 06	-1·1	60		15·5	-7·0	51·3	105	-9·9
38 34	+15·1	-17·2	39 48	+14·9	-16·9	42 42	-1·0		10 Feb. - 29 Jun.	16·0	-7·1	52·8	110	-10·2
41 06	+15·2	-17·1	42 28	+15·0	-16·8	45 34	-0·9	0	+0·2	16·5	-7·2	54·3	115	-10·4
43 56	+15·3	-17·0	45 29	+15·1	-16·7	48 45	-0·8	41	+0·1	16·9	-7·3	55·8	120	-10·6
47 07	+15·4	-16·9	48 52	+15·2	-16·6	52 16	-0·7	76		17·4	-7·4	57·4	125	-10·8
50 43	+15·5	-16·8	52 41	+15·3	-16·5	56 09	-0·6			17·9	-7·5	58·9	130 - 11·1	
54 46	+15·6	-16·7	56 59	+15·4	-16·4	60 26	-0·5			18·4	-7·6	60·5		
59 21	+15·7	-16·6	61 50	+15·5	-16·3	65 06	-0·4			18·8	-7·7	62·1	135	-11·3
64 28	+15·8	-16·5	67 15	+15·6	-16·2	70 09	-0·3			19·3	-7·8	63·8	140	-11·5
70 10	+15·9	-16·4	73 14	+15·7	-16·1	75 32	-0·2			19·8	-7·9	65·4	145	-11·7
76 24	+16·0	-16·3	79 42	+15·8	-16·0	81 12	-0·1			20·4	-8·0	67·1	150	-11·9
83 05	+16·1	-16·2	86 31	+15·9	-15·9	87 03	0·0			20·9	-8·1	68·8	155	-12·1
90 00			90 00			90 00				21·4		70·5		

Aap. = Altura Aparente = Altura de sextante corregida por error de índice y depresión.
Eo = Elevación del ojo sobre el nivel del mar.

(A₃) TABLAS DE CORRECCIÓN DE ALTURAS DE 0° - 10° DEL SOL, ESTRELLAS Y PLANETAS

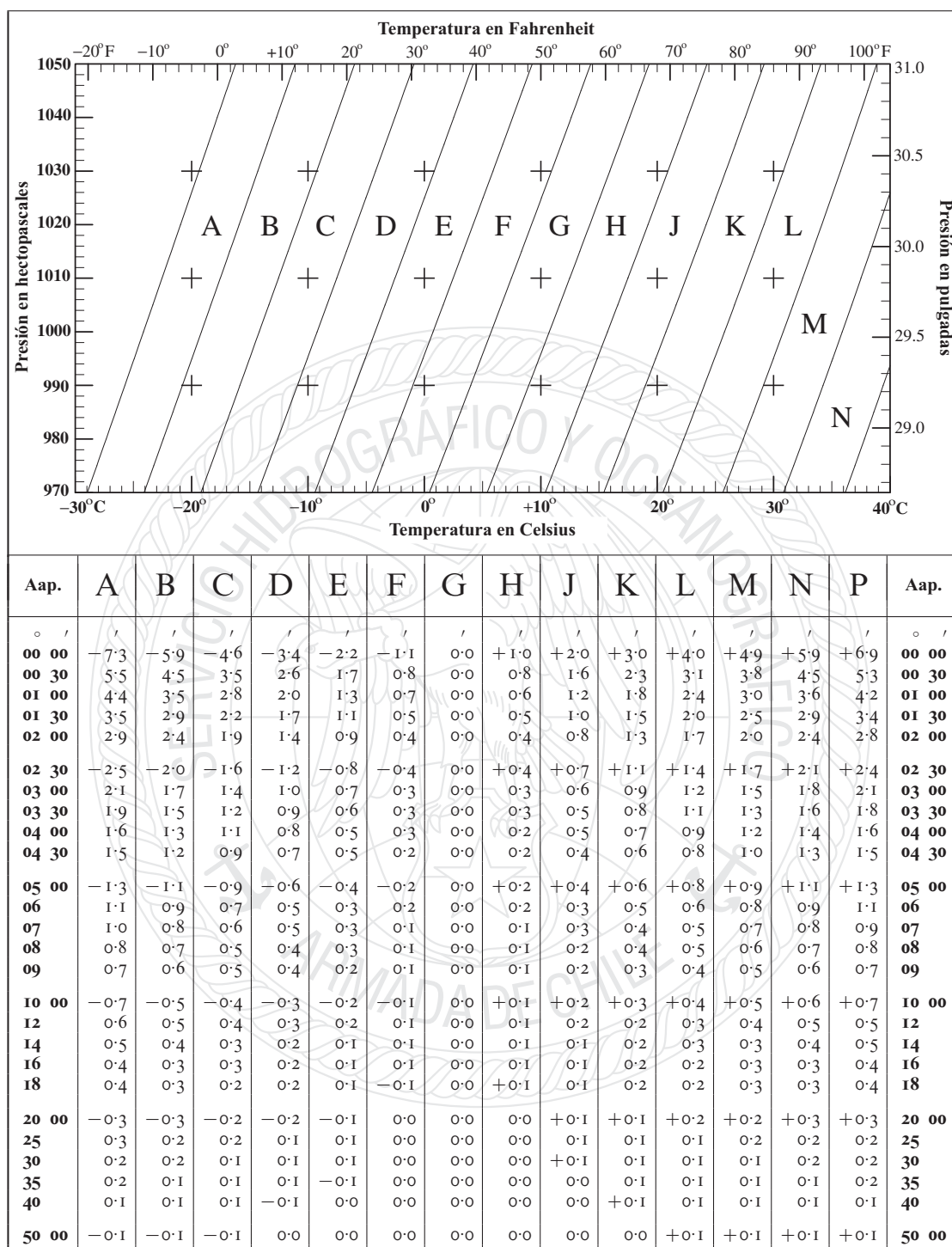
Aap.	OCT. - MAR. SOL		ABR. - SEP.		ESTRELLAS PLANETAS
	Limbo Inf.	Limbo Sup.	Limbo Inf.	Limbo Sup.	
0 00	-17.5	-49.8	-17.8	-49.6	-33.8
0 03	16.9	49.2	17.2	49.0	33.2
0 06	16.3	48.6	16.6	48.4	32.6
0 09	15.7	48.0	16.0	47.8	32.0
0 12	15.2	47.5	15.4	47.2	31.5
0 15	14.6	46.9	14.8	46.6	30.9
0 18	-14.1	-46.4	-14.3	-46.1	-30.4
0 21	13.5	45.8	13.8	45.6	29.8
0 24	13.0	45.3	13.3	45.1	29.3
0 27	12.5	44.8	12.8	44.6	28.8
0 30	12.0	44.3	12.3	44.1	28.3
0 33	11.6	43.9	11.8	43.6	27.9
0 36	-11.1	-43.4	-11.3	-43.1	-27.4
0 39	10.6	42.9	10.9	42.7	26.9
0 42	10.2	42.5	10.5	42.3	26.5
0 45	9.8	42.1	10.0	41.8	26.1
0 48	9.4	41.7	9.6	41.4	25.7
0 51	9.0	41.3	9.2	41.0	25.3
0 54	-8.6	-40.9	-8.8	-40.6	-24.9
0 57	8.2	40.5	8.4	40.2	24.5
1 00	7.8	40.1	8.0	39.8	24.1
1 03	7.4	39.7	7.7	39.5	23.7
1 06	7.1	39.4	7.3	39.1	23.4
1 09	6.7	39.0	7.0	38.8	23.0
1 12	-6.4	-38.7	-6.6	-38.4	-22.7
1 15	6.0	38.3	6.3	38.1	22.3
1 18	5.7	38.0	6.0	37.8	22.0
1 21	5.4	37.7	5.7	37.5	21.7
1 24	5.1	37.4	5.3	37.1	21.4
1 27	4.8	37.1	5.0	36.8	21.1
1 30	-4.5	-36.8	-4.7	-36.5	-20.8
1 35	4.0	36.3	4.3	36.1	20.3
1 40	3.6	35.9	3.8	35.6	19.9
1 45	3.1	35.4	3.4	35.2	19.4
1 50	2.7	35.0	2.9	34.7	19.0
1 55	2.3	34.6	2.5	34.3	18.6
2 00	-1.9	-34.2	-2.1	-33.9	-18.2
2 05	1.5	33.8	1.7	33.5	17.8
2 10	1.1	33.4	1.4	33.2	17.4
2 15	0.8	33.1	1.0	32.8	17.1
2 20	0.4	32.7	0.7	32.5	16.7
2 25	-0.1	32.4	-0.3	32.1	16.4
2 30	+0.2	-32.1	0.0	-31.8	-16.1
2 35	0.5	31.8	+0.3	31.5	15.8
2 40	0.8	31.5	0.6	31.2	15.4
2 45	1.1	31.2	0.9	30.9	15.2
2 50	1.4	30.9	1.2	30.6	14.9
2 55	1.7	30.6	1.4	30.4	14.6
3 00	+2.0	-30.3	+1.7	-30.1	-14.3
3 05	2.2	30.1	2.0	29.8	14.1
3 10	2.5	29.8	2.2	29.6	13.8
3 15	2.7	29.6	2.5	29.3	13.6
3 20	2.9	29.4	2.7	29.1	13.4
3 25	3.2	29.1	2.9	28.9	13.1
3 30	+3.4	-28.9	+3.1	-28.7	-12.9
3 30	+3.4	-28.9	+3.1	-28.7	-12.9
3 35	3.6	28.7	3.3	28.5	12.7
3 40	3.8	28.5	3.6	28.2	12.5
3 45	4.0	28.3	3.8	28.0	12.3
3 50	4.2	28.1	4.0	27.8	12.1
3 55	4.4	27.9	4.1	27.7	11.9
4 00	+4.6	-27.7	+4.3	-27.5	-11.7
4 05	4.8	27.5	4.5	27.3	11.5
4 10	4.9	27.4	4.7	27.1	11.4
4 15	5.1	27.2	4.9	26.9	11.2
4 20	5.3	27.0	5.0	26.8	11.0
4 25	5.4	26.9	5.2	26.6	10.9
4 30	+5.6	-26.7	+5.3	-26.5	-10.7
4 35	5.7	26.6	5.5	26.3	10.6
4 40	5.9	26.4	5.6	26.2	10.4
4 45	6.0	26.3	5.8	26.0	10.3
4 50	6.2	26.1	5.9	25.9	10.1
4 55	6.3	26.0	6.1	25.7	10.0
5 00	+6.4	-25.9	+6.2	-25.6	-9.8
5 05	6.6	25.7	6.3	25.5	9.7
5 10	6.7	25.6	6.5	25.3	9.6
5 15	6.8	25.5	6.6	25.2	9.5
5 20	7.0	25.3	6.7	25.1	9.3
5 25	7.1	25.2	6.8	25.0	9.2
5 30	+7.2	-25.1	+6.9	-24.9	-9.1
5 35	7.3	25.0	7.1	24.7	9.0
5 40	7.4	24.9	7.2	24.6	8.9
5 45	7.5	24.8	7.3	24.5	8.8
5 50	7.6	24.7	7.4	24.4	8.7
5 55	7.7	24.6	7.5	24.3	8.6
6 00	+7.8	-24.5	+7.6	-24.2	-8.5
6 10	8.0	24.3	7.8	24.0	8.3
6 20	8.2	24.1	8.0	23.8	8.1
6 30	8.4	23.9	8.2	23.6	7.9
6 40	8.6	23.7	8.3	23.5	7.7
6 50	8.7	23.6	8.5	23.3	7.6
7 00	+8.9	-23.4	+8.7	-23.1	-7.4
7 10	9.1	23.2	8.8	23.0	7.2
7 20	9.2	23.1	9.0	22.8	7.1
7 30	9.3	23.0	9.1	22.7	6.9
7 40	9.5	22.8	9.2	22.6	6.8
7 50	9.6	22.7	9.4	22.4	6.7
8 00	+9.7	-22.6	+9.5	-22.3	-6.6
8 10	9.9	22.4	9.6	22.2	6.4
8 20	10.0	22.3	9.7	22.1	6.3
8 30	10.1	22.2	9.9	21.9	6.2
8 40	10.2	22.1	10.0	21.8	6.1
8 50	10.3	22.0	10.1	21.7	6.0
9 00	+10.4	-21.9	+10.2	-21.6	-5.9
9 10	10.5	21.8	10.3	21.5	5.8
9 20	10.6	21.7	10.4	21.4	5.7
9 30	10.7	21.6	10.5	21.3	5.6
9 40	10.8	21.5	10.6	21.2	5.5
9 50	10.9	21.4	10.6	21.2	5.4
10 00	+11.0	-21.3	+10.7	-21.1	-5.3

En la página siguiente se dan correcciones adicionales por temperatura y presión.

Para observaciones con sextantes de burbuja, ignórese la depresión y úsense las correcciones de estrellas para Sol, planetas y estrellas.

**TABLAS DE CORRECCIONES ADICIONALES POR REFRACCIÓN
PARA CONDICIONES ANORMALES**

(A₄)



Se entra al gráfico con los datos de temperatura y presión para encontrar la letra correspondiente a la zona; usando como antecedente esta letra de zona y la altura aparente (altura del sextante corregida por error de índice y depresión), se obtiene la corrección de la tabla. Esta corrección se aplica a la altura del sextante además de las correcciones para condiciones normales (para el Sol, estrellas y planetas de las páginas A₂ - A₃ y para la Luna, de las páginas xxxiv y xxxv).

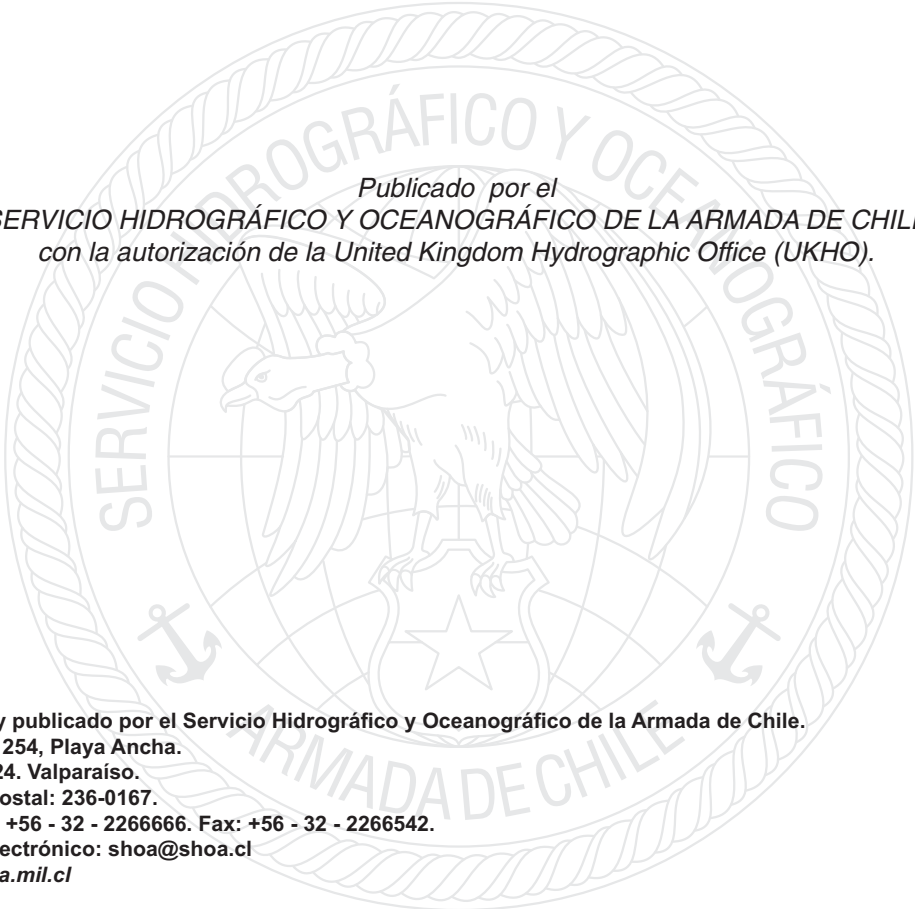
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ALMANAQUE NÁUTICO

PARA EL AÑO

2014

SERVICIO HIDROGRÁFICO Y OCEANOGRÁFICO DE LA ARMADA DE CHILE



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PREFACIO

El Almanaque Náutico es una publicación oficial del Servicio Hidrográfico y Oceanográfico de la Armada de Chile (SHOA), que emplea información astronómica otorgada por la United Kingdom Hydrographic Office para el año 2014.

El objetivo de esta publicación es proporcionar los datos necesarios para la práctica de la navegación astronómica en el mar. Su contenido consiste en los datos a partir de los cuales pueden obtenerse los valores del Ángulo Horario de Greenwich y la Declinación de todos los astros usados en la navegación, para cualquier instante del Tiempo Universal o de la Hora Media de Greenwich. Asimismo, entrega información de calendario y planeamientos misceláneos, tablas auxiliares, incluyendo una lista de horas oficiales y correcciones que deben aplicarse a las alturas observadas.

Esta edición contiene, además, informaciones concernientes a las horas del orto y ocaso del Sol, comienzo y fin de la aurora y crepúsculo civil y náutico, como también del orto y ocaso de la Luna, para las latitudes comprendidas entre 60° S y 72° S.

PATRICIO CARRASCO HELLWIG
Capitán de Navío
Director

Valparaíso, octubre de 2013.

FASES DE LA LUNA – 2014
LOS VALORES DE LA HORA ESTÁN EXPRESADOS EN TIEMPO
UNIVERSAL (UT) U HORA MEDIA DE GREENWICH (HmGr)

LUNA NUEVA				CUARTO CRECIENTE			
	d	h	m		d	h	m
Ene	1	11	14	Ene	8	03	39
Ene	30	21	39	Feb	6	19	22
Mar	1	08	00	Mar	8	13	27
Mar	30	18	45	Abr	7	08	31
Abr	29	06	14	May	7	03	15
May	28	18	40	Jun	5	20	39
Jun	27	08	08	Jul	5	11	59
Jul	26	22	42	Ago	4	00	50
Ago	25	14	13	Sep	2	11	11
Sep	24	06	14	Oct	1	19	33
Oct	23	21	57	Oct	31	02	48
Nov	22	12	32	Nov	29	10	06
Dic	22	01	36	Dic	28	18	31
LUNA LLENA				CUARTO MENGUANTE			
	d	h	m		d	h	m
Ene	16	04	52	Ene	24	05	19
Feb	14	23	53	Feb	22	17	15
Mar	16	17	08	Mar	24	01	46
Abr	15	07	42	Abr	22	07	52
May	14	19	16	May	21	12	59
Jun	13	04	11	Jun	19	18	39
Jul	12	11	25	Jul	19	02	08
Ago	10	18	09	Ago	17	12	26
Sep	9	01	38	Sep	16	02	05
Oct	8	10	51	Oct	15	19	12
Nov	6	22	23	Nov	14	15	16
Dic	6	12	27	Dic	14	12	51

SIMBOLOGÍA DE LAS FASES DE LA LUNA UTILIZADAS EN PÁGINAS DIARIAS



CALENDARIO JULIANO 2014

DÍAS DEL MES, DE LA SEMANA Y FECHA JULIANA

5

Día del Mes	ENE.		FEB.		MAR.		ABR.		MAY.		JUN.		JUL.		AGO.		SEP.		OCT.		NOV.		DIC.	
	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana	Día Sem.	Fecha Juliana
1	Mi.	1	S.	32	S.	60	M.	91	J.	121	D.	152	M.	182	V.	213	L.	244	Mi.	274	S.	305	L.	335
2	J.	2	D.	33	D.	61	Mi.	92	V.	122	L.	153	Mi.	183	S.	214	M.	245	J.	275	D.	306	M.	336
3	V.	3	L.	34	L.	62	J.	93	S.	123	M.	154	J.	184	D.	215	Mi.	246	V.	276	L.	307	Mi.	337
4	S.	4	M.	35	M.	63	V.	94	D.	124	Mi.	155	V.	185	L.	216	J.	247	S.	277	M.	308	J.	338
5	D.	5	Mi.	36	Mi.	64	S.	95	L.	125	J.	156	S.	186	M.	217	V.	248	D.	278	Mi.	309	V.	339
6	L.	6	J.	37	J.	65	D.	96	M.	126	V.	157	D.	187	Mi.	218	S.	249	L.	279	J.	310	S.	340
7	M.	7	V.	38	V.	66	L.	97	Mi.	127	S.	158	L.	188	J.	219	D.	250	M.	280	V.	311	D.	341
8	Mi.	8	S.	39	S.	67	M.	98	J.	128	D.	159	M.	189	V.	220	L.	251	Mi.	281	S.	312	L.	342
9	J.	9	D.	40	D.	68	Mi.	99	V.	129	L.	160	Mi.	190	S.	221	M.	252	J.	282	D.	313	M.	343
10	V.	10	L.	41	L.	69	J.	100	S.	130	M.	161	J.	191	D.	222	Mi.	253	V.	283	L.	314	Mi.	344
11	S.	11	M.	42	M.	70	V.	101	D.	131	Mi.	162	V.	192	L.	223	J.	254	S.	284	M.	315	J.	345
12	D.	12	Mi.	43	Mi.	71	S.	102	L.	132	J.	163	S.	193	M.	224	V.	255	D.	285	Mi.	316	V.	346
13	L.	13	J.	44	J.	72	D.	103	M.	133	V.	164	D.	194	Mi.	225	S.	256	L.	286	J.	317	S.	347
14	M.	14	V.	45	V.	73	L.	104	Mi.	134	S.	165	L.	195	J.	226	D.	257	M.	287	V.	318	D.	348
15	Mi.	15	S.	46	S.	74	M.	105	J.	135	D.	166	M.	196	V.	227	L.	258	Mi.	288	S.	319	L.	349
16	J.	16	D.	47	D.	75	Mi.	106	V.	136	L.	167	Mi.	197	S.	228	M.	259	J.	289	D.	320	M.	350
17	V.	17	L.	48	L.	76	J.	107	S.	137	M.	168	J.	198	D.	229	Mi.	260	V.	290	L.	321	Mi.	351
18	S.	18	M.	49	M.	77	V.	108	D.	138	Mi.	169	V.	199	L.	230	J.	261	S.	291	M.	322	J.	352
19	D.	19	Mi.	50	Mi.	78	S.	109	L.	139	J.	170	S.	200	M.	231	V.	262	D.	292	Mi.	323	V.	353
20	L.	20	J.	51	J.	79	D.	110	M.	140	V.	171	D.	201	Mi.	232	S.	263	L.	293	J.	324	S.	354
21	M.	21	V.	52	V.	80	L.	111	Mi.	141	S.	172	L.	202	J.	233	D.	264	M.	294	V.	325	D.	355
22	Mi.	22	S.	53	S.	81	M.	112	J.	142	D.	173	M.	203	V.	234	L.	265	Mi.	295	S.	326	L.	356
23	J.	23	D.	54	D.	82	Mi.	113	V.	143	L.	174	Mi.	204	S.	235	M.	266	J.	296	D.	327	M.	357
24	V.	24	L.	55	L.	83	J.	114	S.	144	M.	175	J.	205	D.	236	Mi.	267	V.	297	L.	328	Mi.	358
25	S.	25	M.	56	M.	84	V.	115	D.	145	Mi.	176	V.	206	L.	237	J.	268	S.	298	M.	329	J.	359
26	D.	26	Mi.	57	Mi.	85	S.	116	L.	146	J.	177	S.	207	M.	238	V.	269	D.	299	Mi.	330	V.	360
27	L.	27	J.	58	J.	86	D.	117	M.	147	V.	178	D.	208	Mi.	239	S.	270	L.	300	J.	331	S.	361
28	M.	28	V.	59	V.	87	L.	118	Mi.	148	S.	179	L.	209	J.	240	D.	271	M.	301	V.	332	D.	362
29	Mi.	29			S.	88	M.	119	J.	149	D.	180	M.	210	V.	241	L.	272	Mi.	302	S.	333	L.	363
30	J.	30			D.	89	Mi.	120	V.	150	L.	181	Mi.	211	S.	242	M.	273	J.	303	D.	334	M.	364
31	V.	31			L.	90			S.	151			J.	212	D.	243			V.	304			Mi.	365

ECLIPSES

Se producirán dos eclipses de Sol y dos de Luna:

1.- *Eclipse total de Luna*, el 15 de abril. El umbral del eclipse comenzará a las 05^h 58^m y terminará a las 09^h 33^m. La fase total se iniciará a las 07^h 06^m y finalizará a las 08^h 25^m. Será visible desde las Américas, las regiones oriental y central del océano Pacífico, Nueva Zelanda, Australia oriental y en el extremo oriental de Rusia.

2.- *Eclipse anular de Sol*, el 29 de abril. Véase mapa en página 6. El eclipse comenzará a las 03^h 53^m y terminará a las 08^h 14^m; la fase anular se iniciará a las 05^h 58^m y finalizará a las 06^h 09^m. Este inusual fenómeno será un eclipse no central que generará una anularidad de corta duración al ocaso.

3.- *Eclipse total de Luna*, el 8 de octubre. El umbral del eclipse comenzará a las 09^h 14^m y terminará a las 12^h 35^m. La fase total se iniciará a las 10^h 25^m y finalizará a las 11^h 25^m. Será visible desde América del Norte y en las regiones más occidentales de América del Sur, el océano Pacífico, Australasia y en la mitad oriental de Asia.

4.- *Eclipse parcial de Sol*, el 23 de octubre. Véase mapa en página 7. El eclipse comenzará a las 19^h 38^m y terminará a las 23^h 52^m. El momento del gran eclipse será a las 21^h 45^m, cuando el 81 % del diámetro del Sol sea oscurecido.

ECLIPSE ANULAR DE SOL DEL 29 DE ABRIL DE 2014

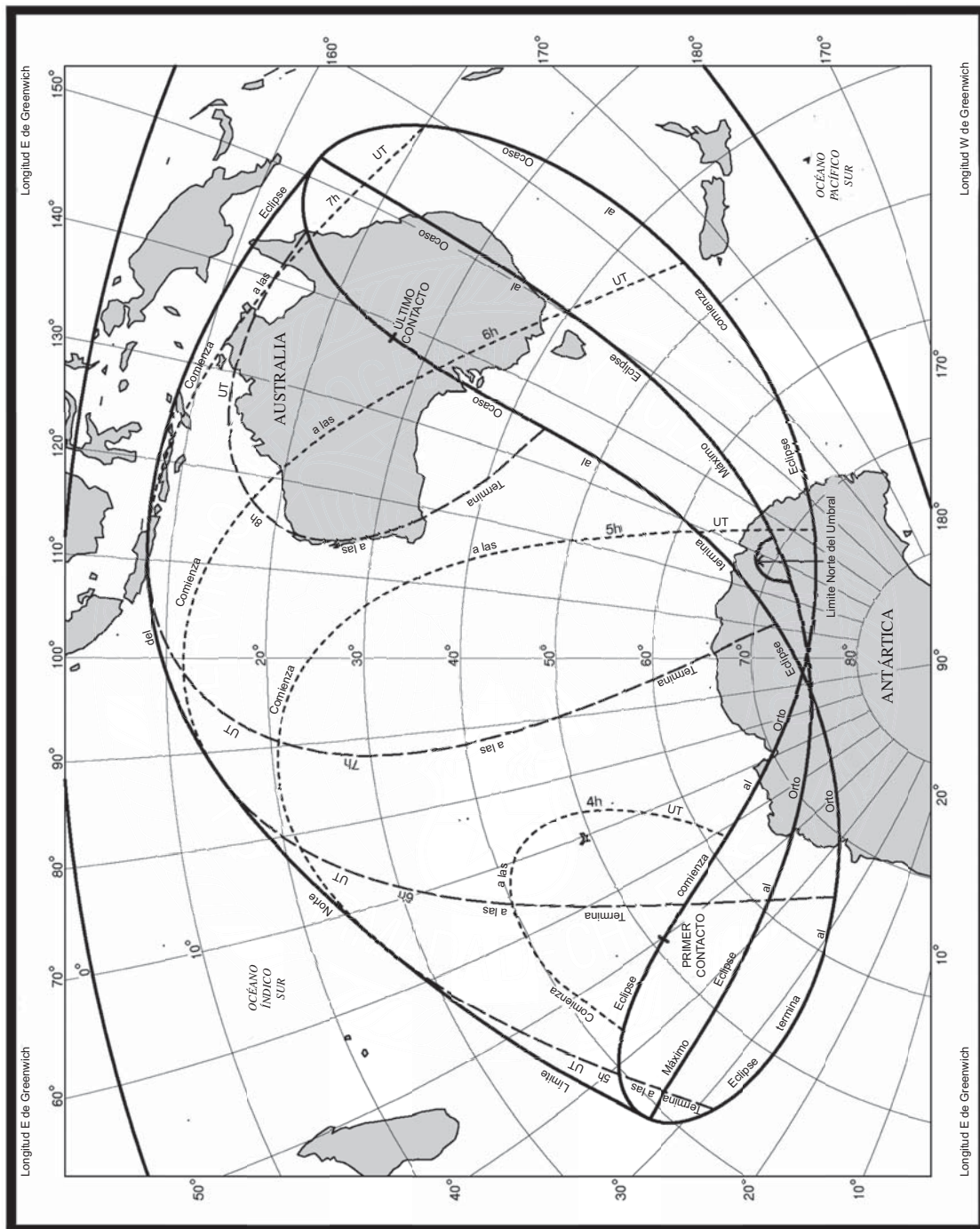


DIAGRAMA DEL ECLIPSE

La principal característica del diagrama arriba indicado es: la ruta del eclipse total y anular; los límites norte y sur del eclipse total y anular; las curvas de orto y ocaso del Sol. Las líneas segmentadas muestran las horas de inicio y término del eclipse parcial a intervalos de una hora.

ECLIPSE PARCIAL DE SOL DEL 23 DE OCTUBRE DE 2014

7

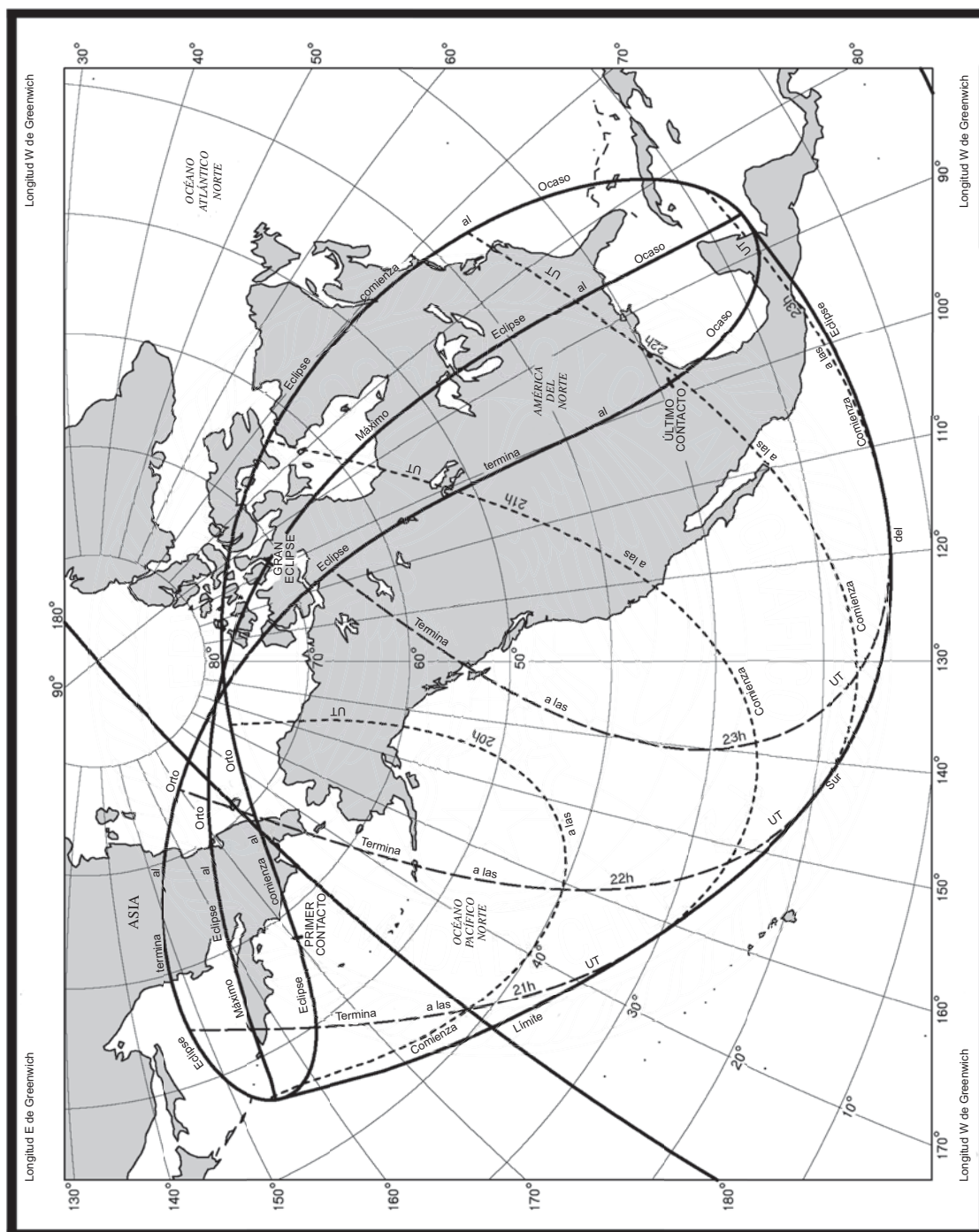


DIAGRAMA DEL ECLIPSE SOLAR

Mayores detalles de la ruta y horas del eclipse central se encuentran en “The Astronomical Almanac” (Almanaque Astronómico en www.nao.rl.ac.uk).

VISIBILIDAD DE LOS PLANETAS

VENUS es un cuerpo brillante en el cielo vespertino hasta fines de la primera semana de enero, después de lo cual se acerca demasiado al Sol como para ser observado. Reaparece en la tercera semana de enero como lucero del alba y puede ser visto al amanecer hasta mediados de septiembre cuando, nuevamente, se acerca demasiado al Sol como para ser observado. Desde inicios de diciembre hasta fines de año es visible al atardecer. Venus está en conjunción con Júpiter el 18 de agosto.

MARTE aparece alrededor de la medianoche a comienzos de año en Virgo (pasando 5° N de *Spica* el 28 de enero y el 31 de marzo). Está en oposición el 8 de abril, cuando es visible toda la noche como un cuerpo luminoso y rojizo. Su elongación E disminuye gradualmente y desde mediados de julio hasta fines de año es visible solamente al atardecer. Permanece en Virgo (pasando $1,4^{\circ}$ N de *Spica* el 12 de julio) hasta mediados de agosto, y luego se mueve a través de Libra, Escorpión, Ofioco (pasando 3° N de *Antares* el 27 de septiembre), Sagitario y hacia el interior de Capricornio a inicios de diciembre. Marte está en conjunción con Saturno el 27 de agosto.

JÚPITER puede ser visto en Géminis desde comienzos de año. Está en oposición el 5 de enero, después de lo cual puede ser visto toda la noche. Su elongación E disminuye gradualmente y desde inicios de abril puede ser visto solamente al atardecer (pasando 6° S de *Póllux* el 21 de junio) y se mueve hacia el interior de Cáncer a inicios de julio. En la segunda semana de julio, se acerca demasiado al Sol como para ser observado, hasta inicios de agosto, después de lo cual reaparece en el cielo matinal. Júpiter pasa hacia el interior de Leo a mediados de octubre y desde mediados de noviembre puede ser visto por más de la mitad de la noche. Júpiter está en conjunción con Venus el 18 de agosto.

SATURNO aparece bien después de la medianoche a principios de año en Libra y permanece en esa constelación el resto del año. Saturno está en oposición el 10 de mayo, luego de lo cual se puede ver toda la noche, y desde inicios de agosto hasta la partida de noviembre, es visible solamente al atardecer. Luego está demasiado cerca del Sol como para ser observado hasta los inicios de diciembre, en que reaparece, y puede ser visto en el cielo matinal por el resto del año. Saturno está en conjunción con Marte el 27 de agosto.

MERCURIO puede ser visto solamente a baja altura por el E antes del orto, o también a baja altura por el W después del ocaso (en las horas cercanas al inicio o término del crepúsculo civil). Es visible, por las mañanas, entre las siguientes fechas aproximadas: 22 de febrero (+2,5) al 18 de abril (-1,2); desde el 29 de junio (+3,0) al 1 de agosto (-1,5) y desde el 23 de octubre (+1,7) hasta el 22 de noviembre (-0,9); el planeta es más luminoso al final de cada período. Es visible por las tardes entre las siguientes fechas aproximadas: desde el 13 de enero (-1,0) hasta el 9 de febrero (+1,5); desde el 4 de mayo (-1,5) hasta el 10 de junio (+3,1); desde el 18 de agosto (-1,0) hasta el 11 de octubre (+2,4) y desde el 25 de diciembre (-0,8) hasta el 31 de diciembre (-0,8); el planeta es más luminoso al principio de cada período. Los valores entre paréntesis representan las magnitudes.

DIAGRAMA PLANETARIO

Descripción general: El diagrama de la página 9 muestra, de modo gráfico, para cualquier fecha del año, la hora media local del paso por el meridiano del Sol y los cinco planetas (Mercurio, Venus, Marte, Júpiter y Saturno), además de los AHS cada 30° . Si el usuario lo requiere, puede trazar líneas intermedias a las del gráfico para estrellas particulares. El propósito de este diagrama es proporcionar una imagen general de la disponibilidad de los planetas y estrellas para su observación.

A cada lado de la línea que marca la hora del paso del Sol por el meridiano, se muestra una banda sombreada de 45 minutos de ancho, para indicar que los planetas y la mayoría de las estrellas que crucen el meridiano dentro de ese lapso, estarán demasiado cerca del Sol como para poder observarlos.

Método de uso e interpretación. Para cualquier fecha, el diagrama entrega inmediatamente las horas medias locales del paso del Sol, planetas y estrellas por el meridiano y, consecuentemente, la siguiente información:

- Si un planeta o estrella está demasiado cerca del Sol para poder ser observado.
- Alguna indicación de su posición en el cielo, especialmente durante el crepúsculo.
- La proximidad de otros planetas.

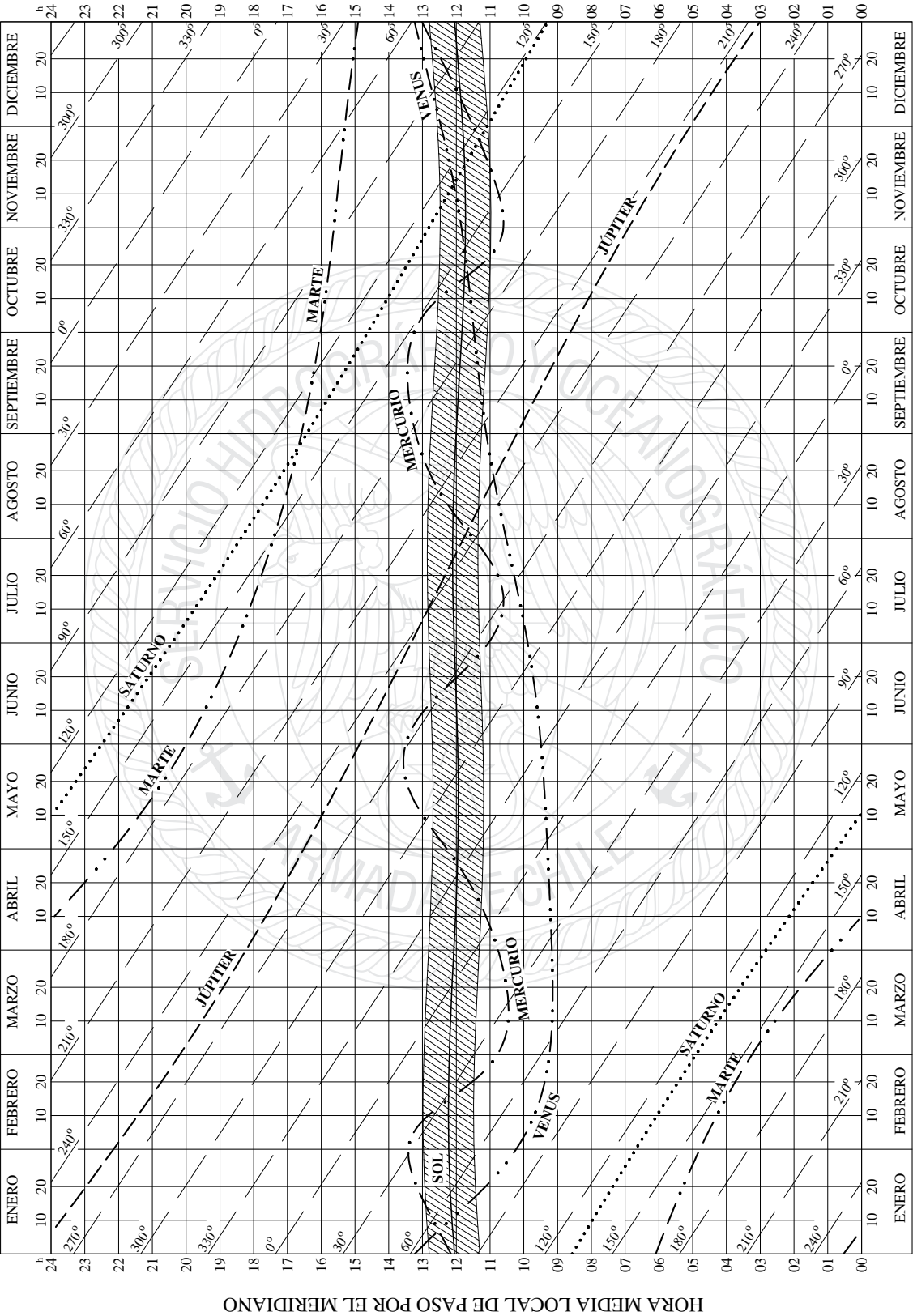
Cuando el paso por el meridiano de un planeta remoto ocurre a medianoche, el cuerpo celeste está en oposición al Sol y es visible toda la noche; dicho planeta puede entonces ser observado durante las auroras y crepúsculos. A medida que la hora de paso por el meridiano decrece, el cuerpo celeste eventualmente deja de ser observable en la mañana, pero su altura sobre el horizonte hacia el E aumenta gradualmente a la hora del ocaso del Sol; este proceso continúa hasta que el cuerpo se encuentre sobre el meridiano durante el crepúsculo. De ahí en adelante, el cuerpo es observable sobre el horizonte por el W y su altura al ocaso del Sol decrece gradualmente; eventualmente el cuerpo queda demasiado cerca del Sol para poder ser observado. Cuando el cuerpo vuelve a ser visible, aparecerá a baja altura por el E durante la aurora; su altura al orto del Sol aumentará hasta que el paso por el meridiano ocurra durante la aurora. Entonces, a medida que la hora del paso por el meridiano decrece hacia la 0^h , el cuerpo celeste es observable hacia el W durante la aurora con una disminución gradual en su altura, hasta entrar nuevamente en oposición.

NO CONFUNDIR

Venus con Júpiter, a mediados de agosto y con Mercurio a fines de diciembre; en ambas ocasiones, Venus es el cuerpo más brillante.

Marte con Saturno, desde mediados de agosto a principios de septiembre, siendo Marte el cuerpo más brillante.

HORA MEDIA LOCAL DE PASO POR EL MERIDIANO



UT (HmGr)	ARIES	VENUS -4.3	MARTE +0.8	JÚPITER -2.7	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
1 00	100 34.3	162 10.0 S18 13.1	269 00.9 S 2 36.2	353 04.4 N22 35.1	232 03.1 S15 44.5	Acamar	315 17.8 S40 15.2	
01	115 36.7	177 13.7 12.6	284 02.3 36.6	8 07.2 35.2	247 05.4 44.5	Achernar	335 26.4 S57 10.3	
02	130 39.2	192 17.3 12.2	299 03.7 37.1	23 10.1 35.2	262 07.6 44.6	Acrux	173 08.6 S63 10.4	
03	145 41.7	207 21.0 . . 11.7	314 05.2 . . 37.5	38 12.9 . . 35.3	277 09.9 . . 44.6	Adhara	255 11.8 S28 59.7	
04	160 44.1	222 24.6 11.3	329 06.6 37.9	53 15.7 35.3	292 12.1 44.7	Aldebarán	290 48.6 N16 32.1	
05	175 46.6	237 28.3 10.8	344 08.0 38.3	68 18.5 35.3	307 14.3 44.8			
06	190 49.0	252 31.9 S18 10.4	359 09.5 S 2 38.7	83 21.4 N22 35.4	322 16.6 S15 44.8	Alioth	166 20.5 N55 52.7	
07	205 51.5	267 35.6 10.0	14 10.9 39.1	98 24.2 35.4	337 18.8 44.9	Alkaid	152 58.8 N49 14.4	
08	220 54.0	282 39.3 09.5	29 12.3 39.5	113 27.0 35.5	352 21.0 44.9	Al Na'ir	27 43.6 S46 53.6	
09	235 56.4	297 42.9 . . 09.1	44 13.8 . . 39.9	128 29.8 . . 35.5	7 23.3 . . 45.0	Alnilam	275 45.6 S 1 11.8	
10	250 58.9	312 46.6 08.6	59 15.2 40.3	143 32.7 35.6	22 25.5 45.0	Alphard	217 55.4 S 8 43.3	
11	266 01.4	327 50.3 08.2	74 16.6 40.7	158 35.5 35.6	37 27.7 45.1			
12	281 03.8	342 54.0 S18 07.7	89 18.1 S 2 41.1	173 38.3 N22 35.7	52 30.0 S15 45.1	Alphecca	126 11.0 N26 40.0	
13	296 06.3	357 57.7 07.3	104 19.5 41.5	188 41.1 35.7	67 32.2 45.2	Alpheratz	357 43.1 N29 10.3	
14	311 08.8	13 01.4 06.9	119 20.9 41.9	203 44.0 35.8	82 34.5 45.2	Altair	62 08.2 N 8 54.5	
15	326 11.2	28 05.0 . . 06.4	134 22.4 . . 42.3	218 46.8 . . 35.8	97 36.7 . . 45.3	Ankaa	353 15.4 S42 14.0	
16	341 13.7	43 08.7 06.0	149 23.8 42.7	233 49.6 35.9	112 38.9 45.3	Antares	112 26.1 S26 27.6	
17	356 16.2	58 12.4 05.5	164 25.3 43.1	248 52.4 35.9	127 41.2 45.4			
18	11 18.6	73 16.1 S18 05.1	179 26.7 S 2 43.5	263 55.3 N22 35.9	142 43.4 S15 45.5	Arcturus	145 55.5 N19 06.5	
19	26 21.1	88 19.8 04.7	194 28.1 43.9	278 58.1 36.0	157 45.6 45.5	Atria	107 28.0 S69 02.8	
20	41 23.5	103 23.6 04.2	209 29.6 44.3	294 00.9 36.0	172 47.9 45.6	Avior	234 17.2 S59 33.3	
21	56 26.0	118 27.3 . . 03.8	224 31.0 . . 44.7	309 03.7 . . 36.1	187 50.1 . . 45.6	Bellatrix	278 31.3 N 6 21.5	
22	71 28.5	133 31.0 03.3	239 32.4 45.1	324 06.6 36.1	202 52.4 45.7	Betelgeuse	271 00.5 N 7 24.4	
23	86 30.9	148 34.7 02.9	254 33.9 45.5	339 09.4 36.2	217 54.6 45.7			
2 00	101 33.4	163 38.4 S18 02.5	269 35.3 S 2 45.9	354 12.2 N22 36.2	232 56.8 S15 45.8	Canopus	263 55.4 S52 42.4	
01	116 35.9	178 42.2 02.0	284 36.8 46.3	9 15.0 36.3	247 59.1 45.8	Capella	280 33.4 N46 00.6	
02	131 38.3	193 45.9 01.6	299 38.2 46.8	24 17.9 36.3	263 01.3 45.9	Deneb	49 31.6 N45 20.1	
03	146 40.8	208 49.6 . . 01.2	314 39.6 . . 47.2	39 20.7 . . 36.4	278 03.5 . . 45.9	Denébola	182 33.2 N14 29.4	
04	161 43.3	223 53.4 00.7	329 41.1 47.6	54 23.5 36.4	293 05.8 46.0	Diphda	348 55.5 S17 54.7	
05	176 45.7	238 57.1 18 00.3	344 42.5 48.0	69 26.3 36.4	308 08.0 46.0			
06	191 48.2	254 00.8 S17 59.9	359 44.0 S 2 48.4	84 29.2 N22 36.5	323 10.3 S15 46.1	Dubhe	193 51.0 N61 40.1	
07	206 50.7	269 04.6 59.4	14 45.4 48.8	99 32.0 36.5	338 12.5 46.2	Elnath	278 11.7 N28 37.0	
08	221 53.1	284 08.3 59.0	29 46.8 49.2	114 34.8 36.6	353 14.7 46.2	Eltanin	90 46.5 N51 29.3	
09	236 55.6	299 12.1 . . 58.6	44 48.3 . . 49.6	129 37.6 . . 36.6	8 17.0 . . 46.3	Enif	33 47.0 N 9 56.5	
10	251 58.0	314 15.9 58.1	59 49.7 50.0	144 40.5 36.7	23 19.2 46.3	Fomalhaut	15 23.8 S29 32.9	
11	267 00.5	329 19.6 57.7	74 51.2 50.4	159 43.3 36.7	38 21.5 46.4			
12	282 03.0	344 23.4 S17 57.3	89 52.6 S 2 50.8	174 46.1 N22 36.8	53 23.7 S15 46.4	Gacrux	172 00.3 S57 11.3	
13	297 05.4	359 27.2 56.8	104 54.1 51.2	189 49.0 36.8	68 25.9 46.5	Gienah	175 51.8 S17 37.2	
14	312 07.9	14 30.9 56.4	119 55.5 51.6	204 51.8 36.9	83 28.2 46.5	Hadar	148 47.5 S60 26.1	
15	327 10.4	29 34.7 . . 56.0	134 56.9 . . 52.0	219 54.6 . . 36.9	98 30.4 . . 46.6	Hamal	328 00.1 N23 31.8	
16	342 12.8	44 38.5 55.6	149 58.4 52.4	234 57.4 37.0	113 32.7 46.6	Kaus Aust.	83 43.7 S34 22.5	
17	357 15.3	59 42.3 55.1	164 59.8 52.8	250 00.3 37.0	128 34.9 46.7			
18	12 17.8	74 46.0 S17 54.7	180 01.3 S 2 53.2	265 03.1 N22 37.0	143 37.1 S15 46.7	Kochab	137 20.9 N74 05.6	
19	27 20.2	89 49.8 54.3	195 02.7 53.6	280 05.9 37.1	158 39.4 46.8	Markab	13 38.1 N15 17.0	
20	42 22.7	104 53.6 53.9	210 04.2 54.0	295 08.7 37.1	173 41.6 46.8	Menkar	314 14.4 N 4 08.6	
21	57 25.2	119 57.4 . . 53.4	225 05.6 . . 54.4	310 11.6 . . 37.2	188 43.9 . . 46.9	Menkent	148 07.2 S36 26.1	
22	72 27.6	135 01.2 53.0	240 07.1 54.8	325 14.4 37.2	203 46.1 46.9	Miaplacidus	221 38.7 S69 46.5	
23	87 30.1	150 05.0 52.6	255 08.5 55.1	340 17.2 37.3	218 48.3 47.0			
3 00	102 32.5	165 08.8 S17 52.2	270 10.0 S 2 55.5	355 20.0 N22 37.3	233 50.6 S15 47.0	Mirfak	308 39.4 N49 54.7	
01	117 35.0	180 12.6 51.7	285 11.4 55.9	10 22.9 37.4	248 52.8 47.1	Nunki	75 58.2 S26 16.6	
02	132 37.5	195 16.4 51.3	300 12.8 56.3	25 25.7 37.4	263 55.1 47.2	Peacock	53 19.2 S56 41.3	
03	147 39.9	210 20.3 . . 50.9	315 14.3 . . 56.7	40 28.5 . . 37.5	278 57.3 . . 47.2	Póllux	243 26.9 N27 59.3	
04	162 42.4	225 24.1 50.5	330 15.7 57.1	55 31.3 37.5	293 59.6 47.3	Procyon	244 59.0 N 5 11.1	
05	177 44.9	240 27.9 50.0	345 17.2 57.5	70 34.2 37.5	309 01.8 47.3			
06	192 47.3	255 31.7 S17 49.6	0 18.6 S 2 57.9	85 37.0 N22 37.6	324 04.0 S15 47.4	Rasalhague	96 06.4 N12 33.1	
07	207 49.8	270 35.5 49.2	15 20.1 58.3	100 39.8 37.6	339 06.3 47.4	Régulus	207 42.9 N11 53.7	
08	222 52.3	285 39.4 48.8	30 21.5 58.7	115 42.7 37.7	354 08.5 47.5	Rigel	281 11.4 S 8 11.4	
09	237 54.7	300 43.2 . . 48.4	45 23.0 . . 59.1	130 45.5 . . 37.7	9 10.8 . . 47.5	Rigel Kent.	139 51.4 S60 53.2	
10	252 57.2	315 47.0 48.0	60 24.4 59.5	145 48.3 37.8	24 13.0 47.6	Sabik	102 12.4 S15 44.3	
11	267 59.7	330 50.9 47.5	75 25.9 2 59.9	160 51.1 37.8	39 15.2 47.6			
12	283 02.1	345 54.7 S17 47.1	90 27.3 S 3 00.3	175 54.0 N22 37.9	54 17.5 S15 47.7	Schedar	349 40.0 N56 37.2	
13	298 04.6	0 58.6 46.7	105 28.8 00.7	190 56.8 37.9	69 19.7 47.7	Shaula	96 21.8 S37 06.6	
14	313 07.0	16 02.4 46.3	120 30.3 01.1	205 59.6 38.0	84 22.0 47.8	Sirius	258 33.0 S16 44.4	
15	328 09.5	31 06.3 . . 45.9	135 31.7 . . 01.5	221 02.4 . . 38.0	99 24.2 . . 47.8	Spica	158 30.9 S11 14.0	
16	343 12.0	46 10.1 45.5	150 33.2 01.9	236 05.3 38.0	114 26.5 47.9	Suhail	222 51.7 S43 29.4	
17	358 14.4	61 14.0 45.0	165 34.6 02.3	251 08.1 38.1	129 28.7 47.9			
18	13 16.9	76 17.8 S17 44.6	180 36.1 S 3 02.7	266 10.9 N22 38.1	144 30.9 S15 48.0	Vega	80 39.1 N38 48.0	
19	28 19.4	91 21.7 44.2	195 37.5 03.1	281 13.8 38.2	159 33.2 48.0	Zuben'ubi	137 05.2 S16 05.9	
20	43 21.8	106 25.6 43.8	210 39.0 03.5	296 16.6 38.2	174 35.4 48.1			
21	58 24.3	121 29.4 . . 43.4	225 40.4 . . 03.9	311 19.4 . . 38.3	189 37.7 . . 48.1			
22	73 26.8	136 33.3 43.0	240 41.9 04.3	326 22.2 38.3	204 39.9 48.2			
23	88 29.2	151 37.2 42.6	255 43.3 04.6	341 25.1 38.4	219 42.2 48.2			
h m								
Paso Mer. 17 11.0	v 3.8 d 0.4		v 1.4 d 0.4	v 2.8 d 0.0	v 2.2 d 0.1			
						AHS	Paso Mer.	
						° /	h m	
						Venus	62 05.0 13 02	
						Marte	168 01.9 6 01	
						Júpiter	252 38.8 0 23	
						Saturno	131 23.4 8 27	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	1	2	3	4
M I É R C O L E S	d h	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m
	179 10.2	S23 01.3	186 33.9	3.3	S19 05.1	2.9	61.3	N 72	08 23	10 39	■	■	11 14	10 54	10 41
	01 194 09.9	01.1	200 56.2	3.2	19 02.2	3.0	61.3	N 70	08 04	09 48	■	■	10 32	10 33	10 31
	02 209 09.6	00.9	215 18.4	3.3	18 59.2	3.2	61.3	66	07 37	08 52	10 26	09 15	09 43	09 59	10 10
	03 224 09.3	00.7	229 40.7	3.4	18 56.0	3.3	61.3	64	07 26	08 34	09 48	08 53	09 25	09 47	10 03
	04 239 09.0	00.5	244 03.1	3.3	18 52.7	3.5	61.3	62	07 17	08 18	09 22	08 34	09 11	09 37	09 56
	05 254 08.8	00.3	258 25.4	3.3	18 49.2	3.6	61.4	60	07 09	08 05	09 02	08 19	08 59	09 28	09 51
	06 269 08.5	S23 00.1	272 47.7	3.4	S18 45.6	3.8	61.4	N 58	07 02	07 54	08 45	08 06	08 48	09 21	09 46
	07 284 08.2	22 59.9	287 10.1	3.4	18 41.8	3.9	61.4	56	06 55	07 44	08 31	07 55	08 39	09 14	09 42
	08 299 07.9	59.7	301 32.5	3.4	18 37.9	4.0	61.4	54	06 50	07 35	08 19	07 45	08 31	09 08	09 38
	09 314 07.6	59.5	315 54.9	3.4	18 33.9	4.2	61.4	52	06 44	07 27	08 08	07 37	08 24	09 02	09 34
	10 329 07.3	59.2	330 17.3	3.4	18 29.7	4.4	61.4	50	06 39	07 20	07 58	07 29	08 17	08 57	09 31
	11 344 07.0	59.0	344 39.7	3.5	18 25.3	4.4	61.4	45	06 28	07 05	07 38	07 12	08 03	08 47	09 24
	12 359 06.7	S22 58.8	359 02.2	3.5	S18 20.9	4.6	61.4	N 40	06 18	06 52	07 22	06 58	07 51	08 38	09 18
	13 14 06.4	58.6	13 24.7	3.6	18 16.3	4.8	61.4	35	06 09	06 40	07 08	06 47	07 41	08 30	09 13
	14 29 06.1	58.4	27 47.3	3.5	18 11.5	4.9	61.4	30	06 00	06 30	06 56	06 36	07 32	08 23	09 09
	15 44 05.8	58.2	42 09.8	3.6	18 06.6	5.0	61.4	20	05 44	06 11	06 35	06 19	07 17	08 11	09 01
	16 59 05.5	58.0	56 32.4	3.6	18 01.6	5.2	61.4	N 10	05 28	05 55	06 17	06 03	07 04	08 01	08 54
	17 74 05.2	57.8	70 55.0	3.7	17 56.4	5.2	61.4	0	05 12	05 38	06 00	05 49	06 51	07 51	08 48
	18 89 04.9	S22 57.6	85 17.7	3.7	S17 51.2	5.5	61.4	S 10	04 53	05 20	05 43	05 35	06 39	07 41	08 41
	19 104 04.6	57.3	99 40.4	3.8	17 45.7	5.5	61.4	20	04 31	05 00	05 25	05 19	06 25	07 31	08 34
	20 119 04.3	57.1	114 03.2	3.7	17 40.2	5.7	61.4	30	04 03	04 36	05 03	05 02	06 10	07 19	08 27
	21 134 04.0	56.9	128 25.9	3.9	17 34.5	5.8	61.4	35	03 44	04 21	04 50	04 52	06 01	07 12	08 22
	22 149 03.7	56.7	142 48.8	3.8	17 28.7	6.0	61.4	40	03 22	04 03	04 36	04 40	05 51	07 04	08 17
	23 164 03.4	56.5	157 11.6	4.0	17 22.7	6.1	61.4	45	02 52	03 41	04 18	04 26	05 39	06 55	08 11
J U E V E S	179 03.2	S22 56.2	171 34.6	3.9	S17 16.6	6.2	61.4	S 50	02 09	03 12	03 56	04 09	05 25	06 44	08 04
	01 194 02.9	56.0	185 57.5	4.0	17 10.4	6.3	61.4	52	01 43	02 58	03 46	04 01	05 18	06 39	08 00
	02 209 02.6	55.8	200 20.5	4.1	17 04.1	6.5	61.4	54	01 03	02 41	03 34	03 53	05 10	06 33	07 57
	03 224 02.3	55.6	214 43.6	4.1	16 57.6	6.6	61.4	56	///	02 19	03 20	03 43	05 02	06 27	07 53
	04 239 02.0	55.4	229 06.7	4.2	16 51.0	6.7	61.4	58	///	01 52	03 04	03 31	04 52	06 19	07 48
	05 254 01.7	55.1	243 29.9	4.2	16 44.3	6.8	61.4	S 60	///	01 09	02 44	03 18	04 41	06 11	07 43
	06 269 01.4	S22 54.9	257 53.1	4.3	S16 37.5	7.0	61.4	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	07 284 01.1	54.7	272 16.4	4.3	16 30.5	7.0	61.4	Ocaso Sol	Civil	Náut.	1	2	3	4	
	08 299 00.8	54.5	286 39.7	4.4	16 23.5	7.2	61.4				h m	h m	h m	h m	
	09 314 00.5	54.2	301 03.1	4.4	16 16.3	7.3	61.4	N 72	h m	h m	h m	h m	h m	h m	h m
	10 329 00.2	54.0	315 26.5	4.6	16 09.0	7.5	61.4	N 70	h m	h m	h m	h m	h m	h m	h m
	11 343 59.9	53.8	329 50.1	4.5	16 01.5	7.5	61.4	68	13 29	14 21	15 46	13 44	15 52	17 57	19 45
	12 358 59.6	S22 53.6	344 13.6	4.6	S15 54.0	7.7	61.4	66	14 21	15 16	16 19	14 30	16 20	18 13	20 03
	13 13 59.3	53.3	358 37.2	4.7	15 46.3	7.7	61.4	64	13 42	15 53	16 32	14 59	16 41	18 26	20 10
	14 28 59.1	53.1	13 00.9	4.8	15 38.6	7.9	61.3	62	14 20	15 35	16 42	15 22	16 57	18 37	20 16
	15 43 58.8	52.9	27 24.7	4.8	15 30.7	8.0	61.3	60	14 46	15 50	16 51	15 40	17 11	18 46	20 21
	16 58 58.5	52.6	41 48.5	4.9	15 22.7	8.1	61.3	58	15 07	16 03	16 59	15 54	17 22	18 54	20 25
	17 73 58.2	52.4	56 12.4	4.9	15 14.6	8.2	61.3	N 58	15 23	16 14	17 06	16 07	17 32	19 01	20 29
	18 88 57.9	S22 52.2	70 36.3	5.1	S15 06.4	8.2	61.3	56	15 37	16 24	17 13	16 18	17 41	19 07	20 33
	19 103 57.6	51.9	85 00.4	5.0	14 58.2	8.4	61.3	54	15 50	16 33	17 19	16 27	17 48	19 12	20 36
	20 118 57.3	51.7	99 24.4	5.2	14 49.8	8.6	61.3	52	16 00	16 41	17 24	16 36	17 55	19 17	20 38
	21 133 57.0	51.5	113 48.6	5.2	14 41.2	8.6	61.3	50	16 10	16 48	17 29	16 43	18 01	19 22	20 41
	22 148 56.7	51.2	128 12.8	5.3	14 32.6	8.7	61.3	45	16 30	17 03	17 41	17 00	18 15	19 31	20 46
	23 163 56.4	51.0	142 37.1	5.4	14 23.9	8.8	61.2	N 40	16 46	17 17	17 51	17 13	18 25	19 39	20 51
	V I E R N E S	01 178 56.1	S22 50.8	157 01.5	5.4	S14 15.1	8.8	61.2	35	17 00	17 28	18 00	17 24	18 35	19 45	20 55
02 208 55.6		50.3	185 50.4	5.6	13 57.3	9.1	61.2	30	17 12	17 38	18 08	17 34	18 43	19 51	20 58
03 223 55.3		50.0	200 15.0	5.6	13 48.2	9.2	61.2	20	17 33	17 57	18 24	17 51	18 57	20 01	21 04
04 238 55.0		49.8	214 39.6	5.8	13 39.0	9.2	61.2	N 10	17 51	18 13	18 40	18 05	19 09	20 10	21 09
05 253 54.7		49.6	229 04.4	5.8	13 29.8	9.4	61.1	0	18 08	18 30	18 56	18 19	19 20	20 18	21 14
06 268 54.4		S22 49.3	243 29.2	5.8	S13 20.4	9.4	61.1	S 10	18 25	18 48	19 15	18 32	19 31	20 27	21 18
07 283 54.1		49.1	257 54.0	6.0	13 11.0	9.5	61.1	20	18 43	19 08	19 37	18 47	19 43	20 35	21 23
08 298 53.8		48.8	272 19.0	6.0	13 01.5	9.6	61.1	30	19 05	19 32	20 05	19 03	19 57	20 45	21 29
09 313 53.5		48.6	286 44.0	6.1	12 51.9	9.7	61.1	35	19 17	19 47	20 23	19 13	20 04	20 50	21 32
10 328 53.3		48.3	301 09.1	6.1	12 42.2	9.8	61.0	40	19 32	20 05	20 46	19 23	20 13	20 57	21 35
11 343 53.0		48.1	315 34.2	6.3	12 32.4	9.8	61.0	45	19 50	20 27	21 15	19 36	20 23	21 04	21 40
12 358 52.7		S22 47.8	329 59.5	6.3	S12 22.6	9.9	61.0	S 50	20 11	20 55	21 58	19 51	20 36	21 13	21 44
13 13 52.4		47.6	344 24.8	6.4	12 12.7	10.0	61.0	52	20 22	21 10	22 24	19 59	20 41	21 17	21 47
14 28 52.1		47.3	358 50.2	6.5	12 02.7	10.1	61.0	54	20 34	21 27	23 02	20 07	20 48	21 21	21 49
15 43 51.8		47.1	13 15.7	6.5	11 52.6	10.1	60.9	56	20 47	21 48	///	20 15	20 55	21 26	21 52
16 58 51.5		46.8	27 41.2	6.6	11 42.5	10.2	60.9	58	21 03	22 15	///	20 25	21 03	21 31	21 55
17 73 51.2		46.6	42 06.8	6.7	11 32.3	10.3	60.9	S 60	21 23	22 57	///	20 37	21 11	21 37	21 58
18 88 51.0		S22 46.3	56 32.5	6.8	S11 22.0	10.3	60.9	SOL		LUNA					
19 103 50.7		46.1	70 58.3	6.9	11 11.7	10.4	60.8	Día	Ec. Tiempo	Paso Mer.	Paso Mer.		Edad	Fase	
20 118 50.4		45.8	85 24.2	6.9	11 01.3	10.5	60.8				Sup.	Inf.			
21 133 50.1		45.6	99 50.1	7.0	10 50.8	10.5	60.8	d	m s	m s	h m	h m	h m	d	%
22 148 49.8		45.3	114 16.1	7.1	10 40.3	10.6	60.8	1	03 18	03 33	12 04	12 04	24 35	00 0	
23 163 49.5		45.1	128 42.2	7.1	S10 29.7	10.6	60.7	2	03 47	04 01	12 04	13 06	00 35	01 2	
		S/D 16.3	<i>d</i> 0.2	S/D 16.7		16.7	16.6	3	04 15	04 29	12 04	14 05	01 36	02 6	

UT (HmGr)	ARIES	VENUS -4.3	MARTE +0.8	JÚPITER -2.7	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
4 00	103 31.7	166 41.0 S17 42.2	270 44.8 S 3 05.0	356 27.9 N22 38.4	234 44.4 S15 48.3	Acamar	315 17.8 S40 15.2	
01	118 34.1	181 44.9 41.7	285 46.3 05.4	11 30.7 38.5	249 46.6 48.4	Achernar	335 26.4 S57 10.3	
02	133 36.6	196 48.8 41.3	300 47.7 05.8	26 33.5 38.5	264 48.9 48.4	Acrux	173 08.6 S63 10.4	
03	148 39.1	211 52.7 . . 40.9	315 49.2 . . 06.2	41 36.4 . . 38.5	279 51.1 . . 48.5	Adhara	255 11.8 S28 59.7	
04	163 41.5	226 56.6 40.5	330 50.6 06.6	56 39.2 38.6	294 53.4 48.5	Aldebarán	290 48.6 N16 32.1	
05	178 44.0	242 00.5 40.1	345 52.1 07.0	71 42.0 38.6	309 55.6 48.6			
06	193 46.5	257 04.4 S17 39.7	0 53.5 S 3 07.4	86 44.8 N22 38.7	324 57.9 S15 48.6	Alioth	166 20.4 N55 52.7	
07	208 48.9	272 08.3 39.3	15 55.0 07.8	101 47.7 38.7	340 00.1 48.7	Alkaid	152 58.8 N49 14.3	
08	223 51.4	287 12.2 38.9	30 56.5 08.2	116 50.5 38.8	355 02.4 48.7	Al Na'ir	27 43.6 S46 53.6	
09	238 53.9	302 16.1 . . 38.5	45 57.9 . . 08.6	131 53.3 . . 38.8	10 04.6 . . 48.8	Alnilam	275 45.6 S 1 11.8	
10	253 56.3	317 20.0 38.1	60 59.4 09.0	146 56.2 38.9	25 06.8 48.8	Alphard	217 55.4 S 8 43.3	
11	268 58.8	332 23.9 37.7	76 00.8 09.3	161 59.0 38.9	40 09.1 48.9			
12	284 01.3	347 27.8 S17 37.3	91 02.3 S 3 09.7	177 01.8 N22 38.9	55 11.3 S15 48.9	Alphecca	126 10.9 N26 40.0	
13	299 03.7	2 31.7 36.9	106 03.8 10.1	192 04.6 39.0	70 13.6 49.0	Alpheratz	357 43.1 N29 10.3	
14	314 06.2	17 35.6 36.5	121 05.2 10.5	207 07.5 39.0	85 15.8 49.0	Altair	62 08.2 N 8 54.5	
15	329 08.6	32 39.5 . . 36.1	136 06.7 . . 10.9	222 10.3 . . 39.1	100 18.1 . . 49.1	Ankaa	353 15.4 S42 14.0	
16	344 11.1	47 43.5 35.7	151 08.1 11.3	237 13.1 39.1	115 20.3 49.1	Antares	112 26.1 S26 27.6	
17	359 13.6	62 47.4 35.3	166 09.6 11.7	252 16.0 39.2	130 22.6 49.2			
18	14 16.0	77 51.3 S17 34.9	181 11.1 S 3 12.1	267 18.8 N22 39.2	145 24.8 S15 49.2	Arcturus	145 55.5 N19 06.5	
19	29 18.5	92 55.2 34.5	196 12.5 12.5	282 21.6 39.3	160 27.1 49.3	Atria	107 28.0 S69 02.8	
20	44 21.0	107 59.2 34.1	211 14.0 12.9	297 24.4 39.3	175 29.3 49.3	Avior	234 17.2 S59 33.4	
21	59 23.4	123 03.1 . . 33.7	226 15.5 . . 13.2	312 27.3 . . 39.4	190 31.5 . . 49.4	Bellatrix	278 31.3 N 6 21.5	
22	74 25.9	138 07.0 33.3	241 16.9 13.6	327 30.1 39.4	205 33.8 49.4	Betelgeuse	271 00.5 N 7 24.4	
23	89 28.4	153 11.0 32.9	256 18.4 14.0	342 32.9 39.4	220 36.0 49.5			
5 00	104 30.8	168 14.9 S17 32.5	271 19.8 S 3 14.4	357 35.7 N22 39.5	235 38.3 S15 49.5	Canopus	263 55.4 S52 42.4	
01	119 33.3	183 18.9 32.1	286 21.3 14.8	12 38.6 39.5	250 40.5 49.6	Capella	280 33.4 N46 00.6	
02	134 35.8	198 22.8 31.7	301 22.8 15.2	27 41.4 39.6	265 42.8 49.6	Deneb	49 31.6 N45 20.1	
03	149 38.2	213 26.8 . . 31.3	316 24.2 . . 15.6	42 44.2 . . 39.6	280 45.0 . . 49.7	Denébola	182 33.2 N14 29.4	
04	164 40.7	228 30.7 30.9	331 25.7 16.0	57 47.1 39.7	295 47.3 49.7	Diphda	348 55.5 S17 54.7	
05	179 43.1	243 34.7 30.5	346 27.2 16.4	72 49.9 39.7	310 49.5 49.8			
06	194 45.6	258 38.6 S17 30.1	1 28.6 S 3 16.7	87 52.7 N22 39.8	325 51.8 S15 49.8	Dubhe	193 51.0 N61 40.1	
07	209 48.1	273 42.6 29.7	16 30.1 17.1	102 55.5 39.8	340 54.0 49.9	Elnath	278 11.7 N28 37.0	
08	224 50.5	288 46.6 29.3	31 31.6 17.5	117 58.4 39.8	355 56.3 49.9	Eltanin	90 46.5 N51 29.3	
09	239 53.0	303 50.5 . . 29.0	46 33.1 . . 17.9	133 01.2 . . 39.9	10 58.5 . . 50.0	Enif	33 47.0 N 9 56.5	
10	254 55.5	318 54.5 28.6	61 34.5 18.3	148 04.0 39.9	26 00.8 50.0	Fomalhaut	15 23.8 S29 32.9	
11	269 57.9	333 58.5 28.2	76 36.0 18.7	163 06.8 40.0	41 03.0 50.1			
12	285 00.4	349 02.4 S17 27.8	91 37.5 S 3 19.1	178 09.7 N22 40.0	56 05.3 S15 50.1	Gacrux	172 00.3 S57 11.3	
13	300 02.9	4 06.4 27.4	106 38.9 19.4	193 12.5 40.1	71 07.5 50.2	Gienah	175 51.8 S17 37.2	
14	315 05.3	19 10.4 27.0	121 40.4 19.8	208 15.3 40.1	86 09.7 50.2	Hadar	148 47.4 S60 26.1	
15	330 07.8	34 14.4 . . 26.6	136 41.9 . . 20.2	223 18.2 . . 40.2	101 12.0 . . 50.3	Hamal	328 00.2 N23 31.8	
16	345 10.2	49 18.3 26.2	151 43.3 20.6	238 21.0 40.2	116 14.2 50.3	Kaus Aust.	83 43.7 S34 22.5	
17	0 12.7	64 22.3 25.9	166 44.8 21.0	253 23.8 40.3	131 16.5 50.4			
18	15 15.2	79 26.3 S17 25.5	181 46.3 S 3 21.4	268 26.6 N22 40.3	146 18.7 S15 50.4	Kochab	137 20.8 N74 05.6	
19	30 17.6	94 30.3 25.1	196 47.8 21.8	283 29.5 40.3	161 21.0 50.5	Markab	13 38.1 N15 17.7	
20	45 20.1	109 34.3 24.7	211 49.2 22.1	298 32.3 40.4	176 23.2 50.5	Menkar	314 14.4 N 4 08.0	
21	60 22.6	124 38.3 . . 24.3	226 50.7 . . 22.5	313 35.1 . . 40.4	191 25.5 . . 50.6	Menkent	148 07.2 S36 26.1	
22	75 25.0	139 42.3 23.9	241 52.2 22.9	328 38.0 40.5	206 27.7 50.6	Miaplacidus	221 38.6 S69 46.5	
23	90 27.5	154 46.3 23.6	256 53.6 23.3	343 40.8 40.5	221 30.0 50.7			
6 00	105 30.0	169 50.3 S17 23.2	271 55.1 S 3 23.7	358 43.6 N22 40.6	236 32.2 S15 50.7	Mirfak	308 39.4 N49 54.7	
01	120 32.4	184 54.3 22.8	286 56.6 24.1	13 46.4 40.6	251 34.5 50.8	Nunki	75 58.2 S26 16.6	
02	135 34.9	199 58.3 22.4	301 58.1 24.4	28 49.3 40.7	266 36.7 50.8	Peacock	53 19.2 S56 41.3	
03	150 37.4	215 02.3 . . 22.0	316 59.5 . . 24.8	43 52.1 . . 40.7	281 39.0 . . 50.9	Póllux	243 26.9 N27 59.3	
04	165 39.8	230 06.3 21.7	332 01.0 25.2	58 54.9 40.7	296 41.2 50.9	Procyon	244 59.0 N 5 11.1	
05	180 42.3	245 10.3 21.3	347 02.5 25.6	73 57.7 40.8	311 43.5 51.0			
06	195 44.7	260 14.3 S17 20.9	2 04.0 S 3 26.0	89 00.6 N22 40.8	326 45.7 S15 51.0	Rasalhague	96 06.4 N12 33.1	
07	210 47.2	275 18.3 20.5	17 05.4 26.4	104 03.4 40.9	341 48.0 51.1	Régulus	207 42.9 N11 53.7	
08	225 49.7	290 22.3 20.2	32 06.9 26.7	119 06.2 40.9	356 50.2 51.1	Rigel	281 11.4 S 8 11.4	
09	240 52.1	305 26.3 . . 19.8	47 08.4 . . 27.1	134 09.1 . . 41.0	11 52.5 . . 51.2	Rigil Kent.	139 51.4 S60 53.2	
10	255 54.6	320 30.4 19.4	62 09.9 27.5	149 11.9 41.0	26 54.7 51.2	Sabik	102 12.4 S15 44.3	
11	270 57.1	335 34.4 19.0	77 11.4 27.9	164 14.7 41.1	41 57.0 51.3			
12	285 59.5	350 38.4 S17 18.7	92 12.8 S 3 28.3	179 17.5 N22 41.1	56 59.2 S15 51.3	Schedar	349 40.0 N56 37.2	
13	301 02.0	5 42.4 18.3	107 14.3 28.6	194 20.4 41.1	72 01.5 51.4	Shaula	96 21.8 S37 06.6	
14	316 04.5	20 46.5 17.9	122 15.8 29.0	209 23.2 41.2	87 03.7 51.4	Sirius	258 33.0 S16 44.4	
15	331 06.9	35 50.5 . . 17.5	137 17.3 . . 29.4	224 26.0 . . 41.2	102 06.0 . . 51.5	Spica	158 30.9 S11 14.0	
16	346 09.4	50 54.5 17.2	152 18.8 29.8	239 28.8 41.3	117 08.2 51.5	Suhail	222 51.7 S43 29.4	
17	1 11.9	65 58.5 16.8	167 20.2 30.2	254 31.7 41.3	132 10.5 51.6			
18	16 14.3	81 02.6 S17 16.4	182 21.7 S 3 30.6	269 34.5 N22 41.4	147 12.7 S15 51.6	Vega	80 39.1 N38 47.9	
19	31 16.8	96 06.6 16.1	197 23.2 30.9	284 37.3 41.4	162 15.0 51.7	Zuben'ubi	137 05.1 S16 05.9	
20	46 19.2	111 10.7 15.7	212 24.7 31.3	299 40.2 41.5	177 17.2 51.7			
21	61 21.7	126 14.7 . . 15.3	227 26.2 . . 31.7	314 43.0 . . 41.5	192 19.5 . . 51.8			
22	76 24.2	141 18.7 15.0	242 27.6 32.1	329 45.8 41.5	207 21.7 51.8			
23	91 26.6	156 22.8 14.6	257 29.1 32.4	344 48.6 41.6	222 24.0 51.9			
h m								
Paso Mer. 16 59.2	v 4.0	d 0.4	v 1.5	d 0.4	v 2.8	d 0.0	v 2.2	d 0.1
							AHS	Paso Mer.
							° /	h m
							Venus	63 44.1 12 44
							Marte	166 49.0 5 54
							Júpiter	253 04.9 0 10
							Saturno	131 07.5 8 16

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		4	5	6	7		
d h	° /	° /	° /	/	° /	/	/	°	h m	h m	h m	h m	h m	h m	h m		
S A B A D O	4 00	178 49.2	S22 44.8		143 08.3	7.2	S10 19.1	10.7	60.7	N 72	08 19	10 30	■	10 41	10 31	10 23	10 14
	01	193 49.0	44.5		157 34.5	7.3	10 08.4	10.8	60.7	N 70	08 01	09 43	■	10 29	10 26	10 24	10 21
	02	208 48.7	44.3		172 00.8	7.4	9 57.6	10.8	60.7	68	07 47	09 12	11 29	10 19	10 22	10 24	10 27
	03	223 48.4	44.0		186 27.2	7.5	9 46.8	10.8	60.6	64	07 25	08 31	09 45	10 03	10 15	10 26	10 36
	04	238 48.1	43.8		200 53.7	7.5	9 36.0	10.9	60.6	62	07 16	08 17	09 19	09 56	10 12	10 26	10 40
	05	253 47.8	43.5		215 20.2	7.6	9 25.1	11.0	60.6	60	07 08	08 04	09 00	09 51	10 10	10 27	10 43
	06	268 47.5	S22 43.2		229 46.8	7.7	S 9 14.1	11.0	60.5	N 58	07 01	07 53	08 43	09 46	10 08	10 27	10 46
	07	283 47.2	43.0		244 13.5	7.7	9 03.1	11.1	60.5	56	06 55	07 43	08 30	09 42	10 06	10 27	10 48
	08	298 47.0	42.7		258 40.2	7.9	8 52.0	11.1	60.5	54	06 49	07 35	08 18	09 38	10 04	10 28	10 51
	09	313 46.7	42.5		273 07.1	7.9	8 40.9	11.1	60.4	52	06 44	07 27	08 07	09 34	10 02	10 28	10 53
	10	328 46.4	42.2		287 34.0	7.9	8 29.8	11.2	60.4	50	06 39	07 20	07 58	09 31	10 01	10 28	10 55
	11	343 46.1	41.9		302 00.9	8.1	8 18.6	11.2	60.4	45	06 28	07 05	07 38	09 24	09 58	10 29	10 59
	12	358 45.8	S22 41.7		316 28.0	8.1	S 8 07.4	11.3	60.4	N 40	06 18	06 52	07 22	09 18	09 55	10 29	11 03
	13	13 45.5	41.4		330 55.1	8.2	7 56.1	11.3	60.3	35	06 09	06 41	07 09	09 13	09 53	10 30	11 06
	14	28 45.3	41.1		345 22.3	8.2	7 44.8	11.3	60.3	30	06 01	06 30	06 57	09 09	09 51	10 30	11 08
	15	43 45.0	40.9		359 49.5	8.4	7 33.5	11.4	60.3	20	05 45	06 12	06 36	09 01	09 47	10 31	11 13
	16	58 44.7	40.6		14 16.9	8.4	7 22.1	11.4	60.2	N 10	05 30	05 56	06 18	08 54	09 44	10 32	11 17
	17	73 44.4	40.3		28 44.3	8.4	7 10.7	11.4	60.2	0	05 13	05 39	06 02	08 48	09 41	10 32	11 22
	18	88 44.1	S22 40.0		43 11.7	8.6	S 6 59.3	11.5	60.2	S 10	04 55	05 22	05 45	08 41	09 38	10 33	11 26
	19	103 43.8	39.8		57 39.3	8.6	6 47.8	11.4	60.1	20	04 33	05 02	05 26	08 34	09 35	10 34	11 30
	20	118 43.6	39.5		72 06.9	8.7	6 36.4	11.6	60.1	30	04 05	04 38	05 05	08 27	09 32	10 35	11 35
	21	133 43.3	39.2		86 34.6	8.7	6 24.8	11.5	60.1	35	03 47	04 23	04 53	08 22	09 30	10 35	11 38
	22	148 43.0	39.0		101 02.3	8.8	6 13.3	11.6	60.0	40	03 25	04 06	04 38	08 17	09 28	10 36	11 41
23	163 42.7	38.7		115 30.1	8.9	6 01.7	11.5	60.0	45	02 56	03 44	04 21	08 11	09 25	10 36	11 45	
D O M I N G O	5 00	178 42.4	S22 38.4		129 58.0	8.9	S 5 50.2	11.6	60.0	S 50	02 14	03 16	04 00	08 04	09 22	10 37	11 50
	01	193 42.2	38.1		144 25.9	9.0	5 38.6	11.7	59.9	52	01 49	03 02	03 49	08 00	09 20	10 37	11 52
	02	208 41.9	37.9		158 53.9	9.1	5 26.9	11.6	59.9	54	01 13	02 45	03 38	07 57	09 19	10 38	11 54
	03	223 41.6	37.6		173 22.0	9.2	5 15.3	11.7	59.9	56	///	02 25	03 24	07 53	09 17	10 38	11 57
	04	238 41.3	37.3		187 50.2	9.2	5 03.6	11.6	59.8	58	///	01 58	03 09	07 48	09 15	10 39	12 00
	05	253 41.0	37.0		202 18.4	9.2	4 52.0	11.7	59.8	S 60	///	01 19	02 50	07 43	09 13	10 39	12 03
	06	268 40.8	S22 36.7		216 46.6	9.4	S 4 40.3	11.7	59.7	Ocaso Sol		Crepúsculo		Ocaso Luna			
	07	283 40.5	36.5		231 15.0	9.3	4 28.6	11.7	59.7	Lat.	Náut.	Civil	Náut.	4	5	6	7
	08	298 40.2	36.2		245 43.3	9.5	4 16.9	11.8	59.7	Lat.							
	09	313 39.9	35.9		260 11.8	9.5	4 05.1	11.7	59.6	N 72	h m	h m	h m	h m	h m	h m	h m
	10	328 39.6	35.6		274 40.3	9.6	3 53.4	11.7	59.6	N 70	13 42	15 52	19 45	21 44	23 38	25 29	
	11	343 39.4	35.3		289 08.9	9.6	3 41.7	11.8	59.6	N 70	13 42	15 52	19 45	21 44	23 38	25 29	
	12	358 39.1	S22 35.0		303 37.5	9.7	S 3 29.9	11.7	59.5	N 70	13 42	15 52	19 45	21 44	23 38	25 29	
	13	13 38.8	34.8		318 06.2	9.7	3 18.2	11.7	59.5	68	12 42	14 59	16 24	20 03	21 47	23 33	25 17
	14	28 38.5	34.5		332 34.9	9.8	3 06.5	11.8	59.5	66	13 51	15 22	16 36	20 10	21 50	23 26	24 59
	15	43 38.2	34.2		347 03.7	9.9	2 54.7	11.8	59.4	64	14 27	15 40	16 46	20 16	21 52	23 24	24 52
	16	58 38.0	33.9		1 32.6	9.9	2 42.9	11.7	59.4	62	14 52	15 55	16 55	20 21	21 53	23 21	24 46
	17	73 37.7	33.6		16 01.5	10.0	2 31.2	11.8	59.3	60	15 11	16 07	17 03	20 25	21 54	23 19	24 41
	18	88 37.4	S22 33.3		30 30.5	10.0	S 2 19.4	11.7	59.3	N 58	15 28	16 18	17 10	20 29	21 55	23 17	24 37
	19	103 37.1	33.0		44 59.5	10.1	2 07.7	11.7	59.3	56	15 41	16 28	17 16	20 33	21 56	23 16	24 33
	20	118 36.9	32.7		59 28.6	10.1	1 56.0	11.8	59.2	54	15 53	16 36	17 22	20 36	21 57	23 14	24 29
	21	133 36.6	32.4		73 57.7	10.2	1 44.2	11.7	59.2	52	16 04	16 44	17 27	20 38	21 57	23 13	24 26
	22	148 36.3	32.1		88 26.9	10.2	1 32.5	11.7	59.2	50	16 13	16 51	17 32	20 41	21 58	23 12	24 23
23	163 36.0	31.9		102 56.1	10.3	1 20.8	11.8	59.1	45	16 33	17 06	17 43	20 46	21 59	23 09	24 17	
L U N E S	6 00	178 35.8	S22 31.6		117 25.4	10.3	S 1 09.0	11.7	59.1	N 40	16 49	17 19	17 53	20 51	22 00	23 07	24 12
	01	193 35.5	31.3		131 54.7	10.4	0 57.3	11.7	59.0	35	17 02	17 30	18 02	20 55	22 01	23 05	24 07
	02	208 35.2	31.0		146 24.1	10.4	0 45.6	11.6	59.0	30	17 14	17 40	18 10	20 58	22 02	23 04	24 03
	03	223 34.9	30.7		160 53.5	10.5	0 34.0	11.7	59.0	20	17 35	17 58	18 26	21 04	22 03	23 01	23 56
	04	238 34.6	30.4		175 23.0	10.5	0 22.3	11.7	58.9	N 10	17 52	18 15	18 41	21 09	22 05	22 58	23 50
	05	253 34.4	30.1		189 52.5	10.6	S 0 10.6	11.6	58.9	0	18 09	18 32	18 58	21 14	22 06	22 56	23 45
	06	268 34.1	S22 29.8		204 22.1	10.6	N 0 01.0	11.6	58.9	S 10	18 26	18 49	19 16	21 18	22 07	22 54	23 39
	07	283 33.8	29.5		218 51.7	10.6	0 12.6	11.7	58.8	20	18 44	19 09	19 38	21 23	22 08	22 51	23 33
	08	298 33.5	29.2		233 21.3	10.7	0 24.3	11.5	58.8	30	19 05	19 32	20 05	21 29	22 09	22 48	23 26
	09	313 33.3	28.9		247 51.0	10.8	0 35.8	11.6	58.7	35	19 18	19 47	20 23	21 32	22 10	22 46	23 22
	10	328 33.0	28.6		262 20.8	10.8	0 47.4	11.6	58.7	40	19 32	20 05	20 45	21 35	22 11	22 45	23 18
	11	343 32.7	28.3		276 50.6	10.8	0 59.0	11.5	58.7	45	19 49	20 26	21 14	21 40	22 12	22 42	23 13
	12	358 32.5	S22 28.0		291 20.4	10.8	N 1 10.5	11.5	58.6	S 50	20 11	20 54	21 56	21 44	22 13	22 40	23 07
	13	13 32.2	27.7		305 50.2	11.0	1 22.0	11.5	58.6	52	20 21	21 08	22 20	21 47	22 13	22 39	23 04
	14	28 31.9	27.4		320 20.2	10.9	1 33.5	11.4	58.5	54	20 32	21 25	22 56	21 49	22 14	22 37	23 01
	15	43 31.6	27.1		334 50.1	11.0	1 44.9	11.5	58.5	56	20 46	21 45	///	21 52	22 15	22 36	22 57
	16	58 31.4	26.7		349 20.1	11.0	1 56.4	11.4	58.5	58	21 01	22 11	///	21 55	22 15	22 34	22 54
	17	73 31.1	26.4		3 50.1	11.0	2 07.8	11.4	58.4	S 60	21 20	2					

UT (HmGr)	ARIES	VENUS -4.3	MARTE +0.7	JÚPITER -2.7	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
7 00	106 29.1	171 26.8 S17 14.2	272 30.6 S 3 32.8	359 51.5 N22 41.6	237 26.3 S15 51.9	Acamar	315 17.9 S40 15.2	
01	121 31.6	186 30.9 13.9	287 32.1 33.2	14 54.3 41.7	252 28.5 52.0	Achernar	335 26.5 S57 10.3	
02	136 34.0	201 34.9 13.5	302 33.6 33.6	29 57.1 41.7	267 30.8 52.0	Acrux	173 08.6 S63 10.4	
03	151 36.5	216 39.0 . . 13.1	317 35.1 . . 34.0	45 00.0 . . 41.8	282 33.0 . . 52.1	Adhara	255 11.8 S28 59.7	
04	166 39.0	231 43.0 12.8	332 36.5 34.3	60 02.8 41.8	297 35.3 52.1	Aldebarán	290 48.6 N16 32.1	
05	181 41.4	246 47.1 12.4	347 38.0 34.7	75 05.6 41.9	312 37.5 52.2			
06	196 43.9	261 51.1 S17 12.1	2 39.5 S 3 35.1	90 08.4 N22 41.9	327 39.8 S15 52.2	Alioth	166 20.4 N55 52.7	
07	211 46.3	276 55.2 11.7	17 41.0 35.5	105 11.3 41.9	342 42.0 52.3	Alkaid	152 58.7 N49 14.3	
08	226 48.8	291 59.2 11.3	32 42.5 35.9	120 14.1 42.0	357 44.3 52.3	Al Na'ir	27 43.6 S46 53.6	
09	241 51.3	307 03.3 . . 11.0	47 44.0 . . 36.2	135 16.9 . . 42.0	12 46.5 . . 52.3	Alnilam	275 45.6 S 1 11.8	
10	256 53.7	322 07.4 10.6	62 45.5 36.6	150 19.7 42.1	27 48.8 52.4	Alphard	217 55.4 S 8 43.3	
11	271 56.2	337 11.4 10.3	77 47.0 37.0	165 22.6 42.1	42 51.0 52.4			
12	286 58.7	352 15.5 S17 09.9	92 48.4 S 3 37.4	180 25.4 N22 42.2	57 53.3 S15 52.5	Alphecca	126 10.9 N26 40.0	
13	302 01.1	7 19.6 09.5	107 49.9 37.7	195 28.2 42.2	72 55.5 52.5	Alpheratz	357 43.1 N29 10.3	
14	317 03.6	22 23.6 09.2	122 51.4 38.1	210 31.1 42.2	87 57.8 52.6	Altair	62 08.2 N 8 54.5	
15	332 06.1	37 27.7 . . 08.8	137 52.9 . . 38.5	225 33.9 . . 42.3	103 00.1 . . 52.6	Ankaa	353 15.4 S42 14.0	
16	347 08.5	52 31.8 08.5	152 54.4 38.9	240 36.7 42.3	118 02.3 52.7	Antares	112 26.0 S26 27.6	
17	2 11.0	67 35.8 08.1	167 55.9 39.2	255 39.5 42.4	133 04.6 52.7			
18	17 13.5	82 39.9 S17 07.8	182 57.4 S 3 39.6	270 42.4 N22 42.4	148 06.8 S15 52.8	Arcturus	145 55.5 N19 06.5	
19	32 15.9	97 44.0 07.4	197 58.9 40.0	285 45.2 42.5	163 09.1 52.8	Atria	107 27.9 S69 02.8	
20	47 18.4	112 48.1 07.1	213 00.4 40.4	300 48.0 42.5	178 11.3 52.9	Avior	234 17.2 S59 33.4	
21	62 20.8	127 52.1 . . 06.7	228 01.9 . . 40.7	315 50.8 . . 42.6	193 13.6 . . 52.9	Bellatrix	278 31.3 N 6 21.5	
22	77 23.3	142 56.2 06.4	243 03.3 41.1	330 53.7 42.6	208 15.8 53.0	Betelgeuse	271 00.5 N 7 24.4	
23	92 25.8	158 00.3 06.0	258 04.8 41.5	345 56.5 42.6	223 18.1 53.0			
8 00	107 28.2	173 04.4 S17 05.7	273 06.3 S 3 41.9	0 59.3 N22 42.7	238 20.3 S15 53.1	Canopus	263 55.4 S52 42.4	
01	122 30.7	188 08.4 05.3	288 07.8 42.2	16 02.1 42.7	253 22.6 53.1	Capella	280 33.4 N46 00.6	
02	137 33.2	203 12.5 05.0	303 09.3 42.6	31 05.0 42.8	268 24.9 53.2	Deneb	49 31.6 N45 20.1	
03	152 35.6	218 16.6 . . 04.6	318 10.8 . . 43.0	46 07.8 . . 42.8	283 27.1 . . 53.2	Denébola	182 33.1 N14 29.4	
04	167 38.1	233 20.7 04.3	333 12.3 43.4	61 10.6 42.9	298 29.4 53.3	Diphda	348 55.5 S17 54.7	
05	182 40.6	248 24.8 03.9	348 13.8 43.7	76 13.5 42.9	313 31.6 53.3			
06	197 43.0	263 28.9 S17 03.6	3 15.3 S 3 44.1	91 16.3 N22 42.9	328 33.9 S15 53.4	Dubhe	193 51.0 N61 40.1	
07	212 45.5	278 33.0 03.2	18 16.8 44.5	106 19.1 43.0	343 36.1 53.4	Elmath	278 11.7 N28 37.0	
08	227 48.0	293 37.1 02.9	33 18.3 44.8	121 21.9 43.0	358 38.4 53.5	Eltanin	90 46.5 N51 29.3	
09	242 50.4	308 41.2 . . 02.6	48 19.8 . . 45.2	136 24.8 . . 43.1	13 40.6 . . 53.5	Enif	33 47.0 N 9 56.5	
10	257 52.9	323 45.2 02.2	63 21.3 45.6	151 27.6 43.1	28 42.9 53.5	Fomalhaut	15 23.8 S29 32.9	
11	272 55.3	338 49.3 01.9	78 22.8 46.0	166 30.4 43.2	43 45.2 53.6			
12	287 57.8	353 53.4 S17 01.5	93 24.3 S 3 46.3	181 33.2 N22 43.2	58 47.4 S15 53.6	Gacrux	172 00.2 S57 11.3	
13	303 00.3	8 57.5 01.2	108 25.8 46.7	196 36.1 43.3	73 49.7 53.7	Gienah	175 51.8 S17 37.2	
14	318 02.7	24 01.6 00.8	123 27.3 47.1	211 38.9 43.3	88 51.9 53.7	Hadar	148 47.4 S60 26.1	
15	333 05.2	39 05.7 . . 00.5	138 28.8 . . 47.4	226 41.7 . . 43.3	103 54.2 . . 53.8	Hamal	328 00.2 N23 31.8	
16	348 07.7	54 09.8 17 00.2	153 30.3 47.8	241 44.5 43.4	118 56.4 53.8	Kaus Aust.	83 43.7 S34 22.5	
17	3 10.1	69 13.9 16 59.8	168 31.8 48.2	256 47.4 43.4	133 58.7 53.9			
18	18 12.6	84 18.0 S16 59.5	183 33.3 S 3 48.6	271 50.2 N22 43.5	149 01.0 S15 53.9	Kochab	137 20.7 N74 05.6	
19	33 15.1	99 22.1 59.2	198 34.8 48.9	286 53.0 43.5	164 03.2 54.0	Markab	13 38.1 N15 17.0	
20	48 17.5	114 26.2 58.8	213 36.3 49.3	301 55.9 43.6	179 05.5 54.0	Menkar	314 14.5 N 4 08.6	
21	63 20.0	129 30.3 . . 58.5	228 37.8 . . 49.7	316 58.7 . . 43.6	194 07.7 . . 54.1	Menkent	148 07.2 S36 26.1	
22	78 22.4	144 34.4 58.2	243 39.3 50.0	332 01.5 43.6	209 10.0 54.1	Miaplacidus	221 38.6 S69 46.5	
23	93 24.9	159 38.5 57.8	258 40.8 50.4	347 04.3 43.7	224 12.2 54.2			
9 00	108 27.4	174 42.6 S16 57.5	273 42.3 S 3 50.8	2 07.2 N22 43.7	239 14.5 S15 54.2	Mirfak	308 39.4 N49 54.7	
01	123 29.8	189 46.8 57.2	288 43.8 51.1	17 10.0 43.8	254 16.8 54.3	Nunki	75 58.2 S26 16.6	
02	138 32.3	204 50.9 56.8	303 45.3 51.5	32 12.8 43.8	269 19.0 54.3	Peacock	53 19.2 S56 41.3	
03	153 34.8	219 55.0 . . 56.5	318 46.8 . . 51.9	47 15.6 . . 43.9	284 21.3 . . 54.3	Póllux	243 26.9 N27 59.3	
04	168 37.2	234 59.1 56.2	333 48.3 52.2	62 18.5 43.9	299 23.5 54.4	Procyon	244 59.0 N 5 11.1	
05	183 39.7	250 03.2 55.8	348 49.8 52.6	77 21.3 43.9	314 25.8 54.4			
06	198 42.2	265 07.3 S16 55.5	3 51.3 S 3 53.0	92 24.1 N22 44.0	329 28.0 S15 54.5	Rasalhague	96 06.4 N12 33.1	
07	213 44.6	280 11.4 55.2	18 52.8 53.4	107 26.9 44.0	344 30.3 54.5	Régulus	207 42.9 N11 53.7	
08	228 47.1	295 15.5 54.9	33 54.3 53.7	122 29.8 44.1	359 32.6 54.6	Rigel	281 11.4 S 8 11.4	
09	243 49.6	310 19.6 . . 54.5	48 55.8 . . 54.1	137 32.6 . . 44.1	14 34.8 . . 54.6	Rigel Kent.	139 51.3 S60 53.2	
10	258 52.0	325 23.7 54.2	63 57.3 54.5	152 35.4 44.2	29 37.1 54.7	Sabik	102 12.4 S15 44.3	
11	273 54.5	340 27.9 53.9	78 58.8 54.8	167 38.2 44.2	44 39.3 54.7			
12	288 56.9	355 32.0 S16 53.6	94 00.3 S 3 55.2	182 41.1 N22 44.3	59 41.6 S15 54.8	Schedar	349 40.0 N56 37.1	
13	303 59.4	10 36.1 53.2	109 01.8 55.6	197 43.9 44.3	74 43.9 54.8	Shaula	96 21.7 S37 06.6	
14	319 01.9	25 40.2 52.9	124 03.3 55.9	212 46.7 44.3	89 46.1 54.9	Sirius	258 33.0 S16 44.4	
15	334 04.3	40 44.3 . . 52.6	139 04.9 . . 56.3	227 49.5 . . 44.4	104 48.4 . . 54.9	Spica	158 30.8 S11 14.0	
16	349 06.8	55 48.4 52.3	154 06.4 56.7	242 52.4 44.4	119 50.6 54.9	Suhail	222 51.7 S43 29.4	
17	4 09.3	70 52.6 51.9	169 07.9 57.0	257 55.2 44.5	134 52.9 55.0			
18	19 11.7	85 56.7 S16 51.6	184 09.4 S 3 57.4	272 58.0 N22 44.5	149 55.2 S15 55.0	Vega	80 39.1 N38 47.9	
19	34 14.2	101 00.8 51.3	199 10.9 57.7	288 00.9 44.6	164 57.4 55.1	Zuben'ubi	137 05.1 S16 05.9	
20	49 16.7	116 04.9 51.0	214 12.4 58.1	303 03.7 44.6	179 59.7 55.1			
21	64 19.1	131 09.0 . . 50.7	229 13.9 . . 58.5	318 06.5 . . 44.6	195 01.9 . . 55.2			
22	79 21.6	146 13.1 50.4	244 15.4 58.8	333 09.3 44.7	210 04.2 55.2			
23	94 24.1	161 17.3 50.0	259 16.9 59.2	348 12.2 44.7	225 06.5 55.3			
h m								
Paso Mer. 16 47.4	v 4.1 d 0.3		v 1.5 d 0.4	v 2.8 d 0.0	v 2.3 d 0.0			
						AHS	Paso Mer.	
						Venus	65 36.1 12 24	
						Marte	165 38.1 5 47	
						Júpiter	253 31.1 23 52	
						Saturno	130 52.1 8 05	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	ν	Dec	d		Naut.	Civil		7	8	9	10		
d h	°	°	°	°	°	°	°	h m	h m	h m	h m	h m	h m	h m	h m	
M A R T E S	7 00	178 29.2	S22 24.3	105 21.2	11.2	N 3 26.8	11.2	58.2	N 70	07 58	09 36	11 09	10 21	10 19	10 17	10 16
	01	193 28.9	24.0	119 51.4	11.4	3 38.0	11.1	58.1	68	07 44	09 08	11 09	10 27	10 30	10 35	10 42
	02	208 28.6	23.6	134 21.8	11.3	3 49.1	11.1	58.1	66	07 32	08 46	10 13	10 32	10 40	10 49	11 02
	03	223 28.4	23.3	148 52.1	11.4	4 00.2	11.1	58.0	64	07 23	08 29	09 40	10 36	10 48	11 01	11 19
	04	238 28.1	23.0	163 22.5	11.4	4 11.3	11.0	58.0	62	07 14	08 14	09 16	10 40	10 54	11 11	11 32
	05	253 27.8	22.7	177 52.9	11.4	4 22.3	11.0	58.0	60	07 07	08 02	08 57	10 43	11 00	11 20	11 44
	06	268 27.6	S22 22.4	192 23.3	11.5	N 4 33.3	11.0	57.9	N 58	07 00	07 51	08 41	10 46	11 06	11 28	11 54
	07	283 27.3	22.1	206 53.8	11.4	4 44.3	10.9	57.9	56	06 54	07 42	08 28	10 48	11 10	11 35	12 02
	08	298 27.0	21.7	221 24.2	11.6	4 55.2	10.8	57.9	54	06 48	07 34	08 16	10 51	11 15	11 41	12 14
	09	313 26.7	21.4	235 54.8	11.5	5 06.0	10.9	57.8	52	06 43	07 26	08 06	10 53	11 19	11 46	12 17
	10	328 26.5	21.1	250 25.3	11.5	5 16.9	10.8	57.8	50	06 38	07 19	07 57	10 55	11 22	11 51	12 23
	11	343 26.2	20.8	264 55.8	11.6	5 27.7	10.7	57.7	45	06 28	07 04	07 38	10 59	11 30	12 02	12 37
	12	358 25.9	S22 20.5	279 26.4	11.6	N 5 38.4	10.7	57.7	N 40	06 18	06 52	07 22	11 03	11 36	12 11	12 48
	13	13 25.7	20.1	293 57.0	11.6	5 49.1	10.7	57.7	35	06 09	06 41	07 09	11 06	11 42	12 19	12 58
	14	28 25.4	19.8	308 27.6	11.7	5 59.8	10.6	57.6	30	06 01	06 31	06 57	11 08	11 47	12 26	13 06
	15	43 25.1	19.5	322 58.3	11.6	6 10.4	10.5	57.6	20	05 46	06 13	06 37	11 13	11 55	12 37	13 21
	16	58 24.9	19.2	337 28.9	11.7	6 20.9	10.6	57.6	N 10	05 31	05 57	06 19	11 17	12 03	12 48	13 34
	17	73 24.6	18.8	351 59.6	11.7	6 31.5	10.4	57.5	0	05 15	05 41	06 03	11 22	12 10	12 58	13 46
	18	88 24.3	S22 18.5	6 30.3	11.7	N 6 41.9	10.5	57.5	S 10	04 57	05 24	05 46	11 26	12 17	13 08	13 58
	19	103 24.1	18.2	21 01.0	11.8	6 52.4	10.3	57.4	20	04 35	05 04	05 28	11 30	12 25	13 18	14 11
	20	118 23.8	17.9	35 31.8	11.7	7 02.7	10.4	57.4	30	04 08	04 41	05 08	11 35	12 33	13 30	14 26
	21	133 23.5	17.5	50 02.5	11.8	7 13.1	10.3	57.4	35	03 50	04 26	04 55	11 38	12 39	13 38	14 35
	22	148 23.3	17.2	64 33.3	11.8	7 23.4	10.2	57.3	40	03 28	04 09	04 41	11 41	12 44	13 46	14 44
23	163 23.0	16.9	79 04.1	11.8	7 33.6	10.2	57.3	45	03 00	03 48	04 24	11 45	12 51	13 55	14 56	
A B R I L	00	178 22.7	S22 16.5	93 34.9	11.8	N 7 43.8	10.1	57.3	S 50	02 19	03 20	04 03	11 50	12 59	14 07	15 10
	01	193 22.5	16.2	108 05.7	11.8	7 53.9	10.1	57.2	52	01 56	03 06	03 53	11 52	13 03	14 12	15 17
	02	208 22.2	15.9	122 36.5	11.9	8 04.0	10.0	57.2	54	01 22	02 50	03 42	11 54	13 07	14 18	15 24
	03	223 21.9	15.5	137 07.4	11.8	8 14.0	10.0	57.2	56	////	02 31	03 29	11 57	13 12	14 24	15 33
	04	238 21.7	15.2	151 38.2	11.9	8 24.0	9.9	57.1	58	////	02 05	03 14	12 00	13 17	14 32	15 42
	05	253 21.4	14.9	166 09.1	11.9	8 33.9	9.8	57.1	S 60	////	01 30	02 55	12 03	13 23	14 40	15 53
	06	268 21.1	S22 14.5	180 40.0	11.9	N 8 43.7	9.8	57.0	Lat.	Ocaso Sol	Crepúsculo Civil Naut.	Ocaso Luna				
	07	283 20.9	14.2	195 10.9	11.9	8 53.5	9.8	57.0				7	8	9	10	
	08	298 20.6	13.9	209 41.8	11.9	9 03.3	9.7	57.0	°	h m	h m	h m	h m	h m	h m	h m
	09	313 20.4	13.5	224 12.7	11.9	9 13.0	9.6	56.9								
	10	328 20.1	13.2	238 43.6	11.9	9 22.6	9.6	56.9	N 70	13 55	15 59	17 59	25 29	01 29	03 20	05 15
	11	343 19.8	12.8	253 14.5	12.0	9 32.2	9.5	56.9	N 70	13 55	15 59	17 59	25 29	01 29	03 20	05 15
	12	358 19.6	S22 12.5	267 45.5	11.9	N 9 41.7	9.5	56.8	68	13 05	15 06	16 30	25 17	01 17	02 58	04 39
	13	13 19.3	12.2	282 16.4	12.0	9 51.2	9.4	56.8	66	14 01	15 28	16 41	24 59	00 59	02 28	03 54
	14	28 19.0	11.8	296 47.4	11.9	10 00.6	9.3	56.8	64	14 34	15 45	16 51	24 52	00 52	02 17	03 39
	15	43 18.8	11.5	311 18.3	12.0	10 09.9	9.3	56.7	62	14 58	16 00	17 00	24 46	00 46	02 08	03 26
	16	58 18.5	11.1	325 49.3	12.0	10 19.2	9.2	56.7	60	15 17	16 12	17 07	24 41	00 41	02 00	03 15
	17	73 18.2	10.8	340 20.3	11.9	10 28.4	9.1	56.7	N 58	15 33	16 22	17 14	24 37	00 37	01 53	03 05
	18	88 18.0	S22 10.4	354 51.2	12.0	N10 37.5	9.1	56.6	56	15 46	16 32	17 20	24 33	00 33	01 47	02 57
	19	103 17.7	10.1	9 22.2	12.0	10 46.6	9.1	56.6	54	15 57	16 40	17 26	24 29	00 29	01 41	02 50
	20	118 17.5	09.8	23 53.2	12.0	10 55.7	8.9	56.6	52	16 08	16 48	17 31	24 26	00 26	01 36	02 43
	21	133 17.2	9.4	38 24.2	12.0	11 04.6	8.9	56.5	50	16 17	16 54	17 35	24 23	00 23	01 32	02 37
	22	148 16.9	09.1	52 55.2	12.0	11 13.5	8.9	56.5	45	16 36	17 09	17 46	24 17	00 17	01 22	02 25
23	163 16.7	08.7	67 26.2	12.0	11 22.4	8.7	56.5	N 40	16 52	17 22	17 56	24 12	00 12	01 14	02 14	
M A Y	00	178 16.4	S22 08.4	81 57.2	12.0	N11 31.1	8.7	56.4	35	17 05	17 33	18 04	24 07	00 07	01 07	02 05
	01	193 16.2	08.0	96 28.2	12.0	11 39.8	8.7	56.4	30	17 17	17 43	18 12	24 03	00 03	01 01	01 57
	02	208 15.9	07.7	110 59.2	12.0	11 48.5	8.5	56.4	20	17 37	18 00	18 28	23 56	24 51	00 51	01 44
	03	223 15.6	7.3	125 30.2	12.0	11 57.0	8.5	56.4	N 10	17 54	18 17	18 43	23 50	24 41	00 41	01 32
	04	238 15.4	07.0	140 01.2	12.0	12 05.5	8.5	56.3	0	18 10	18 33	18 59	23 45	24 33	00 33	01 21
	05	253 15.1	06.6	154 32.2	12.0	12 14.0	8.3	56.3	S 10	18 27	18 50	19 17	23 39	24 24	00 24	01 10
	06	268 14.9	S22 06.3	169 03.2	12.0	N12 22.3	8.3	56.3	20	18 45	19 09	19 38	23 33	24 15	00 15	00 58
	07	283 14.6	05.9	183 34.2	12.0	12 30.6	8.3	56.2	30	19 06	19 33	20 05	23 26	24 05	00 05	00 45
	08	298 14.3	05.5	198 05.2	12.0	12 38.9	8.1	56.2	35	19 18	19 47	20 23	23 22	23 59	24 37	00 37
	09	313 14.1	5.2	212 36.2	12.0	12 47.0	8.1	56.2	40	19 32	20 04	20 44	23 18	23 52	24 28	00 28
	10	328 13.8	04.8	227 07.2	12.0	12 55.1	8.0	56.1	45	19 49	20 25	21 13	23 13	23 44	24 18	00 18
	11	343 13.6	04.5	241 38.2	12.0	13 03.1	8.0	56.1	S 50	20 09	20 52	21 53	23 07	23 35	24 05	00 05
	12	358 13.3	S22 04.1	256 09.2	12.0	N13 11.1	7.9	56.1	52	20 19	21 06	22 16	23 04	23 30	23 59	24 32
	13	13 13.1	03.8	270 40.2	11.9	13 19.0	7.8	56.1	54	20 31	21 22	22 48	23 01	23 26	23 53	24 25
	14	28 12.8	03.4	285 11.1	12.0	13 26.8	7.7	56.0	56	20 44	21 41	////	22 57	23 20	23 46	24 16
	15	43 12.5	3.0	299 42.1	12.0	13 34.5	7.6	56.0	58	20 59	22 06	////	22 54	23 14	23 38	24 06
	16	58 12.3	02.7	314 13.1	12.0	13 42.1	7.6	56.0	S 60	21 17	22 41	////	22 49	23 08	23 29	23 55
	17	73 12.0	02.3	328 44.1	12.0	13 49.7	7.5	55.9	Día	SOL		Paso Mer.	LUNA			
	18	88 11.8	S22 01.9	343 15.1	11.9	N13 57.2	7.5	55.9		Ec. Tiempo			Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase
	19	103 11.5	01.6	357 46.0	12.0	14 04.7	7.3	55.9	00 ^h	12 ^h						
	20	118 11.3	01.2	12 17.0	12.0	14 12.0	7.3	55.9	d	m s	m s	h m	h m	h m	d	%
	21	133 11.0	0.9	26 48.0	11.9	14 19.3	7.2	55.8	7	06 03	06 16	12 06	17 33	05 09	06 43	
	22	148 10.8	00.5	41 18.9	12.0	14 26.5	7.1	55.8	8	06 29	06 41	12 07	18 21	05 57	07 54	
23	163 10.5	00.1	55 49.9	11.9	N14 33.6	7.1	55.8	9	06 54	07 06	12 07	19 09	06 45	08 64		
	S/D	16.3	d 0.3	S/D	15.7	15.5	15.3									

UT (HmGr)	ARIES	VENUS -4.4	MARTE +0.7	JÚPITER -2.7	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
10 00	109 26.5	176 21.4 S16 49.7	274 18.4 S 3 59.6	3 15.0 N22 44.8	240 08.7 S15 55.3	Acamar 315 17.9 S40 15.2
01	124 29.0	191 25.5 49.4	289 20.0 3 59.9	18 17.8 44.8	255 11.0 55.4	Achernar 335 26.5 S57 10.3
02	139 31.4	206 29.6 49.1	304 21.5 4 00.3	33 20.6 44.9	270 13.2 55.4	Acrux 173 08.5 S63 10.4
03	154 33.9	221 33.7 . . 48.8	319 23.0 . . 00.7	48 23.5 . . 44.9	285 15.5 . . 55.5	Adhara 255 11.8 S28 59.7
04	169 36.4	236 37.9 48.5	334 24.5 01.0	63 26.3 44.9	300 17.8 55.5	Aldebarán 290 48.6 N16 32.1
05	184 38.8	251 42.0 48.2	349 26.0 01.4	78 29.1 45.0	315 20.0 55.5	
06	199 41.3	266 46.1 S16 47.8	4 27.5 S 4 01.7	93 31.9 N22 45.0	330 22.3 S15 55.6	Alioth 166 20.4 N55 52.7
07	214 43.8	281 50.2 47.5	19 29.0 02.1	108 34.8 45.1	345 24.6 55.6	Alkaid 152 58.7 N49 14.3
08	229 46.2	296 54.4 47.2	34 30.6 02.5	123 37.6 45.1	0 26.8 55.7	Al Na'ir 27 43.6 S46 53.6
09	244 48.7	311 58.5 . . 46.9	49 32.1 . . 02.8	138 40.4 . . 45.2	15 29.1 . . 55.7	Alnilam 275 45.6 S 1 11.8
10	259 51.2	327 02.6 46.6	64 33.6 03.2	153 43.2 45.2	30 31.3 55.8	Alphard 217 55.4 S 8 43.4
11	274 53.6	342 06.7 46.3	79 35.1 03.6	168 46.1 45.2	45 33.6 55.8	
12	289 56.1	357 10.8 S16 46.0	94 36.6 S 4 03.9	183 48.9 N22 45.3	60 35.9 S15 55.9	Alphecca 126 10.9 N26 40.0
13	304 58.5	12 15.0 45.7	109 38.1 04.3	198 51.7 45.3	75 38.1 55.9	Alpheratz 357 43.1 N29 10.3
14	320 01.0	27 19.1 45.4	124 39.7 04.6	213 54.5 45.4	90 40.4 56.0	Altair 62 08.2 N 8 54.5
15	335 03.5	42 23.2 . . 45.1	139 41.2 . . 05.0	228 57.4 . . 45.4	105 42.7 . . 56.0	Ankaa 353 15.4 S42 14.0
16	350 05.9	57 27.3 44.8	154 42.7 05.4	244 00.2 45.4	120 44.9 56.0	Antares 112 26.0 S26 27.6
17	5 08.4	72 31.5 44.5	169 44.2 05.7	259 03.0 45.5	135 47.2 56.1	
18	20 10.9	87 35.6 S16 44.2	184 45.7 S 4 06.1	274 05.8 N22 45.5	150 49.4 S15 56.1	Arcturus 145 55.5 N19 06.5
19	35 13.3	102 39.7 43.8	199 47.3 06.4	289 08.6 45.6	165 51.7 56.2	Atria 107 27.9 S69 02.8
20	50 15.8	117 43.8 43.5	214 48.8 06.8	304 11.5 45.6	180 54.0 56.2	Avior 234 17.1 S59 33.4
21	65 18.3	132 47.9 . . 43.2	229 50.3 . . 07.2	319 14.3 . . 45.7	195 56.2 . . 56.3	Bellatrix 278 31.3 N 6 21.5
22	80 20.7	147 52.1 42.9	244 51.8 07.5	334 17.1 45.7	210 58.5 56.3	Betelgeuse 271 00.5 N 7 24.3
23	95 23.2	162 56.2 42.6	259 53.3 07.9	349 19.9 45.7	226 00.8 56.4	
11 00	110 25.7	178 00.3 S16 42.3	274 54.9 S 4 08.2	4 22.8 N22 45.8	241 03.0 S15 56.4	Canopus 263 55.4 S52 42.5
01	125 28.1	193 04.4 42.0	289 56.4 08.6	19 25.6 45.8	256 05.3 56.5	Capella 280 33.4 N46 00.6
02	140 30.6	208 08.6 41.7	304 57.9 09.0	34 28.4 45.9	271 07.6 56.5	Deneb 49 31.6 N45 20.1
03	155 33.0	223 12.7 . . 41.4	319 59.4 . . 09.3	49 31.2 . . 45.9	286 09.8 . . 56.5	Denébola 182 33.1 N14 29.4
04	170 35.5	238 16.8 41.2	335 00.9 09.7	64 34.1 46.0	301 12.1 56.6	Diphda 348 55.5 S17 54.7
05	185 38.0	253 20.9 40.9	350 02.5 10.0	79 36.9 46.0	316 14.3 56.6	
06	200 40.4	268 25.0 S16 40.6	5 04.0 S 4 10.4	94 39.7 N22 46.0	331 16.6 S15 56.7	Dubhe 193 50.9 N61 40.1
07	215 42.9	283 29.2 40.3	20 05.5 10.7	109 42.5 46.1	346 18.9 56.7	Elnath 278 11.7 N28 37.0
08	230 45.4	298 33.3 40.0	35 07.0 11.1	124 45.4 46.1	1 21.1 56.8	Eltanin 90 46.5 N51 29.3
09	245 47.8	313 37.4 . . 39.7	50 08.6 . . 11.5	139 48.2 . . 46.2	16 23.4 . . 56.8	Enif 33 47.0 N 9 56.5
10	260 50.3	328 41.5 39.4	65 10.1 11.8	154 51.0 46.2	31 25.7 56.9	Fomalhaut 15 23.8 S29 32.9
11	275 52.8	343 45.7 39.1	80 11.6 12.2	169 53.8 46.3	46 27.9 56.9	
12	290 55.2	358 49.8 S16 38.8	95 13.2 S 4 12.5	184 56.7 N22 46.3	61 30.2 S15 56.9	Gacrux 172 00.2 S57 11.3
13	305 57.7	13 53.9 38.5	110 14.7 12.9	199 59.5 46.3	76 32.5 57.0	Gienah 175 51.8 S17 37.2
14	321 00.2	28 58.0 38.2	125 16.2 13.2	215 02.3 46.4	91 34.7 57.0	Hadar 148 47.3 S60 26.1
15	336 02.6	44 02.1 . . 37.9	140 17.7 . . 13.6	230 05.1 . . 46.4	106 37.0 . . 57.1	Hamal 328 00.2 N23 31.8
16	351 05.1	59 06.3 37.6	155 19.3 14.0	245 07.9 46.5	121 39.3 57.1	Kaus Aust. 83 43.7 S34 22.5
17	6 07.5	74 10.4 37.4	170 20.8 14.3	260 10.8 46.5	136 41.5 57.2	
18	21 10.0	89 14.5 S16 37.1	185 22.3 S 4 14.7	275 13.6 N22 46.5	151 43.8 S15 57.2	Kochab 137 20.7 N74 05.6
19	36 12.5	104 18.6 36.8	200 23.9 15.0	290 16.4 46.6	166 46.1 57.3	Markab 13 38.1 N15 17.0
20	51 14.9	119 22.7 36.5	215 25.4 15.4	305 19.2 46.6	181 48.3 57.3	Menkar 314 14.5 N 4 08.6
21	66 17.4	134 26.9 . . 36.2	230 26.9 . . 15.7	320 22.1 . . 46.7	196 50.6 . . 57.3	Menkent 148 07.1 S36 26.1
22	81 19.9	149 31.0 35.9	245 28.4 16.1	335 24.9 46.7	211 52.9 57.4	Miaplacidus 221 38.6 S69 46.5
23	96 22.3	164 35.1 35.6	260 30.0 16.4	350 27.7 46.8	226 55.1 57.4	
12 00	111 24.8	179 39.2 S16 35.4	275 31.5 S 4 16.8	5 30.5 N22 46.8	241 57.4 S15 57.5	Mirfak 308 39.4 N49 54.7
01	126 27.3	194 43.3 35.1	290 33.0 17.1	20 33.3 46.8	256 59.7 57.5	Nunki 75 58.2 S26 16.6
02	141 29.7	209 47.4 34.8	305 34.6 17.5	35 36.2 46.9	272 01.9 57.6	Peacock 53 19.2 S46 41.3
03	156 32.2	224 51.5 . . 34.5	320 36.1 . . 17.9	50 39.0 . . 46.9	287 04.2 . . 57.6	Póllux 243 26.9 N27 59.3
04	171 34.7	239 55.7 34.2	335 37.6 18.2	65 41.8 47.0	302 06.5 57.6	Procyon 244 59.0 N 5 11.1
05	186 37.1	254 59.8 33.9	350 39.2 18.6	80 44.6 47.0	317 08.7 57.7	
06	201 39.6	270 03.9 S16 33.7	5 40.7 S 4 18.9	95 47.5 N22 47.0	332 11.0 S15 57.7	Rasalhague 96 06.4 N12 33.1
07	216 42.0	285 08.0 33.4	20 42.2 19.3	110 50.3 47.1	347 13.3 57.8	Régulus 207 42.8 N11 53.7
08	231 44.5	300 12.1 33.1	35 43.8 19.6	125 53.1 47.1	2 15.5 57.8	Rigel 281 11.4 S 8 11.4
09	246 47.0	315 16.2 . . 32.8	50 45.3 . . 20.0	140 55.9 . . 47.2	17 17.8 . . 57.9	Rigel Kent. 139 51.3 S60 53.2
10	261 49.4	330 20.3 32.6	65 46.9 20.3	155 58.7 47.2	32 20.1 57.9	Sabik 102 12.4 S15 44.4
11	276 51.9	345 24.4 32.3	80 48.4 20.7	171 01.6 47.3	47 22.3 58.0	
12	291 54.4	0 28.6 S16 32.0	95 49.9 S 4 21.0	186 04.4 N22 47.3	62 24.6 S15 58.0	Schedar 349 40.0 N56 37.1
13	306 56.8	15 32.7 31.7	110 51.5 21.4	201 07.2 47.3	77 26.9 58.0	Shaula 96 21.7 S37 06.6
14	321 59.3	30 36.8 31.5	125 53.0 21.7	216 10.0 47.4	92 29.2 58.1	Sirius 258 33.0 S16 44.4
15	337 01.8	45 40.9 . . 31.2	140 54.5 . . 22.1	231 12.8 . . 47.4	107 31.4 . . 58.1	Spica 158 30.8 S11 14.0
16	352 04.2	60 45.0 30.9	155 56.1 22.4	246 15.7 47.5	122 33.7 58.2	Suhail 222 51.7 S43 29.5
17	7 06.7	75 49.1 30.7	170 57.6 22.8	261 18.5 47.5	137 36.0 58.2	
18	22 09.2	90 53.2 S16 30.4	185 59.2 S 4 23.1	276 21.3 N22 47.5	152 38.2 S15 58.3	Vega 80 39.1 N38 47.9
19	37 11.6	105 57.3 30.1	201 00.7 23.5	291 24.1 47.6	167 40.5 58.3	Zuben'ubi 137 05.1 S16 05.9
20	52 14.1	121 01.4 29.8	216 02.2 23.8	306 27.0 47.6	182 42.8 58.3	
21	67 16.5	136 05.5 . . 29.6	231 03.8 . . 24.2	321 29.8 . . 47.7	197 45.0 . . 58.4	AHS Paso Mer.
22	82 19.0	151 09.6 29.3	246 05.3 24.5	336 32.6 47.7	212 47.3 58.4	Venus 67 34.7 12 05
23	97 21.5	166 13.7 29.0	261 06.9 24.9	351 35.4 47.8	227 49.6 58.5	Marte 164 29.2 5 40
						Júpiter 253 57.1 23 38
						Saturno 130 37.4 7 55
Paso Mer. 16 35.6	v 4.1 d 0.3		v 1.5 d 0.4	v 2.8 d 0.0	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	10	11	12	13	
d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m	
V I E R N E S	10 00	178 10.2	S21 59.8	70 20.8	12.0	N14 40.7	7.0 55.7	N 72	08 09	10 08	■	09 39	09 06	□	□	
	01	193 10.0	59.4	84 51.8	11.9	14 47.7	6.9 55.7	N 70	07 53	09 29	■	10 16	10 18	10 26	10 59	
	02	208 09.7	59.0	99 22.7	11.9	14 54.6	6.8 55.7	68	07 40	09 02	10 53	10 42	10 55	11 19	12 00	
	03	223 09.5	58.7	113 53.6	12.0	15 01.4	6.7 55.7	66	07 29	08 41	10 05	11 02	11 22	11 51	12 34	
	04	238 09.2	58.3	128 24.6	11.9	15 08.1	6.7 55.6	64	07 20	08 25	09 34	11 19	11 42	12 15	13 00	
	05	253 09.0	57.9	142 55.5	11.9	15 14.8	6.6 55.6	62	07 12	08 11	09 12	11 32	11 59	12 34	13 19	
	06	268 08.7	S21 57.5	157 26.4	11.9	N15 21.4	6.5 55.6	60	07 05	07 59	08 53	11 44	12 13	12 50	13 35	
	07	283 08.5	57.2	171 57.3	11.9	15 27.9	6.4 55.6	N 58	06 58	07 49	08 38	11 54	12 25	13 03	13 49	
	08	298 08.2	56.8	186 28.2	11.9	15 34.3	6.4 55.5	54	06 47	07 32	08 14	12 10	12 44	13 24	14 11	
	09	313 08.0	56.4	200 59.1	11.9	15 40.7	6.2 55.5	52	06 42	07 25	08 04	12 17	12 52	13 33	14 20	
	10	328 07.7	56.0	215 30.0	11.9	15 46.9	6.2 55.5	50	06 37	07 18	07 55	12 23	13 00	13 41	14 28	
	11	343 07.5	55.7	230 00.9	11.9	15 53.1	6.1 55.5	45	06 27	07 04	07 37	12 37	13 15	13 58	14 45	
	12	358 07.2	S21 55.3	244 31.8	11.8	N15 59.2	6.1 55.4	N 40	06 18	06 51	07 21	12 48	13 28	14 12	15 00	
	13	13 07.0	54.9	259 02.6	11.9	16 05.3	5.9 55.4	35	06 09	06 41	07 08	12 58	13 39	14 24	15 12	
	14	28 06.7	54.5	273 33.5	11.9	16 11.2	5.9 55.4	30	06 01	06 31	06 57	13 06	13 49	14 34	15 22	
	15	43 06.5	54.2	288 04.4	11.8	16 17.1	5.7 55.4	20	05 47	06 14	06 37	13 21	14 06	14 52	15 40	
	16	58 06.2	53.8	302 35.2	11.9	16 22.8	5.7 55.3	N 10	05 32	05 58	06 20	13 34	14 20	15 08	15 56	
	17	73 06.0	53.4	317 06.1	11.8	16 28.5	5.6 55.3	0	05 16	05 42	06 04	13 46	14 34	15 22	16 11	
	18	88 05.7	S21 53.0	331 36.9	11.8	N16 34.1	5.6 55.3	S 10	04 58	05 25	05 48	13 58	14 48	15 37	16 26	
	19	103 05.5	52.6	346 07.7	11.8	16 39.7	5.4 55.3	20	04 37	05 06	05 30	14 11	15 02	15 53	16 41	
	20	118 05.2	52.3	0 38.5	11.9	16 45.1	5.4 55.2	30	04 10	04 43	05 10	14 26	15 19	16 11	17 00	
	21	133 05.0	51.9	15 09.4	11.8	16 50.5	5.3 55.2	35	03 53	04 29	04 58	14 35	15 29	16 21	17 10	
	22	148 04.7	51.5	29 40.2	11.8	16 55.8	5.1 55.2	40	03 32	04 12	04 44	14 44	15 41	16 33	17 22	
	23	163 04.5	51.1	44 11.0	11.8	17 00.9	5.2 55.2	45	03 04	03 52	04 28	14 56	15 54	16 48	17 36	
	S Á B A D O	11 00	178 04.2	S21 50.7	58 41.8	11.8	N17 06.1	5.0 55.2	S 50	02 25	03 25	04 07	15 10	16 10	17 05	17 54
		01	193 04.0	50.3	73 12.6	11.8	17 11.1	4.9 55.1	52	02 03	03 12	03 58	15 17	16 18	17 13	18 02
02		208 03.7	50.0	87 43.4	11.7	17 16.0	4.9 55.1	54	01 32	02 56	03 47	15 24	16 26	17 22	18 11	
03		223 03.5	49.6	102 14.1	11.8	17 20.9	4.7 55.1	56	00 31	02 37	03 34	15 33	16 36	17 33	18 22	
04		238 03.2	49.2	116 44.9	11.7	17 25.6	4.7 55.1	58	////	02 13	03 19	15 42	16 47	17 44	18 33	
05		253 03.0	48.8	131 15.7	11.7	17 30.3	4.6 55.1	S 60	////	01 41	03 02	15 53	16 59	17 58	18 47	
06		268 02.7	S21 48.4	145 46.4	11.8	N17 34.9	4.5 55.0	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna					
07		283 02.5	48.0	160 17.2	11.7	17 39.4	4.4 55.0					10	11	12	13	
08		298 02.2	47.6	174 47.9	11.8	17 43.8	4.3 55.0			Civil	Náut.					
09		313 02.0	47.2	189 18.7	11.7	17 48.1	4.3 55.0									
10		328 01.7	46.8	203 49.4	11.8	17 52.4	4.1 55.0									
11		343 01.5	46.4	218 20.2	11.7	17 56.5	4.1 54.9	N 72	■	14 09	16 07	05 15	07 29	□	□	
12		358 01.3	S21 46.1	232 50.9	11.7	N18 00.6	4.0 54.9	N 70	■	14 48	16 23	04 39	06 18	07 50	08 58	
13		13 01.0	45.7	247 21.6	11.7	18 04.6	3.9 54.9	68	13 24	15 14	16 36	04 14	05 41	06 58	07 57	
14		28 00.8	45.3	261 52.3	11.7	18 08.5	3.8 54.9	66	14 12	15 35	16 47	03 54	05 15	06 26	07 22	
15		43 00.5	44.9	276 23.0	11.7	18 12.3	3.7 54.9	64	14 42	15 51	16 57	03 39	04 55	06 02	06 57	
16		58 00.3	44.5	290 53.7	11.8	18 16.0	3.6 54.8	62	15 05	16 05	17 05	03 26	04 38	05 43	06 38	
17		73 00.0	44.1	305 24.5	11.7	18 19.6	3.5 54.8	60	15 23	16 17	17 12	03 15	04 25	05 28	06 22	
18		87 59.8	S21 43.7	319 55.2	11.7	N18 23.1	3.5 54.8	N 58	15 38	16 27	17 18	03 05	04 13	05 15	06 08	
19		102 59.5	43.3	334 25.9	11.6	18 26.6	3.3 54.8	56	15 51	16 36	17 24	02 57	04 03	05 03	05 56	
20		117 59.3	42.9	348 56.5	11.7	18 29.9	3.3 54.8	54	16 02	16 44	17 29	02 50	03 54	04 53	05 46	
21		132 59.1	42.5	3 27.2	11.7	18 33.2	3.2 54.8	52	16 12	16 52	17 34	02 43	03 46	04 45	05 37	
22		147 58.8	42.1	17 57.9	11.7	18 36.4	3.0 54.7	50	16 21	16 58	17 39	02 37	03 39	04 37	05 29	
23		162 58.6	41.7	32 28.6	11.7	18 39.4	3.0 54.7	45	16 40	17 13	17 49	02 25	03 24	04 20	05 11	
D O M I N G O		12 00	177 58.3	S21 41.3	46 59.3	11.7	N18 42.4	2.9 54.7	N 40	16 55	17 25	17 58	02 14	03 12	04 06	04 57
		01	192 58.1	40.9	61 30.0	11.7	18 45.3	2.8 54.7	35	17 08	17 35	18 07	02 05	03 01	03 55	04 45
	02	207 57.9	40.5	76 00.7	11.6	18 48.1	2.8 54.7	30	17 19	17 45	18 15	01 57	02 52	03 44	04 35	
	03	222 57.6	40.1	90 31.3	11.7	18 50.9	2.6 54.7	20	17 38	18 02	18 29	01 44	02 36	03 27	04 16	
	04	237 57.4	39.7	105 02.0	11.7	18 53.5	2.5 54.6	N 10	17 56	18 18	18 44	01 32	02 22	03 12	04 01	
	05	252 57.1	39.2	119 32.7	11.7	18 56.0	2.5 54.6	0	18 12	18 34	19 00	01 21	02 09	02 57	03 46	
	06	267 56.9	S21 38.8	134 03.4	11.7	N18 58.5	2.3 54.6	S 10	18 28	18 51	19 17	01 10	01 56	02 43	03 31	
	07	282 56.7	38.4	148 34.1	11.6	19 00.8	2.3 54.6	20	18 45	19 09	19 38	00 58	01 42	02 28	03 15	
	08	297 56.4	38.0	163 04.7	11.7	19 03.1	2.2 54.6	30	19 05	19 32	20 05	00 45	01 26	02 10	02 57	
	09	312 56.2	37.6	177 35.4	11.7	19 05.3	2.1 54.6	35	19 17	19 46	20 22	00 37	01 17	02 00	02 47	
	10	327 55.9	37.2	192 06.1	11.7	19 07.4	2.0 54.5	40	19 31	20 03	20 43	00 28	01 07	01 49	02 34	
	11	342 55.7	36.8	206 36.8	11.6	19 09.4	1.9 54.5	45	19 47	20 24	21 10	00 18	00 54	01 35	02 20	
	12	357 55.5	S21 36.4	221 07.4	11.7	N19 11.3	1.8 54.5	S 50	20 08	20 50	21 49	00 05	00 39	01 18	02 03	
	13	12 55.2	36.0	235 38.1	11.7	19 13.1	1.7 54.5	52	20 17	21 03	22 11	24 32	00 32	01 11	01 54	
	14	27 55.0	35.6	250 08.8	11.7	19 14.8	1.6 54.5	54	20 28	21 19	22 41	24 25	00 25	01 02	01 45	
	15	42 54.7	35.1	264 39.5	11.7	19 16.4	1.5 54.5	56	20 41	21 37	23 35	24 16	00 16	00 52	01 35	
	16	57 54.5	34.7	279 10.2	11.7	19 17.9	1.5 54.5	58	20 55	22 01	////	24 06	00 06	00 41	01 23	
	17	72 54.3	34.3	293 40.9	11.7	19 19.4	1.3 54.4	S 60	21 13	22 32	////	23 55	24 28	00 28	01 09	
	18	87 54.0	S21 33.9	308 11.6	11.7	N19 20.7	1.3 54.4	SOL		LUNA						
	19	102 53.8	33.5	322 42.3	11.7	19 22.0	1.1 54.4	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
	20	117 53.6	33.1	337 13.0	11.7	19 23.1	1.1 54.4		00h	12h		Sup.	Inf.			
	21	132 53.3	32.6	351 43.7	11.7	19 24.2	1.0 54.4									
	22	147 53.1	32.2	6 14.4	11.7	19 25.2	0.9 54.4	d	m s	m s	h m	h m	h m	d %		
	23	162 52.8	31.8	20 45.1	11.7	N19 26.1	0.8 54.4	10	07 19	07 31	12 08	19 57	07 33	09 73		

UT (HmGr)	ARIES	VENUS -4.3	MARTE +0.6	JÚPITER -2.7	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
LUNES						
13 00	112 23.9	181 17.8 S16 28.8	276 08.4 S 4 25.2	6 38.2 N22 47.8	242 51.8 S15 58.5	Acamar 315 17.9 S40 15.2
01	127 26.4	196 21.9 28.5	291 10.0 25.6	21 41.1 47.8	257 54.1 58.6	Achernar 335 26.5 S57 10.3
02	142 28.9	211 26.0 28.3	306 11.5 25.9	36 43.9 47.9	272 56.4 58.6	Acrux 173 08.5 S63 10.4
03	157 31.3	226 30.1 . . 28.0	321 13.0 . . 26.3	51 46.7 . . 47.9	287 58.7 . . 58.6	Adhara 255 11.8 S28 59.7
04	172 33.8	241 34.2 27.7	336 14.6 26.6	66 49.5 48.0	303 00.9 58.7	Aldebarán 290 48.6 N16 32.1
05	187 36.3	256 38.3 27.5	351 16.1 27.0	81 52.3 48.0	318 03.2 58.7	
06	202 38.7	271 42.4 S16 27.2	6 17.7 S 4 27.3	96 55.2 N22 48.0	333 05.5 S15 58.8	Alioth 166 20.3 N55 52.7
07	217 41.2	286 46.5 26.9	21 19.2 27.6	111 58.0 48.1	348 07.7 58.8	Alkaid 152 58.7 N49 14.3
08	232 43.6	301 50.6 26.7	36 20.8 28.0	127 00.8 48.1	3 10.0 58.9	Al Na'ir 27 43.6 S46 53.6
09	247 46.1	316 54.7 . . 26.4	51 22.3 . . 28.3	142 03.6 . . 48.2	18 12.3 . . 58.9	Alnilam 275 45.6 S 1 11.8
10	262 48.6	331 58.7 26.2	66 23.9 28.7	157 06.4 48.2	33 14.6 58.9	Alphard 217 55.4 S 8 43.4
11	277 51.0	347 02.8 25.9	81 25.4 29.0	172 09.3 48.2	48 16.8 59.0	
12	292 53.5	2 06.9 S16 25.7	96 27.0 S 4 29.4	187 12.1 N22 48.3	63 19.1 S15 59.0	Alphecca 126 10.9 N26 40.0
13	307 56.0	17 11.0 25.4	111 28.5 29.7	202 14.9 48.3	78 21.4 59.1	Alpheratz 357 43.1 N29 10.2
14	322 58.4	32 15.1 25.1	126 30.1 30.1	217 17.7 48.4	93 23.6 59.1	Altair 62 08.2 N 8 54.5
15	338 00.9	47 19.2 . . 24.9	141 31.6 . . 30.4	232 20.5 . . 48.4	108 25.9 . . 59.2	Ankaa 353 15.5 S42 14.0
16	353 03.4	62 23.3 24.6	156 33.2 30.8	247 23.4 48.5	123 28.2 59.2	Antares 112 26.0 S26 27.6
17	8 05.8	77 27.3 24.4	171 34.7 31.1	262 26.2 48.5	138 30.5 59.2	
18	23 08.3	92 31.4 S16 24.1	186 36.3 S 4 31.4	277 29.0 N22 48.5	153 32.7 S15 59.3	Arcturus 145 55.4 N19 06.4
19	38 10.8	107 35.5 23.9	201 37.8 31.8	292 31.8 48.6	168 35.0 59.3	Atria 107 27.8 S69 02.8
20	53 13.2	122 39.6 23.6	216 39.4 32.1	307 34.6 48.6	183 37.3 59.4	Avior 234 17.1 S59 33.4
21	68 15.7	137 43.7 . . 23.4	231 40.9 . . 32.5	322 37.4 . . 48.7	198 39.6 . . 59.4	Bellatrix 278 31.3 N 6 21.5
22	83 18.1	152 47.7 23.1	246 42.5 32.8	337 40.3 48.7	213 41.8 59.4	Betelgeuse 271 00.5 N 7 24.3
23	98 20.6	167 51.8 22.9	261 44.0 33.2	352 43.1 48.7	228 44.1 59.5	
MARTES						
14 00	113 23.1	182 55.9 S16 22.7	276 45.6 S 4 33.5	7 45.9 N22 48.8	243 46.4 S15 59.5	Canopus 263 55.4 S52 42.5
01	128 25.5	197 59.9 22.4	291 47.1 33.9	22 48.7 48.8	258 48.6 59.6	Capella 280 33.4 N46 00.6
02	143 28.0	213 04.0 22.2	306 48.7 34.2	37 51.5 48.9	273 50.9 59.6	Deneb 49 31.6 N45 20.0
03	158 30.5	228 08.1 . . 21.9	321 50.2 . . 34.5	52 54.4 . . 48.9	288 53.2 . . 59.7	Denébola 182 33.1 N14 29.4
04	173 32.9	243 12.1 21.7	336 51.8 34.9	67 57.2 48.9	303 55.5 59.7	Diphda 348 55.6 S17 54.7
05	188 35.4	258 16.2 21.4	351 53.3 35.2	83 00.0 49.0	318 57.7 59.7	
06	203 37.9	273 20.3 S16 21.2	6 54.9 S 4 35.6	98 02.8 N22 49.0	334 00.0 S15 59.8	Dubhe 193 50.9 N61 40.1
07	218 40.3	288 24.3 21.0	21 56.4 35.9	113 05.6 49.1	349 02.3 59.8	Elnath 278 11.7 N28 37.0
08	233 42.8	303 28.4 20.7	36 58.0 36.2	128 08.4 49.1	4 04.6 59.9	Eltanin 90 46.4 N51 29.3
09	248 45.3	318 32.5 . . 20.5	51 59.6 . . 36.6	143 11.3 . . 49.1	19 06.8 15 59.9	Enif 33 47.0 N 9 56.5
10	263 47.7	333 36.5 20.2	67 01.1 36.9	158 14.1 49.2	34 09.1 16 00.0	Fomalhaut 15 23.8 S29 32.9
11	278 50.2	348 40.6 20.0	82 02.7 37.3	173 16.9 49.2	49 11.4 00.0	
12	293 52.6	3 44.6 S16 19.8	97 04.2 S 4 37.6	188 19.7 N22 49.3	64 13.7 S16 00.0	Gacrux 172 00.2 S57 11.3
13	308 55.1	18 48.7 19.5	112 05.8 38.0	203 22.5 49.3	79 15.9 00.1	Gienah 175 51.7 S17 37.2
14	323 57.6	33 52.7 19.3	127 07.4 38.3	218 25.4 49.3	94 18.2 00.1	Hadar 148 47.3 S60 26.1
15	339 00.0	48 56.8 . . 19.1	142 08.9 . . 38.6	233 28.2 . . 49.4	109 20.5 . . 00.2	Hamal 328 00.2 N23 31.8
16	354 02.5	64 00.8 18.8	157 10.5 39.0	248 31.0 49.4	124 22.8 00.2	Kaus Aust. 83 43.6 S34 22.5
17	9 05.0	79 04.9 18.6	172 12.0 39.3	263 33.8 49.5	139 25.0 00.2	
18	24 07.4	94 08.9 S16 18.4	187 13.6 S 4 39.6	278 36.6 N22 49.5	154 27.3 S16 00.3	Kochab 137 20.6 N74 05.6
19	39 09.9	109 12.9 18.1	202 15.2 40.0	293 39.4 49.6	169 29.6 00.3	Markab 13 38.1 N15 17.0
20	54 12.4	124 17.0 17.9	217 16.7 40.3	308 42.3 49.6	184 31.9 00.4	Menkar 314 14.5 N 4 08.6
21	69 14.8	139 21.0 . . 17.7	232 18.3 . . 40.7	323 45.1 . . 49.6	199 34.1 . . 00.4	Menkent 148 07.1 S36 26.1
22	84 17.3	154 25.1 17.5	247 19.8 41.0	338 47.9 49.7	214 36.4 00.4	Miaplacidus 221 38.6 S69 46.5
23	99 19.8	169 29.1 17.2	262 21.4 41.3	353 50.7 49.7	229 38.7 00.5	
MIÉRCOLES						
15 00	114 22.2	184 33.1 S16 17.0	277 23.0 S 4 41.7	8 53.5 N22 49.8	244 41.0 S16 00.5	Mirfak 308 39.4 N49 54.7
01	129 24.7	199 37.2 16.8	292 24.5 42.0	23 56.3 49.8	259 43.2 00.6	Nunki 75 58.2 S26 16.6
02	144 27.1	214 41.2 16.5	307 26.1 42.4	38 59.2 49.8	274 45.5 00.6	Peacock 53 19.2 S56 41.3
03	159 29.6	229 45.2 . . 16.3	322 27.7 . . 42.7	54 02.0 . . 49.9	289 47.8 . . 00.7	Póllux 243 26.9 N27 59.3
04	174 32.1	244 49.2 16.1	337 29.2 43.0	69 04.8 49.9	304 50.1 00.7	Procyon 244 59.0 N 5 11.1
05	189 34.5	259 53.3 15.9	352 30.8 43.4	84 07.6 50.0	319 52.4 00.7	
06	204 37.0	274 57.3 S16 15.7	7 32.4 S 4 43.7	99 10.4 N22 50.0	334 54.6 S16 00.8	Rasalhague 96 06.4 N12 33.1
07	219 39.5	290 01.3 15.4	22 33.9 44.0	114 13.2 50.0	349 56.9 00.8	Régulus 207 42.8 N11 53.7
08	234 41.9	305 05.3 15.2	37 35.5 44.4	129 16.0 50.1	4 59.2 00.9	Rigel 281 11.4 S 8 11.4
09	249 44.4	320 09.3 . . 15.0	52 37.1 . . 44.7	144 18.9 . . 50.1	20 01.5 . . 00.9	Rigel Kent. 139 51.2 S60 53.2
10	264 46.9	335 13.3 14.8	67 38.6 45.0	159 21.7 50.2	35 03.7 00.9	Sabik 102 12.3 S15 44.4
11	279 49.3	350 17.4 14.6	82 40.2 45.4	174 24.5 50.2	50 06.0 01.0	
12	294 51.8	5 21.4 S16 14.4	97 41.8 S 4 45.7	189 27.3 N22 50.2	65 08.3 S16 01.0	Schedar 349 40.1 N56 37.1
13	309 54.2	20 25.4 14.1	112 43.3 46.0	204 30.1 50.3	80 10.6 01.1	Shaula 96 21.7 S37 06.6
14	324 56.7	35 29.4 13.9	127 44.9 46.4	219 32.9 50.3	95 12.9 01.1	Sirius 258 33.0 S16 44.4
15	339 59.2	50 33.4 . . 13.7	142 46.5 . . 46.7	234 35.7 . . 50.4	110 15.1 . . 01.1	Spica 158 30.8 S11 14.1
16	355 01.6	65 37.4 13.5	157 48.1 47.0	249 38.6 50.4	125 17.4 01.2	Suhail 222 51.7 S43 29.5
17	10 04.1	80 41.4 13.3	172 49.6 47.4	264 41.4 50.4	140 19.7 01.2	
18	25 06.6	95 45.4 S16 13.1	187 51.2 S 4 47.7	279 44.2 N22 50.5	155 22.0 S16 01.3	Vega 80 39.1 N38 47.9
19	40 09.0	110 49.4 12.9	202 52.8 48.0	294 47.0 50.5	170 24.2 01.3	Zuben'ubi 137 05.1 S16 05.9
20	55 11.5	125 53.4 12.7	217 54.4 48.4	309 49.8 50.6	185 26.5 01.3	
21	70 14.0	140 57.4 . . 12.4	232 55.9 . . 48.7	324 52.6 . . 50.6	200 28.8 . . 01.4	AHS Paso Mer.
22	85 16.4	156 01.3 12.2	247 57.5 49.0	339 55.4 50.6	215 31.1 01.4	Venus 69 32.8 11 45
23	100 18.9	171 05.3 12.0	262 59.1 49.4	354 58.3 50.7	230 33.4 01.5	Marte 163 22.5 5 32
						Júpiter 254 22.8 23 25
						Saturno 130 23.3 7 44
Paso Mer. 16 23.8	v 4.1 d 0.2		v 1.6 d 0.3	v 2.8 d 0.0	v 2.3 d 0.0	

UT (HmGr)	SOL				LUNA				Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec			AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Naut.		Civil	13	14	15	16
d h	° / °	° / °	° / °	° / °	° / °	° / °	° / °	° / °	° / °	h m	h m	h m	h m	h m	h m	h m
L U N E S	13 00	177 52.6	S21 31.4	35 15.8	11.8	N19 26.9	0.7	54.4	N 72	08 03	09 56	■	□	□	□	□
	01	192 52.4	31.0	49 46.6	11.7	19 27.6	0.6	54.3	N 70	07 48	09 21	■	□	□	□	□
	02	207 52.1	30.6	64 17.3	11.8	19 28.2	0.5	54.3	68	07 36	08 56	10 38	12 00	13 01	14 18	15 41
	03	222 51.9	30.1	78 48.1	11.7	19 28.7	0.5	54.3	66	07 25	08 36	09 56	12 34	13 33	14 43	16 00
	04	237 51.7	29.7	93 18.8	11.8	19 29.2	0.3	54.3	64	07 16	08 21	09 28	13 00	13 56	15 02	16 15
	05	252 51.4	29.3	107 49.6	11.8	19 29.5	0.2	54.3	62	07 09	08 07	09 07	13 19	14 15	15 18	16 28
	06	267 51.2	S21 28.9	122 20.4	11.7	N19 29.7	0.2	54.3	60	07 02	07 56	08 49	13 35	14 30	15 32	16 39
	07	282 51.0	28.4	136 51.1	11.8	19 29.9	0.1	54.3	N 58	06 56	07 46	08 35	13 49	14 43	15 43	16 48
	08	297 50.7	28.0	151 21.9	11.8	19 30.0	0.1	54.3	56	06 50	07 38	08 22	14 01	14 54	15 53	16 56
	09	312 50.5	27.6	165 52.7	11.8	19 29.9	0.1	54.3	54	06 45	07 30	08 12	14 11	15 04	16 02	17 03
	10	327 50.3	27.2	180 23.5	11.8	19 29.8	0.2	54.2	52	06 40	07 23	08 02	14 20	15 12	16 09	17 10
	11	342 50.0	26.7	194 54.3	11.9	19 29.6	0.3	54.2	50	06 36	07 16	07 53	14 28	15 20	16 16	17 16
	12	357 49.8	S21 26.3	209 25.2	11.8	N19 29.3	0.4	54.2	45	06 26	07 02	07 35	14 45	15 37	16 31	17 28
	13	12 49.6	25.9	223 56.0	11.9	19 28.9	0.5	54.2	N 40	06 17	06 51	07 20	15 00	15 50	16 44	17 39
	14	27 49.3	25.4	238 26.9	11.8	19 28.4	0.5	54.2	35	06 09	06 40	07 08	15 12	16 02	16 54	17 47
	15	42 49.1	25.0	252 57.7	11.9	19 27.9	0.7	54.2	30	06 01	06 31	06 57	15 22	16 12	17 03	17 55
	16	57 48.9	24.6	267 28.6	11.9	19 27.2	0.8	54.2	N 20	05 47	06 14	06 38	15 40	16 29	17 19	18 09
	17	72 48.7	24.1	281 59.5	11.9	19 26.4	0.8	54.2	N 10	05 33	05 59	06 21	15 56	16 44	17 33	18 20
	18	87 48.4	S21 23.7	296 30.4	11.9	N19 25.6	0.9	54.2	0	05 17	05 43	06 05	16 11	16 59	17 45	18 31
	19	102 48.2	23.3	311 01.3	11.9	19 24.7	1.1	54.2	S 10	05 00	05 27	05 50	16 26	17 13	17 58	18 42
	20	117 48.0	22.8	325 32.2	12.0	19 23.6	1.1	54.2	20	04 40	05 08	05 32	16 41	17 28	18 12	18 54
	21	132 47.7	22.4	340 03.2	11.9	19 22.5	1.2	54.1	30	04 13	04 46	05 13	17 00	17 45	18 28	19 07
	22	147 47.5	22.0	354 34.1	12.0	19 21.3	1.3	54.1	40	03 57	04 32	05 01	17 10	17 55	18 37	19 15
23	162 47.3	21.5	9 05.1	12.0	19 20.0	1.4	54.1	50	03 36	04 16	04 48	17 22	18 07	18 47	19 23	
14 00	177 47.0	S21 21.1	23 36.1	12.0	N19 18.6	1.4	54.1	S 50	02 31	03 30	04 12	17 54	18 37	19 14	19 46	
01	192 46.8	20.7	38 07.1	12.0	19 17.2	1.6	54.1	52	02 10	03 17	04 02	18 02	18 44	19 21	19 51	
02	207 46.6	20.2	52 38.1	12.1	19 15.6	1.6	54.1	54	01 43	03 02	03 52	18 11	18 53	19 28	19 58	
03	222 46.4	19.8	67 09.2	12.0	19 14.0	1.8	54.1	56	00 56	02 44	03 40	18 22	19 03	19 37	20 05	
04	237 46.1	19.3	81 40.2	12.1	19 12.2	1.8	54.1	58	////	02 22	03 25	18 33	19 14	19 46	20 12	
05	252 45.9	18.9	96 11.3	12.1	19 10.4	1.9	54.1	S 60	////	01 52	03 09	18 47	19 26	19 57	20 21	
06	267 45.7	S21 18.5	110 42.4	12.1	N19 08.5	2.0	54.1									
07	282 45.5	18.0	125 13.5	12.1	19 06.5	2.1	54.1	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
08	297 45.2	17.6	139 44.6	12.1	19 04.4	2.2	54.1			Civil	Naut.	13	14	15	16	
09	312 45.0	17.1	154 15.7	12.2	19 02.2	2.3	54.1									
10	327 44.8	16.7	168 46.9	12.2	18 59.9	2.3	54.1									
11	342 44.5	16.2	183 18.1	12.2	18 57.6	2.5	54.1									
12	357 44.3	S21 15.8	197 49.3	12.2	N18 55.1	2.5	54.0	N 72	■	14 23	16 16	□	□	□	□	
13	12 44.1	15.4	212 20.5	12.3	18 52.6	2.6	54.0	N 70	■	14 58	16 31	08 58	09 26	09 33	09 34	
14	27 43.9	14.9	226 51.8	12.2	18 50.0	2.7	54.0	68	13 41	15 23	16 43	07 57	08 35	08 56	09 08	
15	42 43.6	14.5	241 23.0	12.3	18 47.3	2.8	54.0	66	14 23	15 42	16 53	07 22	08 03	08 31	08 49	
16	57 43.4	14.0	255 54.3	12.3	18 44.5	2.8	54.0	64	14 51	15 58	17 02	06 57	07 40	08 11	08 33	
17	72 43.2	13.6	270 25.6	12.4	18 41.7	3.0	54.0	62	15 12	16 11	17 10	06 38	07 21	07 54	08 19	
18	87 43.0	S21 13.1	284 57.0	12.3	N18 38.7	3.0	54.0	60	15 29	16 22	17 17	06 22	07 06	07 41	08 08	
19	102 42.8	12.7	299 28.3	12.4	18 35.7	3.2	54.0	N 58	15 44	16 32	17 23	06 08	06 53	07 29	07 58	
20	117 42.5	12.2	313 59.7	12.4	18 32.5	3.2	54.0	56	15 56	16 41	17 28	05 56	06 41	07 19	07 50	
21	132 42.3	11.8	328 31.1	12.4	18 29.3	3.2	54.0	54	16 07	16 49	17 33	05 46	06 31	07 10	07 42	
22	147 42.1	11.3	343 02.5	12.5	18 26.1	3.4	54.0	52	16 16	16 56	17 38	05 37	06 23	07 02	07 35	
23	162 41.9	10.9	357 34.0	12.4	18 22.7	3.5	54.0	50	16 25	17 02	17 43	05 29	06 15	06 55	07 29	
15 00	177 41.6	S21 10.4	12 05.4	12.5	N18 19.2	3.5	54.0	45	16 43	17 16	17 52	05 11	05 58	06 39	07 16	
01	192 41.4	09.9	26 36.9	12.5	18 15.7	3.6	54.0	N 40	16 58	17 28	18 01	04 57	05 44	06 26	07 05	
02	207 41.2	09.5	41 08.4	12.6	18 12.1	3.7	54.0	35	17 11	17 38	18 09	04 45	05 32	06 15	06 55	
03	222 41.0	9.0	55 40.0	12.6	18 08.4	3.8	54.0	30	17 22	17 47	18 17	04 35	05 22	06 06	06 47	
04	237 40.8	08.6	70 11.6	12.5	18 04.6	3.9	54.0	20	17 40	18 04	18 31	04 16	05 04	05 49	06 32	
05	252 40.5	08.1	84 43.1	12.7	18 00.7	3.9	54.0	N 10	17 57	18 20	18 46	04 01	04 49	05 35	06 20	
06	267 40.3	S21 07.7	99 14.8	12.6	N17 56.8	4.0	54.0	0	18 13	18 35	19 01	03 46	04 34	05 21	06 08	
07	282 40.1	07.2	113 46.4	12.7	17 52.8	4.1	54.0	S 10	18 28	18 51	19 18	03 31	04 19	05 08	05 56	
08	297 39.9	06.7	128 18.1	12.7	17 48.7	4.2	54.0	20	18 45	19 10	19 38	03 15	04 04	04 53	05 43	
09	312 39.7	6.3	142 49.8	12.7	17 44.5	4.3	54.0	30	19 05	19 32	20 04	02 57	03 46	04 37	05 28	
10	327 39.4	05.8	157 21.5	12.7	17 40.2	4.3	54.0	35	19 17	19 46	20 21	02 47	03 36	04 27	05 20	
11	342 39.2	05.4	171 53.2	12.8	17 35.9	4.5	54.0	40	19 30	20 02	20 41	02 34	03 24	04 16	05 10	
12	357 39.0	S21 04.9	186 25.0	12.8	N17 31.4	4.5	54.0	45	19 46	20 22	21 08	02 20	03 09	04 03	04 58	
13	12 38.8	04.4	200 56.8	12.8	17 26.9	4.5	53.9	S 50	20 06	20 47	21 45	02 03	02 52	03 47	04 44	
14	27 38.6	04.0	215 28.6	12.9	17 22.4	4.7	53.9	52	20 15	21 00	22 06	01 54	02 44	03 39	04 38	
15	42 38.3	03.5	230 00.5	12.9	17 17.7	4.7	53.9	54	20 26	21 15	22 33	01 45	02 35	03 31	04 31	
16	57 38.1	03.0	244 32.4	12.9	17 13.0	4.8	53.9	56	20 37	21 33	23 16	01 35	02 25	03 21	04 23	
17	72 37.9	02.6	259 04.3	12.9	17 08.2	4.9	53.9	58	20 51	21 54	////	01 23	02 13	03 10	04 13	
18	87 37.7	S21 02.1	273 36.2	13.0	N17 03.3	5.0	53.9	S 60	21 08	22 23	////	01 09	02 00	02 58	04 03	
19	102 37.5	01.6	288 08.2	13.0	16 58.3	5.0	53.9									
20	117 37.3	01.2	302 40.2	13.0	16 53.3	5.1	53.9	Día	SOL		Paso Mer.	LUNA				
21	132 37.0	00.7	317 12.2	13.0	16 48.2	5.2	53.9		00 ^h	12 ^h		Paso Mer. Sup.	Inf.	Edad	Fase	
22	147 36.8	00.2	331 44.2	13.1	16 43.0	5.2	53.9		d	m s	m s	h m	h m	h m	d %	
23	162 36.6	S20 59.8	346 16.3	13.1	N16 37.8	5.3	53.9	13	08 29	08 40	12 09	22 22	09 58	12 94		
								14	08 51	09 02	12 09	23 10	10 46	13 97		
								15	09 13	09 24	12 09	23 57	11 34	14 99		
	S/D 16.3	<i>d</i> 0.4	S/D	14.8	14.7	14.7										

UT (HmGr)	ARIES	VENUS -4.2	MARTE +0.6	JÚPITER -2.7	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
16 00	115 21.4	186 09.3 S16 11.8	278 00.6 S 4 49.7	10 01.1 N22 50.7	245 35.6 S16 01.5	Acamar 315 17.9 S40 15.2
01	130 23.8	201 13.3 11.6	293 02.2 50.0	25 03.9 50.7	260 37.9 01.5	Achernar 335 26.5 S57 10.3
02	145 26.3	216 17.3 11.4	308 03.8 50.4	40 06.7 50.8	275 40.2 01.6	Acrux 173 08.4 S63 10.4
03	160 28.7	231 21.2 . 11.2	323 05.4 . 50.7	55 09.5 . 50.8	290 42.5 . 01.6	Adhara 255 11.8 S28 59.8
04	175 31.2	246 25.2 11.0	338 07.0 51.0	70 12.3 50.9	305 44.8 01.7	Aldebarán 290 48.6 N16 32.1
05	190 33.7	261 29.2 10.8	353 08.5 51.4	85 15.1 50.9	320 47.0 01.7	
06	205 36.1	276 33.2 S16 10.6	8 10.1 S 4 51.7	100 18.0 N22 50.9	335 49.3 S16 01.7	Alioth 166 20.3 N55 52.7
07	220 38.6	291 37.1 10.4	23 11.7 52.0	115 20.8 51.0	350 51.6 01.8	Alkaid 152 58.6 N49 14.3
08	235 41.1	306 41.1 10.2	38 13.3 52.4	130 23.6 51.0	5 53.9 01.8	Al Na'ir 27 43.6 S46 53.6
09	250 43.5	321 45.1 . 10.0	53 14.8 . 52.7	145 26.4 . 51.1	20 56.2 . 01.9	Alnilam 275 45.6 S 1 11.8
10	265 46.0	336 49.0 09.8	68 16.4 53.0	160 29.2 51.1	35 58.5 01.9	Alphard 217 55.4 S 8 43.4
11	280 48.5	351 53.0 09.6	83 18.0 53.3	175 32.0 51.1	51 00.7 01.9	
12	295 50.9	6 56.9 S16 09.4	98 19.6 S 4 53.7	190 34.8 N22 51.2	66 03.0 S16 02.0	Alphecca 126 10.8 N26 40.0
13	310 53.4	22 00.9 09.2	113 21.2 54.0	205 37.6 51.2	81 05.3 02.0	Alpheratz 357 43.2 N29 10.2
14	325 55.9	37 04.8 09.0	128 22.8 54.3	220 40.4 51.3	96 07.6 02.1	Altair 62 08.2 N 8 54.5
15	340 58.3	52 08.8 . 08.8	143 24.3 . 54.7	235 43.3 . 51.3	111 09.9 . 02.1	Ankaa 353 15.5 S42 14.0
16	356 00.8	67 12.7 08.6	158 25.9 55.0	250 46.1 51.3	126 12.1 02.1	Antares 112 26.0 S26 27.6
17	11 03.2	82 16.7 08.5	173 27.5 55.3	265 48.9 51.4	141 14.4 02.2	
18	26 05.7	97 20.6 S16 08.3	188 29.1 S 4 55.6	280 51.7 N22 51.4	156 16.7 S16 02.2	Arcturus 145 55.4 N19 06.4
19	41 08.2	112 24.5 08.1	203 30.7 56.0	295 54.5 51.5	171 19.0 02.3	Atria 107 27.8 S69 02.8
20	56 10.6	127 28.5 07.9	218 32.3 56.3	310 57.3 51.5	186 21.3 02.3	Avior 234 17.1 S59 33.4
21	71 13.1	142 32.4 . 07.7	233 33.8 . 56.6	326 00.1 . 51.5	201 23.6 . 02.3	Bellatrix 278 31.3 N 6 21.5
22	86 15.6	157 36.3 07.5	248 35.4 57.0	341 02.9 51.6	216 25.8 02.4	Betelgeuse 271 00.5 N 7 24.3
23	101 18.0	172 40.3 07.3	263 37.0 57.3	356 05.8 51.6	231 28.1 02.4	
17 00	116 20.5	187 44.2 S16 07.1	278 38.6 S 4 57.6	11 08.6 N22 51.7	246 30.4 S16 02.4	Canopus 263 55.4 S52 42.5
01	131 23.0	202 48.1 07.0	293 40.2 57.9	26 11.4 51.7	261 32.7 02.5	Capella 280 33.4 N46 00.6
02	146 25.4	217 52.0 06.8	308 41.8 58.3	41 14.2 51.7	276 35.0 02.5	Deneb 49 31.6 N45 20.0
03	161 27.9	232 55.9 . 06.6	323 43.4 . 58.6	56 17.0 . 51.8	291 37.3 . 02.6	Denébola 182 33.1 N14 29.4
04	176 30.4	247 59.8 06.4	338 44.9 58.9	71 19.8 51.8	306 39.5 02.6	Diphda 348 55.6 S17 54.7
05	191 32.8	263 03.8 06.2	353 46.5 59.2	86 22.6 51.8	321 41.8 02.6	
06	206 35.3	278 07.7 S16 06.0	8 48.1 S 4 59.6	101 25.4 N22 51.9	336 44.1 S16 02.7	Dubhe 193 50.8 N61 40.1
07	221 37.7	293 11.6 05.9	23 49.7 4 59.9	116 28.2 51.9	351 46.4 02.7	Elnath 278 11.7 N28 37.0
08	236 40.2	308 15.5 05.7	38 51.3 5 00.2	131 31.0 52.0	6 48.7 02.8	Eltanin 90 46.4 N51 29.2
09	251 42.7	323 19.4 . 05.5	53 52.9 . 00.5	146 33.9 . 52.0	21 51.0 . 02.8	Enif 33 47.0 N 9 56.5
10	266 45.1	338 23.3 05.3	68 54.5 00.9	161 36.7 52.0	36 53.2 02.8	Fomalhaut 15 23.8 S29 32.9
11	281 47.6	353 27.2 05.2	83 56.1 01.2	176 39.5 52.1	51 55.5 02.9	
12	296 50.1	8 31.0 S16 05.0	98 57.7 S 5 01.5	191 42.3 N22 52.1	66 57.8 S16 02.9	Gacrux 172 00.1 S57 11.3
13	311 52.5	23 34.9 04.8	113 59.3 01.8	206 45.1 52.2	82 00.1 03.0	Gienah 175 51.7 S17 37.2
14	326 55.0	38 38.8 04.6	129 00.9 02.2	221 47.9 52.2	97 02.4 03.0	Hadar 148 47.2 S60 26.1
15	341 57.5	53 42.7 . 04.5	144 02.4 . 02.5	236 50.7 . 52.2	112 04.7 . 03.0	Hamal 328 00.2 N23 31.8
16	356 59.9	68 46.6 04.3	159 04.0 02.8	251 53.5 52.3	127 06.9 03.1	Kaus Aust. 83 43.6 S34 22.5
17	12 02.4	83 50.5 04.1	174 05.6 03.1	266 56.3 52.3	142 09.2 03.1	
18	27 04.8	98 54.3 S16 03.9	189 07.2 S 5 03.4	281 59.1 N22 52.3	157 11.5 S16 03.1	Kochab 137 20.6 N74 05.6
19	42 07.3	113 58.2 03.8	204 08.8 03.8	297 01.9 52.4	172 13.8 03.2	Markab 13 38.1 N15 17.0
20	57 09.8	129 02.1 03.6	219 10.4 04.1	312 04.7 52.4	187 16.1 03.2	Menkar 314 14.5 N 4 08.6
21	72 12.2	144 05.9 . 03.4	234 12.0 . 04.4	327 07.6 . 52.5	202 18.4 . 03.3	Menkent 148 07.1 S36 26.1
22	87 14.7	159 09.8 03.3	249 13.6 04.7	342 10.4 52.5	217 20.7 03.3	Miaplacidus 221 38.6 S69 46.6
23	102 17.2	174 13.7 03.1	264 15.2 05.1	357 13.2 52.5	232 22.9 03.3	
18 00	117 19.6	189 17.5 S16 02.9	279 16.8 S 5 05.4	12 16.0 N22 52.6	247 25.2 S16 03.4	Mirfak 308 39.4 N49 54.7
01	132 22.1	204 21.4 02.8	294 18.4 05.7	27 18.8 52.6	262 27.5 03.4	Nunki 75 58.2 S26 16.6
02	147 24.6	219 25.2 02.6	309 20.0 06.0	42 21.6 52.7	277 29.8 03.4	Peacock 53 19.2 S56 41.3
03	162 27.0	234 29.1 . 02.5	324 21.6 . 06.3	57 24.4 . 52.7	292 32.1 . 03.5	Póllux 243 26.8 N27 59.3
04	177 29.5	249 32.9 02.3	339 23.2 06.7	72 27.2 52.7	307 34.4 03.5	Procyon 244 58.9 N 5 11.1
05	192 32.0	264 36.7 02.1	354 24.8 07.0	87 30.0 52.8	322 36.7 03.6	
06	207 34.4	279 40.6 S16 02.0	9 26.4 S 5 07.3	102 32.8 N22 52.8	337 39.0 S16 03.6	Rasalhague 96 06.3 N12 33.1
07	222 36.9	294 44.4 01.8	24 28.0 07.6	117 35.6 52.8	352 41.2 03.6	Régulus 207 42.8 N11 53.7
08	237 39.3	309 48.2 01.7	39 29.6 07.9	132 38.4 52.9	7 43.5 03.7	Rigel 281 11.4 S 8 11.4
09	252 41.8	324 52.1 . 01.5	54 31.2 . 08.3	147 41.2 . 52.9	22 45.8 . 03.7	Rigel Kent. 139 51.2 S60 53.2
10	267 44.3	339 55.9 01.3	69 32.8 08.6	162 44.0 53.0	37 48.1 03.8	Sabik 102 12.3 S15 44.4
11	282 46.7	354 59.7 01.2	84 34.4 08.9	177 46.9 53.0	52 50.4 03.8	
12	297 49.2	10 03.5 S16 01.0	99 36.0 S 5 09.2	192 49.7 N22 53.0	67 52.7 S16 03.8	Schedar 349 40.1 N56 37.1
13	312 51.7	25 07.4 00.9	114 37.6 09.5	207 52.5 53.1	82 55.0 03.9	Shaula 96 21.7 S37 06.6
14	327 54.1	40 11.2 00.7	129 39.2 10.8	222 55.3 53.1	97 57.3 03.9	Sirius 258 33.0 S16 44.4
15	342 56.6	55 15.0 . 00.6	144 40.8 . 10.2	237 58.1 . 53.2	112 59.5 . 03.9	Spica 158 30.8 S11 14.1
16	357 59.1	70 18.8 00.4	159 42.5 10.5	253 00.9 53.2	128 01.8 04.0	Suhail 222 51.6 S43 29.5
17	13 01.5	85 22.6 00.3	174 44.1 10.8	268 03.7 53.2	143 04.1 04.0	
18	28 04.0	100 26.4 S16 00.1	189 45.7 S 5 11.1	283 06.5 N22 53.3	158 06.4 S16 04.0	Vega 80 39.1 N38 47.9
19	43 06.5	115 30.2 16 00.0	204 47.3 11.4	298 09.3 53.3	173 08.7 04.1	Zuben'ubi 137 05.0 S16 05.9
20	58 08.9	130 34.0 15 59.8	219 48.9 11.7	313 12.1 53.3	188 11.0 04.1	
21	73 11.4	145 37.8 . 59.7	234 50.5 . 12.1	328 14.9 . 53.4	203 13.3 . 04.2	AHS Paso Mer.
22	88 13.8	160 41.5 59.5	249 52.1 12.4	343 17.7 53.4	218 15.6 04.2	Venus 71 23.7 11 26
23	103 16.3	175 45.3 59.4	264 53.7 12.7	358 20.5 53.5	233 17.9 04.2	Marte 162 18.1 5 25
						Júpiter 254 48.1 23 11
						Saturno 130 09.9 7 33
Paso Mer. 16 12.0	v 3.9 d 0.2		v 1.6 d 0.3	v 2.8 d 0.0	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	16	17	18	19	
J U E V E S	d h	° / °	° / °	° / °	° / °	° / °	° / °	h m	h m	h m	h m	h m	h m	h m	h m	
	16 00	177 36.4 S20 59.3	0 48.4 13.1	N16 32.5	5.4 53.9			N 72	07 56	09 43	11 42	14 41	16 28	18 09	19 48	
	01	192 36.2 58.8	15 20.5 13.2	16 27.1	5.5 53.9			N 70	07 42	09 12	11 42	15 16	16 50	18 22	19 54	
	02	207 36.0 58.3	29 52.7 13.2	16 21.6	5.6 53.9			68	07 30	08 49	10 24	15 41	17 07	18 33	19 59	
	03	222 35.8 . 57.9	44 24.9 13.2	16 16.0	5.6 53.9			66	07 21	08 30	09 47	16 00	17 20	18 41	20 03	
	04	237 35.5 57.4	58 57.1 13.2	16 10.4	5.7 53.9			64	07 12	08 16	09 21	16 15	17 31	18 48	20 07	
	05	252 35.3 56.9	73 29.3 13.3	16 04.7	5.7 53.9			62	07 05	08 03	09 01	16 28	17 40	18 55	20 10	
	06	267 35.1 S20 56.4	88 01.6 13.3	N15 59.0	5.8 53.9			60	06 59	07 52	08 45	16 39	17 48	19 00	20 12	
	07	282 34.9 56.0	102 33.9 13.3	15 53.2	5.9 53.9			N 58	06 53	07 43	08 31	16 48	17 55	19 05	20 15	
	08	297 34.7 55.5	117 06.2 13.4	15 47.3	6.0 53.9			56	06 48	07 35	08 19	16 56	18 02	19 09	20 17	
	09	312 34.5 . 55.0	131 38.6 13.4	15 41.3	6.0 53.9			54	06 43	07 27	08 09	17 03	18 07	19 12	20 19	
	10	327 34.3 54.5	146 11.0 13.4	15 35.3	6.1 53.9			52	06 38	07 21	07 59	17 10	18 12	19 16	20 20	
	11	342 34.1 54.1	160 43.4 13.4	15 29.2	6.2 53.9			50	06 34	07 14	07 51	17 16	18 17	19 19	20 22	
	12	357 33.8 S20 53.6	175 15.8 13.5	N15 23.0	6.2 53.9			45	06 25	07 01	07 34	17 28	18 26	19 26	20 25	
	13	12 33.6 53.1	189 48.3 13.5	15 16.8	6.3 53.9			N 40	06 16	06 50	07 19	17 39	18 35	19 31	20 28	
	14	27 33.4 52.6	204 20.8 13.5	15 10.5	6.4 53.9			35	06 09	06 40	07 07	17 47	18 41	19 36	20 30	
	15	42 33.2 . 52.1	218 53.3 13.6	15 04.1	6.4 54.0			30	06 01	06 31	06 56	17 55	18 48	19 40	20 33	
	16	57 33.0 51.7	233 25.9 13.6	14 57.7	6.5 54.0			20	05 47	06 14	06 38	18 09	18 58	19 47	20 36	
	17	72 32.8 51.2	247 58.5 13.6	14 51.2	6.6 54.0			N 10	05 33	05 59	06 22	18 20	19 07	19 54	20 40	
	18	87 32.6 S20 50.7	262 31.1 13.6	N14 44.6	6.6 54.0			0	05 19	05 44	06 06	18 31	19 16	19 59	20 43	
	19	102 32.4 50.2	277 03.7 13.7	14 38.0	6.7 54.0			S 10	05 02	05 28	05 51	18 42	19 24	20 05	20 46	
	20	117 32.2 49.7	291 36.4 13.7	14 31.3	6.7 54.0			20	04 42	05 10	05 34	18 54	19 34	20 12	20 49	
	21	132 32.0 . 49.2	306 09.1 13.7	14 24.6	6.8 54.0			30	04 16	04 49	05 15	19 07	19 44	20 19	20 53	
	22	147 31.8 48.8	320 41.8 13.8	14 17.8	6.9 54.0			35	04 00	04 35	05 04	19 15	19 50	20 23	20 55	
	23	162 31.5 48.3	335 14.6 13.7	14 10.9	7.0 54.0			40	03 40	04 19	04 51	19 23	19 57	20 28	20 57	
V I E R N E S	17 00	177 31.3 S20 47.8	349 47.3 13.8	N14 03.9	7.0 54.0			S 50	02 38	03 35	04 16	19 46	20 14	20 39	21 03	
	01	192 31.1 47.3	4 20.1 13.9	13 56.9	7.0 54.0			52	02 18	03 23	04 07	19 51	20 18	20 42	21 05	
	02	207 30.9 46.8	18 53.0 13.8	13 49.9	7.1 54.0			54	01 53	03 08	03 57	19 58	20 23	20 46	21 06	
	03	222 30.7 . 46.3	33 25.8 13.9	13 42.8	7.2 54.0			56	01 15	02 51	03 45	20 05	20 28	20 49	21 08	
	04	237 30.5 45.8	47 58.7 13.9	13 35.6	7.2 54.0			58	01 00	02 30	03 32	20 12	20 34	20 53	21 10	
	05	252 30.3 45.3	62 31.6 14.0	13 28.4	7.3 54.0			S 60	00 59	02 03	03 16	20 21	20 41	20 58	21 13	
	06	267 30.1 S20 44.8	77 04.6 13.9	N13 21.1	7.4 54.0											
	07	282 29.9 44.3	91 37.5 14.0	13 13.7	7.4 54.0			Lat.	Ocaso Sol	Crepúsculo			Ocaso Luna			
	08	297 29.7 43.9	106 10.5 14.0	13 06.3	7.4 54.0					Civil	Náut.	16	17	18	19	
	09	312 29.5 . 43.4	120 43.5 14.1	12 58.9	7.5 54.0							h m	h m	h m	h m	
	10	327 29.3 42.9	135 16.6 14.1	12 51.4	7.6 54.0			N 72	h m	h m	h m	h m	h m	h m	h m	
	11	342 29.1 42.4	149 49.7 14.0	12 43.8	7.6 54.0			N 70	12 38	14 38	16 25	10 10	09 56	09 46	09 37	
	12	357 28.9 S20 41.9	164 22.7 14.2	N12 36.2	7.7 54.0			N 70	12 38	15 09	16 39	09 34	09 33	09 31	09 29	
	13	12 28.7 41.4	178 55.9 14.1	12 28.5	7.7 54.0			68	13 57	15 32	16 51	09 08	09 15	09 19	09 22	
	14	27 28.5 40.9	193 29.0 14.2	12 20.8	7.8 54.0			66	14 34	15 50	17 00	08 49	09 01	09 10	09 16	
	15	42 28.3 . 40.4	208 02.2 14.2	12 13.0	7.9 54.0			64	15 00	16 05	17 08	08 33	08 49	09 01	09 12	
	16	57 28.1 39.9	222 35.4 14.2	12 05.1	7.9 54.0			62	15 20	16 18	17 16	08 19	08 39	08 54	09 07	
	17	72 27.9 39.4	237 08.6 14.2	11 57.2	7.9 54.1			60	15 36	16 28	17 22	08 08	08 30	08 48	09 04	
	18	87 27.7 S20 38.9	251 41.8 14.3	N11 49.3	8.0 54.1			N 58	15 50	16 38	17 28	07 58	08 22	08 43	09 00	
	19	102 27.4 38.4	266 15.1 14.3	11 41.3	8.0 54.1			56	16 02	16 46	17 33	07 50	08 16	08 38	08 58	
	20	117 27.2 37.9	280 48.4 14.3	11 33.3	8.1 54.1			54	16 12	16 53	17 38	07 42	08 10	08 33	08 55	
	21	132 27.0 . 37.4	295 21.7 14.3	11 25.2	8.2 54.1			52	16 21	17 00	17 42	07 35	08 04	08 29	08 53	
	22	147 26.8 36.9	309 55.0 14.3	11 17.0	8.2 54.1			50	16 29	17 06	17 46	07 29	07 59	08 26	08 50	
	23	162 26.6 36.4	324 28.3 14.4	11 08.8	8.2 54.1			45	16 47	17 20	17 56	07 16	07 48	08 18	08 46	
	S Á B A D O	18 00	177 26.4 S20 35.9	339 01.7 14.4	N11 00.6	8.3 54.1			N 40	17 01	17 31	18 04	07 05	07 39	08 11	08 42
01		192 26.2 35.4	353 35.1 14.4	10 52.3	8.3 54.1			35	17 13	17 41	18 12	06 55	07 32	08 06	08 38	
02		207 26.0 34.9	8 08.5 14.5	10 44.0	8.4 54.1			30	17 24	17 50	18 19	06 47	07 25	08 01	08 35	
03		222 25.8 . 34.4	22 42.0 14.4	10 35.6	8.4 54.1			20	17 42	18 06	18 33	06 32	07 13	07 52	08 30	
04		237 25.6 33.9	37 15.4 14.5	10 27.2	8.5 54.1			N 10	17 59	18 21	18 47	06 20	07 03	07 44	08 25	
05		252 25.4 33.3	51 48.9 14.5	10 18.7	8.5 54.1			0	18 14	18 36	19 02	06 08	06 53	07 37	08 20	
06		267 25.2 S20 32.8	66 22.4 14.5	N10 10.2	8.6 54.1			S 10	18 29	18 52	19 18	05 56	06 43	07 30	08 16	
07		282 25.1 32.3	80 55.9 14.5	10 01.6	8.6 54.1			20	18 46	19 09	19 38	05 43	06 33	07 22	08 11	
08		297 24.9 31.8	95 29.4 14.6	9 53.0	8.6 54.2			30	19 05	19 31	20 03	05 28	06 20	07 13	08 05	
09		312 24.7 . 31.3	110 03.0 14.6	9 44.4	8.7 54.2			35	19 16	19 44	20 20	05 20	06 13	07 08	08 02	
10		327 24.5 30.8	124 36.6 14.5	9 35.7	8.7 54.2			40	19 29	20 00	20 39	05 10	06 05	07 02	07 58	
11		342 24.3 30.3	139 10.1 14.6	9 27.0	8.8 54.2			45	19 44	20 19	21 05	04 58	05 56	06 55	07 54	
12		357 24.1 S20 29.8	153 43.7 14.7	N 9 18.2	8.8 54.2			S 50	20 03	20 44	21 40	04 44	05 45	06 46	07 49	
13		12 23.9 29.3	168 17.4 14.6	9 09.4	8.8 54.2			52	20 12	20 56	22 00	04 38	05 39	06 43	07 47	
14		27 23.7 28.7	182 51.0 14.6	9 00.6	8.9 54.2			54	20 22	21 10	22 25	04 31	05 34	06 38	07 44	
15		42 23.5 . 28.2	197 24.6 14.7	8 51.7	8.9 54.2			56	20 34	21 27	23 01	04 23	05 27	06 34	07 41	
16		57 23.3 27.7	211 58.3 14.7	8 42.8	9.0 54.2			58	20 47	21 48	///	04 13	05 20	06 28	07 38	
17		72 23.1 27.2	226 32.0 14.7	8 33.8	9.0 54.2			S 60	21 02	22 14	///	04 03	05 12	06 22	07 34	
18		87 22.9 S20 26.7	241 05.7 14.7	N 8 24.8	9.0 54.2											
19		102 22.7 26.2	255 39.4 14.7	8 15.8	9.1 54.3			Día	SOL				LUNA			
20		117 22.5 25.7	270 13.1 14.8	8 06.7	9.1 54.3				Ec. Tiempo	Paso Mer.		Paso Mer.	Sup.	Inf.	Edad	Fase
21		132 22.3 . 25.1	284 46.9 14.7	7 57.6	9.2 54.3				00h 12h							
22		147 22.1 24.6	299 20.6 14.8	7 48.4	9.2 54.3</											

UT (HmGr)	ARIES	VENUS -4.4	MARTE +0.5	JÚPITER -2.7	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
19	00 118 18.8	190 49.1 S15 59.2	279 55.3 S 5 13.0	13 23.3 N22 53.5	248 20.1 S16 04.3	Acamar 315 17.9 S40 15.2
01	133 21.2	205 52.9 59.1	294 56.9 13.3	28 26.1 53.5	263 22.4 04.3	Achernar 335 26.6 S57 10.3
02	148 23.7	220 56.7 59.0	309 58.5 13.6	43 28.9 53.6	278 24.7 04.3	Acrux 173 08.4 S63 10.4
03	163 26.2	236 00.4 . . 58.8	325 00.2 . . 13.9	58 31.7 . . 53.6	293 27.0 . . 04.4	Adhara 255 11.8 S28 59.8
04	178 28.6	251 04.2 58.7	340 01.8 14.3	73 34.5 53.6	308 29.3 04.4	Aldebarán 290 48.6 N16 32.1
05	193 31.1	266 08.0 58.5	355 03.4 14.6	88 37.3 53.7	323 31.6 04.5	
06	208 33.6	281 11.7 S15 58.4	10 05.0 S 5 14.9	103 40.1 N22 53.7	338 33.9 S16 04.5	Alioth 166 20.2 N55 52.7
07	223 36.0	296 15.5 58.2	25 06.6 15.2	118 42.9 53.8	353 36.2 04.5	Alkaid 152 58.6 N49 14.3
08	238 38.5	311 19.2 58.1	40 08.2 15.5	133 45.7 53.8	8 38.5 04.6	Al Na'ir 27 43.6 S46 53.6
09	253 40.9	326 23.0 . . 58.0	55 09.8 . . 15.8	148 48.6 . . 53.8	23 40.8 . . 04.6	Alnilam 275 45.6 S 1 11.8
10	268 43.4	341 26.7 57.8	70 11.5 16.1	163 51.4 53.9	38 43.1 04.6	Alphard 217 55.3 S 8 43.4
11	283 45.9	356 30.5 57.7	85 13.1 16.5	178 54.2 53.9	53 45.3 04.7	
12	298 48.3	11 34.2 S15 57.6	100 14.7 S 5 16.8	193 57.0 N22 53.9	68 47.6 S16 04.7	Alphecca 126 10.8 N26 40.0
13	313 50.8	26 37.9 57.4	115 16.3 17.1	208 59.8 54.0	83 49.9 04.7	Alpheratz 357 43.2 N29 10.2
14	328 53.3	41 41.7 57.3	130 17.9 17.4	224 02.6 54.0	98 52.2 04.8	Altair 62 08.1 N 8 54.5
15	343 55.7	56 45.4 . . 57.2	145 19.5 . . 17.7	239 05.4 . . 54.1	113 54.5 . . 04.8	Ankaa 353 15.5 S42 14.0
16	358 58.2	71 49.1 57.0	160 21.2 18.0	254 08.2 54.1	128 56.8 04.9	Antares 112 25.9 S26 27.6
17	14 00.7	86 52.8 56.9	175 22.8 18.3	269 11.0 54.1	143 59.1 04.9	
18	29 03.1	101 56.5 S15 56.8	190 24.4 S 5 18.6	284 13.8 N22 54.2	159 01.4 S16 04.9	Arcturus 145 55.4 N19 06.4
19	44 05.6	117 00.3 56.6	205 26.0 18.9	299 16.6 54.2	174 03.7 05.0	Atria 107 27.8 S69 02.8
20	59 08.1	132 04.0 56.5	220 27.6 19.3	314 19.4 54.2	189 06.0 05.0	Avior 234 17.1 S59 33.4
21	74 10.5	147 07.7 . . 56.4	235 29.3 . . 19.6	329 22.2 . . 54.3	204 08.3 . . 05.0	Bellatrix 278 31.3 N 6 21.5
22	89 13.0	162 11.4 56.3	250 30.9 19.9	344 25.0 54.3	219 10.6 05.1	Betelgeuse 271 00.5 N 7 24.3
23	104 15.4	177 15.1 56.1	265 32.5 20.2	359 27.8 54.4	234 12.8 05.1	
20	00 119 17.9	192 18.8 S15 56.0	280 34.1 S 5 20.5	14 30.6 N22 54.4	249 15.1 S16 05.1	Canopus 263 55.4 S52 42.5
01	134 20.4	207 22.5 55.9	295 35.7 20.8	29 33.4 54.4	264 17.4 05.2	Capella 280 33.4 N46 00.6
02	149 22.8	222 26.2 55.8	310 37.4 21.1	44 36.2 54.5	279 19.7 05.2	Deneb 49 31.6 N45 20.0
03	164 25.3	237 29.8 . . 55.6	325 39.0 . . 21.4	59 39.0 . . 54.5	294 22.0 . . 05.3	Denébola 182 33.1 N14 29.4
04	179 27.8	252 33.5 55.5	340 40.6 21.7	74 41.8 54.5	309 24.3 05.3	Diphda 348 55.6 S17 54.7
05	194 30.2	267 37.2 55.4	355 42.2 22.0	89 44.6 54.6	324 26.6 05.3	
06	209 32.7	282 40.9 S15 55.3	10 43.9 S 5 22.3	104 47.4 N22 54.6	339 28.9 S16 05.4	Dubhe 193 50.8 N61 40.1
07	224 35.2	297 44.5 55.2	25 45.5 22.6	119 50.2 54.6	354 31.2 05.4	Elnath 278 11.8 N28 37.0
08	239 37.6	312 48.2 55.0	40 47.1 23.0	134 53.0 54.7	9 33.5 05.4	Eltanin 90 46.4 N51 29.2
09	254 40.1	327 51.9 . . 54.9	55 48.7 . . 23.3	149 55.8 . . 54.7	24 35.8 . . 05.5	Enif 33 47.0 N 9 56.5
10	269 42.6	342 55.5 54.8	70 50.4 23.6	164 58.6 54.8	39 38.1 05.5	Fomalhaut 15 23.8 S29 32.9
11	284 45.0	357 59.2 54.7	85 52.0 23.9	180 01.4 54.8	54 40.4 05.5	
12	299 47.5	13 02.8 S15 54.6	100 53.6 S 5 24.2	195 04.2 N22 54.8	69 42.7 S16 05.6	Gacrux 172 00.1 S57 11.3
13	314 49.9	28 06.5 54.5	115 55.3 24.5	210 07.0 54.9	84 45.0 05.6	Gienah 175 51.7 S17 37.2
14	329 52.4	43 10.1 54.4	130 56.9 24.8	225 09.8 54.9	99 47.3 05.6	Hadar 148 47.2 S60 26.1
15	344 54.9	58 13.8 . . 54.2	145 58.5 . . 25.1	240 12.6 . . 54.9	114 49.6 . . 05.7	Hamal 328 00.2 N23 31.8
16	359 57.3	73 17.4 54.1	161 00.1 25.4	255 15.4 55.0	129 51.8 05.7	Kaus Aust. 83 43.6 S34 22.4
17	14 59.8	88 21.0 54.0	176 01.8 25.7	270 18.2 55.0	144 54.1 05.8	
18	30 02.3	103 24.7 S15 53.9	191 03.4 S 5 26.0	285 21.0 N22 55.0	159 56.4 S16 05.8	Kochab 137 20.5 N74 05.6
19	45 04.7	118 28.3 53.8	206 05.0 26.3	300 23.8 55.1	174 58.7 05.8	Markab 13 38.1 N15 17.0
20	60 07.2	133 31.9 53.7	221 06.7 26.6	315 26.6 55.1	190 01.0 05.9	Menkar 314 14.5 N 4 08.6
21	75 09.7	148 35.5 . . 53.6	236 08.3 . . 26.9	330 29.4 . . 55.2	205 03.3 . . 05.9	Menkent 148 07.0 S36 26.2
22	90 12.1	163 39.2 53.5	251 09.9 27.2	345 32.1 55.2	220 05.6 05.9	Miaplacidus 221 38.5 S69 46.6
23	105 14.6	178 42.8 53.4	266 11.6 27.5	0 34.9 55.2	235 07.9 06.0	
21	00 120 17.0	193 46.4 S15 53.3	281 13.2 S 5 27.8	15 37.7 N22 55.3	250 10.2 S16 06.0	Mirfak 308 39.5 N49 54.7
01	135 19.5	208 50.0 53.2	296 14.8 28.1	30 40.5 55.3	265 12.5 06.0	Nunki 75 58.1 S26 16.6
02	150 22.0	223 53.6 53.1	311 16.5 28.4	45 43.3 55.3	280 14.8 06.1	Peacock 53 19.2 S56 41.3
03	165 24.4	238 57.2 . . 53.0	326 18.1 . . 28.7	60 46.1 . . 55.4	295 17.1 . . 06.1	Póllux 243 26.8 N27 59.3
04	180 26.9	254 00.8 52.9	341 19.8 29.0	75 48.9 55.4	310 19.4 06.1	Procyon 244 58.9 N 5 11.1
05	195 29.4	269 04.3 52.8	356 21.4 29.3	90 51.7 55.4	325 21.7 06.2	
06	210 31.8	284 07.9 S15 52.7	11 23.0 S 5 29.6	105 54.5 N22 55.5	340 24.0 S16 06.2	Rasalhague 96 06.3 N12 33.1
07	225 34.3	299 11.5 52.6	26 24.7 29.9	120 57.3 55.5	355 26.3 06.2	Régulus 207 42.8 N11 53.6
08	240 36.8	314 15.1 52.5	41 26.3 30.2	136 00.1 55.6	10 28.6 06.3	Rigel 281 11.4 S 8 11.4
09	255 39.2	329 18.6 . . 52.4	56 28.0 . . 30.5	151 02.9 . . 55.6	25 30.9 . . 06.3	Rigel Kent. 139 51.2 S60 53.2
10	270 41.7	344 22.2 52.3	71 29.6 30.8	166 05.7 55.6	40 33.2 06.3	Sabik 102 12.3 S15 44.4
11	285 44.2	359 25.8 52.2	86 31.2 31.1	181 08.5 55.7	55 35.5 06.4	
12	300 46.6	14 29.3 S15 52.1	101 32.9 S 5 31.4	196 11.3 N22 55.7	70 37.8 S16 06.4	Schedar 349 40.1 N56 37.1
13	315 49.1	29 32.9 52.0	116 34.5 31.7	211 14.1 55.7	85 40.1 06.4	Shaula 96 21.7 S37 06.6
14	330 51.5	44 36.4 51.9	131 36.2 32.0	226 16.9 55.8	100 42.4 06.5	Sirius 258 33.0 S16 44.4
15	345 54.0	59 40.0 . . 51.8	146 37.8 . . 32.3	241 19.7 . . 55.8	115 44.7 . . 06.5	Spica 158 30.7 S11 14.1
16	0 56.5	74 43.5 51.7	161 39.4 32.6	256 22.5 55.8	130 47.0 06.6	Suhail 222 51.6 S43 29.5
17	15 58.9	89 47.1 51.6	176 41.1 32.9	271 25.3 55.9	145 49.3 06.6	
18	31 01.4	104 50.6 S15 51.5	191 42.7 S 5 33.2	286 28.1 N22 55.9	160 51.6 S16 06.6	Vega 80 39.1 N38 47.9
19	46 03.9	119 54.1 51.4	206 44.4 33.5	301 30.8 56.0	175 53.9 06.7	Zuben'ubi 137 05.0 S16 05.9
20	61 06.3	134 57.7 51.3	221 46.0 33.8	316 33.6 56.0	190 56.2 06.7	
21	76 08.8	150 01.2 . . 51.3	236 47.7 . . 34.1	331 36.4 . . 56.0	205 58.5 . . 06.7	AHS Paso Mer.
22	91 11.3	165 04.7 51.2	251 49.3 34.4	346 39.2 56.1	221 00.8 06.8	Venus 73 00.9 11 08
23	106 13.7	180 08.2 51.1	266 51.0 34.7	1 42.0 56.1	236 03.1 06.8	Marte 161 16.2 5 17
						Júpiter 255 12.7 22 58
						Saturno 129 57.2 7 22
	h m					
Paso Mer. 16	00.2	v 3.6 d 0.1	v 1.6 d 0.3	v 2.8 d 0.0	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Náut.	Civil		19	20	21	22	
d h	° /	° /	° /	/	° /	/	°	h m	h m	h m	h m	h m	h m	h m	h m
DOMINGO	1900	177 21.7 S20 23.6	328 28.1 14.8 N	7	30.0	9.2 54.3	N 72	07 48	09 31	██	19 48	21 26	23 05	24 50	
	01	192 21.5 23.1	343 01.9 14.8	7	20.8	9.3 54.3	N 70	07 35	09 02	11 05	19 54	21 26	22 59	24 36	
	02	207 21.3 22.5	357 35.7 14.8	7	11.5	9.3 54.3	68	07 24	08 41	10 10	19 59	21 26	22 54	24 25	
	03	222 21.2 . 22.0	12 09.5 14.8	7	02.2	9.4 54.3	66	07 16	08 24	09 37	20 03	21 26	22 50	24 16	
	04	237 21.0 21.5	26 43.3 14.9	6	52.8	9.3 54.4	64	07 08	08 10	09 14	20 07	21 26	22 46	24 09	
	05	252 20.8 21.0	41 17.2 14.8	6	43.5	9.5 54.4	62	07 01	07 58	08 55	20 10	21 26	22 43	24 02	
	06	267 20.6 S20 20.4	55 51.0 14.8 N	6	34.0	9.4 54.4	60	06 55	07 48	08 39	20 12	21 26	22 40	23 57	
	07	282 20.4 19.9	70 24.8 14.9	6	24.6	9.5 54.4	N 58	06 50	07 39	08 26	20 15	21 26	22 38	23 52	
	08	297 20.2 19.4	84 58.7 14.8	6	15.1	9.5 54.4	56	06 45	07 31	08 15	20 17	21 26	22 36	23 47	
	09	312 20.0 . 18.9	99 32.5 14.9	6	05.6	9.5 54.4	54	06 40	07 24	08 05	20 19	21 26	22 34	23 44	
	10	327 19.8 18.3	114 06.4 14.8	5	56.1	9.5 54.4	52	06 36	07 18	07 56	20 20	21 26	22 32	23 40	
	11	342 19.6 17.8	128 40.2 14.9	5	46.6	9.6 54.4	50	06 32	07 12	07 48	20 22	21 26	22 31	23 37	
	12	357 19.4 S20 17.3	143 14.1 14.9 N	5	37.0	9.6 54.5	45	06 23	06 59	07 32	20 25	21 26	22 27	23 30	
	13	12 19.3 16.8	157 48.0 14.9	5	27.4	9.7 54.5	N 40	06 15	06 48	07 18	20 28	21 26	22 24	23 24	
	14	27 19.1 16.2	172 21.9 14.8	5	17.7	9.6 54.5	35	06 08	06 39	07 06	20 30	21 26	22 22	23 19	
	15	42 18.9 . 15.7	186 55.7 14.9	5	08.1	9.7 54.5	30	06 01	06 30	06 56	20 33	21 26	22 20	23 15	
	16	57 18.7 . 15.2	201 29.6 14.9	4	58.4	9.7 54.5	20	05 47	06 14	06 38	20 36	21 26	22 16	23 08	
	17	72 18.5 14.6	216 03.5 14.9	4	48.7	9.7 54.5	N 10	05 34	06 00	06 22	20 40	21 26	22 13	23 01	
	18	87 18.3 S20 14.1	230 37.4 14.9 N	4	39.0	9.8 54.5	0	05 20	05 45	06 07	20 43	21 26	22 10	22 55	
	19	102 18.1 13.6	245 11.3 14.8	4	29.2	9.8 54.6	S 10	05 04	05 30	05 52	20 46	21 26	22 07	22 49	
	20	117 17.9 13.0	259 45.1 14.9	4	19.4	9.8 54.6	20	04 44	05 13	05 36	20 49	21 26	22 04	22 43	
	21	132 17.8 . 12.5	274 19.0 14.9	4	09.6	9.8 54.6	30	04 19	04 51	05 18	20 53	21 26	22 00	22 36	
	22	147 17.6 12.0	288 52.9 14.9	3	59.8	9.8 54.6	35	04 04	04 38	05 07	20 55	21 26	21 58	22 32	
	23	162 17.4 11.4	303 26.8 14.9	3	50.0	9.9 54.6	40	03 44	04 23	04 54	20 57	21 26	21 56	22 27	
LUNES	2000	177 17.2 S20 10.9	318 00.7 14.8 N	3	40.1	9.9 54.6	S 50	02 45	03 40	04 21	21 03	21 26	21 50	22 15	
	01	192 17.0 10.4	332 34.5 14.9	3	30.2	9.9 54.6	52	02 27	03 29	04 12	21 05	21 27	21 49	22 12	
	02	207 16.8 09.8	347 08.4 14.9	3	20.3	9.9 54.7	54	02 03	03 15	04 03	21 06	21 27	21 47	22 09	
	03	222 16.6 . 09.3	1 42.3 14.8	3	10.4	9.9 54.7	56	01 30	02 59	03 51	21 08	21 27	21 45	22 06	
	04	237 16.5 08.7	16 16.1 14.9	3	00.5	10.0 54.7	58	////	02 39	03 39	21 10	21 27	21 43	22 02	
	05	252 16.3 08.2	30 50.0 14.9	2	50.5	9.9 54.7	S 60	////	02 14	03 24	21 13	21 27	21 41	21 57	
	06	267 16.1 S20 07.7	45 23.9 14.8 N	2	40.6	10.0 54.7	Lat.		Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	282 15.9 07.1	59 57.7 14.8	2	30.6	10.0 54.7				Civil	Náut.	19	20	21	22
	08	297 15.7 06.6	74 31.5 14.9	2	20.6	10.0 54.8						h m	h m	h m	h m
	09	312 15.5 . 06.0	89 05.4 14.8	2	10.6	10.1 54.8	N 72	h m	h m	h m	09 37	09 29	09 21	09 13	
	10	327 15.4 05.5	103 39.2 14.8	2	00.5	10.0 54.8	N 70	13 18	15 21	16 48	09 29	09 26	09 24	09 21	
	11	342 15.2 05.0	118 13.0 14.8	1	50.5	10.0 54.8	68	14 13	15 42	16 58	09 22	09 24	09 26	09 28	
	12	357 15.0 S20 04.4	132 46.8 14.8 N	1	40.5	10.1 54.8	66	14 45	15 59	17 07	09 16	09 22	09 28	09 34	
	13	12 14.8 03.9	147 20.6 14.7	1	30.4	10.1 54.8	64	15 09	16 13	17 15	09 12	09 21	09 30	09 39	
	14	27 14.6 03.3	161 54.3 14.8	1	20.3	10.1 54.9	62	15 28	16 24	17 22	09 07	09 19	09 31	09 43	
	15	42 14.5 . 02.8	176 28.1 14.8	1	10.2	10.1 54.9	60	15 43	16 34	17 28	09 04	09 18	09 32	09 47	
	16	57 14.3 02.2	191 01.9 14.7	0	50.0	10.1 54.9	N 58	15 56	16 43	17 33	09 00	09 17	09 33	09 51	
	17	72 14.1 01.7	205 35.6 14.7	0	39.9	10.1 54.9	56	16 08	16 51	17 38	08 58	09 16	09 34	09 54	
	18	87 13.9 S20 01.1	220 09.3 14.7 N	0	29.8	10.2 55.0	54	16 17	16 58	17 42	08 55	09 15	09 35	09 56	
	19	102 13.7 00.6	234 43.0 14.7	0	19.6	10.1 55.0	52	16 26	17 05	17 47	08 53	09 14	09 36	09 59	
	20	117 13.6 20 00.0	249 16.7 14.7	0	09.5	10.2 55.0	50	16 34	17 10	17 50	08 50	09 14	09 37	10 01	
	21	132 13.4 19 59.5	263 50.4 14.6 N	0	10.8	10.2 55.0	45	16 51	17 23	17 59	08 46	09 12	09 38	10 06	
	MARTES	2100	177 12.8 S19 57.8	307 31.3 14.6 S	0	21.0	10.1 55.1	N 40	17 05	17 34	18 07	08 42	09 11	09 40	10 10
		01	192 12.7 57.3	322 04.9 14.6	0	31.1	10.2 55.1	35	17 16	17 44	18 15	08 38	09 09	09 41	10 13
02		207 12.5 56.7	336 38.5 14.5	0	41.3	10.2 55.1	30	17 27	17 52	18 21	08 35	09 08	09 42	10 17	
03		222 12.3 . 56.2	351 12.0 14.5	0	51.5	10.2 55.1	20	17 44	18 08	18 35	08 30	09 07	09 44	10 22	
04		237 12.1 55.6	5 45.5 14.6	1	01.7	10.1 55.1	N 10	18 00	18 22	18 48	08 25	09 05	09 45	10 27	
05		252 12.0 55.1	20 19.1 14.4	1	11.8	10.2 55.2	0	18 15	18 37	19 02	08 20	09 03	09 47	10 31	
06		267 11.8 S19 54.5	34 52.5 14.5 S	1	22.0	10.2 55.2	S 10	18 29	18 52	19 18	08 16	09 02	09 48	10 36	
07		282 11.6 54.0	49 26.0 14.4	1	32.2	10.2 55.2	20	18 45	19 09	19 37	08 11	09 00	09 50	10 41	
08		297 11.4 53.4	63 59.4 14.5	1	42.4	10.2 55.2	30	19 04	19 30	20 02	08 05	08 58	09 52	10 46	
09		312 11.3 . 52.8	78 32.9 14.3	1	52.6	10.2 55.2	35	19 15	19 43	20 18	08 02	08 57	09 53	10 49	
10		327 11.1 52.3	93 06.2 14.4	2	02.8	10.1 55.3	40	19 27	19 58	20 37	07 58	08 56	09 54	10 53	
11		342 10.9 51.7	107 39.6 14.3	2	12.9	10.2 55.3	45	19 42	20 17	21 01	07 54	08 54	09 55	10 57	
12		357 10.7 S19 51.2	122 12.9 14.3 S	2	23.1	10.2 55.3	S 50	20 00	20 40	21 35	07 49	08 52	09 57	11 02	
13		12 10.6 50.6	136 46.2 14.3	2	33.3	10.1 55.3	52	20 09	20 52	21 53	07 47	08 51	09 57	11 04	
14		27 10.4 50.0	151 19.5 14.2	2	43.4	10.2 55.4	54	20 18	21 06	22 16	07 44	08 51	09 58	11 07	
15		42 10.2 . 49.5	165 52.7 14.3	2	53.6	10.2 55.4	56	20 29	21 21	22 48	07 41	08 50	09 59	11 10	
16		57 10.0 48.9	180 26.0 14.1	3	03.8	10.1 55.4	58	20 42	21 41	////	07 38	08 48	10 00	11 13	
17		72 09.9 48.4	194 59.1 14.2	3	13.9	10.2 55.4	S 60	20 57	22 05	////	07 34	08 47	10 01	11 16	
18		87 09.7 S19 47.8	209 32.3 14.1 S	3	24.1	10.1 55.4	SOL		LUNA						
19		102 09.5 47.2	224 05.4 14.1	3	34.2	10.2 55.5	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
20		117 09.4 46.7	238 38.5 14.0	3	44.4	10.1 55.5	00h 12h		Paso Mer.	Sup.	Inf.				
21		132 09.2 . 46.1	253 11.5 14.0	3	54.5	10.1 55.5	d	m s	m s	h m	h m	h m	d %		
22		147 09.0 45.5	267 44.5 14.0	4	04.6	10.1 55.5	19	10 33	10 42	12 11	02 10	14 31	18 90		
23		162 08.8 45.0	282 17.5 13.9 S	4	14.7	10.1 55.6	20	10 51	11 00	12 11	02 53	15 15	19 84		
	S/D 16.3	<i>d</i> 0.5	S/D 14.8	14.9	15.1		21	11 08	11 17	12 11	03 36	15 58	20 76		

UT (HmGr)	ARIES	VENUS -4.5	MARTE +0.4	JÚPITER -2.7	SATURNO +0.6	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
22 00	121 16.2	195 11.7 S15 51.0	281 52.6 S 5 35.0	16 44.8 N22 56.1	251 05.4 S16 06.8	Acamar 315 17.9 S40 15.2
01	136 18.6	210 15.2 50.9	296 54.3 35.3	31 47.6 56.2	266 07.7 06.9	Achernar 335 26.6 S57 10.3
02	151 21.1	225 18.7 50.8	311 55.9 35.6	46 50.4 56.2	281 10.0 06.9	Acrux 173 08.4 S63 10.4
03	166 23.6	240 22.2 . . 50.8	326 57.6 . . 35.9	61 53.2 . . 56.2	296 12.3 . . 06.9	Adhara 255 11.8 S28 59.8
04	181 26.0	255 25.7 50.7	341 59.2 36.2	76 56.0 56.3	311 14.6 07.0	Aldebarán 290 48.6 N16 32.1
05	196 28.5	270 29.2 50.6	357 00.9 36.5	91 58.8 56.3	326 16.9 07.0	
06	211 31.0	285 32.7 S15 50.5	12 02.5 S 5 36.8	107 01.6 N22 56.3	341 19.2 S16 07.0	Alioth 166 20.2 N55 52.7
07	226 33.4	300 36.2 50.4	27 04.2 37.1	122 04.4 56.4	356 21.5 07.1	Alkaid 152 58.6 N49 14.3
08	241 35.9	315 39.7 50.3	42 05.8 37.4	137 07.2 56.4	11 23.8 07.1	Al Na'ir 27 43.7 S46 53.6
09	256 38.4	330 43.2 . . 50.3	57 07.5 . . 37.7	152 09.9 . . 56.5	26 26.1 . . 07.1	Alnilam 275 45.7 S 1 11.8
10	271 40.8	345 46.6 50.2	72 09.1 38.0	167 12.7 56.5	41 28.4 07.2	Alphard 217 55.3 S 8 43.4
11	286 43.3	0 50.1 50.1	87 10.8 38.3	182 15.5 56.5	56 30.7 07.2	
12	301 45.8	15 53.6 S15 50.0	102 12.4 S 5 38.6	197 18.3 N22 56.6	71 33.0 S16 07.2	Alphecca 126 10.8 N26 39.9
13	316 48.2	30 57.0 50.0	117 14.1 38.9	212 21.1 56.6	86 35.3 07.3	Alpheratz 357 43.2 N29 10.2
14	331 50.7	46 00.5 49.9	132 15.7 39.2	227 23.9 56.6	101 37.6 07.3	Altair 62 08.1 N 8 54.5
15	346 53.1	61 03.9 . . 49.8	147 17.4 . . 39.5	242 26.7 . . 56.7	116 39.9 . . 07.3	Ankaa 353 15.5 S42 14.0
16	1 55.6	76 07.4 49.7	162 19.1 39.7	257 29.5 56.7	131 42.2 07.4	Antares 112 25.9 S26 27.6
17	16 58.1	91 10.8 49.7	177 20.7 40.0	272 32.3 56.7	146 44.5 07.4	
18	32 00.5	106 14.2 S15 49.6	192 22.4 S 5 40.3	287 35.1 N22 56.8	161 46.8 S16 07.4	Arcturus 145 55.4 N19 06.4
19	47 03.0	121 17.7 49.5	207 24.0 40.6	302 37.8 56.8	176 49.1 07.5	Atria 107 27.7 S69 02.8
20	62 05.5	136 21.1 49.5	222 25.7 40.9	317 40.6 56.8	191 51.4 07.5	Avior 234 17.1 S59 33.5
21	77 07.9	151 24.5 . . 49.4	237 27.3 . . 41.2	332 43.4 . . 56.9	206 53.7 . . 07.5	Bellatrix 278 31.3 N 6 21.5
22	92 10.4	166 27.9 49.3	252 29.0 41.5	347 46.2 56.9	221 56.0 07.6	Betelgeuse 271 00.5 N 7 24.3
23	107 12.9	181 31.4 49.3	267 30.7 41.8	2 49.0 56.9	236 58.3 07.6	
23 00	122 15.3	196 34.8 S15 49.2	282 32.3 S 5 42.1	17 51.8 N22 57.0	252 00.6 S16 07.6	Canopus 263 55.4 S52 42.5
01	137 17.8	211 38.2 49.1	297 34.0 42.4	32 54.6 57.0	267 02.9 07.7	Capella 280 33.4 N46 00.6
02	152 20.3	226 41.6 49.1	312 35.7 42.7	47 57.4 57.0	282 05.2 07.7	Deneb 49 31.6 N45 20.0
03	167 22.7	241 45.0 . . 49.0	327 37.3 . . 42.9	63 00.2 . . 57.1	297 07.5 . . 07.7	Denébola 182 33.0 N14 29.4
04	182 25.2	256 48.4 48.9	342 39.0 43.2	78 02.9 57.1	312 09.8 07.8	Diphda 348 55.6 S17 54.7
05	197 27.6	271 51.8 48.9	357 40.6 43.5	93 05.7 57.2	327 12.1 07.8	
06	212 30.1	286 55.2 S15 48.8	12 42.3 S 5 43.8	108 08.5 N22 57.2	342 14.4 S16 07.8	Dubhe 193 50.8 N61 40.1
07	227 32.6	301 58.5 48.8	27 44.0 44.1	123 11.3 57.2	357 16.7 07.9	Elnath 278 11.8 N28 37.0
08	242 35.0	317 01.9 48.7	42 45.6 44.4	138 14.1 57.3	12 19.1 07.9	Eltanin 90 46.4 N51 29.2
09	257 37.5	332 05.3 . . 48.6	57 47.3 . . 44.7	153 16.9 . . 57.3	27 21.4 . . 07.9	Enif 33 47.0 N 9 56.5
10	272 40.0	347 08.7 48.6	72 49.0 45.0	168 19.7 57.3	42 23.7 08.0	Fomalhaut 15 23.8 S29 32.9
11	287 42.4	2 12.0 48.5	87 50.6 45.3	183 22.4 57.4	57 26.0 08.0	
12	302 44.9	17 15.4 S15 48.5	102 52.3 S 5 45.5	198 25.2 N22 57.4	72 28.3 S16 08.0	Gacrux 172 00.1 S57 11.3
13	317 47.4	32 18.7 48.4	117 54.0 45.8	213 28.0 57.4	87 30.6 08.0	Gienah 175 51.7 S17 37.2
14	332 49.8	47 22.1 48.4	132 55.6 46.1	228 30.8 57.5	102 32.9 08.1	Hadar 148 47.2 S60 26.1
15	347 52.3	62 25.4 . . 48.3	147 57.3 . . 46.4	243 33.6 . . 57.5	117 35.2 . . 08.1	Hamal 328 00.2 N23 31.8
16	2 54.7	77 28.8 48.2	162 59.0 46.7	258 36.4 57.5	132 37.5 08.1	Kaus Aust. 83 43.6 S34 22.4
17	17 57.2	92 32.1 48.2	178 00.7 47.0	273 39.2 57.6	147 39.8 08.2	
18	32 59.7	107 35.5 S15 48.1	193 02.3 S 5 47.3	288 41.9 N22 57.6	162 42.1 S16 08.2	Kochab 137 20.4 N74 05.6
19	48 02.1	122 38.8 48.1	208 04.0 47.6	303 44.7 57.6	177 44.4 08.2	Markab 13 38.1 N15 17.0
20	63 04.6	137 42.1 48.0	223 05.7 47.8	318 47.5 57.7	192 46.7 08.3	Menkar 314 14.5 N 4 08.6
21	78 07.1	152 45.4 . . 48.0	238 07.3 . . 48.1	333 50.3 . . 57.7	207 49.0 . . 08.3	Menkent 148 07.0 S36 26.2
22	93 09.5	167 48.7 47.9	253 09.0 48.4	348 53.1 57.7	222 51.3 08.3	Miaplacidus 221 38.5 S69 46.6
23	108 12.0	182 52.1 47.9	268 10.7 48.7	3 55.9 57.8	237 53.6 08.4	
24 00	123 14.5	197 55.4 S15 47.8	283 12.4 S 5 49.0	18 58.7 N22 57.8	252 55.9 S16 08.4	Mirfak 308 39.5 N49 54.7
01	138 16.9	212 58.7 47.8	298 14.0 49.3	34 01.4 57.8	267 58.3 08.4	Nunki 75 58.1 S26 16.6
02	153 19.4	228 02.0 47.7	313 15.7 49.5	49 04.2 57.9	283 00.6 08.5	Peacock 53 19.2 S56 41.3
03	168 21.9	243 05.3 . . 47.7	328 17.4 . . 49.8	64 07.0 . . 57.9	298 02.9 . . 08.5	Póllux 243 26.8 N27 59.3
04	183 24.3	258 08.6 47.7	343 19.1 50.1	79 09.8 57.9	313 05.2 08.5	Procyon 244 58.9 N 5 11.1
05	198 26.8	273 11.8 47.6	358 20.7 50.4	94 12.6 58.0	328 07.5 08.6	
06	213 29.2	288 15.1 S15 47.6	13 22.4 S 5 50.7	109 15.4 N22 58.0	343 09.8 S16 08.6	Rasalhague 96 06.3 N12 33.1
07	228 31.7	303 18.4 47.5	28 24.1 51.0	124 18.1 58.0	358 12.1 08.6	Régulus 207 42.8 N11 53.6
08	243 34.2	318 21.7 47.5	43 25.8 51.2	139 20.9 58.1	13 14.4 08.7	Rigel 281 11.4 S 8 11.4
09	258 36.6	333 24.9 . . 47.4	58 27.5 . . 51.5	154 23.7 . . 58.1	28 16.7 . . 08.7	Rigel Kent. 139 51.1 S60 53.2
10	273 39.1	348 28.2 47.4	73 29.1 51.8	169 26.5 58.1	43 19.0 08.7	Sabik 102 12.3 S15 44.4
11	288 41.6	3 31.5 47.4	88 30.8 52.1	184 29.3 58.2	58 21.3 08.7	
12	303 44.0	18 34.7 S15 47.3	103 32.5 S 5 52.4	199 32.0 N22 58.2	73 23.6 S16 08.8	Schedar 349 40.1 N56 37.1
13	318 46.5	33 38.0 47.3	118 34.2 52.6	214 34.8 58.2	88 26.0 08.8	Shaula 96 21.6 S37 06.6
14	333 49.0	48 41.2 47.2	133 35.9 52.9	229 37.6 58.3	103 28.3 08.8	Sirius 258 33.0 S16 44.4
15	348 51.4	63 44.5 . . 47.2	148 37.6 . . 53.2	244 40.4 . . 58.3	118 30.6 . . 08.9	Spica 158 30.7 S11 14.1
16	3 53.9	78 47.7 47.2	163 39.2 53.5	259 43.2 58.3	133 32.9 08.9	Suhail 222 51.6 S43 29.5
17	18 56.4	93 50.9 47.1	178 40.9 53.8	274 45.9 58.4	148 35.2 08.9	
18	33 58.8	108 54.2 S15 47.1	193 42.6 S 5 54.1	289 48.7 N22 58.4	163 37.5 S16 09.0	Vega 80 39.1 N38 47.9
19	49 01.3	123 57.4 47.1	208 44.3 54.3	304 51.5 58.4	178 39.8 09.0	Zuben'ubi 137 05.0 S16 05.9
20	64 03.7	139 00.6 47.0	223 46.0 54.6	319 54.3 58.5	193 42.1 09.0	
21	79 06.2	154 03.8 . . 47.0	238 47.7 . . 54.9	334 57.1 . . 58.5	208 44.4 . . 09.1	AHS Paso Mer.
22	94 08.7	169 07.0 47.0	253 49.4 55.2	349 59.8 58.5	223 46.7 09.1	Venus 74 19.4 10 51
23	109 11.1	184 10.3 46.9	268 51.0 55.4	5 02.6 58.6	238 49.0 09.1	Marte 160 17.0 5 09
						Júpiter 255 36.5 22 44
						Saturno 129 45.3 7 11
Paso Mer. 15 48.4	v 3.4 d 0.1		v 1.7 d 0.3	v 2.8 d 0.0	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	v	Dec	d		Ph	Náut.		Civil	22	23	24	25	
M I É R C O L E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	22 00	177 08.7	S19 44.4	296 50.4	13.9 S	4 24.8	10.1	55.6	07 39	09 18	■	24 50	00 50	02 42	04 47	
	01	192 08.5	43.8	311 23.3	13.9	4 34.9	10.1	55.6	70	07 28	08 52	10 41	24 36	00 36	02 18	04 06
	02	207 08.3	43.3	325 56.2	13.8	4 45.0	10.0	55.6	66	07 10	08 17	09 27	24 16	00 16	01 45	03 16
	03	222 08.2	42.7	340 29.0	13.8	4 55.0	10.1	55.7	64	07 03	08 04	09 06	24 09	00 09	01 33	02 59
	04	237 08.0	42.1	355 01.8	13.7	5 05.1	10.0	55.7	62	06 57	07 53	08 48	24 02	00 02	01 23	02 46
	05	252 07.8	41.6	9 34.5	13.7	5 15.1	10.0	55.7	60	06 51	07 43	08 34	23 57	25 15	01 15	02 34
	06	267 07.7	S19 41.0	24 07.2	13.6 S	5 25.1	10.0	55.8	N 58	06 46	07 35	08 21	23 52	25 07	01 07	02 24
	07	282 07.5	40.4	38 39.8	13.6	5 35.1	10.0	55.8	56	06 41	07 28	08 11	23 47	25 01	01 01	02 15
	08	297 07.3	39.8	53 12.4	13.6	5 45.1	10.0	55.8	54	06 37	07 21	08 01	23 44	24 55	00 55	02 07
	09	312 07.2	39.3	67 45.0	13.5	5 55.1	9.9	55.8	52	06 33	07 15	07 53	23 40	24 50	00 50	02 00
	10	327 07.0	38.7	82 17.5	13.5	6 05.0	9.9	55.9	50	06 30	07 09	07 45	23 37	24 45	00 45	01 54
	11	342 06.8	38.1	96 50.0	13.4	6 14.9	10.0	55.9	45	06 21	06 57	07 29	23 30	24 35	00 35	01 41
	12	357 06.7	S19 37.5	111 22.4	13.4 S	6 24.9	9.9	55.9	N 40	06 14	06 47	07 16	23 24	24 26	00 26	01 30
	13	12 06.5	37.0	125 54.8	13.3	6 34.8	9.8	55.9	35	06 07	06 37	07 05	23 19	24 19	00 19	01 20
	14	27 06.3	36.4	140 27.1	13.3	6 44.6	9.9	56.0	30	06 00	06 29	06 55	23 15	24 13	00 13	01 12
	15	42 06.2	35.8	154 59.4	13.2	6 54.5	9.8	56.0	20	05 47	06 14	06 37	23 08	24 02	00 02	00 58
	16	57 06.0	35.2	169 31.6	13.2	7 04.3	9.8	56.0	N 10	05 35	06 00	06 22	23 01	23 52	24 46	00 46
	17	72 05.8	34.7	184 03.8	13.1	7 14.1	9.8	56.1	0	05 21	05 46	06 08	22 55	23 43	24 34	00 34
	18	87 05.7	S19 34.1	198 35.9	13.1 S	7 23.9	9.7	56.1	S 10	05 05	05 31	05 54	22 49	23 34	24 23	00 23
	19	102 05.5	33.5	213 08.0	13.0	7 33.6	9.8	56.1	20	04 47	05 15	05 38	22 43	23 25	24 11	00 11
	20	117 05.4	32.9	227 40.0	12.9	7 43.4	9.7	56.1	30	04 23	04 54	05 20	22 36	23 14	23 57	24 45
	21	132 05.2	32.3	242 11.9	13.0	7 53.1	9.7	56.2	35	04 07	04 42	05 10	22 32	23 08	23 49	24 35
	22	147 05.0	31.8	256 43.9	12.8	8 02.8	9.6	56.2	40	03 49	04 27	04 58	22 27	23 01	23 40	24 24
	23	162 04.9	31.2	271 15.7	12.8	8 12.4	9.6	56.2	45	03 25	04 09	04 44	22 22	22 53	23 29	24 12
J U E V E S	23 00	177 04.7	S19 30.6	285 47.5	12.8 S	8 22.0	9.6	56.3	S 50	02 52	03 46	04 26	22 15	22 44	23 17	23 57
	01	192 04.5	30.0	300 19.3	12.6	8 31.6	9.6	56.3	52	02 35	03 35	04 18	22 12	22 39	23 11	23 49
	02	207 04.4	29.4	314 50.9	12.7	8 41.2	9.5	56.3	54	02 13	03 22	04 08	22 09	22 34	23 04	23 42
	03	222 04.2	28.8	329 22.6	12.5	8 50.7	9.5	56.4	56	01 44	03 07	03 58	22 06	22 29	22 57	23 33
	04	237 04.1	28.3	343 54.1	12.5	9 00.2	9.5	56.4	58	00 54	02 48	03 46	22 02	22 23	22 49	23 23
	05	252 03.9	27.7	358 25.6	12.5	9 09.7	9.4	56.4	S 60	///	02 25	03 32	21 57	22 16	22 40	23 11
	06	267 03.7	S19 27.1	12 57.1	12.4 S	9 19.1	9.4	56.4	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna	22	23	24	25
	07	282 03.6	26.5	27 28.5	12.3	9 28.5	9.3	56.5								
	08	297 03.4	25.9	41 59.8	12.2	9 37.8	9.4	56.5	N 72	h m	h m	h m	h m	h m	h m	h m
	09	312 03.3	25.3	56 31.0	12.2	9 47.2	9.2	56.5								
	10	327 03.1	24.7	71 02.2	12.2	9 56.4	9.3	56.6	N 70	13 43	15 32	16 57	09 21	09 19	09 17	09 17
	11	342 02.9	24.1	85 33.4	12.0	10 05.7	9.2	56.6	70	14 28	15 52	17 07	09 28	09 31	09 37	09 46
	12	357 02.8	S19 23.6	100 04.4	12.0 S	10 14.9	9.2	56.6	66	14 57	16 07	17 15	09 34	09 42	09 52	10 07
	13	12 02.6	23.0	114 35.4	12.0	10 24.1	9.1	56.7	64	15 19	16 20	17 22	09 39	09 50	10 05	10 25
	14	27 02.5	22.4	129 06.4	11.8	10 33.2	9.1	56.7	62	15 36	16 31	17 28	09 43	09 58	10 16	10 39
	15	42 02.3	21.8	143 37.2	11.8	10 42.3	9.0	56.7	60	15 51	16 41	17 33	09 47	10 04	10 25	10 52
	16	57 02.2	21.2	158 08.0	11.8	10 51.3	9.0	56.8	N 58	16 03	16 49	17 38	09 51	10 10	10 33	11 02
	17	72 02.0	20.6	172 38.8	11.6	11 00.3	9.0	56.8	56	16 14	16 57	17 43	09 54	10 15	10 40	11 11
	18	87 01.8	S19 20.0	187 09.4	11.6 S	11 09.3	8.9	56.8	54	16 23	17 03	17 47	09 56	10 19	10 47	11 20
	19	102 01.7	19.4	201 40.0	11.6	11 18.2	8.8	56.9	52	16 31	17 09	17 51	09 59	10 24	10 52	11 27
	20	117 01.5	18.8	216 10.6	11.4	11 27.0	8.9	56.9	50	16 39	17 15	17 55	10 01	10 27	10 58	11 34
	21	132 01.4	18.2	230 41.0	11.4	11 35.9	8.7	56.9	45	16 55	17 27	18 03	10 06	10 36	11 09	11 48
	22	147 01.2	17.6	245 11.4	11.3	11 44.6	8.7	57.0	N 40	17 08	17 37	18 10	10 10	10 42	11 18	12 00
	23	162 01.1	17.0	259 41.7	11.2	11 53.3	8.7	57.0	35	17 19	17 47	18 17	10 13	10 48	11 27	12 10
V I E R N E S	24 00	177 00.9	S19 16.4	274 11.9	11.2 S	12 02.0	8.6	57.0	30	17 29	17 55	18 24	10 17	10 53	11 34	12 19
	01	192 00.8	15.8	288 42.1	11.1	12 10.6	8.6	57.1	20	17 46	18 10	18 36	10 22	11 02	11 46	12 34
	02	207 00.6	15.2	303 12.2	11.0	12 19.2	8.5	57.1	N 10	18 01	18 23	18 49	10 27	11 10	11 57	12 47
	03	222 00.5	14.6	317 42.2	10.9	12 27.7	8.4	57.1	0	18 15	18 37	19 03	10 31	11 18	12 07	13 00
	04	237 00.3	14.0	332 12.1	10.9	12 36.1	8.4	57.2	S 10	18 30	18 52	19 18	10 36	11 25	12 17	13 12
	05	252 00.1	13.4	346 42.0	10.8	12 44.5	8.4	57.2	20	18 45	19 09	19 37	10 41	11 33	12 28	13 26
	06	267 00.0	S19 12.8	1 11.8	10.7 S	12 52.9	8.3	57.2	30	19 03	19 29	20 01	10 46	11 42	12 41	13 41
	07	281 59.8	12.2	15 41.5	10.6	13 01.2	8.2	57.3	35	19 13	19 41	20 16	10 49	11 48	12 48	13 50
	08	296 59.7	11.6	30 11.1	10.6	13 09.4	8.2	57.3	40	19 25	19 56	20 34	10 53	11 54	12 56	14 00
	09	311 59.5	11.0	44 40.7	10.5	13 17.6	8.1	57.4	45	19 39	20 14	20 58	10 57	12 01	13 06	14 12
	10	326 59.4	10.4	59 10.2	10.4	13 25.7	8.0	57.4	S 50	19 57	20 36	21 30	11 02	12 09	13 18	14 27
	11	341 59.2	09.8	73 39.6	10.3	13 33.7	8.0	57.4	52	20 05	20 48	21 47	11 04	12 13	13 23	14 34
	12	356 59.1	S19 09.2	88 08.9	10.2 S	13 41.7	7.9	57.5	54	20 14	21 00	22 08	11 07	12 17	13 29	14 41
	13	11 58.9	08.6	102 38.1	10.2	13 49.6	7.9	57.5	56	20 25	21 15	22 35	11 10	12 22	13 36	14 50
	14	26 58.8	08.0	117 07.3	10.1	13 57.5	7.7	57.5	58	20 36	21 33	23 21	11 13	12 27	13 43	14 59
	15	41 58.6	07.4	131 36.4	10.0	14 05.2	7.8	57.6	S 60	20 50	21 55	///	11 16	12 33	13 52	15 10
	16	56 58.5	06.8	146 05.4	9.9	14 13.0	7.6	57.6	Día	SOL	Paso Mer.	LUNA				
	17	71 58.3	06.2	160 34.3	9.8	14 20.6	7.6	57.6				Ec. Tiempo	Paso Mer.	Paso Mer. Sup.	Edad	Fase
	18	86 58.2	S19 05.6	175 03.1	9.8 S	14 28.2	7.5	57.7	00h	12h	h m						h m	d	%
	19	101 58.0	05.0	189 31.9	9.6	14 35.7	7.5	57.7				22	11 25	04 20	16 43	21 67
	20	116 57.9	04.4	204 00.5	9.6	14 43.2	7.3	57.8	23	11 41	05 06	17 30	22 58			
	21	131 57.8	03.7	218 29.1	9.5	14 50.5	7.3	57.8	24	11 56	05 55	18 21	23 47			
	22	146 57.6	03.1	232 57.6	9.											

UT (HmGr)	ARIES	VENUS -4.6	MARTE +0.4	JÚPITER -2.6	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
25 00	124 13.6	199 13.5 S15 46.9	283 52.7 S 5 55.7	20 05.4 N22 58.6	253 51.4 S16 09.2	Acamar 315 18.0 S40 15.2
01	139 16.1	214 16.7 46.9	298 54.4 56.0	35 08.2 58.6	268 53.7 09.2	Achernar 335 26.6 S57 10.3
02	154 18.5	229 19.9 46.9	313 56.1 56.3	50 11.0 58.7	283 56.0 09.2	Acrux 173 08.3 S63 10.4
03	169 21.0	244 23.0 . . 46.8	328 57.8 . . 56.6	65 13.7 . . 58.7	298 58.3 . . 09.2	Adhara 255 11.8 S28 59.8
04	184 23.5	259 26.2 46.8	343 59.5 56.8	80 16.5 58.7	314 00.6 09.3	Aldebarán 290 48.7 N16 32.1
05	199 25.9	274 29.4 46.8	359 01.2 57.1	95 19.3 58.8	329 02.9 09.3	
06	214 28.4	289 32.6 S15 46.8	14 02.9 S 5 57.4	110 22.1 N22 58.8	344 05.2 S16 09.3	Alioth 166 20.2 N55 52.7
07	229 30.8	304 35.8 46.7	29 04.6 57.7	125 24.9 58.8	359 07.5 09.4	Alkaid 152 58.5 N49 14.3
08	244 33.3	319 38.9 46.7	44 06.3 57.9	140 27.6 58.9	14 09.9 09.4	Al Na'ir 27 43.7 S46 53.6
09	259 35.8	334 42.1 . . 46.7	59 08.0 . . 58.2	155 30.4 . . 58.9	29 12.2 . . 09.4	Alnilam 275 45.7 S 1 11.8
10	274 38.2	349 45.2 46.7	74 09.7 58.5	170 33.2 58.9	44 14.5 09.5	Alphard 217 55.3 S 8 43.4
11	289 40.7	4 48.4 46.6	89 11.4 58.8	185 36.0 59.0	59 16.8 09.5	
12	304 43.2	19 51.5 S15 46.6	104 13.0 S 5 59.0	200 38.7 N22 59.0	74 19.1 S16 09.5	Alphecca 126 10.8 N26 39.9
13	319 45.6	34 54.7 46.6	119 14.7 59.3	215 41.5 59.0	89 21.4 09.5	Alpheratz 357 43.2 N29 10.2
14	334 48.1	49 57.8 46.6	134 16.4 59.6	230 44.3 59.1	104 23.7 09.6	Altair 62 08.1 N 8 54.4
15	349 50.6	65 01.0 . . 46.6	149 18.1 5 59.9	245 47.1 . . 59.1	119 26.0 . . 09.6	Ankaa 353 15.5 S42 14.0
16	4 53.0	80 04.1 46.5	164 19.8 6 00.1	260 49.8 59.1	134 28.4 09.6	Antares 112 25.9 S26 27.6
17	19 55.5	95 07.2 46.5	179 21.5 00.4	275 52.6 59.2	149 30.7 09.7	
18	34 58.0	110 10.3 S15 46.5	194 23.2 S 6 00.7	290 55.4 N22 59.2	164 33.0 S16 09.7	Arcturus 145 55.3 N19 06.4
19	50 00.4	125 13.5 46.5	209 24.9 01.0	305 58.2 59.2	179 35.3 09.7	Atria 107 27.7 S69 02.8
20	65 02.9	140 16.6 46.5	224 26.6 01.2	321 00.9 59.3	194 37.6 09.8	Avior 234 17.1 S59 33.5
21	80 05.3	155 19.7 . . 46.5	239 28.3 . . 01.5	336 03.7 . . 59.3	209 39.9 . . 09.8	Bellatrix 278 31.3 N 6 21.5
22	95 07.8	170 22.8 46.4	254 30.0 01.8	351 06.5 59.3	224 42.2 09.8	Betelgeuse 271 00.5 N 7 24.3
23	110 10.3	185 25.9 46.4	269 31.7 02.0	6 09.3 59.4	239 44.5 09.8	
26 00	125 12.7	200 29.0 S15 46.4	284 33.4 S 6 02.3	21 12.0 N22 59.4	254 46.9 S16 09.9	Canopus 263 55.5 S52 42.5
01	140 15.2	215 32.1 46.4	299 35.2 02.6	36 14.8 59.4	269 49.2 09.9	Capella 280 33.4 N46 00.6
02	155 17.7	230 35.2 46.4	314 36.9 02.9	51 17.6 59.5	284 51.5 09.9	Deneb 49 31.6 N45 20.0
03	170 20.1	245 38.2 . . 46.4	329 38.6 . . 03.1	66 20.4 . . 59.5	299 53.8 . . 10.0	Denébola 182 33.0 N14 29.4
04	185 22.6	260 41.3 46.4	344 40.3 03.4	81 23.1 59.5	314 56.1 10.0	Diphda 348 55.6 S17 54.7
05	200 25.1	275 44.4 46.4	359 42.0 03.7	96 25.9 59.6	329 58.4 10.0	
06	215 27.5	290 47.5 S15 46.3	14 43.7 S 6 03.9	111 28.7 N22 59.6	345 00.8 S16 10.1	Dubhe 193 50.7 N61 40.2
07	230 30.0	305 50.5 46.3	29 45.4 04.2	126 31.5 59.6	0 03.1 10.1	Elnath 278 11.8 N28 37.0
08	245 32.5	320 53.6 46.3	44 47.1 04.5	141 34.2 59.7	15 05.4 10.1	Eltanin 90 46.4 N51 29.2
09	260 34.9	335 56.6 . . 46.3	59 48.8 . . 04.7	156 37.0 . . 59.7	30 07.7 . . 10.1	Enif 33 47.0 N 9 56.5
10	275 37.4	350 59.7 46.3	74 50.5 05.0	171 39.8 59.7	45 10.0 10.2	Fomalhaut 15 23.8 S29 32.9
11	290 39.8	6 02.7 46.3	89 52.2 05.3	186 42.5 59.8	60 12.3 10.2	
12	305 42.3	21 05.8 S15 46.3	104 53.9 S 6 05.6	201 45.3 N22 59.8	75 14.6 S16 10.2	Gacrux 172 00.0 S57 11.4
13	320 44.8	36 08.8 46.3	119 55.6 05.8	216 48.1 59.8	90 17.0 10.3	Gienah 175 51.6 S17 37.2
14	335 47.2	51 11.8 46.3	134 57.4 06.1	231 50.9 59.9	105 19.3 10.3	Hadar 148 47.1 S60 26.2
15	350 49.7	66 14.9 . . 46.3	149 59.1 . . 06.4	246 53.6 . . 59.9	120 21.6 . . 10.3	Hamal 328 00.2 N23 31.8
16	5 52.2	81 17.9 46.3	165 00.8 06.6	261 56.4 22 59.9	135 23.9 10.3	Kaus Aust. 83 43.6 S34 22.4
17	20 54.6	96 20.9 46.3	180 02.5 06.9	276 59.2 23 00.0	150 26.2 10.4	
18	35 57.1	111 23.9 S15 46.3	195 04.2 S 6 07.2	292 01.9 N23 00.0	165 28.5 S16 10.4	Kochab 137 20.4 N74 05.6
19	50 59.6	126 26.9 46.3	210 05.9 07.4	307 04.7 00.0	180 30.9 10.4	Markab 13 38.1 N15 17.0
20	66 02.0	141 29.9 46.3	225 07.6 07.7	322 07.5 00.1	195 33.2 10.5	Menkar 314 14.5 N 4 08.5
21	81 04.5	156 32.9 . . 46.3	240 09.4 . . 08.0	337 10.2 . . 00.1	210 35.5 . . 10.5	Menkent 148 07.0 S36 26.2
22	96 07.0	171 35.9 46.3	255 11.1 08.2	352 13.0 00.1	225 37.8 10.5	Miaplacidus 221 38.5 S69 46.6
23	111 09.4	186 38.9 46.3	270 12.8 08.5	7 15.8 00.2	240 40.1 10.6	
27 00	126 11.9	201 41.9 S15 46.3	285 14.5 S 6 08.7	22 18.6 N23 00.2	255 42.5 S16 10.6	Mirfak 308 39.5 N49 54.7
01	141 14.3	216 44.9 46.3	300 16.2 09.0	37 21.3 00.2	270 44.8 10.6	Nunki 75 58.1 S26 16.6
02	156 16.8	231 47.9 46.3	315 17.9 09.3	52 24.1 00.2	285 47.1 10.6	Peacock 53 19.2 S56 41.2
03	171 19.3	246 50.8 . . 46.3	330 19.7 . . 09.5	67 26.9 . . 00.3	300 49.4 . . 10.7	Póllux 243 26.8 N27 59.3
04	186 21.7	261 53.8 46.3	345 21.4 09.8	82 29.6 00.3	315 51.7 10.7	Procyon 244 58.9 N 5 11.0
05	201 24.2	276 56.8 46.3	0 23.1 10.1	97 32.4 00.3	330 54.0 10.7	
06	216 26.7	291 59.7 S15 46.3	15 24.8 S 6 10.3	112 35.2 N23 00.4	345 56.4 S16 10.8	Rasalhague 96 06.3 N12 33.0
07	231 29.1	307 02.7 46.3	30 26.6 10.6	127 37.9 00.4	0 58.7 10.8	Régulus 207 42.8 N11 53.6
08	246 31.6	322 05.6 46.4	45 28.3 10.9	142 40.7 00.4	16 01.0 10.8	Rigel 281 11.4 S 8 11.4
09	261 34.1	337 08.6 . . 46.4	60 30.0 . . 11.1	157 43.5 . . 00.5	31 03.3 . . 10.8	Rigel Kent. 139 51.1 S60 53.2
10	276 36.5	352 11.5 46.4	75 31.7 11.4	172 46.2 00.5	46 05.6 10.9	Sabik 102 12.3 S15 44.4
11	291 39.0	7 14.5 46.4	90 33.4 11.6	187 49.0 00.5	61 08.0 10.9	
12	306 41.5	22 17.4 S15 46.4	105 35.2 S 6 11.9	202 51.8 N23 00.6	76 10.3 S16 10.9	Schedar 349 40.1 N56 37.1
13	321 43.9	37 20.3 46.4	120 36.9 12.2	217 54.5 00.6	91 12.6 10.9	Shaula 96 21.6 S37 06.6
14	336 46.4	52 23.2 46.4	135 38.6 12.4	232 57.3 00.6	106 14.9 11.0	Sirius 258 33.0 S16 44.4
15	351 48.8	67 26.2 . . 46.4	150 40.4 . . 12.7	248 00.1 . . 00.7	121 17.2 . . 11.0	Spica 158 30.7 S11 14.1
16	6 51.3	82 29.1 46.4	165 42.1 12.9	263 02.8 00.7	136 19.6 11.0	Suhail 222 51.6 S43 29.5
17	21 53.8	97 32.0 46.5	180 43.8 13.2	278 05.6 00.7	151 21.9 11.1	
18	36 56.2	112 34.9 S15 46.5	195 45.5 S 6 13.5	293 08.4 N23 00.8	166 24.2 S16 11.1	Vega 80 39.0 N38 47.8
19	51 58.7	127 37.8 46.5	210 47.3 13.7	308 11.1 00.8	181 26.5 11.1	Zuben'ubi 137 05.0 S16 05.9
20	67 01.2	142 40.7 46.5	225 49.0 14.0	323 13.9 00.8	196 28.8 11.1	
21	82 03.6	157 43.6 . . 46.5	240 50.7 . . 14.2	338 16.6 . . 00.8	211 31.2 . . 11.2	AHS Paso Mer.
22	97 06.1	172 46.5 46.5	255 52.5 14.5	353 19.4 00.9	226 33.5 11.2	Venus 75 16.2 10 36
23	112 08.6	187 49.3 46.6	270 54.2 14.8	8 22.2 00.9	241 35.8 11.2	Marte 159 20.7 5 01
						Júpiter 255 59.3 22 31
						Saturno 129 34.1 7 00
Paso Mer. 15 36.6	v 3.0 d 0.0		v 1.7 d 0.3	v 2.8 d 0.0	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna								
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		25	26	27	28					
d h	° /	° /	° /	/	° /	/	/	°	h m	h m	h m	h m	h m	h m	h m	h m				
S Á B A D O	25 00	176 57.3	S19 01.9	261 54.4	9.3	S15 12.2	7.1 57.9	N 72	07 30	09 05	11 40	04 47								
	01	191 57.2	01.3	276 22.7	9.1	15 19.3	7.0 57.9	N 70	07 20	08 42	10 21	04 06	05 58	07 43	08 34					
	02	206 57.0	00.7	290 50.8	9.1	15 26.3	6.9 58.0	68	07 11	08 24	09 43	03 37	05 14	06 40	07 37					
	03	221 56.9	19 00.1	305 18.9	9.0	15 33.2	6.8 58.0	66	07 04	08 10	09 17	03 16	04 45	06 04	07 03					
	04	236 56.7	18 59.5	319 46.9	9.0	15 40.0	6.8 58.1	64	06 57	07 57	08 57	02 59	04 23	05 39	06 38					
	05	251 56.6	58.8	334 14.9	8.8	15 46.8	6.7 58.1	62	06 51	07 47	08 41	02 46	04 06	05 19	06 19					
	06	266 56.4	S18 58.2	348 42.7	8.8	S15 53.5	6.6 58.1	60	06 46	07 38	08 27	02 34	03 51	05 03	06 03					
	07	281 56.3	57.6	3 10.5	8.6	16 00.1	6.5 58.2	N 58	06 42	07 30	08 16	02 24	03 39	04 49	05 49					
	08	296 56.2	57.0	17 38.1	8.6	16 06.6	6.4 58.2	56	06 38	07 23	08 06	02 15	03 28	04 37	05 38					
	09	311 56.0	56.4	32 05.7	8.5	16 13.0	6.3 58.2	54	06 34	07 17	07 57	02 07	03 19	04 27	05 27					
	10	326 55.9	55.8	46 33.2	8.4	16 19.3	6.3 58.3	52	06 30	07 11	07 49	02 00	03 11	04 18	05 18					
	11	341 55.7	55.1	61 00.6	8.4	16 25.6	6.1 58.3	50	06 27	07 06	07 42	01 54	03 03	04 09	05 10					
	12	356 55.6	S18 54.5	75 28.0	8.2	S16 31.7	6.1 58.4	45	06 19	06 55	07 26	01 41	02 47	03 52	04 53					
	13	11 55.4	53.9	89 55.2	8.2	16 37.8	6.0 58.4	N 40	06 12	06 45	07 14	01 30	02 34	03 38	04 38					
	14	26 55.3	53.3	104 22.4	8.0	16 43.8	5.9 58.4	35	06 05	06 36	07 03	01 20	02 23	03 26	04 26					
	15	41 55.2	52.7	118 49.4	8.0	16 49.7	5.7 58.5	30	05 59	06 28	06 53	01 12	02 13	03 15	04 16					
	16	56 55.0	52.0	133 16.4	7.9	16 55.4	5.7 58.5	20	05 47	06 14	06 37	00 58	01 57	02 57	03 58					
	17	71 54.9	51.4	147 43.3	7.9	17 01.1	5.6 58.6	N 10	05 35	06 00	06 23	00 46	01 42	02 41	03 42					
	18	86 54.7	S18 50.8	162 10.2	7.7	S17 06.7	5.6 58.6	0	05 22	05 47	06 09	00 34	01 29	02 27	03 27					
	19	101 54.6	50.2	176 36.9	7.7	17 12.3	5.4 58.6	S 10	05 07	05 33	05 55	00 23	01 15	02 12	03 12					
	20	116 54.5	49.5	191 03.6	7.5	17 17.7	5.3 58.7	20	04 49	05 17	05 40	00 11	01 01	01 56	02 57					
	21	131 54.3	48.9	205 30.1	7.5	17 23.0	5.2 58.7	30	04 26	04 57	05 23	24 45	00 45	01 39	02 39					
	22	146 54.2	48.3	219 56.6	7.5	17 28.2	5.1 58.7	35	04 11	04 45	05 13	24 35	00 35	01 28	02 28					
	23	161 54.0	47.7	234 23.1	7.3	17 33.3	5.0 58.8	40	03 53	04 31	05 02	24 24	00 24	01 16	02 16					
								45	03 30	04 14	04 48	24 12	00 12	01 02	02 02					
26	00	176 53.9	S18 47.0	248 49.4	7.2	S17 38.3	4.9 58.8	S 50	02 59	03 52	04 31	23 57	24 46	00 46	01 45					
	01	191 53.8	46.4	263 15.6	7.2	17 43.2	4.8 58.9	52	02 43	03 41	04 23	23 49	24 38	00 38	01 37					
	02	206 53.6	45.8	277 41.8	7.1	17 48.0	4.7 58.9	54	02 23	03 29	04 14	23 42	24 29	00 29	01 28					
	03	221 53.5	45.2	292 07.9	7.0	17 52.7	4.6 58.9	56	01 58	03 15	04 04	23 33	24 19	00 19	01 18					
	04	236 53.4	44.5	306 33.9	6.9	17 57.3	4.5 59.0	58	01 19	02 57	03 53	23 23	24 07	00 07	01 06					
	05	251 53.2	43.9	320 59.8	6.8	18 01.8	4.3 59.0	S 60	////	02 36	03 40	23 11	23 54	24 52	00 52					
	06	266 53.1	S18 43.3	335 25.6	6.8	S18 06.1	4.3 59.0	Ocaso Sol		Crepúsculo		Ocaso Luna								
	07	281 53.0	42.6	349 51.4	6.7	18 10.4	4.2 59.1	Lat.	Sol		Civil	Náut.	25	26	27	28				
	08	296 52.8	42.0	4 17.1	6.6	18 14.6	4.0 59.1	h m									h m	h m	h m	
	09	311 52.7	41.4	18 42.7	6.5	18 18.6	3.9 59.2	h m									h m	h m	h m	
	10	326 52.5	40.7	33 08.2	6.5	18 22.5	3.8 59.2	N 72	h m	h m	h m	h m	h m	h m	h m	h m	h m			
	11	341 52.4	40.1	47 33.7	6.3	18 26.3	3.7 59.2	N 70	12 46	15 21	16 56	08 34								
	12	356 52.3	S18 39.5	61 59.0	6.3	S18 30.0	3.6 59.3	N 70	14 05	15 44	17 07	09 17	09 19	09 37	10 54					
	13	11 52.1	38.8	76 24.3	6.3	18 33.6	3.5 59.3	68	14 43	16 02	17 15	09 46	10 03	10 40	11 50					
	14	26 52.0	38.2	90 49.6	6.1	18 37.1	3.4 59.3	66	15 09	16 16	17 23	10 07	10 33	11 16	12 24					
	15	41 51.9	37.6	105 14.7	6.1	18 40.5	3.2 59.4	64	15 29	16 28	17 29	10 25	10 55	11 41	12 49					
	16	56 51.7	36.9	119 39.8	6.0	18 43.7	3.1 59.4	62	15 45	16 39	17 34	10 39	11 13	12 01	13 08					
	17	71 51.6	36.3	134 04.8	5.9	18 46.8	3.0 59.5	60	15 58	16 48	17 39	10 52	11 28	12 18	13 24					
	18	86 51.5	S18 35.7	148 29.7	5.9	S18 49.8	2.9 59.5	N 58	16 10	16 55	17 44	11 02	11 41	12 32	13 37					
	19	101 51.3	35.0	162 54.6	5.8	18 52.7	2.7 59.5	56	16 20	17 02	17 48	11 11	11 52	12 43	13 49					
	20	116 51.2	34.4	177 19.4	5.7	18 55.4	2.6 59.6	54	16 29	17 09	17 52	11 20	12 01	12 54	13 59					
	21	131 51.1	33.7	191 44.1	5.7	18 58.0	2.5 59.6	52	16 37	17 14	17 56	11 27	12 10	13 03	14 08					
	22	146 51.0	33.1	206 08.8	5.6	19 00.5	2.4 59.6	50	16 44	17 19	17 59	11 34	12 18	13 11	14 16					
	23	161 50.8	32.5	220 33.4	5.5	19 02.9	2.3 59.7	45	16 59	17 31	18 07	11 48	12 34	13 29	14 33					
	27	00	176 50.7	S18 31.8	234 57.9	5.5	S19 05.2	2.1 59.7	N 40	17 12	17 41	18 14	12 00	12 48	13 43	14 47				
01		191 50.6	31.2	249 22.4	5.4	19 07.3	2.0 59.7	35	17 22	17 49	18 20	12 10	12 59	13 56	14 59					
02		206 50.4	30.5	263 46.8	5.3	19 09.3	1.9 59.8	30	17 32	17 57	18 26	12 19	13 09	14 06	15 09					
03		221 50.3	29.9	278 11.1	5.3	19 11.2	1.7 59.8	20	17 48	18 11	18 38	12 34	13 27	14 24	15 27					
04		236 50.2	29.3	292 35.4	5.2	19 12.9	1.6 59.8	N 10	18 03	18 25	18 50	12 47	13 42	14 40	15 42					
05		251 50.1	28.6	306 59.6	5.2	19 14.5	1.5 59.9	0	18 16	18 38	19 03	13 00	13 56	14 55	15 56					
06		266 49.9	S18 28.0	321 23.8	5.1	S19 16.0	1.3 59.9	S 10	18 30	18 52	19 18	13 12	14 10	15 10	16 11					
07		281 49.8	27.3	335 47.9	5.0	19 17.3	1.3 60.0	20	18 44	19 08	19 36	13 26	14 25	15 26	16 26					
08		296 49.7	26.7	350 11.9	5.0	19 18.6	1.0 60.0	30	19 01	19 28	19 59	13 41	14 43	15 44	16 43					
09		311 49.5	26.0	4 35.9	4.9	19 19.6	1.0 60.0	35	19 11	19 39	20 13	13 50	14 53	15 54	16 53					
10		326 49.4	25.4	18 59.8	4.9	19 20.6	0.8 60.1	40	19 23	19 53	20 31	14 00	15 04	16 07	17 05					
11		341 49.3	24.7	33 23.7	4.8	19 21.4	0.7 60.1	45	19 36	20 10	20 54	14 12	15 18	16 21	17 18					
12		356 49.2	S18 24.1	47 47.5	4.8	S19 22.1	0.5 60.1	S 50	19 53	20 32	21 24	14 27	15 34	16 38	17 35					
13		11 49.0	23.4	62 11.3	4.7	19 22.6	0.5 60.2	52	20 01	20 43	21 40	14 34	15 42	16 46	17 43					
14		26 48.9	22.8	76 35.0	4.7	19 23.1	0.2 60.2	54	20 10	20 55	21 59	14 41	15 51	16 55	17 51					
15		41 48.8	22.1	90 58.7	4.6	19 23.3	0.2 60.2	56	20 19	21 09	22 24	14 50	16 01	17 06	18 01					
16		56 48.7	21.5	105 22.3	4.6	19 23.5	0.0 60.2	58	20 31	21 25	23 00	14 59	16 12	17 17	18 12					
17		71 48.5	20.8	119 45.9	4.6	19 23.5	0.2 60.3	S 60	20 44	21 46	////	15 10	16 25	17 31	18 24					
18		86 48.4	S18 20.2	134 09.5	4.5	S19 23.3	0.2 60.3	SOL		LUNA										
19		101 48.3	19.5	148 33.0	4.5	19 23.1	0.4 60.3	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase					
20		116 48.2	18.9	162 56.5	4.4	19 22.7	0.6 60.4	00h 12h				Sup.	Inf.							
21		131 48.0	18.2	177 19.9	4.4	19 22.1	0.7 60.4	d	m s		m s	h m	h m	h m	d	%				
22		146 47.9																		

UT (HmGr)	ARIES	VENUS -4.7	MARTE +0.3	JÚPITER -2.6	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
28	127 11.0	202 52.2 S15 46.6	285 55.9 S 6 15.0	23 24.9 N23 00.9	256 38.1 S16 11.3	Acamar 315 18.0 S40 15.3
01	142 13.5	217 55.1 46.6	300 57.7 15.3	38 27.7 01.0	271 40.5 11.3	Achernar 335 26.6 S57 10.2
02	157 15.9	232 58.0 46.6	315 59.4 15.5	53 30.5 01.0	286 42.8 11.3	Acrux 173 08.3 S63 10.5
03	172 18.4	248 00.8 . . 46.6	331 01.1 . . 15.8	68 33.2 . . 01.0	301 45.1 . . 11.3	Adhara 255 11.8 S28 59.8
04	187 20.9	263 03.7 46.7	346 02.9 16.1	83 36.0 01.1	316 47.4 11.4	Aldebarán 290 48.7 N16 32.1
05	202 23.3	278 06.5 46.7	1 04.6 16.3	98 38.7 01.1	331 49.7 11.4	
06	217 25.8	293 09.4 S15 46.7	16 06.3 S 6 16.6	113 41.5 N23 01.1	346 52.1 S16 11.4	Alioth 166 20.1 N55 52.7
07	232 28.3	308 12.2 46.7	31 08.1 16.8	128 44.3 01.2	1 54.4 11.4	Alkaid 152 58.5 N49 14.3
08	247 30.7	323 15.1 46.7	46 09.8 17.1	143 47.0 01.2	16 56.7 11.5	Al Na'ir 27 43.7 S46 53.6
09	262 33.2	338 17.9 . . 46.8	61 11.6 . . 17.3	158 49.8 . . 01.2	31 59.0 . . 11.5	Alnilam 275 45.7 S 1 11.9
10	277 35.7	353 20.7 46.8	76 13.3 17.6	173 52.6 01.3	47 01.4 11.5	Alphard 217 55.3 S 8 43.4
11	292 38.1	8 23.6 46.8	91 15.0 17.8	188 55.3 01.3	62 03.7 11.6	
12	307 40.6	23 26.4 S15 46.8	106 16.8 S 6 18.1	203 58.1 N23 01.3	77 06.0 S16 11.6	Alphecca 126 10.7 N26 39.9
13	322 43.1	38 29.2 46.9	121 18.5 18.4	219 00.8 01.3	92 08.3 11.6	Alpheratz 357 43.2 N29 10.2
14	337 45.5	53 32.0 46.9	136 20.3 18.6	234 03.6 01.4	107 10.6 11.6	Altair 62 08.1 N 8 54.4
15	352 48.0	68 34.8 . . 46.9	151 22.0 . . 18.9	249 06.4 . . 01.4	122 13.0 . . 11.7	Ankaa 353 15.5 S42 14.0
16	7 50.4	83 37.6 47.0	166 23.7 19.1	264 09.1 01.4	137 15.3 11.7	Antares 112 25.9 S26 27.6
17	22 52.9	98 40.4 47.0	181 25.5 19.4	279 11.9 01.5	152 17.6 11.7	
18	37 55.4	113 43.2 S15 47.0	196 27.2 S 6 19.6	294 14.6 N23 01.5	167 19.9 S16 11.7	Arcturus 145 55.3 N19 06.4
19	52 57.8	128 46.0 47.0	211 29.0 19.9	309 17.4 01.5	182 22.3 11.8	Atria 107 27.6 S69 02.8
20	68 00.3	143 48.8 47.1	226 30.7 20.1	324 20.2 01.6	197 24.6 11.8	Avior 234 17.1 S59 33.5
21	83 02.8	158 51.6 . . 47.1	241 32.5 . . 20.4	339 22.9 . . 01.6	212 26.9 . . 11.8	Bellatrix 278 31.3 N 6 21.5
22	98 05.2	173 54.4 47.1	256 34.2 20.6	354 25.7 01.6	227 29.2 11.9	Betelgeuse 271 00.5 N 7 24.3
23	113 07.7	188 57.1 47.2	271 36.0 20.9	9 28.4 01.6	242 31.6 11.9	
29	128 10.2	203 59.9 S15 47.2	286 37.7 S 6 21.1	24 31.2 N23 01.7	257 33.9 S16 11.9	Canopus 263 55.5 S52 42.6
01	143 12.6	219 02.7 47.2	301 39.5 21.4	39 33.9 01.7	272 36.2 11.9	Capella 280 33.4 N46 00.7
02	158 15.1	234 05.4 47.3	316 41.2 21.6	54 36.7 01.7	287 38.5 12.0	Deneb 49 31.6 N45 20.0
03	173 17.6	249 08.2 . . 47.3	331 43.0 . . 21.9	69 39.5 . . 01.8	302 40.9 . . 12.0	Denébola 182 33.0 N14 29.4
04	188 20.0	264 10.9 47.3	346 44.7 22.1	84 42.2 01.8	317 43.2 12.0	Diphda 348 55.6 S17 54.7
05	203 22.5	279 13.7 47.4	1 46.5 22.4	99 45.0 01.8	332 45.5 12.0	
06	218 24.9	294 16.4 S15 47.4	16 48.2 S 6 22.6	114 47.7 N23 01.9	347 47.9 S16 12.1	Dubhe 193 50.7 N61 40.2
07	233 27.4	309 19.2 47.4	31 50.0 22.9	129 50.5 01.9	2 50.2 12.1	Elnath 278 11.8 N28 37.0
08	248 29.9	324 21.9 47.5	46 51.7 23.1	144 53.2 01.9	17 52.5 12.1	Eltanin 90 46.3 N51 29.2
09	263 32.3	339 24.6 . . 47.5	61 53.5 . . 23.4	159 56.0 . . 02.0	32 54.8 . . 12.1	Enif 33 47.0 N 9 56.5
10	278 34.8	354 27.3 47.6	76 55.2 23.6	174 58.7 02.0	47 57.2 12.2	Fomalhaut 15 23.8 S29 32.9
11	293 37.3	9 30.0 47.6	91 57.0 23.9	190 01.5 02.0	62 59.5 12.2	
12	308 39.7	24 32.8 S15 47.6	106 58.8 S 6 24.1	205 04.3 N23 02.0	78 01.8 S16 12.2	Gacrux 172 00.0 S57 11.4
13	323 42.2	39 35.5 47.7	122 00.5 24.4	220 07.0 02.1	93 04.1 12.3	Gienah 175 51.6 S17 37.3
14	338 44.7	54 38.2 47.7	137 02.3 24.6	235 09.8 02.1	108 06.5 12.3	Hadar 148 47.1 S60 26.2
15	353 47.1	69 40.9 . . 47.8	152 04.0 . . 24.9	250 12.5 . . 02.1	123 08.8 . . 12.3	Hamal 328 00.2 N23 31.7
16	8 49.6	84 43.6 47.8	167 05.8 25.1	265 15.3 02.2	138 11.1 12.3	Kaus Aust. 83 43.6 S34 22.4
17	23 52.1	99 46.3 47.8	182 07.5 25.4	280 18.0 02.2	153 13.5 12.4	
18	38 54.5	114 48.9 S15 47.9	197 09.3 S 6 25.6	295 20.8 N23 02.2	168 15.8 S16 12.4	Kochab 137 20.3 N74 05.6
19	53 57.0	129 51.6 47.9	212 11.1 25.9	310 23.5 02.3	183 18.1 12.4	Markab 13 38.1 N15 16.9
20	68 59.4	144 54.3 48.0	227 12.8 26.1	325 26.3 02.3	198 20.4 12.4	Menkar 314 14.5 N 4 08.5
21	84 01.9	159 57.0 . . 48.0	242 14.6 . . 26.3	340 29.0 . . 02.3	213 22.8 . . 12.5	Menkent 148 06.9 S36 26.2
22	99 04.4	174 59.6 48.1	257 16.4 26.6	355 31.8 02.3	228 25.1 12.5	Miaplacidus 221 38.5 S69 46.6
23	114 06.8	190 02.3 48.1	272 18.1 26.8	10 34.5 02.4	243 27.4 12.5	
30	129 09.3	205 05.0 S15 48.2	287 19.9 S 6 27.1	25 37.3 N23 02.4	258 29.8 S16 12.5	Mirfak 308 39.5 N49 54.7
01	144 11.8	220 07.6 48.2	302 21.7 27.3	40 40.0 02.4	273 32.1 12.6	Nunki 75 58.1 S26 16.6
02	159 14.2	235 10.3 48.3	317 23.4 27.6	55 42.8 02.5	288 34.4 12.6	Peacock 53 19.2 S56 41.2
03	174 16.7	250 12.9 . . 48.3	332 25.2 . . 27.8	70 45.5 . . 02.5	303 36.7 . . 12.6	Póllux 243 26.8 N27 59.3
04	189 19.2	265 15.6 48.3	347 27.0 28.1	85 48.3 02.5	318 39.1 12.6	Procyon 244 58.9 N 5 11.0
05	204 21.6	280 18.2 48.4	2 28.7 28.3	100 51.0 02.5	333 41.4 12.7	
06	219 24.1	295 20.8 S15 48.4	17 30.5 S 6 28.5	115 53.8 N23 02.6	348 43.7 S16 12.7	Rasalhague 96 06.3 N12 33.0
07	234 26.6	310 23.5 48.5	32 32.3 28.8	130 56.5 02.6	3 46.1 12.7	Régulus 207 42.7 N11 53.6
08	249 29.0	325 26.1 48.5	47 34.0 29.0	145 59.3 02.6	18 48.4 12.7	Rigel 281 11.4 S 8 11.4
09	264 31.5	340 28.7 . . 48.6	62 35.8 . . 29.3	161 02.0 . . 02.7	33 50.7 . . 12.8	Rigel Kent. 139 51.0 S60 53.2
10	279 33.9	355 31.3 48.6	77 37.6 29.5	176 04.8 02.7	48 53.1 12.8	Sabik 102 12.2 S15 44.4
11	294 36.4	10 33.9 48.7	92 39.3 29.8	191 07.5 02.7	63 55.4 12.8	
12	309 38.9	25 36.5 S15 48.8	107 41.1 S 6 30.0	206 10.3 N23 02.8	78 57.7 S16 12.8	Schedar 349 40.2 N56 37.1
13	324 41.3	40 39.1 48.8	122 42.9 30.2	221 13.0 02.8	94 00.1 12.9	Shaula 96 21.6 S37 06.6
14	339 43.8	55 41.7 48.9	137 44.7 30.5	236 15.8 02.8	109 02.4 12.9	Sirius 258 33.0 S16 44.5
15	354 46.3	70 44.3 . . 48.9	152 46.4 . . 30.7	251 18.5 . . 02.8	124 04.7 . . 12.9	Spica 158 30.7 S11 14.1
16	9 48.7	85 46.9 49.0	167 48.2 31.0	266 21.3 02.9	139 07.0 12.9	Suhail 222 51.6 S43 29.6
17	24 51.2	100 49.5 49.0	182 50.0 31.2	281 24.0 02.9	154 09.4 13.0	
18	39 53.7	115 52.1 S15 49.1	197 51.8 S 6 31.4	296 26.8 N23 02.9	169 11.7 S16 13.0	Vega 80 39.0 N38 47.8
19	54 56.1	130 54.6 49.1	212 53.5 31.7	311 29.5 03.0	184 14.0 13.0	Zuben'ubi 137 04.9 S16 05.9
20	69 58.6	145 57.2 49.2	227 55.3 31.9	326 32.3 03.0	199 16.4 13.0	
21	85 01.0	160 59.8 . . 49.2	242 57.1 . . 32.1	341 35.0 . . 03.0	214 18.7 . . 13.1	AHS Paso Mer.
22	100 03.5	176 02.3 49.3	257 58.9 32.4	356 37.8 03.0	229 21.0 13.1	Venus 75 49.7 10 22
23	115 06.0	191 04.9 49.4	273 00.7 32.6	11 40.5 03.1	244 23.4 13.1	Marte 158 27.6 4 53
						Júpiter 256 21.0 22 18
						Saturno 129 23.7 6 49
Paso Mer. 15 24.8	v 2.7 d 0.0		v 1.8 d 0.2	v 2.8 d 0.0	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		28	29	30	31			
^d ^h	°	′	°	′	°	′	′	°	h	m	h	m	h	m	h	m	h	m
28	00	176 47.7	S18 16.3	220 30.0	4.3	S19 19.6	1.1	60.5	N 72	07 20	08 52	10 56	08 34	09 50	09 16	09 01		
	01	191 47.6	15.6	234 53.3	4.2	19 18.5	1.2	60.5	N 70	07 11	08 31	10 03	08 34	08 43	08 44	08 43		
	02	206 47.4	15.0	249 16.5	4.3	19 17.3	1.4	60.5	68	07 03	08 15	09 30	07 37	08 07	08 21	08 29		
	03	221 47.3	14.3	263 39.8	4.2	19 15.9	1.6	60.6	66	06 57	08 02	09 07	07 03	07 40	08 03	08 17		
	04	236 47.2	13.6	278 03.0	4.1	19 14.3	1.6	60.6	64	06 51	07 50	08 49	06 38	07 20	07 48	08 08		
	05	251 47.1	13.0	292 26.1	4.2	19 12.7	1.8	60.6	62	06 46	07 41	08 34	06 19	07 04	07 36	07 59		
	06	266 47.0	S18 12.3	306 49.3	4.1	S19 10.9	2.0	60.7	60	06 41	07 33	08 21	06 03	06 50	07 25	07 52		
	07	281 46.8	11.7	321 12.4	4.1	19 08.9	2.1	60.7	N 58	06 37	07 25	08 10	05 49	06 38	07 16	07 45		
	08	296 46.7	11.0	335 35.5	4.1	19 06.8	2.2	60.7	56	06 33	07 19	08 01	05 38	06 28	07 08	07 40		
	09	311 46.6	10.4	349 58.6	4.1	19 04.6	2.4	60.7	54	06 30	07 13	07 52	05 27	06 18	07 00	07 35		
M A R T E S	10	326 46.5	09.7	4 21.7	4.0	19 02.2	2.5	60.8	52	06 27	07 08	07 45	05 18	06 10	06 54	07 30		
	11	341 46.4	09.0	18 44.7	4.1	18 59.7	2.7	60.8	50	06 24	07 03	07 38	05 10	06 03	06 48	07 26		
	12	356 46.3	S18 08.4	33 07.8	4.0	S18 57.0	2.8	60.8	45	06 16	06 52	07 23	04 53	05 47	06 35	07 17		
	13	11 46.1	07.7	47 30.8	4.0	18 54.2	2.9	60.8	N 40	06 10	06 42	07 11	04 38	05 34	06 24	07 09		
	14	26 46.0	07.0	61 53.8	4.0	18 51.3	3.1	60.9	35	06 04	06 34	07 01	04 26	05 23	06 15	07 02		
	15	41 45.9	06.4	76 16.8	4.0	18 48.2	3.2	60.9	30	05 58	06 27	06 52	04 16	05 14	06 07	06 57		
	16	56 45.8	05.7	90 39.8	4.0	18 45.0	3.4	60.9	20	05 47	06 13	06 36	03 58	04 57	05 54	06 46		
	17	71 45.7	05.1	105 02.8	4.0	18 41.6	3.5	60.9	N 10	05 35	06 01	06 23	03 42	04 42	05 41	06 38		
	18	86 45.6	S18 04.4	119 25.8	4.0	S18 38.1	3.6	61.0	0	05 23	05 48	06 10	03 27	04 29	05 30	06 29		
	19	101 45.4	03.7	133 48.8	4.0	18 34.5	3.8	61.0	S 10	05 08	05 34	05 56	03 12	04 15	05 19	06 21		
29	00	176 44.9	S18 00.4	205 43.7	4.0	S18 14.2	4.5	61.1	20	04 51	05 19	05 42	02 57	04 01	05 06	06 12		
	01	191 44.8	17 59.7	220 06.7	4.0	18 09.7	4.6	61.1	30	04 29	05 00	05 26	02 39	03 44	04 52	06 02		
	02	206 44.6	59.0	234 29.7	4.0	18 05.1	4.7	61.1	35	04 15	04 48	05 16	02 28	03 34	04 44	05 56		
	03	221 44.5	58.4	248 52.7	4.1	18 00.4	4.9	61.1	40	03 58	04 35	05 05	02 16	03 23	04 35	05 49		
	04	236 44.4	57.7	263 15.8	4.0	17 55.5	5.0	61.1	45	03 58	04 35	04 52	02 02	03 10	04 24	05 41		
	05	251 44.3	57.0	277 38.8	4.1	17 50.5	5.1	61.2	S 50	03 07	03 58	04 36	01 45	02 54	04 11	05 32		
	06	266 44.2	S17 56.4	292 01.9	4.0	S17 45.4	5.3	61.2	52	02 52	03 47	04 29	01 37	02 47	04 05	05 27		
	07	281 44.1	55.7	306 24.9	4.1	17 40.1	5.4	61.2	54	02 33	03 36	04 20	01 28	02 39	03 58	05 23		
	08	296 44.0	55.0	320 48.0	4.1	17 34.7	5.6	61.2	56	02 10	03 22	04 11	01 18	02 29	03 51	05 17		
	09	311 43.9	54.3	335 11.1	4.1	17 29.1	5.7	61.2	S 58	01 38	03 07	04 00	01 06	02 19	03 42	05 11		
M I É R C O L E S	10	326 43.8	53.7	349 34.2	4.2	17 23.4	5.8	61.2	0	///	02 47	03 48	00 52	02 06	03 32	05 04		
	11	341 43.6	53.0	3 57.4	4.2	17 17.6	5.9	61.3	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna					
	12	356 43.5	S17 52.3	18 20.6	4.2	S17 11.7	6.1	61.3		Civil	Náut.	28	29	30	31			
	13	11 43.4	51.6	32 43.8	4.2	17 05.6	6.2	61.3	N 72	13 32	15 36	17 08	11 48	14 30	16 47			
	14	26 43.3	51.0	47 07.0	4.2	16 59.4	6.3	61.3	N 70	14 25	15 56	17 17	10 54	12 54	15 00	17 03		
	15	41 43.2	50.3	61 30.2	4.3	16 53.1	6.5	61.3	68	14 57	16 12	17 24	11 50	13 30	15 22	17 15		
	16	56 43.1	49.6	75 53.5	4.3	16 46.6	6.5	61.3	66	15 20	16 26	17 31	12 24	13 55	15 39	17 26		
	17	71 43.0	48.9	90 16.8	4.3	16 40.1	6.7	61.3	64	15 38	16 37	17 36	12 49	14 15	15 53	17 34		
	18	86 42.9	S17 48.3	104 40.1	4.4	S16 33.4	6.9	61.3	62	15 53	16 46	17 41	13 08	14 31	16 05	17 42		
	19	101 42.8	47.6	119 03.5	4.4	16 26.5	6.9	61.3	60	16 06	16 54	17 46	13 24	14 44	16 14	17 48		
30	00	176 42.3	S17 44.2	191 00.9	4.5	S15 50.6	7.5	61.4	N 58	16 17	17 02	17 50	13 37	14 56	16 23	17 53		
	01	191 42.1	43.5	205 24.4	4.7	15 43.1	7.7	61.4	56	16 26	17 08	17 53	13 49	15 06	16 31	17 58		
	02	206 42.0	42.8	219 48.1	4.6	15 35.4	7.8	61.4	54	16 35	17 14	17 57	13 59	15 15	16 37	18 03		
	03	221 41.9	42.1	234 11.7	4.7	15 27.6	7.8	61.4	52	16 42	17 19	18 00	14 08	15 22	16 43	18 06		
	04	236 41.8	41.4	248 35.4	4.8	15 19.8	8.0	61.4	50	16 49	17 24	18 03	14 16	15 29	16 49	18 10		
	05	251 41.7	40.8	262 59.2	4.8	15 11.8	8.1	61.4	45	17 03	17 35	18 10	14 33	15 44	17 00	18 18		
	06	266 41.6	S17 40.1	277 23.0	4.8	S15 03.7	8.3	61.4	N 40	17 15	17 44	18 17	14 47	15 57	17 10	18 24		
	07	281 41.5	39.4	291 46.8	4.9	14 55.4	8.3	61.4	35	17 26	17 52	18 23	14 59	16 07	17 18	18 30		
	08	296 41.4	38.7	306 10.7	5.0	14 47.1	8.4	61.4	30	17 34	18 00	18 28	15 09	16 16	17 25	18 34		
	09	311 41.3	38.0	320 34.7	4.9	14 38.7	8.6	61.4	20	17 50	18 13	18 40	15 27	16 32	17 38	18 43		
J U E V E S	10	326 41.2	37.3	334 58.6	5.1	14 30.1	8.6	61.4	N 10	18 04	18 26	18 51	15 42	16 45	17 48	18 50		
	11	341 41.1	36.6	349 22.7	5.1	14 21.5	8.7	61.4	0	18 17	18 38	19 04	15 56	16 58	17 58	18 56		
	12	356 41.0	S17 36.0	3 46.8	5.1	S14 12.8	8.9	61.4	S 10	18 30	18 52	19 18	16 11	17 11	18 08	19 03		
	13	11 40.9	35.3	18 10.9	5.2	14 03.9	8.9	61.4	20	18 44	19 07	19 35	16 26	17 24	18 19	19 10		
	14	26 40.8	34.6	32 35.1	5.2	13 55.0	9.1	61.4	30	19 00	19 26	19 57	16 43	17 39	18 31	19 18		
	15	41 40.7	33.9	46 59.3	5.3	13 45.9	9.1	61.4	35	19 09	19 37	20 11	16 53	17 48	18 38	19 22		
	16	56 40.6	33.2	61 23.6	5.4	13 36.8	9.2	61.4	40	19 20	19 51	20 28	17 05	17 58	18 45	19 28		
	17	71 40.5	32.5	75 48.0	5.3	13 27.6	9.4	61.4	45	19 33	20 07	20 49	17 18	18 10	18 54	19 33		
	18	86 40.4	S17 31.8	90 12.3	5.5	S13 18.2	9.4	61.4	S 50	19 49	20 27	21 18	17 35	18 24	19 05	19 41		
	19	101 40.3	31.1	104 36.8	5.5	13 08.8	9.5	61.4	52	19 56	20 37	21 33	17 43	18 30	19 10	19 44		
	20	116 40.2	30.4	119 01.3	5.6	12 59.3	9.6	61.4	54	20 05	20 49	21 50	17 51	18 38	19 16	19 47		
	21	131 40.1	29.7	133 25.9	5.6	12 49.7	9.7	61.4	56	20 14	21 02	22 13	18 01	18 46	19 22	19 51		
	22	146 40.0	29.0	147 50.5	5.7	12 40.0	9.8	61.4	58	20 24	21 17	22 43	18 12	18 55	19 28	19 55		
	23	161 39.9	28.4	162 15.2	5.7	S12 30.2	9.8	61.4	S 60	20 37	21 36	23 42	18 24	19 05	19 36	20 00		
		S/D 16.3	<i>d</i> 0.7	S/D 16.6		16.7			Día	SOL Ec. Tiempo 00 ^h 12 ^h		Paso Mer.	LUNA Paso Mer. Sup. Inf.		Edad	Fase		
								^d	^m ^s	^m ^s	h m	h m	h m	^d %				

UT (HmGr)	ARIES	VENUS -4.8	MARTE +0.2	JÚPITER -2.6	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
31	130 08.4	206 07.4 S15 49.4	288 02.4 S 6 32.9	26 43.3 N23 03.1	259 25.7 S16 13.1	Acamar 315 18.0 S40 15.3
01	145 10.9	221 10.0 49.5	303 04.2 33.1	41 46.0 03.1	274 28.0 13.2	Achernar 335 26.7 S57 10.2
02	160 13.4	236 12.5 49.5	318 06.0 33.3	56 48.7 03.2	289 30.4 13.2	Acrux 173 08.2 S63 10.5
03	175 15.8	251 15.1 . . 49.6	333 07.8 . . 33.6	71 51.5 . . 03.2	304 32.7 . . 13.2	Adhara 255 11.8 S28 59.8
04	190 18.3	266 17.6 49.7	348 09.6 33.8	86 54.2 03.2	319 35.0 13.2	Aldebarán 290 48.7 N16 32.1
05	205 20.8	281 20.1 49.7	3 11.4 34.0	101 57.0 03.2	334 37.4 13.3	
06	220 23.2	296 22.7 S15 49.8	18 13.1 S 6 34.3	116 59.7 N23 03.3	349 39.7 S16 13.3	Alioth 166 20.1 N55 52.7
07	235 25.7	311 25.2 49.8	33 14.9 34.5	132 02.5 03.3	4 42.0 13.3	Alkaid 152 58.5 N49 14.3
08	250 28.2	326 27.7 49.9	48 16.7 34.7	147 05.2 03.3	19 44.4 13.3	Al Na'ir 27 43.6 S46 53.6
09	265 30.6	341 30.2 . . 50.0	63 18.5 . . 35.0	162 08.0 . . 03.4	34 46.7 . . 13.4	Alnilam 275 45.7 S 1 11.9
10	280 33.1	356 32.7 50.0	78 20.3 35.2	177 10.7 03.4	49 49.0 13.4	Alphard 217 55.3 S 8 43.4
11	295 35.5	11 35.2 50.1	93 22.1 35.5	192 13.4 03.4	64 51.4 13.4	
12	310 38.0	26 37.7 S15 50.2	108 23.9 S 6 35.7	207 16.2 N23 03.4	79 53.7 S16 13.4	Alphecca 126 10.7 N26 39.9
13	325 40.5	41 40.2 50.2	123 25.7 35.9	222 18.9 03.5	94 56.1 13.5	Alpheratz 357 43.2 N29 10.2
14	340 42.9	56 42.7 50.3	138 27.5 36.2	237 21.7 03.5	109 58.4 13.5	Altair 62 08.1 N 8 54.4
15	355 45.4	71 45.2 . . 50.3	153 29.2 . . 36.4	252 24.4 . . 03.5	125 00.7 . . 13.5	Ankaa 353 15.5 S42 14.0
16	10 47.9	86 47.7 50.4	168 31.0 36.6	267 27.2 03.6	140 03.1 13.5	Antares 112 25.8 S26 27.6
17	25 50.3	101 50.2 50.5	183 32.8 36.9	282 29.9 03.6	155 05.4 13.5	
18	40 52.8	116 52.6 S15 50.5	198 34.6 S 6 37.1	297 32.6 N23 03.6	170 07.7 S16 13.6	Arcturus 145 55.3 N19 06.4
19	55 55.3	131 55.1 50.6	213 36.4 37.3	312 35.4 03.6	185 10.1 13.6	Atria 107 27.5 S69 02.8
20	70 57.7	146 57.6 50.7	228 38.2 37.5	327 38.1 03.7	200 12.4 13.6	Avior 234 17.1 S59 33.5
21	86 00.2	162 00.0 . . 50.7	243 40.0 . . 37.8	342 40.9 . . 03.7	215 14.7 . . 13.6	Bellatrix 278 31.3 N 6 21.5
22	101 02.7	177 02.5 50.8	258 41.8 38.0	357 43.6 03.7	230 17.1 13.7	Betelgeuse 271 00.5 N 7 24.3
23	116 05.1	192 04.9 50.9	273 43.6 38.2	12 46.3 03.8	245 19.4 13.7	
1	131 07.6	207 07.4 S15 51.0	288 45.4 S 6 38.5	27 49.1 N23 03.8	260 21.8 S16 13.7	Canopus 263 55.5 S52 42.6
01	146 10.0	222 09.8 51.0	303 47.2 38.7	42 51.8 03.8	275 24.1 13.7	Capella 280 33.4 N46 00.7
02	161 12.5	237 12.2 51.1	318 49.0 38.9	57 54.6 03.8	290 26.4 13.8	Deneb 49 31.6 N45 20.0
03	176 15.0	252 14.7 . . 51.2	333 50.8 . . 39.2	72 57.3 . . 03.9	305 28.8 . . 13.8	Denébola 182 33.0 N14 29.4
04	191 17.4	267 17.1 51.2	348 52.6 39.4	88 00.0 03.9	320 31.1 13.8	Diphda 348 55.6 S17 54.7
05	206 19.9	282 19.5 51.3	3 54.4 39.6	103 02.8 03.9	335 33.4 13.8	
06	221 22.4	297 21.9 S15 51.4	18 56.2 S 6 39.8	118 05.5 N23 04.0	350 35.8 S16 13.9	Dubhe 193 50.7 N61 40.2
07	236 24.8	312 24.4 51.5	33 58.0 40.1	133 08.2 04.0	5 38.1 13.9	Elnath 278 11.8 N28 37.0
08	251 27.3	327 26.8 51.5	48 59.8 40.3	148 11.0 04.0	20 40.5 13.9	Eltanin 90 46.3 N51 29.2
09	266 29.8	342 29.2 . . 51.6	64 01.6 . . 40.5	163 13.7 . . 04.0	35 42.8 . . 13.9	Enif 33 47.0 N 9 56.5
10	281 32.2	357 31.6 51.7	79 03.4 40.8	178 16.5 04.1	50 45.1 13.9	Fomalhaut 15 23.8 S29 32.9
11	296 34.7	12 34.0 51.7	94 05.2 41.0	193 19.2 04.1	65 47.5 14.0	
12	311 37.1	27 36.4 S15 51.8	109 07.0 S 6 41.2	208 21.9 N23 04.1	80 49.8 S16 14.0	Gacrux 172 00.0 S57 11.4
13	326 39.6	42 38.8 51.9	124 08.8 41.4	223 24.7 04.1	95 52.1 14.0	Gienah 175 51.6 S17 37.3
14	341 42.1	57 41.1 52.0	139 10.6 41.7	238 27.4 04.2	110 54.5 14.0	Hadar 148 47.0 S60 26.2
15	356 44.5	72 43.5 . . 52.0	154 12.5 . . 41.9	253 30.1 . . 04.2	125 56.8 . . 14.1	Hamal 328 00.3 N23 31.7
16	11 47.0	87 45.9 52.1	169 14.3 42.1	268 32.9 04.2	140 59.2 14.1	Kaus Aust. 83 43.5 S34 22.4
17	26 49.5	102 48.3 52.2	184 16.1 42.3	283 35.6 04.3	156 01.5 14.1	
18	41 51.9	117 50.6 S15 52.3	199 17.9 S 6 42.6	298 38.3 N23 04.3	171 03.8 S16 14.1	Kochab 137 20.2 N74 05.6
19	56 54.4	132 53.0 52.3	214 19.7 42.8	313 41.1 04.3	186 06.2 14.1	Markab 13 38.1 N15 16.9
20	71 56.9	147 55.4 52.4	229 21.5 43.0	328 43.8 04.3	201 08.5 14.2	Menkar 314 14.5 N 4 08.5
21	86 59.3	162 57.7 . . 52.5	244 23.3 . . 43.2	343 46.5 . . 04.4	216 10.9 . . 14.2	Menkent 148 06.9 S36 26.2
22	102 01.8	178 00.1 52.6	259 25.1 43.5	358 49.3 04.4	231 13.2 14.2	Miaplacidus 221 38.5 S69 46.6
23	117 04.3	193 02.4 52.7	274 26.9 43.7	13 52.0 04.4	246 15.5 14.2	
2	132 06.7	208 04.8 S15 52.7	289 28.8 S 6 43.9	28 54.7 N23 04.5	261 17.9 S16 14.3	Mirfak 308 39.5 N49 54.7
01	147 09.2	223 07.1 52.8	304 30.6 44.1	43 57.5 04.5	276 20.2 14.3	Nunki 75 58.1 S26 16.6
02	162 11.6	238 09.4 52.9	319 32.4 44.4	59 00.2 04.5	291 22.6 14.3	Peacock 53 19.2 S56 41.2
03	177 14.1	253 11.8 . . 53.0	334 34.2 . . 44.6	74 02.9 . . 04.5	306 24.9 . . 14.3	Póllux 243 26.8 N27 59.3
04	192 16.6	268 14.1 53.1	349 36.0 44.8	89 05.7 04.6	321 27.3 14.4	Procyon 244 58.9 N 5 11.0
05	207 19.0	283 16.4 53.1	4 37.8 45.0	104 08.4 04.6	336 29.6 14.4	
06	222 21.5	298 18.7 S15 53.2	19 39.7 S 6 45.2	119 11.1 N23 04.6	351 31.9 S16 14.4	Rasalhague 96 06.3 N12 33.0
07	237 24.0	313 21.0 53.3	34 41.5 45.5	134 13.9 04.6	6 34.3 14.4	Régulus 207 42.7 N11 53.6
08	252 26.4	328 23.3 53.4	49 43.3 45.7	149 16.6 04.7	21 36.6 14.4	Rigel 281 11.4 S 8 11.4
09	267 28.9	343 25.6 . . 53.5	64 45.1 . . 45.9	164 19.3 . . 04.7	36 39.0 . . 14.5	Rigel Kent. 139 51.0 S60 53.3
10	282 31.4	358 27.9 53.6	79 46.9 46.1	179 22.0 04.7	51 41.3 14.5	Sabik 102 12.2 S15 44.4
11	297 33.8	13 30.2 53.6	94 48.8 46.3	194 24.8 04.7	66 43.7 14.5	
12	312 36.3	28 32.5 S15 53.7	109 50.6 S 6 46.6	209 27.5 N23 04.8	81 46.0 S16 14.5	Schedar 349 40.2 N56 37.1
13	327 38.8	43 34.8 53.8	124 52.4 46.8	224 30.2 04.8	96 48.3 14.5	Shaula 96 21.6 S37 06.6
14	342 41.2	58 37.1 53.9	139 54.2 47.0	239 33.0 04.8	111 50.7 14.6	Sirius 258 33.0 S16 44.5
15	357 43.7	73 39.4 . . 54.0	154 56.1 . . 47.2	254 35.7 . . 04.9	126 53.0 . . 14.6	Spica 158 30.6 S11 14.1
16	12 46.1	88 41.6 54.1	169 57.9 47.4	269 38.4 04.9	141 55.4 14.6	Suhail 222 51.6 S43 29.6
17	27 48.6	103 43.9 54.1	184 59.7 47.7	284 41.1 04.9	156 57.7 14.6	
18	42 51.1	118 46.2 S15 54.2	200 01.6 S 6 47.9	299 43.9 N23 04.9	172 00.1 S16 14.7	Vega 80 39.0 N38 47.8
19	57 53.5	133 48.4 54.3	215 03.4 48.1	314 46.6 05.0	187 02.4 14.7	Zuben'ubi 137 04.9 S16 05.9
20	72 56.0	148 50.7 54.4	230 05.2 48.3	329 49.3 05.0	202 04.7 14.7	
21	87 58.5	163 52.9 . . 54.5	245 07.0 . . 48.5	344 52.1 . . 05.0	217 07.1 . . 14.7	AHS Paso Mer.
22	103 00.9	178 55.2 54.6	260 08.9 48.7	359 54.8 05.0	232 09.4 14.7	Venus 75 59.8 10 10
23	118 03.4	193 57.4 54.7	275 10.7 49.0	14 57.5 05.1	247 11.8 14.8	Marte 157 37.8 4 44
						Júpiter 256 41.5 22 05
						Saturno 129 14.2 6 38
Paso Mer. 15 13.0	v 2.4 d 0.1		v 1.8 d 0.2	v 2.7 d 0.0	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		31	1	2	3	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
31	00	176 39.8	S17 27.7	176 39.9	5.8	S12 20.4	10.0	61.3	N 72	07 10	08 39	10 28	09 01	08 51	08 42	08 33
	01	191 39.7	27.0	191 04.7	5.8	12 10.4	10.0	61.3	N 70	07 02	08 20	09 46	08 43	08 41	08 39	08 37
	02	206 39.6	26.3	205 29.5	5.9	12 00.4	10.1	61.3	68	06 55	08 05	09 18	08 29	08 34	08 37	08 41
	03	221 39.6	25.6	219 54.4	6.0	11 50.3	10.2	61.3	66	06 49	07 53	08 56	08 17	08 28	08 36	08 43
	04	236 39.5	24.9	234 19.4	6.0	11 40.1	10.2	61.3	64	06 44	07 43	08 40	08 08	08 22	08 34	08 46
	05	251 39.4	24.2	248 44.4	6.1	11 29.9	10.4	61.3	62	06 40	07 34	08 26	07 59	08 18	08 33	08 48
	06	266 39.3	23.5	263 09.5	6.2	S11 19.5	10.4	61.3	60	06 36	07 27	08 14	07 52	08 14	08 32	08 50
	07	281 39.2	22.8	277 34.7	6.2	11 09.1	10.5	61.3	N 58	06 32	07 20	08 04	07 45	08 10	08 31	08 51
	08	296 39.1	22.1	291 59.9	6.2	10 58.6	10.5	61.3	56	06 29	07 14	07 55	07 40	08 07	08 30	08 53
	09	311 39.0	21.4	306 25.1	6.4	10 48.1	10.6	61.3	54	06 26	07 08	07 47	07 35	08 04	08 30	08 54
V E R N E S	10	326 38.9	20.7	320 50.5	6.4	10 37.5	10.7	61.2	52	06 23	07 03	07 40	07 30	08 01	08 29	08 55
	11	341 38.8	20.0	335 15.9	6.4	10 26.8	10.8	61.2	50	06 20	06 59	07 34	07 26	07 59	08 28	08 57
	12	356 38.7	S17 19.3	349 41.3	6.5	S10 16.0	10.8	61.2	45	06 14	06 49	07 20	07 17	07 53	08 27	08 59
	13	11 38.6	18.6	4 06.8	6.6	10 05.2	10.9	61.2	N 40	06 08	06 40	07 09	07 09	07 49	08 26	09 01
	14	26 38.5	17.9	18 32.4	6.6	9 54.3	10.9	61.2	35	06 02	06 32	06 59	07 02	07 45	08 25	09 03
	15	41 38.4	17.2	32 58.0	6.7	9 43.4	11.0	61.2	30	05 57	06 25	06 50	06 57	07 42	08 24	09 04
	16	56 38.3	16.5	47 23.7	6.8	9 32.4	11.1	61.1	20	05 46	06 13	06 36	06 46	07 36	08 23	09 07
	17	71 38.3	15.8	61 49.5	6.8	9 21.3	11.1	61.1	N 10	05 35	06 01	06 22	06 38	07 31	08 21	09 10
	18	86 38.2	S17 15.1	76 15.3	6.9	S 9 10.2	11.1	61.1	0	05 23	05 48	06 10	06 29	07 26	08 20	09 12
	19	101 38.1	14.4	90 41.2	6.9	8 59.1	11.2	61.1	S 10	05 10	05 35	05 58	06 21	07 21	08 19	09 14
S A B A D O	20	116 38.0	13.7	105 07.1	7.0	8 47.9	11.3	61.1	20	04 53	05 21	05 44	06 12	07 16	08 18	09 17
	21	131 37.9	12.9	119 33.1	7.1	8 36.6	11.3	61.0	30	04 32	05 03	05 28	06 02	07 10	08 16	09 20
	22	146 37.8	12.2	133 59.2	7.1	8 25.3	11.4	61.0	35	04 18	04 52	05 19	05 56	07 07	08 15	09 22
	23	161 37.7	11.5	148 25.3	7.2	8 13.9	11.4	61.0	40	04 02	04 39	05 09	05 49	07 03	08 14	09 24
	1 00	176 37.6	S17 10.8	162 51.5	7.2	S 8 02.5	11.4	61.0	45	03 41	04 23	04 57	05 41	06 58	08 13	09 26
	01	191 37.5	10.1	177 17.7	7.3	7 51.1	11.5	61.0	S 50	03 14	04 03	04 41	05 32	06 53	08 12	09 29
	02	206 37.5	09.4	191 44.0	7.4	7 39.6	11.6	60.9	52	03 00	03 54	04 34	05 27	06 50	08 12	09 30
	03	221 37.4	08.7	206 10.4	7.4	7 28.0	11.5	60.9	54	02 43	03 43	04 27	05 23	06 48	08 11	09 31
	04	236 37.3	08.0	220 36.8	7.5	7 16.5	11.7	60.9	56	02 22	03 30	04 18	05 17	06 45	08 10	09 33
	05	251 37.2	07.3	235 03.3	7.5	7 04.8	11.6	60.9	S 58	01 54	03 16	04 08	05 11	06 41	08 09	09 35
D O M I N G O	06	266 37.1	S17 06.6	249 29.8	7.6	S 6 53.2	11.7	60.8	0	01 10	02 58	03 56	05 04	06 37	08 09	09 37
	07	281 37.0	05.9	263 56.4	7.7	6 41.5	11.7	60.8	Lat.	Ocaso Sol	Civil	Náut.	31	1	2	3
	08	296 36.9	05.2	278 23.1	7.7	6 29.8	11.7	60.8								
	09	311 36.9	04.4	292 49.8	7.8	6 18.1	11.8	60.8	°	h m	h m	h m	h m	h m	h m	h m
	10	326 36.8	03.7	307 16.6	7.9	6 06.3	11.8	60.7								
	11	341 36.7	03.0	321 43.5	7.9	5 54.5	11.9	60.7	N 72	14 01	15 50	17 19	16 47	18 54	20 54	22 50
	12	356 36.6	S17 02.3	336 10.4	7.9	S 5 42.6	11.8	60.7	N 70	14 43	16 08	17 27	17 03	19 01	20 53	22 42
	13	11 36.5	01.6	350 37.3	8.0	5 30.8	11.9	60.7	68	15 11	16 23	17 33	17 15	19 06	20 53	22 35
	14	26 36.4	00.9	5 04.3	8.1	5 18.9	11.9	60.6	66	15 32	16 35	17 39	17 26	19 11	20 52	22 29
	15	41 36.4	17 00.2	19 31.4	8.2	5 07.0	11.9	60.6	64	15 48	16 45	17 44	17 34	19 14	20 51	22 25
2	16	56 36.3	16 59.4	33 58.6	8.1	4 55.1	11.9	60.6	62	16 02	16 54	17 48	17 42	19 18	20 51	22 21
	17	71 36.2	58.7	48 25.7	8.3	4 43.2	12.0	60.6	60	16 14	17 01	17 52	17 48	19 20	20 50	22 17
	18	86 36.1	S16 58.0	62 53.0	8.3	S 4 31.2	12.0	60.5	N 58	16 24	17 08	17 56	17 53	19 23	20 50	22 14
	19	101 36.0	57.3	77 20.3	8.3	4 19.2	11.9	60.5	56	16 33	17 14	17 59	17 58	19 25	20 50	22 11
	20	116 36.0	56.6	91 47.6	8.5	4 07.3	12.0	60.5	54	16 41	17 19	18 02	18 03	19 27	20 49	22 08
	21	131 35.9	55.9	106 15.1	8.4	3 55.3	12.0	60.4	52	16 48	17 24	18 05	18 06	19 29	20 49	22 06
	22	146 35.8	55.1	120 42.5	8.5	3 43.3	12.1	60.4	50	16 54	17 29	18 08	18 10	19 31	20 49	22 04
	23	161 35.7	54.4	135 10.0	8.6	3 31.2	12.0	60.4	45	17 08	17 39	18 14	18 18	19 34	20 48	22 00
	00	176 35.6	S16 53.7	149 37.6	8.6	S 3 19.2	12.0	60.3	N 40	17 19	17 48	18 20	18 24	19 37	20 48	21 56
	01	191 35.6	53.0	164 05.2	8.7	3 07.2	12.1	60.3	35	17 29	17 55	18 25	18 30	19 40	20 47	21 53
02	206 35.5	52.3	178 32.9	8.8	2 55.1	12.0	60.3	30	17 37	18 02	18 31	18 34	19 42	20 47	21 50	
03	221 35.4	51.5	193 00.7	8.7	2 43.1	12.0	60.2	20	17 52	18 15	18 41	18 43	19 46	20 46	21 45	
04	236 35.3	50.8	207 28.4	8.9	2 31.1	12.1	60.2	N 10	18 05	18 27	18 52	18 50	19 49	20 46	21 40	
05	251 35.2	50.1	221 56.3	8.9	2 19.0	12.0	60.2	0	18 17	18 39	19 04	18 56	19 52	20 45	21 36	
06	266 35.2	S16 49.4	236 24.2	8.9	S 2 07.0	12.1	60.1	S 10	18 29	18 52	19 17	19 03	19 55	20 44	21 32	
07	281 35.1	48.6	250 52.1	9.0	1 54.9	12.0	60.1	20	18 43	19 06	19 34	19 10	19 58	20 44	21 28	
08	296 35.0	47.9	265 20.1	9.0	1 42.9	12.0	60.1	30	18 58	19 24	19 55	19 18	20 02	20 43	21 23	
09	311 34.9	47.2	279 48.1	9.1	1 30.9	12.0	60.0	35	19 07	19 35	20 08	19 22	20 04	20 42	21 20	
10	326 34.9	46.5	294 16.2	9.1	1 18.9	12.1	60.0	40	19 18	19 47	20 24	19 28	20 06	20 42	21 17	
11	341 34.8	45.7	308 44.3	9.2	1 06.8	12.0	60.0	45	19 30	20 03	20 44	19 33	20 09	20 41	21 13	
12	356 34.7	S16 45.0	323 12.5	9.2	S 0 54.8	12.0	59.9	S 50	19 45	20 22	21 12	19 41	20 12	20 41	21 09	
13	11 34.6	44.3	337 40.7	9.3	0 42.8	12.0	59.9	52	19 52	20 32	21 25	19 44	20 13	20 40	21 07	
14	26 34.6	43.6	352 09.0	9.3	0 30.8	11.9	59.9	54	19 59	20 43	21 42	19 47	20 15	20 40	21 04	
15	41 34.5	42.8	6 37.3	9.4	0 18.9	12.0	59.8	56	20 08	20 55	22 02	19 51	20 16	20 40	21 02	
16	56 34.4	42.1	21 05.7	9.4	S 0 06.9	11.9	59.8	58	20 18	21 09	22 29	19 55	20 18	20 39	20 59	
17	71 34.3	41.4	35 34.1	9.5	N 0 05.0	12.0	59.7	S 60	20 29	21 26	23 09	20 00	20 20	20 39	20 56	
18	86 34.3	S16 40.7	50 02.6	9.5	N 0 17.0	11.9	59.7	Dia	SOL		Paso Mer.	LUNA				
19	101 34.2	39.9	64 31.1	9.5	0											

UT (HmGr)	ARIES	VENUS -4.8	MARTE +0.2	JÚPITER -2.6	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
LUNES						
3 00	133 05.9	208 59.7 S15 54.7	290 12.5 S 6 49.2	30 00.2 N23 05.1	262 14.1 S16 14.8	Acamar 315 18.0 S40 15.3
01	148 08.3	224 01.9 54.8	305 14.4 49.4	45 03.0 05.1	277 16.5 14.8	Achernar 335 26.7 S57 10.2
02	163 10.8	239 04.1 54.9	320 16.2 49.6	60 05.7 05.1	292 18.8 14.8	Acrux 173 08.2 S63 10.5
03	178 13.2	254 06.4 . . 55.0	335 18.0 . . 49.8	75 08.4 . . 05.2	307 21.2 . . 14.8	Adhara 255 11.8 S28 59.8
04	193 15.7	269 08.6 55.1	350 19.9 50.0	90 11.1 05.2	322 23.5 14.9	Aldebarán 290 48.7 N16 32.1
05	208 18.2	284 10.8 55.2	5 21.7 50.2	105 13.9 05.2	337 25.9 14.9	
06	223 20.6	299 13.0 S15 55.3	20 23.5 S 6 50.5	120 16.6 N23 05.3	352 28.2 S16 14.9	Alioth 166 20.1 N55 52.7
07	238 23.1	314 15.2 55.4	35 25.4 50.7	135 19.3 05.3	7 30.5 14.9	Alkaid 152 58.4 N49 14.3
08	253 25.6	329 17.4 55.5	50 27.2 50.9	150 22.0 05.3	22 32.9 15.0	Al Na'ir 27 43.7 S46 53.6
09	268 28.0	344 19.6 . . 55.6	65 29.1 . . 51.1	165 24.8 . . 05.3	37 35.2 . . 15.0	Alnilam 275 45.7 S 1 11.9
10	283 30.5	359 21.8 55.6	80 30.9 51.3	180 27.5 05.4	52 37.6 15.0	Alphard 217 55.3 S 8 43.4
11	298 33.0	14 24.0 55.7	95 32.7 51.5	195 30.2 05.4	67 39.9 15.0	
12	313 35.4	29 26.2 S15 55.8	110 34.6 S 6 51.7	210 32.9 N23 05.4	82 42.3 S16 15.0	Alphecca 126 10.7 N26 39.9
13	328 37.9	44 28.4 55.9	125 36.4 51.9	225 35.6 05.4	97 44.6 15.1	Alpheratz 357 43.2 N29 10.2
14	343 40.4	59 30.6 56.0	140 38.3 52.2	240 38.4 05.5	112 47.0 15.1	Altair 62 08.1 N 8 54.4
15	358 42.8	74 32.7 . . 56.1	155 40.1 . . 52.4	255 41.1 . . 05.5	127 49.3 . . 15.1	Ankaa 353 15.5 S42 14.0
16	13 45.3	89 34.9 56.2	170 42.0 52.6	270 43.8 05.5	142 51.7 15.1	Antares 112 25.8 S26 27.6
17	28 47.7	104 37.1 56.3	185 43.8 52.8	285 46.5 05.5	157 54.0 15.1	
18	43 50.2	119 39.2 S15 56.4	200 45.6 S 6 53.0	300 49.3 N23 05.6	172 56.4 S16 15.2	Arcturus 145 55.3 N19 06.4
19	58 52.7	134 41.4 56.5	215 47.5 53.2	315 52.0 05.6	187 58.7 15.2	Atria 107 27.5 S69 02.8
20	73 55.1	149 43.6 56.6	230 49.3 53.4	330 54.7 05.6	203 01.1 15.2	Avior 234 17.1 S59 33.5
21	88 57.6	164 45.7 . . 56.7	245 51.2 . . 53.6	345 57.4 . . 05.6	218 03.4 . . 15.2	Bellatrix 278 31.3 N 6 21.5
22	104 00.1	179 47.9 56.8	260 53.0 53.8	1 00.1 05.7	233 05.8 15.2	Betelgeuse 271 00.6 N 7 24.3
23	119 02.5	194 50.0 56.9	275 54.9 54.0	16 02.9 05.7	248 08.1 15.3	
MARTES						
4 00	134 05.0	209 52.1 S15 56.9	290 56.7 S 6 54.3	31 05.6 N23 05.7	263 10.5 S16 15.3	Canopus 263 55.5 S52 42.6
01	149 07.5	224 54.3 57.0	305 58.6 54.5	46 08.3 05.7	278 12.8 15.3	Capella 280 33.5 N46 00.7
02	164 09.9	239 56.4 57.1	321 00.4 54.7	61 11.0 05.8	293 15.1 15.3	Deneb 49 31.6 N45 19.9
03	179 12.4	254 58.5 . . 57.2	336 02.3 . . 54.9	76 13.7 . . 05.8	308 17.5 . . 15.3	Denébola 182 33.0 N14 29.4
04	194 14.8	270 00.6 57.3	351 04.1 55.1	91 16.4 05.8	323 19.8 15.4	Diphda 348 55.6 S17 54.7
05	209 17.3	285 02.8 57.4	6 06.0 55.3	106 19.2 05.8	338 22.2 15.4	
06	224 19.8	300 04.9 S15 57.5	21 07.8 S 6 55.5	121 21.9 N23 05.9	353 24.5 S16 15.4	Dubhe 193 50.7 N61 40.2
07	239 22.2	315 07.0 57.6	36 09.7 55.7	136 24.6 05.9	8 26.9 15.4	Elnath 278 11.8 N28 37.0
08	254 24.7	330 09.1 57.7	51 11.6 55.9	151 27.3 05.9	23 29.2 15.4	Eltanin 90 46.3 N51 29.2
09	269 27.2	345 11.2 . . 57.8	66 13.4 . . 56.1	166 30.0 . . 06.0	38 31.6 . . 15.5	Enif 33 47.0 N 9 56.5
10	284 29.6	0 13.3 57.9	81 15.3 56.3	181 32.8 06.0	53 33.9 15.5	Fomalhaut 15 23.8 S29 32.9
11	299 32.1	15 15.4 58.0	96 17.1 56.5	196 35.5 06.0	68 36.3 15.5	
12	314 34.6	30 17.5 S15 58.1	111 19.0 S 6 56.7	211 38.2 N23 06.0	83 38.7 S16 15.5	Gacrux 171 59.9 S57 11.4
13	329 37.0	45 19.6 58.2	126 20.9 56.9	226 40.9 06.1	98 41.0 15.5	Gienah 175 51.6 S17 37.3
14	344 39.5	60 21.6 58.3	141 22.7 57.1	241 43.6 06.1	113 43.4 15.6	Hadar 148 47.0 S60 26.2
15	359 42.0	75 23.7 . . 58.4	156 24.6 . . 57.3	256 46.3 . . 06.1	128 45.7 . . 15.6	Hamal 328 00.3 N23 31.7
16	14 44.4	90 25.8 58.5	171 26.4 57.5	271 49.0 06.1	143 48.1 15.6	Kaus Aust. 83 43.5 S34 22.4
17	29 46.9	105 27.9 58.6	186 28.3 57.8	286 51.8 06.2	158 50.4 15.6	
18	44 49.3	120 29.9 S15 58.7	201 30.2 S 6 58.0	301 54.5 N23 06.2	173 52.8 S16 15.6	Kochab 137 20.2 N74 05.6
19	59 51.8	135 32.0 58.8	216 32.0 58.2	316 57.2 06.2	188 55.1 15.7	Markab 13 38.1 N15 16.9
20	74 54.3	150 34.0 58.9	231 33.9 58.4	331 59.9 06.2	203 57.5 15.7	Menkar 314 14.5 N 4 08.5
21	89 56.7	165 36.1 . . 59.0	246 35.8 . . 58.6	347 02.6 . . 06.3	218 59.8 . . 15.7	Menkent 148 06.9 S36 26.2
22	104 59.2	180 38.1 59.1	261 37.6 58.8	2 05.3 06.3	234 02.2 15.7	Miaplacidus 221 38.5 S69 46.7
23	120 01.7	195 40.2 59.2	276 39.5 59.0	17 08.0 06.3	249 04.5 15.7	
MIÉRCOLES						
5 00	135 04.1	210 42.2 S15 59.3	291 41.4 S 6 59.2	32 10.7 N23 06.3	264 06.9 S16 15.8	Mirfak 308 39.6 N49 54.7
01	150 06.6	225 44.3 59.4	306 43.2 59.4	47 13.5 06.4	279 09.2 15.8	Nunki 75 58.1 S26 16.6
02	165 09.1	240 46.3 59.5	321 45.1 59.6	62 16.2 06.4	294 11.6 15.8	Peacock 53 19.2 S56 41.2
03	180 11.5	255 48.3 . . 59.6	336 47.0 6 59.8	77 18.9 . . 06.4	309 13.9 . . 15.8	Póllux 243 26.8 N27 59.3
04	195 14.0	270 50.4 59.7	351 48.8 7 00.0	92 21.6 06.4	324 16.3 15.8	Procyon 244 58.9 N 5 11.0
05	210 16.5	285 52.4 59.8	6 50.7 00.2	107 24.3 06.5	339 18.6 15.8	
06	225 18.9	300 54.4 S15 59.9	21 52.6 S 7 00.4	122 27.0 N23 06.5	354 21.0 S16 15.9	Rasalhague 96 06.2 N12 33.0
07	240 21.4	315 56.4 16 00.0	36 54.5 00.6	137 29.7 06.5	9 23.3 15.9	Régulus 207 42.7 N11 53.6
08	255 23.8	330 58.4 00.1	51 56.3 00.8	152 32.4 06.5	24 25.7 15.9	Rigel 281 11.4 S 8 11.4
09	270 26.3	346 00.4 . . 00.2	66 58.2 . . 01.0	167 35.1 . . 06.5	39 28.1 . . 15.9	Rigel Kent. 139 50.9 S60 53.3
10	285 28.8	1 02.4 00.3	82 00.1 01.2	182 37.9 06.6	54 30.4 15.9	Sabik 102 12.2 S15 44.4
11	300 31.2	16 04.4 00.4	97 02.0 01.4	197 40.6 06.6	69 32.8 16.0	
12	315 33.7	31 06.4 S16 00.5	112 03.8 S 7 01.6	212 43.3 N23 06.6	84 35.1 S16 16.0	Schedar 349 40.2 N56 37.1
13	330 36.2	46 08.4 00.6	127 05.7 01.7	227 46.0 06.6	99 37.5 16.0	Shaula 96 21.5 S37 06.6
14	345 38.6	61 10.4 00.7	142 07.6 01.9	242 48.7 06.7	114 39.8 16.0	Sirius 258 33.0 S16 44.5
15	0 41.1	76 12.4 . . 00.9	157 09.5 . . 02.1	257 51.4 . . 06.7	129 42.2 . . 16.0	Spica 158 30.6 S11 14.1
16	15 43.6	91 14.3 01.0	172 11.4 02.3	272 54.1 06.7	144 44.5 16.1	Suhail 222 51.6 S43 29.6
17	30 46.0	106 16.3 01.1	187 13.2 02.5	287 56.8 06.7	159 46.9 16.1	
18	45 48.5	121 18.3 S16 01.2	202 15.1 S 7 02.7	302 59.5 N23 06.8	174 49.3 S16 16.1	Vega 80 39.0 N38 47.8
19	60 50.9	136 20.2 01.3	217 17.0 02.9	318 02.2 06.8	189 51.6 16.1	Zuben'ubi 137 04.9 S16 05.9
20	75 53.4	151 22.2 01.4	232 18.9 03.1	333 04.9 06.8	204 54.0 16.1	
21	90 55.9	166 24.2 . . 01.5	247 20.8 . . 03.3	348 07.6 . . 06.8	219 56.3 . . 16.1	AHS Paso Mer.
22	105 58.3	181 26.1 01.6	262 22.7 03.5	3 10.3 06.9	234 58.7 16.2	Venus 75 47.1 9 59
23	121 00.8	196 28.1 01.7	277 24.5 03.7	18 13.0 06.9	250 01.0 16.2	Marte 156 51.7 4 36
	h m					Júpiter 257 00.6 21 52
Paso Mer. 15 01.2	v 2.1 d 0.1		v 1.9 d 0.2	v 2.7 d 0.0	v 2.4 d 0.0	Saturno 129 05.5 6 26

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	3	4	5	6	
L U N E S	d h	° /	° /		° /	° /		h m	h m	h m	h m	h m	h m	h m	h m	
	3 00	176 33.8	S16 36.3	136 54.2	9.7 N	1 28.1	11.8	59.5	N 72	06 59	08 25	10 04	08 33	08 25	08 16	08 04
	01	191 33.8	35.5	151 22.9	9.8	1 39.9	11.8	59.4	N 70	06 52	08 09	09 29	08 37	08 35	08 34	08 34
	02	206 33.7	34.8	165 51.7	9.9	1 51.7	11.7	59.4	68	06 47	07 55	09 05	08 41	08 44	08 49	08 56
	03	221 33.6	34.1	180 20.6	9.8	2 03.4	11.7	59.4	66	06 42	07 45	08 46	08 43	08 51	09 01	09 13
	04	236 33.6	33.3	194 49.4	9.9	2 15.1	11.6	59.3	64	06 37	07 35	08 30	08 46	08 58	09 11	09 27
	05	251 33.5	32.6	209 18.3	10.0	2 26.7	11.7	59.3	62	06 34	07 27	08 18	08 48	09 03	09 20	09 39
	06	266 33.4	S16 31.9	223 47.3	9.9 N	2 38.4	11.6	59.2	60	06 30	07 20	08 07	08 50	09 08	09 27	09 50
	07	281 33.4	31.1	238 16.2	10.1	2 50.0	11.6	59.2	N 58	06 27	07 14	07 57	08 51	09 12	09 34	09 59
	08	296 33.3	30.4	252 45.3	10.0	3 01.6	11.5	59.2	56	06 24	07 09	07 49	08 53	09 15	09 40	10 07
	09	311 33.2	29.7	267 14.3	10.1	3 13.1	11.5	59.1	54	06 21	07 04	07 42	08 54	09 19	09 45	10 14
	10	326 33.1	28.9	281 43.4	10.1	3 24.6	11.5	59.1	52	06 19	06 59	07 35	08 55	09 22	09 50	10 20
	11	341 33.1	28.2	296 12.5	10.2	3 36.1	11.4	59.0	50	06 16	06 55	07 29	08 57	09 25	09 54	10 26
	12	356 33.0	S16 27.4	310 41.7	10.1 N	3 47.5	11.4	59.0	45	06 10	06 45	07 16	08 59	09 31	10 03	10 38
	13	11 33.0	26.7	325 10.8	10.3	3 58.9	11.3	59.0	N 40	06 05	06 37	07 06	09 01	09 36	10 11	10 48
	14	26 32.9	26.0	339 40.1	10.2	4 10.2	11.4	58.9	35	06 00	06 30	06 57	09 03	09 40	10 18	10 57
	15	41 32.8	25.2	354 09.3	10.3	4 21.6	11.2	58.9	30	05 55	06 24	06 49	09 04	09 44	10 24	11 05
	16	56 32.8	24.5	8 38.6	10.3	4 32.8	11.3	58.8	20	05 45	06 12	06 34	09 07	09 51	10 34	11 18
	17	71 32.7	23.7	23 07.9	10.3	4 44.1	11.1	58.8	N 10	05 35	06 00	06 22	09 10	09 57	10 44	11 30
	18	86 32.6	S16 23.0	37 37.2	10.4 N	4 55.2	11.2	58.8	0	05 24	05 49	06 10	09 12	10 03	10 52	11 41
	19	101 32.6	22.3	52 06.6	10.4	5 06.4	11.1	58.7	S 10	05 11	05 37	05 59	09 14	10 08	11 01	11 53
	20	116 32.5	21.5	66 36.0	10.5	5 17.5	11.0	58.7	20	04 55	05 23	05 46	09 17	10 15	11 10	12 05
	21	131 32.4	20.8	81 05.5	10.4	5 28.5	11.0	58.6	30	04 35	05 05	05 31	09 20	10 22	11 21	12 18
	22	146 32.4	20.0	95 34.9	10.5	5 39.5	11.0	58.6	35	04 22	04 55	05 22	09 22	10 26	11 27	12 26
	23	161 32.3	19.3	110 04.4	10.5	5 50.5	10.9	58.6	40	04 07	04 43	05 13	09 24	10 30	11 34	12 36
4 00	176 32.2	S16 18.6	124 33.9	10.6 N	6 01.4	10.9	58.5	45	03 47	04 28	05 01	09 26	10 36	11 43	12 46	
01	191 32.2	17.8	139 03.5	10.5	6 12.3	10.8	58.5	S 50	03 21	04 09	04 47	09 29	10 42	11 53	12 59	
02	206 32.1	17.1	153 33.0	10.6	6 23.1	10.8	58.4	52	03 08	04 00	04 40	09 30	10 45	11 57	13 06	
03	221 32.1	16.3	168 02.6	10.6	6 33.9	10.7	58.4	54	02 52	03 50	04 33	09 31	10 49	12 03	13 12	
04	236 32.0	15.6	182 32.2	10.7	6 44.6	10.6	58.4	56	02 33	03 38	04 24	09 33	10 53	12 08	13 20	
05	251 31.9	14.8	197 01.9	10.6	6 55.2	10.6	58.3	S 58	02 09	03 25	04 15	09 35	10 57	12 15	13 28	
06	266 31.9	S16 14.1	211 31.5	10.7 N	7 05.8	10.6	58.3	0	01 34	03 09	04 04	09 37	11 01	12 22	13 38	
07	281 31.8	13.3	226 01.2	10.7	7 16.4	10.5	58.2	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
08	296 31.8	12.6	240 30.9	10.8	7 26.9	10.4	58.2	Civil	Náut.	3	4	5	6			
09	311 31.7	11.8	255 00.7	10.7	7 37.3	10.4	58.1	N 72	h m	h m	h m	h m	h m	h m	h m	
10	326 31.6	11.1	269 30.4	10.8	7 47.7	10.3	58.1		14 25	16 04	17 31	22 50	24 44	00 44	02 39	
11	341 31.6	10.3	284 00.2	10.8	7 58.0	10.3	58.1		N 70	15 00	16 20	17 37	22 42	24 27	00 27	02 11
12	356 31.5	S16 09.6	298 30.0	10.8 N	8 08.3	10.2	58.0		68	15 24	16 34	17 43	22 35	24 14	00 14	01 49
13	11 31.5	08.8	312 59.8	10.8	8 18.5	10.1	58.0		66	15 43	16 44	17 47	22 29	24 03	00 03	01 33
14	26 31.4	08.1	327 29.6	10.9	8 28.6	10.1	57.9	64	15 58	16 54	17 52	22 25	23 54	25 19	01 19	
15	41 31.4	07.3	341 59.5	10.9	8 38.7	10.0	57.9	62	16 11	17 01	17 55	22 21	23 47	25 08	01 08	
16	56 31.3	06.6	356 29.4	10.9	8 48.7	10.0	57.9	60	16 22	17 08	17 59	22 17	23 40	24 58	00 58	
17	71 31.2	05.8	10 59.3	10.9	8 58.7	9.9	57.8	N 58	16 31	17 14	18 02	22 14	23 34	24 50	00 50	
18	86 31.2	S16 05.1	25 29.2	10.9 N	9 08.6	9.8	57.8	56	16 39	17 20	18 05	22 11	23 29	24 43	00 43	
19	101 31.1	04.3	39 59.1	11.0	9 18.4	9.8	57.7	54	16 47	17 25	18 07	22 08	23 24	24 36	00 36	
20	116 31.1	03.6	54 29.1	10.9	9 28.2	9.7	57.7	52	16 53	17 30	18 10	22 06	23 20	24 30	00 30	
21	131 31.0	02.8	68 59.0	11.0	9 37.9	9.7	57.7	50	16 59	17 34	18 12	22 04	23 16	24 25	00 25	
22	146 31.0	02.1	83 29.0	11.0	9 47.6	9.6	57.6	45	17 12	17 43	18 18	22 00	23 08	24 14	00 14	
23	161 30.9	01.3	97 59.0	11.0	9 57.2	9.5	57.6	N 40	17 23	17 51	18 23	21 56	23 01	24 04	00 04	
5 00	176 30.9	S16 00.6	112 29.0	11.0 N	10 06.7	9.4	57.5	35	17 32	17 58	18 28	21 53	22 55	23 56	24 54	
01	191 30.8	15 59.8	126 59.0	11.1	10 16.1	9.4	57.5	30	17 40	18 05	18 33	21 50	22 50	23 49	24 45	
02	206 30.8	59.0	141 29.1	11.0	10 25.5	9.3	57.5	20	17 54	18 16	18 43	21 45	22 41	23 37	24 30	
03	221 30.7	58.3	155 59.1	11.1	10 34.8	9.3	57.4	N 10	18 06	18 28	18 53	21 40	22 34	23 26	24 17	
04	236 30.7	57.5	170 29.2	11.1	10 44.1	9.1	57.4	0	18 17	18 39	19 04	21 36	22 26	23 16	24 05	
05	251 30.6	56.8	184 59.3	11.0	10 53.2	9.1	57.3	S 10	18 29	18 51	19 17	21 32	22 19	23 06	23 53	
06	266 30.6	S15 56.0	199 29.3	11.2 N	11 02.3	9.1	57.3	20	18 42	19 05	19 32	21 28	22 11	22 55	23 40	
07	281 30.5	55.3	213 59.5	11.1	11 11.4	8.9	57.3	30	18 56	19 22	19 52	21 23	22 03	22 43	23 25	
08	296 30.5	54.5	228 29.6	11.1	11 20.3	8.9	57.2	35	19 05	19 32	20 05	21 20	21 58	22 36	23 16	
09	311 30.4	53.7	242 59.7	11.1	11 29.2	8.9	57.2	40	19 15	19 44	20 20	21 17	21 52	22 28	23 07	
10	326 30.4	53.0	257 29.8	11.2	11 38.1	8.7	57.1	45	19 26	19 59	20 40	21 13	21 45	22 19	22 55	
11	341 30.3	52.2	272 00.0	11.2	11 46.8	8.7	57.1	S 50	19 40	20 17	21 05	21 09	21 37	22 08	22 41	
12	356 30.3	S15 51.5	286 30.2	11.1 N	11 55.5	8.6	57.1	52	19 47	20 26	21 18	21 07	21 34	22 03	22 35	
13	11 30.2	50.7	301 00.3	11.2	12 04.1	8.5	57.0	54	19 54	20 36	21 33	21 04	21 30	21 57	22 28	
14	26 30.2	49.9	315 30.5	11.2	12 12.6	8.5	57.0	56	20 02	20 47	21 51	21 02	21 25	21 51	22 20	
15	41 30.1	49.2	330 00.7	11.2	12 21.1	8.3	57.0	58	20 11	21 01	22 15	20 59	21 20	21 44	22 11	
16	56 30.1	48.4	344 30.9	11.2	12 29.4	8.4	56.9	S 60	20 22	21 17	22 48	20 56	21 15	21 36	22 01	
17	71 30.0	47.6	359 01.1	11.2	12 37.8	8.2	56.9	SOL		LUNA						
18	86 30.0	S15 46.9	13 31.3	11.3 N	12 46.0	8.1	56.8	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
19	101 29.9	46.1	28 01.6	11.2	12 54.1	8.1	56.8		00 ^h	12 ^h		Sup.	Inf.			
20	116 29.9	45.3	42 31.8	11.2	13 02.2	8.0	56.8	d	m s	m s	h m	h m	h m	d %		
21	131 29.8	44.6	57 02.0	11.3	13 10.2	7.9	56.7									

UT (HmGr)	ARIES			VENUS -4.8			MARTE +0.1			JÚPITER -2.6			SATURNO +0.5			ESTRELLAS		
	AHGr	AHGr	Dec	AHGr	Dec		AHGr	Dec		AHGr	Dec		AHGr	Dec		Nombre	AHS	Dec
6 d h	00	136 03.3	211 30.0	S16 01.8	292 26.4	S 7 03.9	33 15.7	N23 06.9	265 03.4	S16 16.2	Acamar	315 18.0	S40 15.3					
	01	151 05.7	226 31.9	01.9	307 28.3	04.1	48 18.5	06.9	280 05.8	16.2	Achernar	335 26.7	S57 10.2					
	02	166 08.2	241 33.9	02.0	322 30.2	04.3	63 21.2	07.0	295 08.1	16.2	Arcturus	173 08.2	S63 10.5					
	03	181 10.7	256 35.8	02.1	337 32.1	04.5	78 23.9	07.0	310 10.5	16.3	Adhara	255 11.8	S28 59.8					
	04	196 13.1	271 37.7	02.2	352 34.0	04.7	93 26.6	07.0	325 12.8	16.3	Aldebarán	290 48.7	N16 32.1					
	05	211 15.6	286 39.7	02.3	7 35.9	04.9	108 29.3	07.0	340 15.2	16.3								
J U E V E S	06	226 18.1	301 41.6	S16 02.4	22 37.8	S 7 05.0	123 32.0	N23 07.1	355 17.5	S16 16.3	Alioth	166 20.0	N55 52.7					
	07	241 20.5	316 43.5	02.6	37 39.7	05.2	138 34.7	07.1	10 19.9	16.3	Alkaid	152 58.4	N49 14.3					
	08	256 23.0	331 45.4	02.7	52 41.6	05.4	153 37.4	07.1	25 22.3	16.3	Al Na'ir	27 43.7	S46 53.5					
	09	271 25.4	346 47.3	02.8	67 43.4	05.6	168 40.1	07.1	40 24.6	16.4	Alnilam	275 45.7	S 1 11.9					
	10	286 27.9	1 49.2	02.9	82 45.3	05.8	183 42.8	07.2	55 27.0	16.4	Alphard	217 55.3	S 8 43.5					
	11	301 30.4	16 51.1	03.0	97 47.2	06.0	198 45.5	07.2	70 29.3	16.4								
	12	316 32.8	31 53.0	S16 03.1	112 49.1	S 7 06.2	213 48.2	N23 07.2	85 31.7	S16 16.4	Alphecca	126 10.7	N26 39.9					
	13	331 35.3	46 54.9	03.2	127 51.0	06.4	228 50.9	07.2	100 34.0	16.4	Alpheratz	357 43.2	N29 10.2					
	14	346 37.8	61 56.8	03.3	142 52.9	06.6	243 53.6	07.2	115 36.4	16.4	Altair	62 08.1	N 8 54.4					
	15	1 40.2	76 58.7	03.4	157 54.8	06.8	258 56.3	07.3	130 38.8	16.5	Ankaa	353 15.6	S42 14.0					
	16	16 42.7	92 00.6	03.5	172 56.7	06.9	273 59.0	07.3	145 41.1	16.5	Antares	112 25.8	S26 27.6					
	17	31 45.2	107 02.5	03.6	187 58.6	07.1	289 01.7	07.3	160 43.5	16.5								
	18	46 47.6	122 04.3	S16 03.7	203 00.5	S 7 07.3	304 04.4	N23 07.3	175 45.8	S16 16.5	Arcturus	145 55.2	N19 06.4					
	19	61 50.1	137 06.2	03.9	218 02.4	07.5	319 07.1	07.4	190 48.2	16.5	Atria	107 27.4	S69 02.8					
	20	76 52.5	152 08.1	04.0	233 04.3	07.7	334 09.8	07.4	205 50.6	16.6	Avior	234 17.1	S59 33.6					
	21	91 55.0	167 09.9	04.1	248 06.2	07.9	349 12.5	07.4	220 52.9	16.6	Bellatrix	278 31.3	N 6 21.5					
	22	106 57.5	182 11.8	04.2	263 08.1	08.1	4 15.2	07.4	235 55.3	16.6	Betelgeuse	271 00.6	N 7 24.3					
	23	121 59.9	197 13.7	04.3	278 10.0	08.3	19 17.9	07.5	250 57.7	16.6								
7 00	01	137 02.4	212 15.5	S16 04.4	293 12.0	S 7 08.4	34 20.6	N23 07.5	266 00.0	S16 16.6	Canopus	263 55.5	S52 42.6					
	02	152 04.9	227 17.4	04.5	308 13.9	08.6	49 23.3	07.5	281 02.4	16.6	Capella	280 33.5	N46 00.7					
	03	167 07.3	242 19.2	04.6	323 15.8	08.8	64 26.0	07.5	296 04.7	16.7	Deneb	49 31.6	N45 19.9					
	04	182 09.8	257 21.0	04.7	338 17.7	09.0	79 28.7	07.6	311 07.1	16.7	Denébola	182 32.9	N14 29.4					
	05	197 12.3	272 22.9	04.8	353 19.6	09.2	94 31.4	07.6	326 09.5	16.7	Diphda	348 55.6	S17 54.7					
	06	212 14.7	287 24.7	05.0	8 21.5	09.4	109 34.1	07.6	341 11.8	16.7								
	07	227 17.2	302 26.5	S16 05.1	23 23.4	S 7 09.5	124 36.8	N23 07.6	356 14.2	S16 16.7	Dubhe	193 50.6	N61 40.2					
	08	242 19.7	317 28.4	05.2	38 25.3	09.7	139 39.5	07.6	11 16.5	16.7	Elmath	278 11.8	N28 37.0					
	09	257 22.1	332 30.2	05.3	53 27.2	09.9	154 42.1	07.7	26 18.9	16.8	Eltanin	90 46.3	N51 29.1					
	10	272 24.6	347 32.0	05.4	68 29.1	10.1	169 44.8	07.7	41 21.3	16.8	Enif	33 47.0	N 9 56.5					
	11	287 27.0	2 33.8	05.5	83 31.1	10.3	184 47.5	07.7	56 23.6	16.8	Fomalhaut	15 23.8	S29 32.9					
	12	302 29.5	17 35.6	05.6	98 33.0	10.5	199 50.2	07.7	71 26.0	16.8								
	13	317 32.0	32 37.4	S16 05.7	113 34.9	S 7 10.6	214 52.9	N23 07.8	86 28.4	S16 16.8	Gacrux	171 59.9	S57 11.4					
	14	332 34.4	47 39.2	05.8	128 36.8	10.8	229 55.6	07.8	101 30.7	16.8	Gienah	175 51.6	S17 37.3					
	15	347 36.9	62 41.0	06.0	143 38.7	11.0	244 58.3	07.8	116 33.1	16.9	Hadar	148 46.9	S60 26.2					
	16	2 39.4	77 42.8	06.1	158 40.6	11.2	260 01.0	07.8	131 35.4	16.9	Hamal	328 00.3	N23 31.7					
	17	17 41.8	92 44.6	06.2	173 42.6	11.4	275 03.7	07.9	146 37.8	16.9	Kaus Aust.	83 43.5	S34 22.4					
	18	32 44.3	107 46.4	06.3	188 44.5	11.6	290 06.4	07.9	161 40.2	16.9								
	19	47 46.8	122 48.2	S16 06.4	203 46.4	S 7 11.7	305 09.1	N23 07.9	176 42.5	S16 16.9	Kochab	137 20.1	N74 05.6					
	20	62 49.2	137 50.0	06.5	218 48.3	11.9	320 11.8	07.9	191 44.9	16.9	Markab	13 38.1	N15 16.9					
	21	77 51.7	152 51.7	06.6	233 50.2	12.1	335 14.5	07.9	206 47.3	17.0	Menkar	314 14.6	N 4 08.5					
	22	92 54.2	167 53.5	06.7	248 52.2	12.3	350 17.2	08.0	221 49.6	17.0	Menkent	148 06.9	S36 26.2					
	23	107 56.6	182 55.3	06.9	263 54.1	12.4	5 19.8	08.0	236 52.0	17.0	Miaplacidus	221 38.5	S69 46.7					
24	122 59.1	197 57.1	07.0	278 56.0	12.6	20 22.5	08.0	251 54.4	17.0									
8 00	01	138 01.5	212 58.8	S16 07.1	293 57.9	S 7 12.8	35 25.2	N23 08.0	266 56.7	S16 17.0	Mirfak	308 58.6	N49 54.6					
	02	153 04.0	228 00.6	07.2	308 59.9	13.0	50 27.9	08.1	281 59.1	17.0	Nunki	75 39.0	S26 16.6					
	03	168 06.5	243 02.3	07.3	324 01.8	13.2	65 30.6	08.1	297 01.5	17.0	Peacock	53 19.1	S56 41.2					
	04	183 08.9	258 04.1	07.4	339 03.7	13.3	80 33.3	08.1	312 03.8	17.1	Póllux	243 26.8	N27 59.3					
	05	198 11.4	273 05.8	07.5	354 05.6	13.5	95 36.0	08.1	327 06.2	17.1	Procyon	244 58.9	N 5 11.0					
	06	213 13.9	288 07.6	07.6	9 07.6	13.7	110 38.7	08.1	342 08.6	17.1								
	07	228 16.3	303 09.3	S16 07.8	24 09.5	S 7 13.9	125 41.4	N23 08.2	357 10.9	S16 17.1	Rasalhague	96 06.2	N12 33.0					
	08	243 18.8	318 11.0	07.9	39 11.4	14.0	140 44.0	08.2	12 13.3	17.1	Régulus	207 42.7	N11 53.6					
	09	258 21.3	333 12.8	08.0	54 13.4	14.2	155 46.7	08.2	27 15.7	17.1	Rigel	281 11.4	S 8 11.4					
	10	273 23.7	348 14.5	08.1	69 15.3	14.4	170 49.4	08.2	42 18.0	17.2	Rigel Kent.	139 50.9	S60 53.3					
	11	288 26.2	3 16.2	08.2	84 17.2	14.6	185 52.1	08.3	57 20.4	17.2	Sabik	102 12.2	S15 44.4					
	12	303 28.7	18 17.9	08.3	99 19.2	14.7	200 54.8	08.3	72 22.8	17.2								
	13	318 31.1	33 19.7	S16 08.4	114 21.1	S 7 14.9	215 57.5	N23 08.3	87 25.1	S16 17.2	Schedar	349 40.2	N56 37.1					
	14	333 33.6	48 21.4	08.5	129 23.0	15.1	231 00.2	08.3	102 27.5	17.2	Shaula	96 21.5	S37 06.6					
	15	348 36.0	63 23.1	08.7	144 25.0	15.3	246 02.9	08.3	117 29.9	17.2	Sirius	258 33.0	S16 44.5					
	16	3 38.5	78 24.8	08.8	159 26.9	15.4	261 05.5	08.4	132 32.2	17.2	Spica	158 30.6	S11 14.1					
	17	18 41.0	93 26.5	08.9	174 28.8	15.6	276 08.2	08.4	147 34.6	17.3	Suhail	222 51.6	S43 29.6					
	18	33 43.4	108 28.2	09.0	189 30.8	15.8	291 10.9	08.4	162 37.0	17.3								
	19	48 45.9	123 29.9	S16 09.1	204 32.7	S 7 16.0	306 13.6	N23 08.4	177 39.3	S16 17.3	Vega	80 39.0	N38 47.8					
	20	63 48.4	138 31.6	09.2	219 34.7	16.1	321 16.3	08.5	192 41.7	17.3	Zuben'ubi	137 04.9	S16 05.9					
	21	78 50.8	153 33.3	09.3	234 36.6	16.3	336 19.0	08.5	207 44.1	17.3								
	22	93 53.3	168 34.9	09.5	249 38.5	16.5	351 21.6	08.5	222 46.4	17.3								
	23	108 55.8	183 36.6	09.6	264 40.5	16.6	6 24.3	08.5	237 48.8	17.4	Venus	75 13.1	h 50					
24	123 58.2	198 38.3	09.7	279 42.4	16.8	21 27.0	08.5	252 51.2	17.4	Marte	156 09.5	4 27						
h m															Paso Mer.			
Paso Mer. 14 49.4															v 1.8 d 0.1			
															v 1.9 d 0.2			
															v 2.7 d 0.0			
															v 2.4 d 0.0			
															Saturno 128 57.6 6 15			

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		6	7	8	9	
d h	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	°	h m	h m	h m	h m	h m	h m	h m	h m
J U E V E S	6 00	176 29.7	S15 42.3	100 32.8	11.3	N13 33.7	7.7 56.6	N 72	06 47	08 12	09 43	08 04	07 46			
	01	191 29.7	41.5	115 03.1	11.3	13 41.4	7.6 56.6	N 70	06 42	07 57	09 14	08 34	08 35	08 43	09 06	
	02	206 29.6	40.7	129 33.4	11.3	13 49.0	7.5 56.6	66	06 34	07 36	08 35	09 13	09 31	09 57	10 35	
	03	221 29.6	40.0	144 03.7	11.3	13 56.5	7.5 56.5	64	06 30	07 27	08 21	09 27	09 49	10 19	10 59	
	04	236 29.5	39.2	158 34.0	11.3	14 04.0	7.4 56.5	62	06 27	07 20	08 09	09 39	10 04	10 37	11 18	
	05	251 29.5	38.4	173 04.3	11.3	14 11.4	7.2 56.4	60	06 24	07 14	07 59	09 50	10 17	10 51	11 34	
	06	266 29.4	S15 37.7	187 34.6	11.3	N14 18.6	7.2 56.4	N 58	06 21	07 08	07 51	09 59	10 28	11 04	11 47	
	07	281 29.4	36.9	202 04.9	11.3	14 25.8	7.2 56.4	56	06 19	07 03	07 43	10 07	10 38	11 15	11 59	
	08	296 29.3	36.1	216 35.2	11.3	14 33.0	7.0 56.3	54	06 16	06 58	07 36	10 14	10 46	11 25	12 09	
	09	311 29.3	35.4	231 05.5	11.4	14 40.0	7.0 56.3	52	06 14	06 54	07 30	10 20	10 54	11 33	12 18	
	10	326 29.3	34.6	245 35.9	11.3	14 47.0	6.8 56.3	50	06 12	06 50	07 25	10 26	11 01	11 41	12 26	
	11	341 29.2	33.8	260 06.2	11.3	14 53.8	6.8 56.2	45	06 07	06 42	07 13	10 38	11 16	11 57	12 43	
	12	356 29.2	S15 33.0	274 36.5	11.4	N15 00.6	6.7 56.2	N 40	06 02	06 34	07 03	10 48	11 28	12 11	12 57	
	13	11 29.1	32.3	289 06.9	11.3	15 07.3	6.7 56.2	35	05 58	06 28	06 54	10 57	11 38	12 22	13 09	
	14	26 29.1	31.5	303 37.2	11.4	15 14.0	6.5 56.1	30	05 53	06 22	06 46	11 05	11 48	12 32	13 19	
	15	41 29.1	30.7	318 07.6	11.4	15 20.5	6.5 56.1	20	05 44	06 11	06 33	11 18	12 03	12 50	13 37	
	16	56 29.0	30.0	332 38.0	11.3	15 27.0	6.3 56.1	N 10	05 35	06 00	06 22	11 30	12 17	13 05	13 53	
	17	71 29.0	29.2	347 08.3	11.4	15 33.3	6.3 56.0	0	05 24	05 49	06 11	11 41	12 30	13 19	14 08	
	18	86 28.9	S15 28.4	1 38.7	11.4	N15 39.6	6.2 56.0	S 10	05 12	05 38	06 00	11 53	12 43	13 33	14 22	
	19	101 28.9	27.6	16 09.1	11.4	15 45.8	6.1 56.0	20	04 57	05 24	05 48	12 05	12 57	13 49	14 38	
	20	116 28.9	26.9	30 39.5	11.3	15 51.9	6.1 55.9	30	04 38	05 08	05 34	12 18	13 14	14 06	14 56	
	21	131 28.8	26.1	45 09.8	11.4	15 58.0	5.9 55.9	35	04 26	04 58	05 26	12 26	13 23	14 16	15 06	
	22	146 28.8	25.3	59 40.2	11.4	16 03.9	5.9 55.9	40	04 11	04 47	05 16	12 36	13 34	14 28	15 18	
	23	161 28.8	24.5	74 10.6	11.4	16 09.8	5.7 55.8	45	03 52	04 33	05 05	12 46	13 46	14 42	15 33	
V I E R N E S	7 00	176 28.7	S15 23.7	88 41.0	11.4	N16 15.5	5.7 55.8	S 50	03 28	04 15	04 52	12 59	14 02	14 59	15 50	
	01	191 28.7	23.0	103 11.4	11.4	16 21.2	5.6 55.8	52	03 16	04 07	04 46	13 06	14 09	15 07	15 58	
	02	206 28.7	22.2	117 41.8	11.4	16 26.8	5.5 55.8	54	03 02	03 57	04 39	13 12	14 17	15 16	16 07	
	03	221 28.6	21.4	132 12.2	11.4	16 32.3	5.5 55.7	56	02 44	03 46	04 31	13 20	14 26	15 25	16 17	
	04	236 28.6	20.6	146 42.6	11.4	16 37.8	5.3 55.7	58	02 23	03 34	04 23	13 28	14 36	15 37	16 29	
	05	251 28.6	19.8	161 13.0	11.5	16 43.1	5.3 55.7	S 60	01 53	03 19	04 13	13 38	14 48	15 50	16 43	
	06	266 28.5	S15 19.1	175 43.5	11.4	N16 48.4	5.1 55.6	Lat. Ocaso Sol		Crepúsculo		Ocaso Luna				
	07	281 28.5	18.3	190 13.9	11.4	16 53.5	5.1 55.6	N 72	h m	h m	h m	h m	h m	h m	h m	h m
	08	296 28.4	17.5	204 44.3	11.4	16 58.6	5.0 55.6									
	09	311 28.4	16.7	219 14.7	11.5	17 03.6	4.9 55.5	N 70	14 46	16 18	17 43	02 39	04 40			
	10	326 28.4	15.9	233 45.2	11.4	17 08.5	4.8 55.5	N 68	15 16	16 33	17 48	02 11	03 51	05 25	06 43	
	11	341 28.4	15.2	248 15.6	11.5	17 13.3	4.7 55.5	70	15 37	16 44	17 52	01 49	03 20	04 41	05 48	
	12	356 28.3	S15 14.4	262 46.1	11.4	N17 18.0	4.6 55.5	66	15 54	16 54	17 56	01 33	02 57	04 12	05 15	
	13	11 28.3	13.6	277 16.5	11.5	17 22.6	4.6 55.4	64	16 08	17 02	17 59	01 19	02 39	03 50	04 50	
	14	26 28.3	12.8	291 47.0	11.4	17 27.2	4.4 55.4	62	16 20	17 09	18 02	01 08	02 24	03 33	04 31	
	15	41 28.2	12.0	306 17.4	11.5	17 31.6	4.4 55.4	60	16 30	17 15	18 05	00 58	02 12	03 18	04 15	
	16	56 28.2	11.2	320 47.9	11.4	17 36.0	4.2 55.4	N 58	16 38	17 21	18 08	00 50	02 01	03 06	04 02	
	17	71 28.2	10.5	335 18.3	11.5	17 40.2	4.2 55.3	56	16 46	17 26	18 10	00 43	01 52	02 55	03 51	
	18	86 28.1	S15 09.7	349 48.8	11.5	N17 44.4	4.1 55.3	54	16 53	17 31	18 13	00 36	01 44	02 45	03 41	
	19	101 28.1	08.9	4 19.3	11.5	17 48.5	4.0 55.3	52	16 59	17 35	18 15	00 30	01 36	02 37	03 32	
	20	116 28.1	08.1	18 49.8	11.5	17 52.5	3.9 55.3	50	17 04	17 39	18 17	00 25	01 30	02 29	03 24	
	21	131 28.0	07.3	33 20.3	11.4	17 56.4	3.8 55.2	45	17 16	17 47	18 22	00 14	01 15	02 13	03 07	
	22	146 28.0	06.5	47 50.7	11.5	18 00.2	3.8 55.2	N 40	17 26	17 54	18 26	00 04	01 04	02 00	02 53	
	23	161 28.0	05.7	62 21.2	11.5	18 04.0	3.6 55.2	35	17 35	18 01	18 31	24 54	00 54	01 49	02 41	
S Á B A D O	8 00	176 28.0	S15 04.9	76 51.7	11.5	N18 07.6	3.6 55.1	30	17 42	18 07	18 35	24 45	00 45	01 39	02 30	
	01	191 27.9	04.2	91 22.2	11.5	18 11.2	3.4 55.1	20	17 55	18 18	18 44	24 30	00 30	01 22	02 13	
	02	206 27.9	03.4	105 52.7	11.6	18 14.6	3.4 55.1	N 10	18 07	18 28	18 54	24 17	00 17	01 08	01 57	
	03	221 27.9	02.6	120 23.3	11.5	18 18.0	3.3 55.1	0	18 18	18 39	19 04	24 05	00 05	00 54	01 43	
	04	236 27.9	01.8	134 53.8	11.5	18 21.3	3.1 55.1	S 10	18 29	18 50	19 16	23 53	24 40	00 40	01 28	
	05	251 27.8	01.0	149 24.3	11.5	18 24.4	3.1 55.0	20	18 40	19 03	19 31	23 40	24 26	00 26	01 12	
	06	266 27.8	S15 00.2	163 54.8	11.6	N18 27.5	3.0 55.0	30	18 54	19 19	19 50	23 25	24 09	00 09	00 55	
	07	281 27.8	14 59.4	178 25.4	11.5	18 30.5	2.9 55.0	35	19 02	19 29	20 02	23 16	23 59	24 44	00 44	
	08	296 27.8	58.6	192 55.9	11.6	18 33.4	2.9 55.0	40	19 11	19 41	20 16	23 07	23 48	24 32	00 32	
	09	311 27.7	57.8	207 26.5	11.5	18 36.3	2.7 54.9	45	19 22	19 54	20 35	22 55	23 35	24 18	00 18	
	10	326 27.7	57.0	221 57.0	11.6	18 39.0	2.6 54.9	S 50	19 35	20 12	20 58	22 41	23 19	24 01	00 01	
	11	341 27.7	56.2	236 27.6	11.6	18 41.6	2.6 54.9	52	19 41	20 20	21 10	22 35	23 11	23 53	24 41	
	12	356 27.7	S14 55.4	250 58.2	11.6	N18 44.2	2.4 54.9	54	19 48	20 29	21 24	22 28	23 03	23 44	24 32	
	13	11 27.6	54.7	265 28.8	11.6	18 46.6	2.4 54.9	56	19 55	20 40	21 41	22 20	22 54	23 34	24 22	
	14	26 27.6	53.9	279 59.4	11.5	18 49.0	2.2 54.8	58	20 04	20 52	22 02	22 11	22 43	23 23	24 10	
	15	41 27.6	53.1	294 29.9	11.7	18 51.2	2.2 54.8	S 60	20 14	21 07	22 30	22 01	22 31	23 09	23 56	
	16	56 27.6	52.3	309 00.6	11.6	18 53.4	2.1 54.8	SOL		LUNA						
	17	71 27.5	51.5	323 31.2	11.6	18 55.5	2.0 54.8	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
	18	86 27.5	S14 50.7	338 01.8	11.6	N18 57.5	1.9 54.8		00h	12h						
	19	101 27.5	49.9	352 32.4	11.7	18 59.4	1.8 54.7	d	m s	m s	h m	h m	h m	d	%	
	20	116 27.5	49.1	7 03.1	11.6	19 01.2	1.7 54.7	6	14 01	14 03	12 14	17 53	05 29	07 47		
	21	131 27.5	48.3	21 33.7	11.7	19 02.9	1.7 54.7	7	14 05	14 07	12 14	18 42	06 18	08 57		
	22	146 27.4	47.5	36 04.4	11.6	19 04.6	1.5 54.7	8	14 08	14 09	12 14	19 31	07 07	09 66		
	23	161 27.4	46.7	50 35.0	11.7	N19 06.1	1.4 54.									

UT (HmGr)	ARIES			VENUS -4.9			MARTE +0.0			JÚPITER -2.6			SATURNO +0.5			ESTRELLAS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	AHGr	AHGr	Dec	AHGr	Dec		AHGr	Dec		AHGr	Dec		Nombre	AHS	Dec																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
DOMINGO	9 00	139 00.7	213 40.0	S16 09.8	294 44.4	S 7 17.0	36 29.7	N23 08.6	267 53.5	S16 17.4	Acamar	315 18.0	S40 15.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	01	154 03.1	228 41.6	09.9	309 46.3	17.2	51 32.4	08.6	282 55.9	17.4	Achernar	335 26.7	S57 10.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	02	169 05.6	243 43.3	10.0	324 48.3	17.3	66 35.1	08.6	297 58.3	17.4	Acrux	173 08.1	S63 10.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	03	184 08.1	258 45.0	10.1	339 50.2	17.5	81 37.7	08.6	313 00.6	17.4	Adhara	255 11.8	S28 59.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	04	199 10.5	273 46.6	10.3	354 52.2	17.7	96 40.4	08.6	328 03.0	17.4	Aldebarán	290 48.7	N16 32.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	05	214 13.0	288 48.3	10.4	9 54.1	17.8	111 43.1	08.7	343 05.4	17.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	06	229 15.5	303 49.9	S16 10.5	24 56.1	S 7 18.0	126 45.8	N23 08.7	358 07.8	S16 17.5	Alioth	166 20.0	N55 52.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	07	244 17.9	318 51.6	10.6	39 58.0	18.2	141 48.5	08.7	13 10.1	17.5	Alkaid	152 58.4	N49 14.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	08	259 20.4	333 53.2	10.7	55 00.0	18.3	156 51.1	08.7	28 12.5	17.5	Al Na'ir	27 43.6	S46 53.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	09	274 22.9	348 54.9	10.8	70 01.9	18.5	171 53.8	08.8	43 14.9	17.5	Alnilam	275 45.7	S 1 11.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	10	289 25.3	3 56.5	10.9	85 03.9	18.7	186 56.5	08.8	58 17.2	17.5	Alphard	217 55.3	S 8 43.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	11	304 27.8	18 58.1	11.0	100 05.8	18.8	201 59.2	08.8	73 19.6	17.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	12	319 30.3	33 59.8	S16 11.2	115 07.8	S 7 19.0	217 01.9	N23 08.8	88 22.0	S16 17.6	Alphecca	126 10.6	N26 39.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	13	334 32.7	49 01.4	11.3	130 09.7	19.2	232 04.5	08.8	103 24.4	17.6	Alpheratz	357 43.2	N29 10.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	14	349 35.2	64 03.0	11.4	145 11.7	19.3	247 07.2	08.9	118 26.7	17.6	Altair	62 08.1	N 8 54.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	15	4 37.6	79 04.6	11.5	160 13.7	19.5	262 09.9	08.9	133 29.1	17.6	Ankaa	353 15.6	S42 13.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	16	19 40.1	94 06.3	11.6	175 15.6	19.7	277 12.6	08.9	148 31.5	17.6	Antares	112 25.8	S26 27.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	17	34 42.6	109 07.9	11.7	190 17.6	19.8	292 15.2	08.9	163 33.8	17.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	18	49 45.0	124 09.5	S16 11.9	205 19.5	S 7 20.0	307 17.9	N23 08.9	178 36.2	S16 17.6	Arcturus	145 55.2	N19 06.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	19	64 47.5	139 11.1	12.0	220 21.5	20.2	322 20.6	09.0	193 38.6	17.7	Atria	107 27.4	S69 02.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	20	79 50.0	154 12.7	12.1	235 23.5	20.3	337 23.3	09.0	208 41.0	17.7	Avior	234 17.1	S59 33.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	21	94 52.4	169 14.3	12.2	250 25.4	20.5	352 26.0	09.0	223 43.3	17.7	Bellatrix	278 31.3	N 6 21.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	22	109 54.9	184 15.9	12.3	265 27.4	20.6	7 28.6	09.0	238 45.7	17.7	Betelgeuse	271 00.6	N 7 24.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
23	124 57.4	199 17.5	12.4	280 29.3	20.8	22 31.3	09.1	253 48.1	17.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
LUNES	10 00	139 59.8	214 19.1	S16 12.5	295 31.3	S 7 21.0	37 34.0	N23 09.1	268 50.4	S16 17.7	Canopus	263 55.5	S52 42.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	01	155 02.3	229 20.6	12.7	310 33.3	21.1	52 36.7	09.1	283 52.8	17.7	Capella	480 33.5	N46 00.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	02	170 04.8	244 22.2	12.8	325 35.2	21.3	67 39.3	09.1	298 55.2	17.8	Deneb	29 31.6	N45 19.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	03	185 07.2	259 23.8	12.9	340 37.2	21.5	82 42.0	09.1	313 57.6	17.8	Denébola	182 32.9	N14 29.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	04	200 09.7	274 25.4	13.0	355 39.2	21.6	97 44.7	09.2	328 59.9	17.8	Diphda	348 55.6	S17 54.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	05	215 12.1	289 26.9	13.1	10 41.1	21.8	112 47.3	09.2	344 02.3	17.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	06	230 14.6	304 28.5	S16 13.2	25 43.1	S 7 21.9	127 50.0	N23 09.2	359 04.7	S16 17.8	Dubhe	193 50.6	N61 40.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	07	245 17.1	319 30.1	13.3	40 45.1	22.1	142 52.7	09.2	14 07.1	17.8	Einath	278 11.8	N28 37.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	08	260 19.5	334 31.6	13.4	55 47.1	22.3	157 55.4	09.2	29 09.4	17.8	Eltanin	90 46.3	N51 29.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	09	275 22.0	349 33.2	13.6	70 49.0	22.4	172 58.0	09.3	44 11.8	17.9	Enif	33 47.0	N 9 56.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	10	290 24.5	4 34.7	13.7	85 51.0	22.6	188 00.7	09.3	59 14.2	17.9	Fomalhaut	15 23.8	S29 32.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	11	305 26.9	19 36.3	13.8	100 53.0	22.7	203 03.4	09.3	74 16.6	17.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	12	320 29.4	34 37.8	S16 13.9	115 55.0	S 7 22.9	218 06.0	N23 09.3	89 18.9	S16 17.9	Gacrux	171 59.9	S57 11.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	13	335 31.9	49 39.4	14.0	130 56.9	23.1	233 08.7	09.3	104 21.3	17.9	Gienah	175 51.5	S17 37.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	14	350 34.3	64 40.9	14.1	145 58.9	23.2	248 11.4	09.4	119 23.7	17.9	Hadar	148 46.9	S60 26.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	15	5 36.8	79 42.5	14.2	161 00.9	23.4	263 14.1	09.4	134 26.1	17.9	Hamal	328 00.3	N23 31.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	16	20 39.3	94 44.0	14.4	176 02.9	23.5	278 16.7	09.4	149 28.4	17.9	Kaus Aust.	83 43.5	S34 22.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	17	35 41.7	109 45.5	14.5	191 04.8	23.7	293 19.4	09.4	164 30.8	18.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	18	50 44.2	124 47.0	S16 14.6	206 06.8	S 7 23.8	308 22.1	N23 09.4	179 33.2	S16 18.0	Kochab	137 20.0	N74 05.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	19	65 46.6	139 48.6	14.7	221 08.8	24.0	323 24.7	09.5	194 35.6	18.0	Markab	13 38.1	N15 16.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	20	80 49.1	154 50.1	14.8	236 10.8	24.2	338 27.4	09.5	209 37.9	18.0	Menkar	314 14.6	N 4 08.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	21	95 51.6	169 51.6	14.9	251 12.8	24.3	353 30.1	09.5	224 40.3	18.0	Menkent	148 06.8	S36 26.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	22	110 54.0	184 53.1	15.0	266 14.8	24.5	8 32.7	09.5	239 42.7	18.0	Miaplacidus	221 38.5	S69 46.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
23	125 56.5	199 54.6	15.2	281 16.7	24.6	23 35.4	09.5	254 45.1	18.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
MARTES	11 00	140 59.0	214 56.1	S16 15.3	296 18.7	S 7 24.8	38 38.1	N23 09.6	269 47.5	S16 18.0	Mirfak	308 39.6	N49 54.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	01	156 01.4	229 57.6	15.4	311 20.7	24.9	53 40.7	09.6	284 49.8	18.1	Nunki	75 58.0	S26 16.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	02	171 03.9	244 59.1	15.5	326 22.7	25.1	68 43.4	09.6	299 52.2	18.1	Peacock	53 19.1	S56 41.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	03	186 06.4	260 00.6	15.6	341 24.7	25.2	83 46.1	09.6	314 54.6	18.1	Póllux	243 26.8	N27 59.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	04	201 08.8	275 02.1	15.7	356 26.7	25.4	98 48.7	09.6	329 57.0	18.1	Procyon	244 58.9	N 5 11.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	05	216 11.3	290 03.6	15.8	11 28.7	25.5	113 51.4	09.7	344 59.3	18.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	06	231 13.7	305 05.1	S16 15.9	26 30.7	S 7 25.7	128 54.1	N23 09.7	0 01.7	S16 18.1	Rasalhague	96 06.2	N12 33.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	07	246 16.2	320 06.6	16.1	41 32.6	25.8	143 56.7	09.7	15 04.1	18.1	Régulus	207 42.7	N11 53.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	08	261 18.7	335 08.0	16.2	56 34.6	26.0	158 59.4	09.7	30 06.5	18.1	Rigel	281 11.4	S 8 11.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	09	276 21.1	350 09.5	16.3	71 36.6	26.1	174 02.1	09.7	45 08.9	18.2	Rigel Kent.	139 50.8	S60 53.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	10	291 23.6	5 11.0	16.4	86 38.6	26.3	189 04.7	09.8	60 11.2	18.2	Sabik	102 12.1	S15 44.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	11	306 26.1	20 12.4	16.5	101 40.6	26.4	204 07.4	09.8	75 13.6	18.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	12	321 28.5	35 13.9	S16 16.6	116 42.6	S 7 26.6	219 10.1	N23 09.8	90 16.0	S16 18.2	Schedar	349 40.2	N56 37.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	13	336 31.0	50 15.4	16.7	131 44.6	26.7	234 12.7	09.8	105 18.4	18.2	Shaula	96 21.5	S37 06.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	14	351 33.5	65 16.8	16.8	146 46.6	26.9	249 15.4	09.8	120 20.8	18.2	Sirius	258 33.0	S16 44.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	15	6 35.9	80 18.3	17.0	161 48.6	27.0	264 18.0	09.9	135 23.1	18.2	Spica	158 30.6	S11 14.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	16	21 38.4	95 19.7	17.1	176 50.6	27.2	279 20.7	09.9	150 25.5	18.2	Suhail	222 51.6	S43 29.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	17	36 40.9	110 21.2	17.2	191 52.6	27.3	294 23.4	09.9	165 27.9	18.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	18	51 43.3	125 22.6	S16 17.3	206 54.6	S 7 27.5	309 26.0	N23 09.9	180 30.3	S16 18.3	Vega	80 38.9	N38 47.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	19	66 45.8	140 24.1	17.4	221 56.6	27.6	324 28.7	09.9	195 32.7	18.3	Zuben'ubi	137 04.8	S16 06.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	20	81 48.2	155 25.5	17.5	236 58.6	27.8	339 31.3	10.0	210 35.0	18.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	21	96 50.7	170 26.9	17.6	252 00.6	27.9	354 34.0	10.0	225 37.4	18.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	22	111 53.2	185 28.4	17.7	267 02.6	28.1	9 36.7	10.0	240 39.8	18.3	Venus	74 19.2	h 9 42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
23	126 55.6	200 29.8	17.8	282 04.6	28.2	24 39.3	10.0	255 42.2	18.3	Marte	155 31.5	4 17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Paso Mer. 14 37.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	9	10	11	12
d h	°	'	°	'	°	'	°	h m	h m	h m	h m	h m	h m	h m	h m
DOMINGO	N 70	176 27.4	S14 45.9	65 05.7	N19 07.5	1.4	54.6	N 72	06 36	07 58	09 24			09 58	12 18
	N 70	191 27.4	45.1	79 36.4	N19 08.9	1.2	54.6	N 68	06 32	07 45	08 59	09 06	10 03	11 27	12 58
	N 70	206 27.4	44.3	94 07.1	N19 10.1	1.2	54.6	N 66	06 28	07 35	08 39	10 01	10 55	12 06	13 26
	N 70	221 27.3	43.5	108 37.8	N19 11.7	1.1	54.6	N 64	06 25	07 26	08 24	10 35	11 27	12 33	13 47
	N 70	236 27.3	42.7	123 08.5	N19 12.4	1.0	54.6	N 62	06 22	07 19	08 11	10 59	11 51	12 53	14 03
	N 70	251 27.3	41.9	137 39.2	N19 13.4	0.9	54.5	N 60	06 20	07 12	08 01	11 18	12 10	13 10	14 17
	N 58	266 27.3	S14 41.1	152 10.0	N19 14.3	0.8	54.5	N 58	06 17	07 07	07 52	11 34	12 25	13 24	14 29
	N 56	281 27.3	40.3	166 40.7	N19 15.1	0.7	54.5	N 56	06 15	07 02	07 44	11 47	12 38	13 36	14 39
	N 54	296 27.3	39.5	181 11.5	N19 15.8	0.6	54.5	N 54	06 13	06 57	07 37	11 59	12 49	13 46	14 47
	N 52	311 27.2	38.7	195 42.3	N19 16.4	0.5	54.5	N 52	06 11	06 53	07 30	12 09	12 59	13 55	14 55
	N 50	326 27.2	37.9	210 13.0	N19 16.9	0.5	54.5	N 50	06 09	06 49	07 25	12 18	13 08	14 03	15 02
	N 45	341 27.2	37.1	224 43.8	N19 17.4	0.3	54.5	N 45	06 08	06 46	07 20	12 26	13 16	14 10	15 08
	N 40	356 27.2	S14 36.3	239 14.6	N19 17.7	0.3	54.4	N 40	06 03	06 38	07 08	12 43	13 33	14 26	15 22
	N 35	11 27.2	35.5	253 45.5	N19 18.0	0.1	54.4	N 35	05 59	06 31	06 59	12 57	13 46	14 39	15 33
	N 30	26 27.2	34.7	268 16.3	N19 18.1	0.1	54.4	N 30	05 55	06 25	06 51	13 09	13 58	14 49	15 42
	N 20	41 27.2	33.9	282 47.2	N19 18.2	0.0	54.4	N 20	05 51	06 20	06 44	13 19	14 08	14 59	15 50
	N 10	56 27.1	33.0	297 18.0	N19 18.2	0.1	54.4	N 10	05 43	06 09	06 32	13 37	14 26	15 15	16 05
	S 0	71 27.1	32.2	311 48.9	N19 18.1	0.2	54.4	S 0	05 34	05 59	06 21	13 53	14 41	15 29	16 17
	S 10	86 27.1	S14 31.4	326 19.8	N19 17.9	0.3	54.4	S 10	05 25	05 49	06 11	14 08	14 55	15 42	16 29
	S 20	101 27.1	30.6	340 50.7	N19 17.6	0.4	54.3	S 20	05 13	05 39	06 00	14 22	15 10	15 56	16 40
	S 30	116 27.1	29.8	355 21.6	N19 17.2	0.4	54.3	S 30	04 59	05 26	05 49	14 38	15 25	16 10	16 52
	S 35	131 27.1	29.0	355 21.6	N19 17.2	0.4	54.3	S 35	04 41	05 11	05 36	14 56	15 42	16 26	17 06
	S 40	146 27.1	28.2	355 21.6	N19 17.2	0.4	54.3	S 40	04 29	05 02	05 29	15 06	15 53	16 35	17 15
	S 45	161 27.1	27.4	355 21.6	N19 17.2	0.4	54.3	S 45	04 15	04 51	05 20	15 18	16 04	16 46	17 24
	S 50	176 27.0	S14 26.6	53 25.5	N19 14.8	0.8	54.3	S 50	03 58	04 38	05 10	15 33	16 18	16 59	17 35
S 52	191 27.0	25.8	67 56.5	N19 14.0	0.9	54.3	S 52	03 35	04 21	04 57	15 50	16 35	17 14	17 48	
S 54	206 27.0	25.0	82 27.5	N19 13.1	1.0	54.3	S 54	03 24	04 13	04 52	15 58	16 43	17 21	17 54	
S 56	221 27.0	24.2	96 58.5	N19 12.1	1.1	54.2	S 56	03 10	04 04	04 45	16 07	16 51	17 29	18 01	
S 58	236 27.0	23.3	111 29.5	N19 11.0	1.2	54.2	S 58	02 55	03 54	04 38	16 17	17 01	17 38	18 08	
S 60	251 27.0	22.5	126 00.6	N19 09.8	1.2	54.2	S 60	02 35	03 43	04 30	16 29	17 12	17 48	18 16	
LUNES	S 60	266 27.0	S14 21.7	140 31.7	N19 08.6	1.4	54.2	S 60	02 10	03 29	04 21	16 43	17 25	17 59	18 26
	Lat.	281 27.0	20.9	155 02.8	N19 07.2	1.4	54.2	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	Lat.	296 27.0	20.1	169 33.9	N19 05.8	1.5	54.2	Lat.	Sol	Civil	Náut.	9	10	11	12
	N 72	311 27.0	19.3	184 05.0	N19 04.3	1.7	54.2	N 72				h m	h m	h m	h m
	N 70	326 26.9	18.5	198 36.2	N19 02.6	1.7	54.2	N 70	15 06	16 32	17 55			09 09	08 26
	N 68	341 26.9	17.7	213 07.4	N19 00.9	1.8	54.2	N 68	15 31	16 45	17 59	06 43	07 26	07 40	07 45
	N 66	356 26.9	S14 16.8	227 38.6	N18 59.1	1.8	54.2	N 66	15 50	16 55	18 02	05 48	06 34	07 01	07 16
	N 64	11 26.9	16.0	242 09.8	N18 57.3	2.0	54.1	N 64	16 06	17 03	18 05	05 15	06 01	06 33	06 55
	N 62	26 26.9	15.2	256 41.0	N18 55.3	2.1	54.1	N 62	16 18	17 11	18 07	04 50	05 38	06 12	06 38
	N 60	41 26.9	14.4	271 12.2	N18 53.2	2.1	54.1	N 60	16 29	17 17	18 10	04 31	05 19	05 55	06 24
	N 58	56 26.9	13.6	285 43.5	N18 51.1	2.2	54.1	N 58	16 38	17 23	18 12	04 15	05 03	05 41	06 11
	N 56	71 26.9	12.8	300 14.8	N18 48.9	2.3	54.1	N 56	16 46	17 28	18 14	04 02	04 50	05 29	06 01
	N 54	86 26.9	S14 12.0	314 46.1	N18 46.6	2.4	54.1	N 54	16 53	17 32	18 16	03 51	04 39	05 19	05 52
	N 52	101 26.9	11.1	329 17.4	N18 44.2	2.5	54.1	N 52	16 59	17 36	18 18	03 41	04 29	05 09	05 44
	N 50	116 26.9	10.3	343 48.8	N18 41.7	2.6	54.1	N 50	17 04	17 40	18 20	03 32	04 20	05 01	05 37
	N 45	131 26.9	9.5	358 20.1	N18 39.1	2.6	54.1	N 45	17 10	17 43	18 22	03 24	04 12	04 54	05 30
	N 40	146 26.9	08.7	372 51.5	N18 36.5	2.7	54.1	N 40	17 21	17 51	18 26	03 07	03 55	04 38	05 16
	N 30	161 26.9	07.9	386 22.9	N18 33.8	2.8	54.1	N 30	17 30	17 58	18 30	02 53	03 41	04 25	05 04
	N 35	176 26.9	S14 07.0	41 54.4	N18 31.0	2.9	54.1	N 35	17 38	18 04	18 34	02 41	03 29	04 14	04 54
	N 40	191 26.9	06.2	56 25.8	N18 28.1	3.0	54.1	N 40	17 45	18 09	18 38	02 30	03 19	04 04	04 46
	N 45	206 26.9	05.4	70 57.3	N18 25.1	3.1	54.1	N 45	17 57	18 19	18 46	02 13	03 01	03 47	04 31
	N 50	221 26.9	04.6	85 28.8	N18 22.0	3.1	54.0	N 50	18 07	18 29	18 54	01 57	02 45	03 32	04 17
	N 55	236 26.9	03.8	100 00.3	N18 18.9	3.3	54.0	N 55	18 18	18 39	19 04	01 43	02 31	03 18	04 05
	N 60	251 26.9	02.9	114 31.9	N18 15.6	3.3	54.0	N 60	18 28	18 50	19 15	01 28	02 16	03 04	03 52
	N 65	266 26.9	S14 02.1	129 03.4	N18 12.3	3.4	54.0	N 65	18 39	19 02	19 29	01 12	02 01	02 50	03 39
N 70	281 26.9	01.3	143 35.0	N18 08.9	3.4	54.0	N 70	18 52	19 17	19 47	00 55	01 43	02 33	03 24	
N 75	296 26.9	14 00.5	158 06.6	N18 05.5	3.6	54.0	N 75	18 59	19 26	19 58	00 44	01 32	02 23	03 15	
N 80	311 26.9	13 59.7	172 38.2	N18 01.9	3.6	54.0	N 80	19 08	19 37	20 12	00 32	01 20	02 11	03 04	
N 85	326 26.9	58.8	187 09.9	N17 58.3	3.8	54.0	N 85	19 18	19 50	20 29	00 18	01 06	01 58	02 52	
N 90	341 26.9	58.0	201 41.6	N17 54.5	3.8	54.0	N 90	19 30	20 06	20 52	00 01	00 49	01 41	02 38	
N 95	356 26.9	S13 57.2	216 13.3	N17 50.7	3.8	54.0	N 95	19 36	20 14	21 03	24 41	00 41	01 34	02 31	
N 100	11 26.9	56.4	230 45.0	N17 46.9	4.0	54.0	N 100	19 42	20 22	21 16	24 32	00 32	01 25	02 23	
N 105	26 26.9	55.5	245 16.7	N17 42.9	4.0	54.0	N 105	19 49	20 32	21 31	24 22	00 22	01 15	02 15	
N 110	41 26.9	54.7	259 48.5	N17 38.9	4.1	54.0	N 110	19 57	20 44	21 50	24 10	00 10	01 04	02 05	
N 115	56 26.9	53.9	274 20.3	N17 34.8	4.2	54.0	N 115	20 06	20 57	22 14	23 56	24 52	00 52	01 54	
N 120	71 26.9	53.1	288 52.1	N17 30.6	4.3	54.0	N 120	SOL		LUNA					
N 125	86 26.9	S13 52.2	303 24.0	N17 26.3	4.4	54.0	N 125	SOL		LUNA					
N 130	101 26.9	51.4	317 55.8	N17 21.9	4.4	54.0	N 130	Día	Ec. Tiempo		Paso Mer.		Paso Mer.		
N 135	116 26.9	50.6	332 27.7	N17 17.5	4.5	54.0	N 135		00 ^h	12 ^h		Sup.	Inf.	Edad	Fase
N 140	131 26.9	49.8	346 59.6	N17 13.0	4.6	54.0	N 140	d	m s	m s	h m	h m	h m	d %	
N 145	146 26.9	48.9	1 31.5	N17 08.4	4.6	54.0	N 145	9	14 10	14 11	12 14	20 19	07 55	10 75	
N 150	161 26.9	48.1	16 03.5	N17 03.8	4.7	54.0	N 150	10	14 12	14 12	12 14	21 07	08 43	11 83	
N 155							N 155	11	14 12	14 13	12 14	21 54	09 30	12 89	

UT (HmGr)	ARIES	VENUS -4.9	MARTE -0.1	JÚPITER -2.5	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
12 00	141 58.1	215 31.2 S16 18.0	297 06.6 S 7 28.4	39 42.0 N23 10.0	270 44.6 S16 18.3	Acamar 315 18.1 S40 15.3
01	157 00.6	230 32.7 18.1	312 08.6 28.5	54 44.6 10.1	285 46.9 18.4	Achernar 335 26.8 S57 10.2
02	172 03.0	245 34.1 18.2	327 10.7 28.7	69 47.3 10.1	300 49.3 18.4	Acrux 173 08.1 S63 10.5
03	187 05.5	260 35.5 . 18.3	342 12.7 . 28.8	84 50.0 . 10.1	315 51.7 . 18.4	Adhara 255 11.8 S28 59.9
04	202 08.0	275 36.9 18.4	357 14.7 29.0	99 52.6 10.1	330 54.1 18.4	Aldebarán 290 48.7 N16 32.1
05	217 10.4	290 38.3 18.5	12 16.7 29.1	114 55.3 10.1	345 56.5 18.4	
06	232 12.9	305 39.7 S16 18.6	27 18.7 S 7 29.2	129 57.9 N23 10.2	0 58.9 S16 18.4	Alioth 166 20.0 N55 52.7
07	247 15.4	320 41.1 18.7	42 20.7 29.4	145 00.6 10.2	16 01.2 18.4	Alkaid 152 58.4 N49 14.3
08	262 17.8	335 42.5 18.8	57 22.7 29.5	160 03.2 10.2	31 03.6 18.4	Al Na'ir 27 43.6 S46 53.5
09	277 20.3	350 43.9 . 18.9	72 24.7 . 29.7	175 05.9 . 10.2	46 06.0 . 18.4	Alnilam 275 45.7 S 1 11.9
10	292 22.7	5 45.3 19.1	87 26.8 29.8	190 08.6 10.2	61 08.4 18.5	Alphard 217 55.3 S 8 43.5
11	307 25.2	20 46.7 19.2	102 28.8 30.0	205 11.2 10.3	76 10.8 18.5	
12	322 27.7	35 48.1 S16 19.3	117 30.8 S 7 30.1	220 13.9 N23 10.3	91 13.2 S16 18.5	Alphecca 126 10.6 N26 39.9
13	337 30.1	50 49.5 19.4	132 32.8 30.2	235 16.5 10.3	106 15.5 18.5	Alpheratz 357 43.2 N29 10.2
14	352 32.6	65 50.8 19.5	147 34.8 30.4	250 19.2 10.3	121 17.9 18.5	Altair 62 08.1 N 8 54.4
15	7 35.1	80 52.2 . 19.6	162 36.8 . 30.5	265 21.8 . 10.3	136 20.3 . 18.5	Ankaa 353 15.6 S42 13.9
16	22 37.5	95 53.6 19.7	177 38.9 30.7	280 24.5 10.4	151 22.7 18.5	Antares 112 25.7 S26 27.6
17	37 40.0	110 55.0 19.8	192 40.9 30.8	295 27.1 10.4	166 25.1 18.5	
18	52 42.5	125 56.3 S16 19.9	207 42.9 S 7 31.0	310 29.8 N23 10.4	181 27.5 S16 18.5	Arcturus 145 55.2 N19 06.4
19	67 44.9	140 57.7 20.0	222 44.9 31.1	325 32.4 10.4	196 29.8 18.6	Atria 107 27.3 S69 02.8
20	82 47.4	155 59.0 20.2	237 47.0 31.2	340 35.1 10.4	211 32.2 18.6	Avior 234 17.1 S59 33.6
21	97 49.8	171 00.4 . 20.3	252 49.0 . 31.4	355 37.7 . 10.4	226 34.6 . 18.6	Bellatrix 278 31.3 N 6 21.5
22	112 52.3	186 01.8 20.4	267 51.0 31.5	10 40.4 10.5	241 37.0 18.6	Betelgeuse 271 00.6 N 7 24.3
23	127 54.8	201 03.1 20.5	282 53.0 31.6	25 43.0 10.5	256 39.4 18.6	
13 00	142 57.2	216 04.5 S16 20.6	297 55.1 S 7 31.8	40 45.7 N23 10.5	271 41.8 S16 18.6	Canopus 263 55.5 S52 42.6
01	157 59.7	231 05.8 20.7	312 57.1 31.9	55 48.3 10.5	286 44.2 18.6	Capella 280 33.5 N46 00.7
02	173 02.2	246 07.1 20.8	327 59.1 32.1	70 51.0 10.5	301 46.5 18.6	Deneb 49 31.6 N45 19.9
03	188 04.6	261 08.5 . 20.9	343 01.2 . 32.2	85 53.7 . 10.6	316 48.9 . 18.6	Denébola 182 32.9 N14 29.4
04	203 07.1	276 09.8 21.0	358 03.2 32.3	100 56.3 10.6	331 51.3 18.6	Diphda 348 55.6 S17 54.7
05	218 09.6	291 11.1 21.1	13 05.2 32.5	115 58.9 10.6	346 53.7 18.7	
06	233 12.0	306 12.5 S16 21.2	28 07.2 S 7 32.6	131 01.6 N23 10.6	1 56.1 S16 18.7	Dubhe 193 50.6 N61 40.2
07	248 14.5	321 13.8 21.3	43 09.3 32.7	146 04.2 10.6	16 58.5 18.7	Elnath 278 11.8 N28 37.0
08	263 17.0	336 15.1 21.4	58 11.3 32.9	161 06.9 10.7	32 00.9 18.7	Eltanin 90 46.2 N51 29.1
09	278 19.4	351 16.4 . 21.5	73 13.4 . 33.0	176 09.5 . 10.7	47 03.3 . 18.7	Enif 33 47.0 N 9 56.4
10	293 21.9	6 17.8 21.7	88 15.4 33.1	191 12.2 10.7	62 05.6 18.7	Fomalhaut 15 23.8 S29 32.9
11	308 24.3	21 19.1 21.8	103 17.4 33.3	206 14.8 10.7	77 08.0 18.7	
12	323 26.8	36 20.4 S16 21.9	118 19.5 S 7 33.4	221 17.5 N23 10.7	92 10.4 S16 18.7	Gacrux 171 59.8 S57 11.4
13	338 29.3	51 21.7 22.0	133 21.5 33.5	236 20.1 10.7	107 12.8 18.7	Gienah 175 51.5 S17 37.3
14	353 31.7	66 23.0 22.1	148 23.5 33.7	251 22.8 10.8	122 15.2 18.8	Hadar 148 46.9 S60 26.2
15	8 34.2	81 24.3 . 22.2	163 25.6 . 33.8	266 25.4 . 10.8	137 17.6 . 18.8	Hamal 328 00.3 N23 31.7
16	23 36.7	96 25.6 22.3	178 27.6 33.9	281 28.1 10.8	152 20.0 18.8	Kaus Aust. 83 43.4 S34 22.4
17	38 39.1	111 26.9 22.4	193 29.7 34.1	296 30.7 10.8	167 22.4 18.8	
18	53 41.6	126 28.2 S16 22.5	208 31.7 S 7 34.2	311 33.4 N23 10.8	182 24.7 S16 18.8	Kochab 137 20.0 N74 05.6
19	68 44.1	141 29.5 22.6	223 33.8 34.3	326 36.0 10.9	197 27.1 18.8	Markab 13 38.1 N15 16.9
20	83 46.5	156 30.8 22.7	238 35.8 34.5	341 38.6 10.9	212 29.5 18.8	Menkar 314 14.6 N 4 08.5
21	98 49.0	171 32.0 . 22.8	253 37.9 . 34.6	356 41.3 . 10.9	227 31.9 . 18.8	Menkent 148 06.8 S36 26.2
22	113 51.5	186 33.3 22.9	268 39.9 34.7	11 43.9 10.9	242 34.3 18.8	Miaplacidus 221 38.5 S69 46.7
23	128 53.9	201 34.6 23.0	283 42.0 34.9	26 46.6 10.9	257 36.7 18.8	
14 00	143 56.4	216 35.9 S16 23.1	298 44.0 S 7 35.0	41 49.2 N23 10.9	272 39.1 S16 18.8	Mirfak 308 39.6 N49 54.7
01	158 58.8	231 37.1 23.2	313 46.1 35.1	56 51.9 11.0	287 41.5 18.9	Nunki 75 58.0 S26 16.6
02	174 01.3	246 38.4 23.3	328 48.1 35.3	71 54.5 11.0	302 43.9 18.9	Peacock 53 19.1 S56 41.2
03	189 03.8	261 39.7 . 23.4	343 50.2 . 35.4	86 57.1 . 11.0	317 46.3 . 18.9	Póllux 243 26.8 N27 59.3
04	204 06.2	276 40.9 23.5	358 52.2 35.5	101 59.8 11.0	332 48.6 18.9	Procyon 244 58.9 N 5 11.0
05	219 08.7	291 42.2 23.6	13 54.3 35.6	117 02.4 11.0	347 51.0 18.9	
06	234 11.2	306 43.4 S16 23.7	28 56.3 S 7 35.8	132 05.1 N23 11.0	2 53.4 S16 18.9	Rasalhague 96 06.2 N12 33.0
07	249 13.6	321 44.7 23.8	43 58.4 35.9	147 07.7 11.1	17 55.8 18.9	Régulus 207 42.7 N11 53.6
08	264 16.1	336 45.9 23.9	59 00.4 36.0	162 10.4 11.1	32 58.2 18.9	Rigel 281 11.4 S 8 11.4
09	279 18.6	351 47.2 . 24.0	74 02.5 . 36.1	177 13.0 . 11.1	48 00.6 . 18.9	Rigel Kent. 139 50.8 S60 53.3
10	294 21.0	6 48.4 24.1	89 04.6 36.3	192 15.6 11.1	63 03.0 18.9	Sabik 102 12.1 S15 44.4
11	309 23.5	21 49.7 24.2	104 06.6 36.4	207 18.3 11.1	78 05.4 18.9	
12	324 25.9	36 50.9 S16 24.3	119 08.7 S 7 36.5	222 20.9 N23 11.2	93 07.8 S16 19.0	Schedar 349 40.3 N56 37.1
13	339 28.4	51 52.1 24.4	134 10.7 36.7	237 23.5 11.2	108 10.2 19.0	Shaula 96 21.5 S37 06.6
14	354 30.9	66 53.4 24.5	149 12.8 36.8	252 26.2 11.2	123 12.6 19.0	Sirius 258 33.0 S16 44.5
15	9 33.3	81 54.6 . 24.6	164 14.9 . 36.9	267 28.8 . 11.2	138 14.9 . 19.0	Spica 158 30.6 S11 14.2
16	24 35.8	96 55.8 24.7	179 16.9 37.0	282 31.5 11.2	153 17.3 19.0	Suhail 222 51.6 S43 29.6
17	39 38.3	111 57.0 24.8	194 19.0 37.2	297 34.1 11.2	168 19.7 19.0	
18	54 40.7	126 58.3 S16 24.9	209 21.1 S 7 37.3	312 36.7 N23 11.3	183 22.1 S16 19.0	Vega 80 38.9 N38 47.8
19	69 43.2	141 59.5 25.0	224 23.1 37.4	327 39.4 11.3	198 24.5 19.0	Zuben'ubi 137 04.8 S16 06.0
20	84 45.7	157 00.7 25.1	239 25.2 37.5	342 42.0 11.3	213 26.9 19.0	
21	99 48.1	172 01.9 . 25.2	254 27.3 . 37.6	357 44.6 . 11.3	228 29.3 . 19.0	AHS Paso Mer.
22	114 50.6	187 03.1 25.3	269 29.3 37.8	12 47.3 11.3	243 31.7 19.0	Venus 73 07.2 9 35
23	129 53.1	202 04.3 25.4	284 31.4 37.9	27 49.9 11.3	258 34.1 19.1	Marte 154 57.8 4 08
						Júpiter 257 48.5 21 13
						Saturno 128 44.5 5 52
Paso Mer. 14	25.8	v 1.3 d 0.1	v 2.0 d 0.1	v 2.6 d 0.0	v 2.4 d 0.0	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		12	13	14	15
M I É R C O L E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m
	12 00	176 26.9	S13 47.3	30 35.5	13.0	N16 59.1	4.9 54.0	N 70	06 23	07 44	09 06	12 18	14 06	15 48	17 27
	01	191 26.9	46.4	45 07.5	13.0	16 54.2	4.8 54.0	68	06 18	07 24	08 27	13 26	14 50	16 16	17 43
	02	206 26.9	45.6	59 39.5	13.1	16 49.4	5.0 54.0	66	06 16	07 17	08 13	13 47	15 06	16 26	17 48
	03	221 26.9	44.8	74 11.6	13.1	16 44.4	5.0 54.0	64	06 14	07 10	08 02	14 03	15 18	16 35	17 53
	04	236 26.9	44.0	88 43.7	13.1	16 39.4	5.1 54.0	62	06 12	07 04	07 52	14 17	15 28	16 42	17 57
	05	251 26.9	43.1	103 15.8	13.1	16 34.3	5.2 54.0	60	06 11	06 59	07 44	14 29	15 37	16 48	18 01
	06	266 26.9	S13 42.3	117 47.9	13.2	N16 29.1	5.3 54.0	N 58	06 09	06 55	07 37	14 39	15 45	16 54	18 04
	07	281 27.0	41.5	132 20.1	13.1	16 23.8	5.3 54.0	56	06 07	06 51	07 30	14 47	15 52	16 59	18 07
	08	296 27.0	40.6	146 52.2	13.3	16 18.5	5.4 54.0	54	06 06	06 47	07 24	14 55	15 58	17 03	18 09
	09	311 27.0	39.8	161 24.5	13.2	16 13.1	5.4 54.0	52	06 04	06 44	07 19	15 02	16 04	17 07	18 12
	10	326 27.0	39.0	175 56.7	13.2	16 07.7	5.6 54.0	50	06 03	06 41	07 14	15 08	16 09	17 11	18 14
	11	341 27.0	38.1	190 28.9	13.3	16 02.1	5.6 54.0	45	05 59	06 34	07 04	15 22	16 19	17 18	18 18
	12	356 27.0	S13 37.3	205 01.2	13.3	N15 56.5	5.7 54.0	N 40	05 56	06 28	06 56	15 33	16 28	17 25	18 22
	13	11 27.0	36.5	219 33.5	13.3	15 50.8	5.7 54.0	35	05 53	06 22	06 48	15 42	16 36	17 30	18 25
	14	26 27.0	35.6	234 05.8	13.4	15 45.1	5.8 54.0	30	05 49	06 17	06 42	15 50	16 43	17 35	18 28
	15	41 27.0	34.8	248 38.2	13.4	15 39.3	5.9 54.0	20	05 42	06 08	06 30	16 05	16 54	17 44	18 33
	16	56 27.0	34.0	263 10.6	13.4	15 33.4	6.0 54.0	N 10	05 34	05 59	06 20	16 17	17 04	17 51	18 37
	17	71 27.0	33.1	277 43.0	13.4	15 27.4	6.0 54.0	0	05 25	05 50	06 11	16 29	17 14	17 58	18 41
	18	86 27.1	S13 32.3	292 15.4	13.4	N15 21.4	6.1 54.0	S 10	05 14	05 39	06 01	16 40	17 23	18 05	18 46
	19	101 27.1	31.5	306 47.8	13.5	15 15.3	6.1 54.0	20	05 01	05 28	05 51	16 52	17 33	18 12	18 50
	20	116 27.1	30.6	321 20.3	13.5	15 09.2	6.2 54.0	30	04 44	05 14	05 39	17 06	17 44	18 20	18 55
	21	131 27.1	29.8	335 52.8	13.5	15 03.0	6.3 54.0	35	04 33	05 05	05 32	17 15	17 51	18 25	18 58
	22	146 27.1	28.9	350 25.3	13.6	14 56.7	6.4 54.0	40	04 20	04 55	05 24	17 24	17 58	18 30	19 01
	23	161 27.1	28.1	4 57.9	13.6	14 50.3	6.4 54.0	45	04 03	04 42	05 14	17 35	18 07	18 37	19 05
J U E V E S	13 00	176 27.1	S13 27.3	19 30.5	13.5	N14 43.9	6.5 54.0	S 50	03 42	04 27	05 03	17 48	18 18	18 44	19 09
	01	191 27.1	26.4	34 03.0	13.7	14 37.4	6.5 54.0	52	03 31	04 20	04 57	17 54	18 22	18 48	19 11
	02	206 27.2	25.6	48 35.7	13.6	14 30.9	6.7 54.0	54	03 19	04 11	04 52	18 01	18 28	18 51	19 13
	03	221 27.2	24.8	63 08.3	13.7	14 24.2	6.6 54.0	56	03 05	04 02	04 45	18 08	18 33	18 56	19 16
	04	236 27.2	23.9	77 41.0	13.7	14 17.6	6.8 54.0	58	02 47	03 51	04 38	18 16	18 40	19 00	19 18
	05	251 27.2	23.1	92 13.7	13.7	14 10.8	6.8 54.0	S 60	02 25	03 39	04 29	18 26	18 47	19 05	19 21
	06	266 27.2	S13 22.2	106 46.4	13.7	N14 04.0	6.8 54.0	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
	07	281 27.2	21.4	121 19.1	13.7	13 57.2	7.0 54.0			Civil		Náut.		12	13
	08	296 27.2	20.6	135 51.8	13.8	13 50.2	6.9 54.0							14	15
	09	311 27.3	19.7	150 24.6	13.8	13 43.3	7.1 54.0								
	10	326 27.3	18.9	164 57.4	13.9	13 36.2	7.1 54.1								
	11	341 27.3	18.0	179 30.3	13.8	13 29.1	7.2 54.1	N 72	h m	h m	h m	h m	h m	h m	h m
	12	356 27.3	S13 17.2	194 03.1	13.9	N13 21.9	7.2 54.1	N 70	15 24	16 46	18 07	08 26	08 12	08 02	07 53
	13	11 27.3	16.3	208 36.0	13.9	13 14.7	7.3 54.1	68	16 03	17 06	18 12	07 45	07 45	07 45	07 43
	14	26 27.3	15.5	223 08.9	13.9	13 07.4	7.3 54.1	66	16 17	17 13	18 14	06 55	07 09	07 20	07 28
	15	41 27.4	14.7	237 41.8	13.9	13 00.1	7.4 54.1	64	16 28	17 19	18 16	06 38	06 56	07 10	07 22
	16	56 27.4	13.8	252 14.7	14.0	12 52.7	7.5 54.1	62	16 37	17 25	18 17	06 24	06 45	07 02	07 17
	17	71 27.4	13.0	266 47.7	13.9	12 45.2	7.5 54.1	60	16 46	17 30	18 19	06 11	06 36	06 55	07 12
	18	86 27.4	S13 12.1	281 20.6	14.0	N12 37.7	7.5 54.1	N 58	16 53	17 34	18 21	06 01	06 27	06 49	07 08
	19	101 27.4	11.3	295 53.6	14.0	12 30.2	7.6 54.1	56	16 59	17 38	18 22	05 52	06 20	06 43	07 04
	20	116 27.5	10.4	310 26.6	14.1	12 22.6	7.7 54.1	54	17 05	17 42	18 23	05 44	06 13	06 39	07 01
	21	131 27.5	9.6	324 59.7	14.0	12 14.9	7.7 54.1	52	17 10	17 45	18 25	05 37	06 07	06 34	06 58
	22	146 27.5	08.7	339 32.7	14.1	12 07.2	7.8 54.1	50	17 15	17 48	18 26	05 30	06 02	06 30	06 56
	23	161 27.5	07.9	354 05.8	14.1	11 59.4	7.9 54.1	45	17 25	17 55	18 30	05 16	05 50	06 21	06 50
	V I E R N E S	14 00	176 27.5	S13 07.0	8 38.9	14.1	N11 51.5	7.8 54.1	N 40	17 33	18 01	18 33	05 04	05 41	06 14	06 45
01		191 27.6	06.2	23 12.0	14.2	11 43.7	8.0 54.1	35	17 41	18 07	18 36	04 54	05 32	06 07	06 41
02		206 27.6	05.4	37 45.2	14.1	11 35.7	8.0 54.2	30	17 47	18 12	18 40	04 46	05 25	06 02	06 37
03		221 27.6	04.5	52 18.3	14.2	11 27.7	8.0 54.2	20	17 58	18 21	18 47	04 31	05 12	05 52	06 30
04		236 27.6	03.7	66 51.5	14.2	11 19.7	8.1 54.2	N 10	18 08	18 30	18 55	04 17	05 01	05 43	06 24
05		251 27.7	02.8	81 24.7	14.2	11 11.6	8.1 54.2	0	18 18	18 39	19 03	04 05	04 50	05 35	06 19
06		266 27.7	S13 02.0	95 57.9	14.2	N11 03.5	8.2 54.2	S 10	18 27	18 49	19 14	03 52	04 40	05 27	06 13
07		281 27.7	01.1	110 31.1	14.2	10 55.3	8.3 54.2	20	18 37	19 00	19 27	03 39	04 29	05 18	06 07
08		296 27.7	13 00.3	125 04.3	14.3	10 47.0	8.3 54.2	30	18 49	19 14	19 44	03 24	04 16	05 08	06 01
09		311 27.7	12 59.4	139 37.6	14.3	10 38.7	8.3 54.2	35	18 56	19 23	19 55	03 15	04 08	05 02	05 57
10		326 27.8	58.6	154 10.9	14.3	10 30.4	8.4 54.2	40	19 04	19 33	20 08	03 04	03 59	04 55	05 52
11		341 27.8	57.7	168 44.2	14.3	10 22.0	8.4 54.2	45	19 13	19 45	20 24	02 52	03 49	04 48	05 47
12		356 27.8	S12 56.9	183 17.5	14.3	N10 13.6	8.5 54.2	S 50	19 25	20 00	20 45	02 38	03 37	04 38	05 41
13		11 27.8	56.0	197 50.8	14.3	10 05.1	8.5 54.2	52	19 30	20 07	20 55	02 31	03 31	04 34	05 38
14		26 27.9	55.2	212 24.1	14.4	9 56.6	8.5 54.3	54	19 36	20 15	21 07	02 23	03 25	04 29	05 35
15		41 27.9	54.3	226 57.5	14.4	9 48.1	8.7 54.3	56	19 42	20 25	21 21	02 15	03 18	04 24	05 31
16		56 27.9	53.4	241 30.9	14.4	9 39.4	8.6 54.3	58	19 49	20 35	21 38	02 05	03 10	04 18	05 27
17		71 27.9	52.6	256 04.3	14.4	9 30.8	8.7 54.3	S 60	19 57	20 47	21 59	01 54	03 01	04 11	05 23
18		86 28.0	S12 51.7	270 37.7	14.4	N 9 22.1	8.7 54.3	Día		SOL		LUNA			
19		101 28.0	50.9	285 11.1	14.4	9 13.4	8.8 54.3			Ec. Tiempo		Paso Mer.		Paso Mer.	Inf.
20		116 28.0	50.0	299 44.5	14.4	9 04.6	8.8 54.3			00 ^h		12 ^h		Edad	Fase
21		131 28.1	49.2	314 17.9	14.5	8 55.8	8.9 54.3			m s		m s		h m	h m
22		146 28.1	48.3	328 51.4	14.4	8 46.9	8.9 54.3			d		m s		h m	h m
23		161 28.1	47.5	343 24.8	14.5	N 8 38.0	8.9 54.3			12		14 12		14 12	14 14
			S/D 16.2	<i>d</i> 0.8	S/D	14.7	14.7	14.8			13		14 12		14 11	14 14

UT (HmGr)		ARIES		VENUS -4.9		MARTE -0.1		JÚPITER -2.5		SATURNO +0.5		ESTRELLAS		
		AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre AHS Dec			
S A B A D O	15 00	144 55.5	217 05.5	S16 25.5	299 33.5	S 7 38.0	42 52.5	N23 11.4	273 36.5	S16 19.1	Acamar	315 18.1	S40 15.3	
	01	159 58.0	232 06.7	25.6	314 35.6	38.1	57 55.2	11.4	288 38.9	19.1	Achernar	335 26.8	S57 10.2	
	02	175 00.4	247 07.9	25.7	329 37.6	38.2	72 57.8	11.4	303 41.3	19.1	Acruhr	173 08.1	S63 10.6	
	03	190 02.9	262 09.1	25.8	344 39.7	38.4	88 00.5	11.4	318 43.7	19.1	Adhara	255 11.9	S28 59.9	
	04	205 05.4	277 10.3	25.9	359 41.8	38.5	103 03.1	11.4	333 46.1	19.1	Aldebarán	290 48.7	N16 32.1	
	05	220 07.8	292 11.5	26.0	14 43.9	38.6	118 05.7	11.4	348 48.5	19.1				
	06	235 10.3	307 12.7	S16 26.1	29 45.9	S 7 38.7	133 08.3	N23 11.5	3 50.9	S16 19.1	Alioth	166 20.0	N55 52.7	
	07	250 12.8	322 13.8	26.2	44 48.0	38.8	148 11.0	11.5	18 53.3	19.1	Alkaid	152 58.3	N49 14.3	
	08	265 15.2	337 15.0	26.3	59 50.1	39.0	163 13.6	11.5	33 55.6	19.1	Al Na'ir	27 43.6	S46 53.5	
	09	280 17.7	352 16.2	26.4	74 52.2	39.1	178 16.2	11.5	48 58.0	19.1	Alnilam	275 45.7	S 1 11.9	
	10	295 20.2	7 17.4	26.5	89 54.3	39.2	193 18.9	11.5	64 00.4	19.1	Alphard	217 55.3	S 8 43.5	
	11	310 22.6	22 18.5	26.6	104 56.3	39.3	208 21.5	11.6	79 02.8	19.2				
	12	325 25.1	37 19.7	S16 26.7	119 58.4	S 7 39.4	223 24.1	N23 11.6	94 05.2	S16 19.2	Alphecca	126 10.6	N26 39.9	
	13	340 27.6	52 20.9	26.8	135 00.5	39.6	238 26.8	11.6	109 07.6	19.2	Alpheratz	357 43.2	N29 10.2	
	14	355 30.0	67 22.0	26.9	150 02.6	39.7	253 29.4	11.6	124 10.0	19.2	Altair	62 08.0	N 8 54.4	
	15	10 32.5	82 23.2	27.0	165 04.7	39.8	268 32.0	11.6	139 12.4	19.2	Ankaa	353 15.6	S42 13.9	
	16	25 34.9	97 24.3	27.1	180 06.8	39.9	283 34.7	11.6	154 14.8	19.2	Antares	112 25.7	S26 27.6	
	17	40 37.4	112 25.5	27.2	195 08.9	40.0	298 37.3	11.7	169 17.2	19.2				
	18	55 39.9	127 26.6	S16 27.3	210 10.9	S 7 40.1	313 39.9	N23 11.7	184 19.6	S16 19.2	Arcturus	145 55.2	N19 06.4	
	19	70 42.3	142 27.8	27.4	225 13.0	40.2	328 42.5	11.7	199 22.0	19.2	Atria	107 27.3	S69 02.8	
	20	85 44.8	157 28.9	27.5	240 15.1	40.4	343 45.2	11.7	214 24.4	19.2	Avior	234 17.2	S59 33.6	
	21	100 47.3	172 30.1	27.5	255 17.2	40.5	358 47.8	11.7	229 26.8	19.2	Bellatrix	278 31.3	N 6 21.5	
	22	115 49.7	187 31.2	27.6	270 19.3	40.6	13 50.4	11.7	244 29.2	19.2	Betelgeuse	271 00.6	N 7 24.3	
23	130 52.2	202 32.3	27.7	285 21.4	40.7	28 53.1	11.8	259 31.6	19.2					
16	00	145 54.7	217 33.5	S16 27.8	300 23.5	S 7 40.8	43 55.7	N23 11.8	274 34.0	S16 19.3	Canopus	263 55.6	S52 42.6	
	01	160 57.1	232 34.6	27.9	315 25.6	40.9	58 58.3	11.8	289 36.4	19.3	Capella	280 33.5	N46 00.7	
	02	175 59.6	247 35.7	28.0	330 27.7	41.0	74 00.9	11.8	304 38.8	19.3	Deneb	49 31.5	S45 19.9	
	03	191 02.0	262 36.8	28.1	345 29.8	41.2	89 03.6	11.8	319 41.2	19.3	Denébola	182 32.9	N14 29.4	
	04	206 04.5	277 38.0	28.2	0 31.9	41.3	104 06.2	11.8	334 43.6	19.3	Diphda	348 55.6	S17 54.7	
	05	221 07.0	292 39.1	28.3	15 34.0	41.4	119 08.8	11.8	349 46.0	19.3				
	06	236 09.4	307 40.2	S16 28.4	30 36.1	S 7 41.5	134 11.4	N23 11.9	4 48.4	S16 19.3	Dubhe	193 50.6	N61 40.2	
	07	251 11.9	322 41.3	28.5	45 38.2	41.6	149 14.1	11.9	19 50.8	19.3	Elmath	278 11.8	N28 37.0	
	08	266 14.4	337 42.4	28.5	60 40.3	41.7	164 16.7	11.9	34 53.2	19.3	Eltanin	90 46.2	N51 29.1	
	09	281 16.8	352 43.5	28.6	75 42.4	41.8	179 19.3	11.9	49 55.6	19.3	Enif	33 47.0	N 9 56.4	
	10	296 19.3	7 44.6	28.7	90 44.5	41.9	194 21.9	11.9	64 58.0	19.3	Fomalhaut	15 23.8	S29 32.9	
	11	311 21.8	22 45.7	28.8	105 46.6	42.0	209 24.5	11.9	80 00.4	19.3				
	12	326 24.2	37 46.8	S16 28.9	120 48.7	S 7 42.1	224 27.2	N23 12.0	95 02.8	S16 19.3	Gacrux	171 59.8	S57 11.5	
	13	341 26.7	52 47.9	29.0	135 50.8	42.2	239 29.8	12.0	110 05.2	19.3	Gienah	175 51.5	S17 37.3	
	14	356 29.2	67 49.0	29.1	150 52.9	42.4	254 32.4	12.0	125 07.6	19.4	Hadar	148 46.8	S60 26.2	
	15	11 31.6	82 50.1	29.2	165 55.0	42.5	269 35.0	12.0	140 10.0	19.4	Hamal	328 00.3	N23 31.7	
	16	26 34.1	97 51.2	29.3	180 57.2	42.6	284 37.7	12.0	155 12.4	19.4	Kaus Aust.	83 43.4	S34 22.4	
	17	41 36.5	112 52.3	29.3	195 59.3	42.7	299 40.3	12.0	170 14.8	19.4				
	18	56 39.0	127 53.3	S16 29.4	211 01.4	S 7 42.8	314 42.9	N23 12.1	185 17.2	S16 19.4	Kochab	137 19.9	N74 05.6	
	19	71 41.5	142 54.4	29.5	226 03.5	42.9	329 45.5	12.1	200 19.6	19.4	Markab	13 38.1	N15 16.9	
	20	86 43.9	157 55.5	29.6	241 05.6	43.0	344 48.1	12.1	215 22.0	19.4	Menkar	314 14.6	N 4 08.5	
	21	101 46.4	172 56.6	29.7	256 07.7	43.1	359 50.8	12.1	230 24.4	19.4	Menkent	148 06.8	S36 26.2	
	22	116 48.9	187 57.6	29.8	271 09.8	43.2	14 53.4	12.1	245 26.8	19.4	Miaplacidus	221 05.8	S69 46.7	
23	131 51.3	202 58.7	29.9	286 12.0	43.3	29 56.0	12.1	260 29.2	19.4					
17	00	146 53.8	217 59.8	S16 29.9	301 14.1	S 7 43.4	44 58.6	N23 12.2	275 31.6	S16 19.4	Mirfak	308 39.6	N49 54.4	
	01	161 56.3	233 00.8	30.0	316 16.2	43.5	60 01.2	12.2	290 34.0	19.4	Nunki	75 58.0	S26 16.6	
	02	176 58.7	248 01.9	30.1	331 18.3	43.6	75 03.8	12.2	305 36.4	19.4	Peacock	53 19.1	S56 41.2	
	03	192 01.2	263 03.0	30.2	346 20.4	43.7	90 06.5	12.2	320 38.8	19.4	Póllux	243 26.8	N27 59.3	
	04	207 03.6	278 04.0	30.3	1 22.6	43.8	105 09.1	12.2	335 41.2	19.4	Procyon	244 58.9	N 5 11.0	
	05	222 06.1	293 05.1	30.4	16 24.7	43.9	120 11.7	12.2	350 43.6	19.4				
	06	237 08.6	308 06.1	S16 30.4	31 26.8	S 7 44.0	135 14.3	N23 12.2	5 46.0	S16 19.5	Rasalhague	96 06.2	N12 33.0	
	07	252 11.0	323 07.2	30.5	46 28.9	44.1	150 16.9	12.3	20 48.4	19.5	Régulus	207 42.7	N11 53.6	
	08	267 13.5	338 08.2	30.6	61 31.1	44.2	165 19.5	12.3	35 50.8	19.5	Rigel	281 11.5	S 8 11.4	
	09	282 16.0	353 09.2	30.7	76 33.2	44.3	180 22.2	12.3	50 53.2	19.5	Rigel Kent.	139 50.8	S60 53.3	
	10	297 18.4	8 10.3	30.8	91 35.3	44.4	195 24.8	12.3	65 55.6	19.5	Sabik	102 12.1	S15 44.4	
	11	312 20.9	23 11.3	30.9	106 37.4	44.5	210 27.4	12.3	80 58.1	19.5				
	12	327 23.4	38 12.3	S16 30.9	121 39.6	S 7 44.6	225 30.0	N23 12.3	96 00.5	S16 19.5	Schedar	349 40.3	N56 37.1	
	13	342 25.8	53 13.4	31.0	136 41.7	44.7	240 32.6	12.4	111 02.9	19.5	Shaula	96 21.4	S37 06.6	
	14	357 28.3	68 14.4	31.1	151 43.8	44.8	255 35.2	12.4	126 05.3	19.5	Sirius	258 33.0	S16 44.5	
	15	12 30.8	83 15.4	31.2	166 46.0	44.9	270 37.8	12.4	141 07.7	19.5	Spica	158 30.5	S11 14.2	
	16	27 33.2	98 16.4	31.3	181 48.1	45.0	285 40.4	12.4	156 10.1	19.5	Suhail	222 51.6	S43 29.7	
	17	42 35.7	113 17.5	31.3	196 50.2	45.1	300 43.1	12.4	171 12.5	19.5				
	18	57 38.1	128 18.5	S16 31.4	211 52.4	S 7 45.2	315 45.7	N23 12.4	186 14.9	S16 19.5	Vega	80 38.9	N38 47.8	
	19	72 40.6	143 19.5	31.5	226 54.5	45.3	330 48.3	12.4	201 17.3	19.5	Zuben'ubi	137 04.8	S16 06.0	
	20	87 43.1	158 20.5	31.6	241 56.7	45.4	345 50.9	12.5	216 19.7	19.5				
	21	102 45.5	173 21.5	31.6	256 58.8	45.5	0 53.5	12.5	231 22.1	19.5		AHS	Paso Mer.	
	22	117 48.0	188 22.5	31.7	272 00.9	45.6	15 56.1	12.5	246 24.5	19.5	Venus	71 38.8	h m 9 29	
23	132 50.5	203 23.5	31.8	287 03.1	45.7	30 58.7	12.5	261 26.9	19.5	Marte	154 28.8	3 58		
Paso Mer. 14 14.0		<i>v</i>	<i>d</i>	0.1	<i>v</i>	<i>d</i>	0.1	<i>v</i>	<i>d</i>	0.0	<i>v</i>	<i>d</i>	0.0	
											Saturno	128 39.3	5 41	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		15	16	17	18	
												h m	h m	h m	h m	h m
S Á B A D O	d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
	15 00	176 28.1	S12 46.6	357 58.3	14.5 N	8 29.1	9.0	54.3	N 72	06 11	07 30	08 48	17 27	19 06	20 45	22 27
	01	191 28.2	45.8	12 31.8	14.5	8 20.1	9.0	54.4	N 70	06 09	07 21	08 29	17 36	19 08	20 41	22 16
	02	206 28.2	44.9	27 05.3	14.5	8 11.1	9.0	54.4	66	06 07	07 07	08 02	17 48	19 11	20 35	22 00
	03	221 28.2	44.0	41 38.8	14.5	8 02.1	9.1	54.4	64	06 06	07 01	07 52	17 53	19 12	20 32	21 54
	04	236 28.3	43.2	56 12.3	14.6	7 53.0	9.1	54.4	62	06 04	06 56	07 43	17 57	19 13	20 30	21 49
	05	251 28.3	42.3	70 45.9	14.5	7 43.9	9.2	54.4	60	06 03	06 52	07 36	18 01	19 14	20 29	21 44
	06	266 28.3	S12 41.5	85 19.4	14.5 N	7 34.7	9.2	54.4	N 58	06 02	06 48	07 29	18 04	19 15	20 27	21 40
	07	281 28.3	40.6	99 52.9	14.6	7 25.5	9.2	54.4	56	06 01	06 45	07 23	18 07	19 16	20 26	21 37
	08	296 28.4	39.8	114 26.5	14.6	7 16.3	9.3	54.4	54	06 00	06 41	07 18	18 09	19 16	20 24	21 34
	09	311 28.4	38.9	129 00.1	14.5	7 07.0	9.3	54.4	52	05 59	06 38	07 13	18 12	19 17	20 23	21 31
	10	326 28.4	38.0	143 33.6	14.6	6 57.7	9.3	54.5	50	05 58	06 36	07 09	18 14	19 18	20 22	21 28
	11	341 28.5	37.2	158 07.2	14.6	6 48.4	9.4	54.5	45	05 55	06 30	07 00	18 18	19 19	20 20	21 23
	12	356 28.5	S12 36.3	172 40.8	14.6 N	6 39.0	9.4	54.5	N 40	05 52	06 24	06 52	18 22	19 20	20 18	21 18
	13	11 28.5	35.5	187 14.4	14.6	6 29.6	9.4	54.5	35	05 50	06 19	06 45	18 25	19 21	20 17	21 14
	14	26 28.6	34.6	201 48.0	14.6	6 20.2	9.4	54.5	30	05 47	06 15	06 39	18 28	19 21	20 15	21 10
	15	41 28.6	33.7	216 21.6	14.6	6 10.8	9.5	54.5	20	05 40	06 06	06 29	18 33	19 23	20 13	21 04
	16	56 28.6	32.9	230 55.2	14.6	6 01.3	9.5	54.5	N 10	05 33	05 58	06 19	18 37	19 24	20 11	20 59
	17	71 28.7	32.0	245 28.8	14.6	5 51.8	9.6	54.5	0	05 25	05 49	06 11	18 41	19 25	20 09	20 54
	18	86 28.7	S12 31.2	260 02.4	14.6 N	5 42.2	9.5	54.6	S 10	05 15	05 40	06 02	18 46	19 26	20 07	20 49
	19	101 28.7	30.3	274 36.0	14.6	5 32.7	9.6	54.6	20	05 03	05 29	05 52	18 50	19 27	20 05	20 44
	20	116 28.8	29.4	289 09.6	14.6	5 23.1	9.7	54.6	30	04 47	05 16	05 41	18 55	19 29	20 03	20 38
	21	131 28.8	28.6	303 43.2	14.7	5 13.4	9.6	54.6	35	04 36	05 08	05 35	18 58	19 29	20 01	20 35
	22	146 28.8	27.7	318 16.9	14.6	5 03.8	9.7	54.6	40	04 24	04 59	05 27	19 01	19 30	20 00	20 31
	23	161 28.9	26.8	332 50.5	14.6	4 54.1	9.7	54.6	45	04 09	04 47	05 18	19 05	19 31	19 58	20 26
16 																

UT (HmGr)		ARIES		VENUS -4.8		MARTE -0.2		JÚPITER -2.5		SATURNO +0.5		ESTRELLAS		
		AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre AHS Dec			
MARTES	1800	147 52.9	218 24.5	S16 31.9	302 05.2	S 7 45.8	46 01.3	N23 12.5	276 29.3	S16 19.6	Acamar	315 18.1	S40 15.2	
	01	162 55.4	233 25.5	32.0	317 07.4	45.9	61 03.9	12.5	291 31.7	19.6	Achernar	335 26.8	S57 10.2	
	02	177 57.9	248 26.5	32.0	332 09.5	46.0	76 06.6	12.5	306 34.1	19.6	Acrux	173 08.1	S63 10.6	
	03	193 00.3	263 27.5	32.1	347 11.7	46.1	91 09.2	12.6	321 36.5	19.6	Adhara	255 11.9	S28 59.9	
	04	208 02.8	278 28.5	32.2	2 13.8	46.2	106 11.8	12.6	336 39.0	19.6	Aldebarán	290 48.7	N16 32.1	
	05	223 05.2	293 29.5	32.3	17 15.9	46.3	121 14.4	12.6	351 41.4	19.6				
	06	238 07.7	308 30.5	S16 32.3	32 18.1	S 7 46.4	136 17.0	N23 12.6	6 43.8	S16 19.6	Alioth	166 19.9	N55 52.7	
	07	253 10.2	323 31.5	32.4	47 20.2	46.5	151 19.6	12.6	21 46.2	19.6	Alkaid	152 58.3	N49 14.3	
	08	268 12.6	338 32.4	32.5	62 22.4	46.6	166 22.2	12.6	36 48.6	19.6	Al Na'ir	27 43.6	S46 53.5	
	09	283 15.1	353 33.4	32.5	77 24.5	46.7	181 24.8	12.7	51 51.0	19.6	Anilam	275 45.7	S 1 11.9	
	10	298 17.6	8 34.4	32.6	92 26.7	46.7	196 27.4	12.7	66 53.4	19.6	Alphard	217 55.3	S 8 43.5	
	11	313 20.0	23 35.4	32.7	107 28.9	46.8	211 30.0	12.7	81 55.8	19.6				
	12	328 22.5	38 36.3	S16 32.8	122 31.0	S 7 46.9	226 32.6	N23 12.7	96 58.2	S16 19.6	Alphecca	126 10.6	N26 39.9	
	13	343 25.0	53 37.3	32.8	137 33.2	47.0	241 35.2	12.7	112 00.6	19.6	Alpheratz	357 43.3	N29 10.2	
	14	358 27.4	68 38.3	32.9	152 35.3	47.1	256 37.8	12.7	127 03.0	19.6	Altair	62 08.0	N 8 54.4	
	15	13 29.9	83 39.2	33.0	167 37.5	47.2	271 40.4	12.7	142 05.4	19.6	Ankaa	353 15.6	S42 13.9	
	16	28 32.4	98 40.2	33.1	182 39.6	47.3	286 43.0	12.8	157 07.9	19.6	Antares	112 25.7	S26 27.6	
	17	43 34.8	113 41.1	33.1	197 41.8	47.4	301 45.6	12.8	172 10.3	19.6				
	18	58 37.3	128 42.1	S16 33.2	212 44.0	S 7 47.5	316 48.2	N23 12.8	187 12.7	S16 19.6	Arcturus	145 55.2	N19 06.4	
	19	73 39.7	143 43.0	33.3	227 46.1	47.6	331 50.8	12.8	202 15.1	19.6	Atria	107 27.2	S69 02.8	
	20	88 42.2	158 44.0	33.3	242 48.3	47.6	346 53.5	12.8	217 17.5	19.6	Avior	234 17.7	S59 33.6	
	21	103 44.7	173 44.9	33.4	257 50.4	47.7	1 56.1	12.8	232 19.9	19.7	Bellatrix	278 31.4	N 6 21.5	
	22	118 47.1	188 45.9	33.5	272 52.6	47.8	16 58.7	12.8	247 22.3	19.7	Betelgeuse	271 00.6	N 7 24.3	
23	133 49.6	203 46.8	33.5	287 54.8	47.9	32 01.3	12.9	262 24.7	19.7					
MERCURIO	1900	148 52.1	218 47.8	S16 33.6	302 56.9	S 7 48.0	47 03.9	N23 12.9	277 27.1	S16 19.7	Canopus	263 55.6	S52 42.6	
	01	163 54.5	233 48.7	33.7	317 59.1	48.1	62 06.5	12.9	292 29.6	19.7	Capella	280 33.5	N46 00.7	
	02	178 57.0	248 49.6	33.7	333 01.3	48.2	77 09.1	12.9	307 32.0	19.7	Deneb	49 31.5	N45 19.9	
	03	193 59.5	263 50.6	33.8	348 03.4	48.2	92 11.7	12.9	322 34.4	19.7	Denébola	182 32.9	N14 29.4	
	04	209 01.9	278 51.5	33.9	3 05.6	48.3	107 14.3	12.9	337 36.8	19.7	Diphda	348 55.7	S17 54.7	
	05	224 04.4	293 52.4	33.9	18 07.8	48.4	122 16.9	12.9	352 39.2	19.7				
	06	239 06.9	308 53.3	S16 34.0	33 10.0	S 7 48.5	137 19.5	N23 13.0	7 41.6	S16 19.7	Dubhe	193 50.6	N61 40.2	
	07	254 09.3	323 54.3	34.1	48 12.1	48.6	152 22.1	13.0	22 44.0	19.7	El Nath	278 11.8	N28 37.0	
	08	269 11.8	338 55.2	34.1	63 14.3	48.6	167 24.7	13.0	37 46.4	19.7	Eltanin	90 46.2	N51 29.1	
	09	284 14.2	353 56.1	34.2	78 16.5	48.8	182 27.3	13.0	52 48.8	19.7	Enif	33 47.0	N 9 56.4	
	10	299 16.7	8 57.0	34.3	93 18.7	48.8	197 29.9	13.0	67 51.3	19.7	Fomalhaut	15 23.8	S29 32.9	
	11	314 19.2	23 57.9	34.3	108 20.8	48.9	212 32.4	13.0	82 53.7	19.7				
	12	329 21.6	38 58.8	S16 34.4	123 23.0	S 7 49.0	227 35.0	N23 13.0	97 56.1	S16 19.7	Gacrux	171 59.8	S57 11.5	
	13	344 24.1	53 59.7	34.4	138 25.2	49.1	242 37.6	13.1	112 58.5	19.7	Gienah	175 51.5	S17 37.3	
	14	359 26.6	69 00.6	34.5	153 27.4	49.2	257 40.2	13.1	128 00.9	19.7	Hadar	148 46.8	S60 26.2	
	15	14 29.0	84 01.5	34.6	168 29.6	49.2	272 42.8	13.1	143 03.3	19.7	Hamal	328 00.3	N23 31.7	
	16	29 31.5	99 02.4	34.6	183 31.8	49.3	287 45.4	13.1	158 05.7	19.7	Kaus Aust.	83 43.4	S34 22.4	
	17	44 34.0	114 03.3	34.7	198 33.9	49.4	302 48.0	13.1	173 08.2	19.7				
	18	59 36.4	129 04.2	S16 34.8	213 36.1	S 7 49.5	317 50.6	N23 13.1	188 10.6	S16 19.7	Kochab	137 19.9	N74 05.6	
	19	74 38.9	144 05.1	34.8	228 38.3	49.6	332 53.2	13.1	203 13.0	19.7	Markab	13 38.1	N15 16.9	
	20	89 41.3	159 06.0	34.9	243 40.5	49.6	347 55.8	13.1	218 15.4	19.7	Menkar	314 14.6	N 4 08.5	
	21	104 43.3	174 06.9	34.9	258 42.7	49.7	2 58.4	13.2	233 17.8	19.7	Menkent	148 06.8	S36 26.2	
	22	119 46.8	189 07.8	35.0	273 44.9	49.8	18 01.0	13.2	248 20.2	19.7	Miaplacidus	221 25.5	S69 46.8	
23	134 48.7	204 08.7	35.0	288 47.1	49.9	33 03.6	13.2	263 22.6	19.7					
JUEVES	2000	149 51.2	219 09.5	S16 35.1	303 49.3	S 7 50.0	48 06.2	N23 13.2	278 25.1	S16 19.8	Miraf	308 39.7	N49 54.7	
	01	164 53.7	234 10.4	35.2	318 51.4	50.0	63 08.8	13.2	293 27.5	19.8	Nunki	75 58.0	S26 16.5	
	02	179 56.1	249 11.3	35.2	333 53.6	50.1	78 11.4	13.2	308 29.9	19.8	Peacock	53 19.1	S56 41.1	
	03	194 58.6	264 12.2	35.3	348 55.8	50.2	93 14.0	13.2	323 32.3	19.8	Póllux	243 26.8	N27 59.3	
	04	210 01.1	279 13.0	35.3	3 58.0	50.3	108 16.5	13.3	338 34.7	19.8	Procyon	244 59.0	N 5 11.0	
	05	225 03.5	294 13.9	35.4	19 00.2	50.3	123 19.1	13.3	353 37.1	19.8				
	06	240 06.0	309 14.8	S16 35.4	34 02.4	S 7 50.4	138 21.7	N23 13.3	8 39.6	S16 19.8	Rasalhague	96 06.1	N12 33.0	
	07	255 08.5	324 15.6	35.5	49 04.6	50.5	153 24.3	13.3	23 42.0	19.8	Régulus	207 42.7	N11 53.6	
	08	270 10.9	339 16.5	35.6	64 06.8	50.6	168 26.9	13.3	38 44.4	19.8	Rigel	281 11.5	S 8 11.4	
	09	285 13.4	354 17.3	35.6	79 09.0	50.6	183 29.5	13.3	53 46.8	19.8	Rigel Kent.	139 50.7	S60 53.3	
	10	300 15.8	9 18.2	35.7	94 11.2	50.7	198 32.1	13.3	68 49.2	19.8	Sabik	102 12.1	S15 44.4	
	11	315 18.3	24 19.1	35.7	109 13.4	50.8	213 34.7	13.3	83 51.6	19.8				
	12	330 20.8	39 19.9	S16 35.8	124 15.6	S 7 50.9	228 37.3	N23 13.4	98 54.1	S16 19.8	Schedar	349 40.3	N56 37.0	
	13	345 23.2	54 20.7	35.8	139 17.8	50.9	243 39.8	13.4	113 56.5	19.8	Shaula	96 21.4	S37 06.6	
	14	0 25.7	69 21.6	35.9	154 20.0	51.0	258 42.4	13.4	128 58.9	19.8	Sirius	258 33.1	S16 44.5	
	15	15 28.2	84 22.4	35.9	169 22.3	51.1	273 45.0	13.4	144 01.3	19.8	Spica	158 30.5	S11 14.2	
	16	30 30.6	99 23.3	36.0	184 24.5	51.1	288 47.6	13.4	159 03.7	19.8	Suhail	222 51.6	S43 29.7	
	17	45 33.1	114 24.1	36.0	199 26.7	51.2	303 50.2	13.4	174 06.1	19.8				
	18	60 35.6	129 25.0	S16 36.1	214 28.9	S 7 51.3	313 52.8	N23 13.4	189 08.6	S16 19.8	Vega	80 38.9	N38 47.7	
	19	75 38.0	144 25.8	36.1	229 31.1	51.4	338 55.4	13.5	204 11.0	19.8	Zuben'ubi	137 04.8	S16 06.0	
	20	90 40.5	159 26.6	36.2	244 33.3	51.4	348 58.0	13.5	219 13.4	19.8				
	21	105 42.9	174 27.4	36.2	259 35.5	51.5	4 00.5	13.5	234 15.8	19.8		AHS	Paso Mer.	
	22	120 45.4	189 28.3	36.3	274 37.7	51.6	19 03.1	13.5	249 18.2	19.8	Venus	69 55.7	h m	
23	135 47.9	204 29.1	36.3	289 40.0	51.6	34 05.7	13.5	264 20.7	19.8	Marte	154 04.9	3 48		
Paso Mer. 14 02.2		<i>v</i> 0.9	<i>d</i> 0.1	<i>v</i> 2.2	<i>d</i> 0.1	<i>v</i> 2.6	<i>d</i> 0.0	<i>v</i> 2.4	<i>d</i> 0.0	Saturno	128 35.1	5 29		

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>ν</i>	Dec	<i>d</i>		Ph	Náut.		Civil	18	19	20	21	
M A R T E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	1800	176 31.0	S11 44.1	326 08.4	13.9 S	3 17.0	10.1	55.4	05 57	07 16	08 31	22 27	24 14	00 14	02 10	
	01	191 31.1	43.2	340 41.3	14.0	3 27.1	10.1	55.4	05 57	07 02	08 15	22 16	23 55	25 37	01 37	
	02	206 31.1	42.3	355 14.3	13.9	3 37.2	10.0	55.4	05 57	06 57	07 51	22 00	23 27	24 56	00 56	
	03	221 31.2	41.5	9 47.2	13.9	3 47.2	10.1	55.5	05 57	06 52	07 42	21 54	23 17	24 41	00 41	
	04	236 31.2	40.6	24 20.1	13.9	3 57.3	10.0	55.5	05 56	06 48	07 34	21 49	23 09	24 29	00 29	
	05	251 31.3	39.7	38 53.0	13.8	4 07.3	10.1	55.5	05 56	06 44	07 27	21 44	23 01	24 18	00 18	
	06	266 31.3	S11 38.8	53 25.8	13.8 S	4 17.4	10.0	55.5	N 58	05 55	06 41	07 21	21 40	22 55	24 10	00 10
	07	281 31.4	37.9	67 58.6	13.7	4 27.4	10.0	55.5	56	05 55	06 38	07 16	21 37	22 49	24 02	00 02
	08	296 31.4	37.0	82 31.3	13.8	4 37.4	10.0	55.6	54	05 54	06 35	07 12	21 34	22 44	23 55	25 05
	09	311 31.5	36.2	97 04.1	13.7	4 47.4	9.9	55.6	52	05 53	06 33	07 07	21 31	22 39	23 48	24 57
	10	326 31.5	35.3	111 36.8	13.6	4 57.3	10.0	55.6	50	05 53	06 30	07 03	21 28	22 35	23 43	24 50
	11	341 31.6	34.4	126 09.4	13.7	5 07.3	9.9	55.6	45	05 51	06 25	06 55	21 23	22 26	23 31	24 35
	12	356 31.6	S11 33.5	140 42.1	13.6 S	5 17.2	10.0	55.6	N 40	05 49	06 20	06 48	21 18	22 19	23 20	24 23
	13	11 31.7	32.6	155 14.7	13.5	5 27.2	9.9	55.7	35	05 46	06 16	06 42	21 14	22 12	23 12	24 13
	14	26 31.7	31.7	169 47.2	13.6	5 37.1	9.9	55.7	30	05 44	06 12	06 36	21 10	22 07	23 04	24 03
	15	41 31.8	30.9	184 19.8	13.4	5 47.0	9.8	55.7	20	05 39	06 04	06 27	21 04	21 57	22 52	23 48
	16	56 31.9	30.0	198 52.2	13.5	5 56.8	9.9	55.7	N 10	05 32	05 57	06 18	20 59	21 49	22 40	23 34
	17	71 31.9	29.1	213 24.7	13.4	6 06.7	9.8	55.7	0	05 25	05 49	06 10	20 54	21 41	22 30	23 22
	18	86 32.0	S11 28.2	227 57.1	13.4 S	6 16.5	9.8	55.8	S 10	05 16	05 41	06 02	20 49	21 33	22 19	23 09
	19	101 32.0	27.3	242 29.5	13.3	6 26.3	9.8	55.8	20	05 04	05 31	05 54	20 44	21 25	22 08	22 56
	20	116 32.1	26.4	257 01.8	13.3	6 36.1	9.7	55.8	30	04 49	05 19	05 43	20 38	21 15	21 56	22 41
	21	131 32.1	25.5	271 34.1	13.3	6 45.8	9.8	55.8	35	04 40	05 11	05 37	20 35	21 10	21 49	22 32
	22	146 32.2	24.7	286 06.4	13.2	6 55.6	9.7	55.8	40	04 28	05 02	05 31	20 31	21 04	21 40	22 22
	23	161 32.2	23.8	300 38.6	13.1	7 05.3	9.6	55.9	45	04 14	04 52	05 23	20 26	20 57	21 31	22 10
M I É R C O L E S	1900	176 32.3	S11 22.9	315 10.7	13.2 S	7 14.9	9.7	55.9	S 50	03 55	04 38	05 13	20 21	20 48	21 19	21 56
	01	191 32.4	22.0	329 42.9	13.0	7 24.6	9.6	55.9	52	03 46	04 32	05 09	20 19	20 45	21 14	21 49
	02	206 32.4	21.1	344 14.9	13.1	7 34.2	9.6	55.9	54	03 36	04 25	05 04	20 16	20 40	21 08	21 42
	03	221 32.5	20.2	358 47.0	13.0	7 43.8	9.6	56.0	56	03 24	04 17	04 58	20 13	20 36	21 02	21 34
	04	236 32.5	19.3	13 19.0	12.9	7 53.4	9.5	56.0	58	03 09	04 08	04 52	20 10	20 30	20 54	21 25
	05	251 32.6	18.4	27 50.9	12.9	8 02.9	9.5	56.0	S 60	02 52	03 58	04 45	20 07	20 25	20 46	21 14
	06	266 32.7	S11 17.5	42 22.8	12.9 S	8 12.4	9.5	56.0	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	07	281 32.7	16.7	56 54.7	12.8	8 21.9	9.4	56.0				Civil	Náut.	18	19	20	21
	08	296 32.8	15.8	71 26.5	12.7	8 31.3	9.4	56.1								
	09	311 32.8	14.9	85 58.2	12.8	8 40.7	9.4	56.1	N 72	h m	h m	h m	h m	h m	h m	h m
	10	326 32.9	14.0	100 30.0	12.6	8 50.1	9.3	56.1								
	11	341 33.0	13.1	115 01.6	12.6	8 59.4	9.3	56.1	15 58	17 13	18 32	07 31	07 23	07 13	07 01	
	12	356 33.0	S11 12.2	129 33.2	12.6 S	9 08.7	9.3	56.2	N 70	16 14	17 21	18 32	07 37	07 36	07 34	07 34
	13	11 33.1	11.3	144 04.8	12.5	9 18.0	9.2	56.2	68	16 27	17 27	18 32	07 43	07 46	07 51	07 59
	14	26 33.1	10.4	158 36.3	12.5	9 27.2	9.2	56.2	66	16 38	17 32	18 32	07 47	07 54	08 04	08 18
	15	41 33.2	09.5	173 07.8	12.4	9 36.4	9.1	56.2	64	16 47	17 37	18 32	07 51	08 02	08 15	08 33
	16	56 33.3	08.6	187 39.2	12.4	9 45.5	9.1	56.3	62	16 55	17 41	18 33	07 54	08 08	08 24	08 46
	17	71 33.3	07.7	202 10.6	12.3	9 54.6	9.1	56.3	60	17 01	17 45	18 33	07 57	08 13	08 33	08 57
	18	86 33.4	S11 06.8	216 41.9	12.2	10 03.7	9.0	56.3	N 58	17 07	17 48	18 33	07 59	08 18	08 40	09 06
	19	101 33.5	06.0	231 13.1	12.2	10 12.7	9.0	56.3	56	17 12	17 51	18 34	08 02	08 22	08 46	09 15
	20	116 33.5	05.1	245 44.3	12.2	10 21.7	9.0	56.3	54	17 17	17 53	18 34	08 04	08 26	08 52	09 22
	21	131 33.6	04.2	260 15.5	12.1	10 30.7	8.8	56.4	52	17 21	17 56	18 35	08 06	08 30	08 57	09 29
	22	146 33.6	03.3	274 46.6	12.0	10 39.5	8.9	56.4	50	17 25	17 58	18 36	08 07	08 33	09 02	09 35
	23	161 33.7	02.4	289 17.6	12.0	10 48.4	8.8	56.4	45	17 33	18 03	18 38	08 11	08 40	09 12	09 48
	J U E V E S	2000	176 33.8	S11 01.5	303 48.6	11.9 S	10 57.2	8.8	56.4	N 40	17 40	18 08	18 39	08 14	08 46	09 20	09 59
01		191 33.8	11 00.6	318 19.5	11.9	11 06.0	8.7	56.5	35	17 46	18 12	18 42	08 17	08 51	09 28	10 08
02		206 33.9	10 59.7	332 50.4	11.8	11 14.7	8.6	56.5	30	17 52	18 16	18 44	08 19	08 55	09 34	10 16
03		221 34.0	58.8	347 21.2	11.7	11 23.3	8.6	56.5	20	18 01	18 23	18 49	08 23	09 03	09 45	10 30
04		236 34.0	57.9	1 51.9	11.7	11 31.9	8.6	56.5	N 10	18 09	18 31	18 55	08 27	09 10	09 55	10 43
05		251 34.1	57.0	16 22.6	11.7	11 40.5	8.5	56.6	0	18 17	18 38	19 03	08 30	09 16	10 04	10 54
06		266 34.2	S10 56.1	30 53.3	11.6 S	11 49.0	8.4	56.6	S 10	18 25	18 47	19 12	08 34	09 23	10 13	11 06
07		281 34.2	55.2	45 23.9	11.5	11 57.4	8.4	56.6	20	18 34	18 56	19 23	08 37	09 29	10 23	11 18
08		296 34.3	54.3	59 54.4	11.4	12 05.8	8.4	56.6	30	18 44	19 08	19 38	08 42	09 37	10 34	11 33
09		311 34.4	53.4	74 24.8	11.4	12 14.2	8.3	56.7	35	18 50	19 16	19 47	08 44	09 42	10 41	11 41
10		326 34.4	52.5	88 55.2	11.4	12 22.5	8.2	56.7	40	18 56	19 24	19 58	08 47	09 47	10 48	11 50
11		341 34.5	51.6	103 25.6	11.2	12 30.7	8.2	56.7	45	19 04	19 35	20 13	08 50	09 53	10 57	12 01
12		356 34.6	S10 50.7	117 55.8	11.3 S	12 38.9	8.1	56.7	S 50	19 13	19 48	20 31	08 54	10 00	11 07	12 15
13		11 34.6	49.8	132 26.1	11.1	12 47.0	8.1	56.8	52	19 18	19 54	20 40	08 55	10 03	11 12	12 21
14		26 34.7	48.9	146 56.2	11.1	12 55.1	8.0	56.8	54	19 22	20 01	20 50	08 57	10 07	11 17	12 28
15		41 34.8	48.0	161 26.3	11.0	13 03.1	7.9	56.8	56	19 28	20 09	21 02	08 59	10 11	11 23	12 36
16		56 34.8	47.1	175 56.3	11.0	13 11.0	7.9	56.9	58	19 34	20 18	21 16	09 02	10 15	11 30	12 44
17		71 34.9	46.2	190 26.3	10.9	13 18.9	7.8	56.9	S 60	19 40	20 28	21 32	09 04	10 21	11 38	12 54
18		86 35.0	S10 45.3	204 56.2	10.8 S	13 26.7	7.7	56.9	Día	SOL		Paso Mer.	LUNA			
19		101 35.0	44.4	219 26.0	10.8	13 34.4	7.7	56.9		Ec. Tiempo	Paso Mer.		Paso Mer. Sup.	Mer. Inf.	Edad	Fase
20		116 35.1	43.5	233 55.8	10.7	13 42.1	7.7	57.0	00h			12h				
21		131 35.2	42.6	248 25.5	10.6	13 49.8	7.5	57.0								
22		146 35.3	41.7	262 55.1	10.6	13 57.3	7.5	57.0								
23		161 35.3	40.8	277 24.7	10.5	14 04.8	7.4	57.0								
		S/D 16.2	<i>d</i> 0.9	S/D 15.2	15.3	15.5			d 18 19 20	m s 13 56 13 51 13 45	m s 13 54 13 48 13 42	h m 12 14 12				

UT (HmGr)		ARIES				VENUS −4.8				MARTE −0.3				JÚPITER −2.5				SATURNO+0.5				ESTRELLAS			
		AHGr		AHGr		Dec		AHGr		Dec		AHGr		Dec		AHGr		Dec		Nombre		AHS		Dec	
d h		° ′		° ′		° ′		° ′		° ′		° ′		° ′		° ′		° ′		° ′		° ′		° ′	
21	00	150	50.3	219	29.9	S16	36.4	304	42.2	S7	51.7	49	08.3	N23	13.5	279	23.1	S16	19.8	Acamar	315	18.1	S40	15.2	
	01	165	52.8	234	30.7		36.4	319	44.4		51.8	64	10.9		13.5	294	25.5		19.8	Achernar	335	26.8	S57	10.2	
	02	180	55.3	249	31.6		36.5	334	46.6		51.8	79	13.5		13.5	309	27.9		19.8	Acrux	173	08.0	S63	10.6	
	03	195	57.7	264	32.4		36.5	349	48.8		51.9	94	16.0		13.6	324	30.3		19.8	Adhara	255	11.9	S28	59.9	
	04	211	00.2	279	33.2		36.5	4	51.1		52.0	109	18.6		13.6	339	32.8		19.8	Aldebarán	290	48.8	N16	32.1	
	05	226	02.7	294	34.0		36.6	19	53.3		52.0	124	21.2		13.6	354	35.2		19.8						
	06	241	05.1	309	34.8	S16	36.6	34	55.5	S7	52.1	139	23.8	N23	13.6	9	37.6	S16	19.8	Alioth	166	19.9	N55	52.7	
	07	256	07.6	324	35.6		36.7	49	57.7		52.2	154	26.4		13.6	24	40.0		19.8	Alkaid	152	58.3	N49	14.3	
	08	271	10.1	339	36.4		36.7	64	59.9		52.2	169	28.9		13.6	39	42.4		19.8	Al Na'ir	27	43.6	S46	53.3	
	09	286	12.5	354	37.2		36.8	80	02.2		52.3	184	31.5		13.6	54	44.9		19.8	Anilam	275	45.7	S1	11.9	
V I E R N E S	10	301	15.0	9	38.0		36.8	95	04.4		52.4	199	34.1		13.6	69	47.3		19.8	Alphard	217	55.3	S8	43.5	
	11	316	17.4	24	38.8		36.8	110	06.6		52.4	214	36.7		13.7	84	49.7		19.8						
	12	331	19.9	39	39.6	S16	36.9	125	08.9	S7	52.5	229	39.3	N23	13.7	99	52.1	S16	19.8	Alphecca	126	10.6	N26	39.9	
	13	346	22.4	54	40.4		36.9	140	11.1		52.6	244	41.8		13.7	114	54.6		19.8	Alpheratz	357	43.3	N29	10.1	
	14	1	24.8	69	41.2		37.0	155	13.3		52.6	259	44.4		13.7	129	57.0		19.8	Altair	62	08.0	N8	54.4	
	15	16	27.3	84	42.0		37.0	170	15.6		52.7	274	47.0		13.7	144	59.4		19.8	Ankaa	353	15.6	S42	13.9	
	16	31	29.8	99	42.8		37.0	185	17.8		52.8	289	49.6		13.7	160	01.8		19.8	Antares	112	25.7	S26	27.6	
	17	46	32.2	114	43.6		37.1	200	20.0		52.8	304	52.2		13.7	175	04.2		19.8						
	18	61	34.7	129	44.3	S16	37.1	215	22.3	S7	52.9	319	54.7	N23	13.7	190	06.7	S16	19.8	Arcturus	145	55.1	N19	06.4	
	19	76	37.2	144	45.1		37.2	230	24.5		52.9	334	57.3		13.8	205	09.1		19.8	Atria	107	27.1	S69	02.8	
22	00	151	49.5	219	49.0	S16	37.3	305	35.7	S7	53.2	50	10.2	N23	13.8	280	21.2	S16	19.8	Canopus	263	55.6	S52	42.6	
	01	166	51.9	234	49.7		37.4	320	37.9		53.3	65	12.8		13.8	295	23.6		19.8	Capella	280	33.6	N46	00.7	
	02	181	54.4	249	50.5		37.4	335	40.2		53.4	80	15.3		13.8	310	26.1		19.9	Deneb	49	31.5	N45	19.9	
	03	196	56.9	264	51.3		37.5	350	42.4		53.4	95	17.9		13.8	325	28.5		19.9	Denebola	182	32.9	N14	29.4	
	04	211	59.3	279	52.0		37.5	5	44.7		53.5	110	20.5		13.9	340	30.9		19.9	Diphda	348	55.7	S17	54.7	
	05	227	01.8	294	52.8		37.5	20	46.9		53.5	125	23.1		13.9	355	33.3		19.9						
	06	242	04.3	309	53.5	S16	37.5	35	49.2	S7	53.6	140	25.6	N23	13.9	10	35.8	S16	19.9	Dubhe	193	50.5	N61	40.2	
	07	257	06.7	324	54.3		37.6	50	51.4		53.6	155	28.2		13.9	25	38.2		19.9	Elnath	278	11.9	N28	37.0	
	08	272	09.2	339	55.0		37.6	65	53.7		53.7	170	30.8		13.9	40	40.6		19.9	Eltanin	90	46.1	N51	29.1	
	09	287	11.7	354	55.8		37.6	80	55.9		53.8	185	33.4		13.9	55	43.0		19.9	Enif	33	46.9	N9	56.4	
S Á B A D O	10	302	14.1	9	56.5		37.7	95	58.2		53.8	200	35.9		13.9	70	45.5		19.9	Fomalhaut	15	23.8	S29	32.9	
	11	317	16.6	24	57.3		37.7	111	00.4		53.9	215	38.5		13.9	85	47.9		19.9						
	12	332	19.1	39	58.0	S16	37.7	126	02.7	S7	53.9	230	41.1	N23	14.0	100	50.3	S16	19.9	Gacrux	171	59.8	S57	11.5	
	13	347	21.5	54	58.8		37.8	141	05.0		54.0	245	43.6		14.0	115	52.7		19.9	Gienah	175	51.5	S17	37.3	
	14	1	24.0	69	59.5		37.8	156	07.2		54.0	260	46.2		14.0	130	55.2		19.9	Hadar	148	46.8	S60	26.2	
	15	17	26.4	85	00.2		37.8	171	09.5		54.1	275	48.8		14.0	145	57.6		19.9	Hamal	328	00.3	N23	31.7	
	16	32	28.9	100	01.0		37.8	186	11.7		54.1	290	51.3		14.0	161	00.0		19.9	Kaus Aust.	83	43.4	S34	22.4	
	17	47	31.4	115	01.7		37.9	201	14.0		54.2	305	53.9		14.0	176	02.4		19.9						
	18	62	33.8	130	02.4	S16	37.9	216	16.3	S7	54.2	320	56.5	N23	14.0	191	04.9	S16	19.9	Kochab	137	19.8	N74	05.6	
	19	77	36.3	145	03.1		37.9	231	18.5		54.3	335	59.1		14.0	206	07.3		19.9	Markab	13	38.1	N15	16.9	
23	00	152	48.6	220	06.7	S16	38.1	306	29.9	S7	54.5	51	11.9	N23	14.1	281	19.4	S16	19.9	Mirfak	308	39.7	N49	54.7	
	01	167	51.1	235	07.5		38.1	321	32.1		54.6	66	14.5		14.1	296	21.9		19.9	Nunki	75	58.0	S26	16.5	
	02	182	53.5	250	08.2		38.1	336	34.4		54.6	81	17.0		14.1	311	24.3		19.9	Péacock	53	19.0	S56	41.1	
	03	197	56.0	265	08.9		38.1	351	36.7		54.7	96	19.6		14.1	326	26.7		19.9	Póllux	243	26.8	N27	59.3	
	04	212	58.5	280	09.6		38.1	6	39.0		54.7	111	22.2		14.1	341	29.1		19.9	Procyon	244	59.0	N5	11.0	
	05	228	00.9	295	10.3		38.2	21	41.2		54.8	126	24.7		14.1	356	31.6		19.9						
	06	243	03.4	310	11.0	S16	38.2	36	43.5	S7	54.8	141	27.3	N23	14.2	11	34.0	S16	19.9	Rasalhague	96	06.1	N12	33.0	
	07	258	05.9	325	11.7		38.2	51	45.8		54.9	156	29.8		14.2	26	36.4		19.9	Régulus	207	42.7	N11	53.6	
	08	273	08.3	340	12.4		38.2	66	48.1		54.9	171	32.4		14.2	41	38.9		19.9	Rigel	281	11.5	S8	11.5	
	09	288	10.8	355	13.1		38.2	81	50.3		55.0	186	35.0		14.2	56	41.3		19.9	Rigil Kent.	139	50.7	S60	53.3	
D O M I N G O	10	303	13.3	10	13.8		38.3	96	52.6		55.0	201	37.5		14.2	71	43.7		19.9	Sabik	102	12.1	S15	44.4	
	11	318	15.7	25	14.5		38.3	111	54.9		55.1	216	40.1		14.2	86	46.2		19.9						
	12	333	18.2	40	15.2	S16	38.3	126	57.2	S7	55.1	231	42.7	N23	14.2	101	48.6	S16	19.9	Schedar	349	40.3	N56	37.0	
	13	348	20.7	55	15.9		38.3	141	59.5		55.2	246	45.2		14.2	116	51.0		19.9	Shaula	96	21.4	S37	06.6	
	14	3	23.1	70	16.5		38.3	157	01.8		55.2	261	47.8		14.2	131	53.4		19.9	Sirius	258	33.1	S16	44.5	
	15	18	25.6	85	17.2		38.3	172	04.0		55.3	276	50.3		14.3	146	55.9		19.9	Spica	158	30.5	S11	14.2	
	16	33	28.0	100	17.9		38.4	187	06.3		55.3	291	52.9		14.3	161	58.3		19.9	Suhail	222	51.6	S43	29.7	
	17	48	30.5	115	18.6		38.4	202	08.6		55.3	306	55.5		14.3	177	00.7		19.9						
	18	63	33.0	130	19.3	S16	38.4	217	10.9	S7	55.4	321	58.0	N23	14.3	192	03.2	S16	19.8	Vega	80	38.9	N38	47.7	
	19	78	35.4	145	19.9		38.4	232	13.2		55.4	337	00.6		14.3	207	05.6		19.8	Zuben'ubi	137	04.7	S16	06.0	
Paso Mer.	20	93	37.9	160	20.6		38.4	247	15.5		55.5	352	03.1		14.3	222	08.0		19.8						
	21	108	40.4	175	21.3		38.4	262	17.8		55.5	7	05.7		14.3	237	10.5		19.8						
	22	123	42.8	190	22.0		38.4	277	20.1		55.5	22	08.3		14.3	252	12.9		19.8	Venus	67	59.5	h m	9 20	
	23	138	45.3	205	22.6		38.4	292	22.4		55.6	37	10.8		14.3	267	15.3		19.8	Marte	153	46.2	3	37	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		21	22	23	24		
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m	
V I E R N E S	21 00	176 35.4	S10 39.9	291 54.2	10.5	S14 12.2	7.4	57.1	N 72	05 44	07 02	08 15	02 10	04 27	05 07	06 22	
	01	191 35.5	39.0	306 23.7	10.4	14 19.6	7.3	57.1	N 70	05 45	06 56	08 01	01 37	03 24	05 07	06 22	
	02	206 35.5	38.1	320 53.1	10.3	14 26.9	7.2	57.1	68	05 46	06 51	07 49	01 14	02 48	04 16	05 23	
	03	221 35.6	37.2	335 22.4	10.2	14 34.1	7.1	57.2	66	05 47	06 46	07 40	00 56	02 23	03 44	04 49	
	04	236 35.7	36.3	349 51.6	10.2	14 41.2	7.1	57.2	64	05 48	06 43	07 32	00 41	02 04	03 20	04 24	
	05	251 35.8	35.4	4 20.8	10.1	14 48.3	7.0	57.2	62	05 48	06 39	07 25	00 29	01 48	03 01	04 05	
	06	266 35.8	S10 34.5	18 49.9	10.1	S14 55.3	6.9	57.2	60	05 48	06 36	07 19	00 18	01 35	02 46	03 49	
	07	281 35.9	33.6	33 19.0	9.9	15 02.2	6.9	57.3	N 58	05 48	06 34	07 14	00 10	01 23	02 33	03 35	
	08	296 36.0	32.7	47 47.9	9.9	15 09.1	6.7	57.3	56	05 48	06 29	07 05	25 05	01 05	02 12	03 13	
	09	311 36.0	31.8	62 16.8	9.9	15 15.8	6.7	57.3	54	05 48	06 27	07 01	24 57	00 57	02 03	03 04	
	10	326 36.1	30.9	76 45.7	9.8	15 22.5	6.7	57.3	50	05 47	06 25	06 58	24 50	00 50	01 55	02 56	
	11	341 36.2	30.0	91 14.5	9.7	15 29.2	6.5	57.4	45	05 46	06 20	06 50	24 35	00 35	01 38	02 39	
	12	356 36.3	S10 29.1	105 43.2	9.6	S15 35.7	6.4	57.4	N 40	05 45	06 16	06 44	24 23	00 23	01 25	02 24	
	13	11 36.3	28.2	120 11.8	9.6	15 42.1	6.4	57.4	35	05 43	06 13	06 38	24 13	00 13	01 13	02 12	
	14	26 36.4	27.2	134 40.4	9.5	15 48.5	6.3	57.5	30	05 41	06 09	06 33	24 03	00 03	01 03	02 02	
	15	41 36.5	26.3	149 08.9	9.4	15 54.8	6.2	57.5	20	05 37	06 03	06 25	23 48	24 46	00 46	01 44	
	16	56 36.6	25.4	163 37.3	9.4	16 01.0	6.2	57.5	N 10	05 31	05 56	06 17	23 34	24 31	00 31	01 28	
	17	71 36.6	24.5	178 05.7	9.3	16 07.2	6.0	57.5	0	05 25	05 49	06 10	23 22	24 16	00 16	01 14	
	18	86 36.7	S10 23.6	192 34.0	9.2	S16 13.2	6.0	57.6	S 10	05 16	05 41	06 03	23 09	24 02	00 02	00 59	
	19	101 36.8	22.7	207 02.2	9.2	16 19.2	5.8	57.6	20	05 06	05 32	05 55	22 56	23 47	24 43	00 43	
	20	116 36.9	21.8	221 30.4	9.1	16 25.0	5.8	57.6	30	04 52	05 21	05 46	22 41	23 30	24 26	00 26	
	21	131 37.0	20.9	235 58.5	9.0	16 30.8	5.7	57.7	35	04 43	05 14	05 40	22 32	23 20	24 15	00 15	
	22	146 37.0	20.0	250 26.5	9.0	16 36.5	5.6	57.7	40	04 32	05 06	05 34	22 22	23 09	24 03	00 03	
	23	161 37.1	19.1	264 54.5	8.9	16 42.1	5.5	57.7	45	04 19	04 56	05 27	22 10	22 56	23 49	24 51	
	S Á B A D O	22 00	176 37.2	S10 18.2	279 22.4	8.8	S16 47.6	5.5	57.8	S 50	04 02	04 44	05 18	21 56	22 40	23 32	24 35
		01	191 37.3	17.3	293 50.2	8.8	16 53.1	5.3	57.8	52	03 53	04 38	05 14	21 49	22 32	23 24	24 27
02		206 37.3	16.3	308 18.0	8.7	16 58.4	5.2	57.8	54	03 44	04 32	05 10	21 42	22 24	23 15	24 18	
03		221 37.4	15.4	322 45.7	8.6	17 03.6	5.2	57.8	56	03 33	04 25	05 05	21 34	22 14	23 05	24 08	
04		236 37.5	14.5	337 13.3	8.5	17 08.8	5.0	57.9	58	03 20	04 16	05 00	21 25	22 03	22 54	23 57	
05		251 37.6	13.6	351 40.8	8.5	17 13.8	5.0	57.9	S 60	03 04	04 07	04 53	21 14	21 51	22 41	23 45	
06		266 37.7	S10 12.7	6 08.3	8.4	S17 18.8	4.9	57.9	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna					
07		281 37.7	11.8	20 35.7	8.4	17 23.7	4.7	58.0				21	22	23	24		
08		296 37.8	10.9	35 03.1	8.3	17 28.4	4.7	58.0	N 72	h m	h m	h m	h m	h m	h m	h m	
09		311 37.9	10.0	49 30.4	8.2	17 33.1	4.6	58.0									07 01	06 33	07 49	08 35
10		326 38.0	09.1	63 57.6	8.2	17 37.7	4.4	58.0	N 70	16 14	17 27	18 46	07 34	07 37	07 49	08 35	
11		341 38.1	08.1	78 24.8	8.1	17 42.1	4.4	58.1	68	16 28	17 33	18 44	07 34	07 37	07 49	08 35	
12		356 38.1	S10 07.2	92 51.9	8.0	S17 46.5	4.3	58.1	66	16 39	17 38	18 42	07 59	08 13	08 40	09 33	
13		11 38.2	06.3	107 18.9	8.0	17 50.8	4.1	58.1	66	16 49	17 42	18 42	08 18	08 38	09 13	10 07	
14		26 38.3	05.4	121 45.9	7.9	17 54.9	4.1	58.2	64	16 56	17 46	18 41	08 33	08 58	09 36	10 32	
15		41 38.4	04.5	136 12.8	7.8	17 59.0	3.9	58.2	62	17 03	17 49	18 40	08 46	09 15	09 55	10 51	
16		56 38.5	03.6	150 39.6	7.8	18 02.9	3.9	58.2	60	17 09	17 52	18 40	08 57	09 28	10 11	11 07	
17		71 38.5	02.7	165 06.4	7.7	18 06.8	3.7	58.3	N 58	17 14	17 54	18 40	09 06	09 40	10 24	11 21	
18		86 38.6	S10 01.8	179 33.1	7.6	S18 10.5	3.7	58.3	56	17 19	17 57	18 40	09 15	09 50	10 36	11 33	
19		101 38.7	00 00.8	193 59.7	7.6	18 14.2	3.5	58.3	54	17 23	17 59	18 40	09 22	09 59	10 46	11 43	
20		116 38.8	9 59.9	208 26.3	7.5	18 17.7	3.4	58.4	52	17 27	18 01	18 40	09 29	10 07	10 55	11 52	
21		131 38.9	59.0	222 52.8	7.5	18 21.1	3.3	58.4	50	17 30	18 03	18 41	09 35	10 15	11 03	12 00	
22		146 39.0	58.1	237 19.3	7.4	18 24.4	3.2	58.4	45	17 38	18 07	18 41	09 48	10 30	11 20	12 17	
23		161 39.0	57.2	251 45.7	7.4	18 27.6	3.1	58.4	N 40	17 44	18 11	18 43	09 59	10 43	11 34	12 31	
D O M I N G O		23 00	191 39.1	S 9 56.3	266 12.1	7.2	S18 30.7	3.0	58.5	35	17 49	18 15	18 44	10 08	10 54	11 45	12 43
		01	206 39.3	54.4	295 04.6	7.1	18 36.6	2.7	58.5	30	17 54	18 18	18 46	10 16	11 03	11 56	12 54
	02	221 39.4	53.5	309 30.7	7.1	18 39.3	2.7	58.6	N 10	18 02	18 25	18 50	10 30	11 20	12 13	13 11	
	03	236 39.5	52.6	323 56.8	7.1	18 42.0	2.5	58.6	0	18 10	18 31	18 56	10 43	11 34	12 29	13 27	
	04	251 39.5	51.7	338 22.9	7.0	18 44.5	2.4	58.6	S 10	18 17	18 38	19 02	10 54	11 48	12 43	13 42	
	05	266 39.6	S 9 50.8	352 48.9	6.9	S18 46.9	2.3	58.7	20	18 24	18 45	19 10	11 06	12 01	12 58	13 56	
	06	281 39.7	49.8	7 14.8	6.9	18 49.2	2.2	58.7	30	18 32	18 54	19 21	11 18	12 15	13 13	14 11	
	07	296 39.8	48.9	21 40.7	6.9	18 51.4	2.1	58.7	35	18 41	19 05	19 34	11 33	12 32	13 31	14 29	
	08	311 39.9	48.0	36 06.6	6.7	18 53.5	1.9	58.7	40	18 46	19 12	19 43	11 41	12 41	13 41	14 39	
	09	326 40.0	47.1	50 32.3	6.8	18 55.4	1.9	58.8	45	18 52	19 20	19 54	11 50	12 52	13 53	14 51	
	10	341 40.1	46.2	64 58.1	6.6	18 57.3	1.7	58.8	S 50	18 59	19 30	20 07	12 01	13 05	14 07	15 05	
	11	356 40.1	S 9 45.3	79 23.7	6.7	S18 59.0	1.6	58.8	52	19 07	19 42	20 24	12 15	13 21	14 24	15 22	
	12	11 40.2	44.3	93 49.4	6.5	19 00.6	1.4	58.9	54	19 11	19 47	20 32	12 21	13 28	14 32	15 30	
	13	26 40.3	43.4	108 14.9	6.6	19 02.0	1.4	58.9	56	19 16	19 54	20 41	12 28	13 36	14 41	15 38	
	14	41 40.4	42.5	122 40.5	6.5	19 03.4	1.2	58.9	54	19 20	20 01	20 52	12 36	13 46	14 51	15 48	
	15	56 40.5	41.6	137 06.0	6.4	19 04.6	1.1	59.0	58	19 26	20 09	21 05	12 44	13 56	15 02	15 59	
	16	71 40.6	40.7	151 31.4	6.4	19 05.7	1.0	59.0	S 60	19 32	20 18	21 20	12 54	14 08	15 15	16 12	
	17	86 40.7	S 9 39.7	165 56.8	6.3	S19 06.7	0.9	59.0	Dia	SOL		Paso Mer.	LUNA				
	18	101 40.8	38.8	180 22.1	6.3	19 07.6	0.7	59.0		Ec. Tiempo			Paso Mer. Sup.	Mer. Inf.	Edad	Fase	
	19	116 40.8	37.9	194 47.4	6.2	19 08.3	0.6	59.1	d	m s	m s	h m	h m	h m	d	%	
	20	131 40.9	37.0	209 12.6	6.3	19 08.9	0.5	59.1									13 39	13 35	12 14	04 42	17 08	22 63
	21	146 41.0	36.1	223 37.9	6.1	19 09.4	0.4	59.1	22	13 31	13 28	12 13	05 35	18 02	23 53		
	22	161 41.1	35.1	238													

UT (HmGr)	ARIES	VENUS -4.8	MARTE -0.4	JÚPITER -2.5	SATURNO +0.4	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
24 00	153 47.8	220 23.3 S16 38.5	307 24.7 S 7 55.6	52 13.4 N23 14.4	282 17.8 S16 19.8	Acamar	315 18.1 S40 15.2	
01	168 50.2	235 24.0 38.5	322 27.0 55.7	67 15.9 14.4	297 20.2 19.8	Achernar	335 26.9 S57 10.2	
02	183 52.7	250 24.6 38.5	337 29.3 55.7	82 18.5 14.4	312 22.6 19.8	Acrux	173 08.0 S63 10.6	
03	198 55.2	265 25.3 . . 38.5	352 31.6 . . 55.8	97 21.0 . . 14.4	327 25.1 . . 19.8	Adhara	255 11.9 S28 59.9	
04	213 57.6	280 25.9 38.5	7 33.9 55.8	112 23.6 14.4	342 27.5 19.8	Aldebarán	290 48.8 N16 32.1	
05	229 00.1	295 26.6 38.5	22 36.2 55.8	127 26.2 14.4	357 29.9 19.8			
06	244 02.5	310 27.2 S16 38.5	37 38.5 S 7 55.9	142 28.7 N23 14.4	12 32.4 S16 19.8	Alioth	166 19.9 N55 52.7	
07	259 05.0	325 27.9 38.5	52 40.8 55.9	157 31.3 14.4	27 34.8 19.8	Alkaid	152 58.3 N49 14.3	
08	274 07.5	340 28.5 38.5	67 43.1 55.9	172 33.8 14.4	42 37.2 19.8	Al Na'ir	27 43.6 S46 53.5	
09	289 09.9	355 29.2 . . 38.5	82 45.4 . . 56.0	187 36.4 . . 14.4	57 39.7 . . 19.8	Alnilam	275 45.7 S 1 11.9	
10	304 12.4	10 29.8 38.5	97 47.7 56.0	202 38.9 14.5	72 42.1 19.8	Alphard	217 55.3 S 8 43.5	
11	319 14.9	25 30.5 38.5	112 50.0 56.1	217 41.5 14.5	87 44.5 19.8			
12	334 17.3	40 31.1 S16 38.5	127 52.3 S 7 56.1	232 44.0 N23 14.5	102 47.0 S16 19.8	Alphecca	126 10.5 N26 39.9	
13	349 19.8	55 31.8 38.6	142 54.6 56.1	247 46.6 14.5	117 49.4 19.8	Alpheratz	357 43.3 N29 10.1	
14	4 22.3	70 32.4 38.6	157 56.9 56.2	262 49.1 14.5	132 51.8 19.8	Altair	62 08.0 N 8 54.4	
15	19 24.7	85 33.0 . . 38.6	172 59.2 . . 56.2	277 51.7 . . 14.5	147 54.3 . . 19.8	Ankaa	353 15.6 S42 13.9	
16	34 27.2	100 33.7 38.6	188 01.6 56.2	292 54.2 14.5	162 56.7 19.8	Antares	112 25.6 S26 27.6	
17	49 29.7	115 34.3 38.6	203 03.9 56.3	307 56.8 14.5	177 59.1 19.8			
18	64 32.1	130 34.9 S16 38.6	218 06.2 S 7 56.3	322 59.3 N23 14.5	193 01.6 S16 19.8	Arcturus	145 55.1 N19 06.4	
19	79 34.6	145 35.6 38.6	233 08.5 56.3	338 01.9 14.5	208 04.0 19.8	Atria	107 27.1 S69 02.8	
20	94 37.0	160 36.2 38.6	248 10.8 56.4	353 04.4 14.6	223 06.5 19.8	Avior	234 17.2 S59 33.7	
21	109 39.5	175 36.8 . . 38.6	263 13.2 . . 56.4	8 07.0 . . 14.6	238 08.9 . . 19.8	Bellatrix	278 31.4 N 6 21.5	
22	124 42.0	190 37.4 38.6	278 15.5 56.4	23 09.5 14.6	253 11.3 19.8	Betelgeuse	271 00.6 N 7 24.3	
23	139 44.4	205 38.1 38.6	293 17.8 56.5	38 12.1 14.6	268 13.8 19.8			
25 00	154 46.9	220 38.7 S16 38.6	308 20.1 S 7 56.5	53 14.6 N23 14.6	283 16.2 S16 19.8	Canopus	263 55.6 S52 42.7	
01	169 49.4	235 39.3 38.6	323 22.4 56.5	68 17.2 14.6	298 18.6 19.8	Capella	280 33.6 N46 00.7	
02	184 51.8	250 39.9 38.5	338 24.8 56.6	83 19.7 14.6	313 21.1 19.8	Deneb	49 31.5 N45 19.8	
03	199 54.3	265 40.5 . . 38.5	353 27.1 . . 56.6	98 22.3 . . 14.6	328 23.5 . . 19.8	Denébola	182 32.9 N14 29.3	
04	214 56.8	280 41.1 38.5	8 29.4 56.6	113 24.8 14.6	343 26.0 19.8	Diphda	348 55.7 S17 54.7	
05	229 59.2	295 41.7 38.5	23 31.8 56.6	128 27.4 14.6	358 28.4 19.8			
06	245 01.7	310 42.3 S16 38.5	38 34.1 S 7 56.7	143 29.9 N23 14.7	13 30.8 S16 19.8	Dubhe	193 50.5 N61 40.3	
07	260 04.1	325 42.9 38.5	53 36.4 56.7	158 32.5 14.7	28 33.3 19.8	Elnath	278 11.9 N28 37.0	
08	275 06.6	340 43.5 38.5	68 38.8 56.7	173 35.0 14.7	43 35.7 19.8	Eltanin	90 46.1 N51 29.1	
09	290 09.1	355 44.1 . . 38.5	83 41.1 . . 56.8	188 37.6 . . 14.7	58 38.1 . . 19.8	Enif	33 46.9 N 9 56.4	
10	305 11.5	10 44.7 38.5	98 43.4 56.8	203 40.1 14.7	73 40.6 19.8	Fomalhaut	15 23.8 S29 32.9	
11	320 14.0	25 45.3 38.5	113 45.8 56.8	218 42.7 14.7	88 43.0 19.8			
12	335 16.5	40 45.9 S16 38.5	128 48.1 S 7 56.8	233 45.2 N23 14.7	103 45.5 S16 19.8	Gacrux	171 59.8 S57 11.5	
13	350 18.9	55 46.5 38.5	143 50.4 56.9	248 47.7 14.7	118 47.9 19.8	Gienah	175 51.5 S17 37.4	
14	5 21.4	70 47.1 38.5	158 52.8 56.9	263 50.3 14.7	133 50.3 19.8	Hadar	148 46.7 S60 26.3	
15	20 23.9	85 47.7 . . 38.4	173 55.1 . . 56.9	278 52.8 . . 14.7	148 52.8 . . 19.8	Hamal	328 00.4 N23 31.7	
16	35 26.3	100 48.3 38.4	188 57.5 56.9	293 55.4 14.8	163 55.2 19.8	Kaus Aust.	83 43.3 S34 22.4	
17	50 28.8	115 48.9 38.4	203 59.8 57.0	308 57.9 14.8	178 57.7 19.8			
18	65 31.3	130 49.5 S16 38.4	219 02.1 S 7 57.0	324 00.5 N23 14.8	194 00.1 S16 19.8	Kochab	137 19.7 N74 05.6	
19	80 33.7	145 50.0 38.4	234 04.5 57.0	339 03.0 14.8	209 02.5 19.8	Markab	13 38.1 N15 16.9	
20	95 36.2	160 50.6 38.4	249 06.8 57.0	354 05.5 14.8	224 05.0 19.8	Menkar	314 14.6 N 4 08.5	
21	110 38.6	175 51.2 . . 38.4	264 09.2 . . 57.1	9 08.1 . . 14.8	239 07.4 . . 19.7	Menkent	148 06.7 S36 26.3	
22	125 41.1	190 51.8 38.4	279 11.5 57.1	24 10.6 14.8	254 09.9 19.7	Miaplacidus	221 38.6 S69 46.8	
23	140 43.6	205 52.4 38.3	294 13.9 57.1	39 13.2 14.8	269 12.3 19.7			
26 00	155 46.0	220 52.9 S16 38.3	309 16.2 S 7 57.1	54 15.7 N23 14.8	284 14.7 S16 19.7	Mirfak	308 39.7 N49 54.7	
01	170 48.5	235 53.5 38.3	324 18.6 57.1	69 18.2 14.8	299 17.2 19.7	Nunki	75 57.9 S26 16.5	
02	185 51.0	250 54.1 38.3	339 20.9 57.2	84 20.8 14.8	314 19.6 19.7	Peacock	53 19.0 S56 41.1	
03	200 53.4	265 54.6 . . 38.3	354 23.3 . . 57.2	99 23.3 . . 14.9	329 22.1 . . 19.7	Póllux	243 26.9 N27 59.3	
04	215 55.9	280 55.2 38.2	9 25.7 57.2	114 25.9 14.9	344 24.5 19.7	Procyon	244 59.0 N 5 11.0	
05	230 58.4	295 55.8 38.2	24 28.0 57.2	129 28.4 14.9	359 27.0 19.7			
06	246 00.8	310 56.3 S16 38.2	39 30.4 S 7 57.2	144 30.9 N23 14.9	14 29.4 S16 19.7	Rasalhague	96 06.1 N12 33.0	
07	261 03.3	325 56.9 38.2	54 32.7 57.3	159 33.5 14.9	29 31.8 19.7	Régulus	207 42.7 N11 53.6	
08	276 05.8	340 57.4 38.2	69 35.1 57.3	174 36.0 14.9	44 34.3 19.7	Rigel	281 11.5 S 8 11.5	
09	291 08.2	355 58.0 . . 38.1	84 37.5 . . 57.3	189 38.5 . . 14.9	59 36.7 . . 19.7	Rigel Kent.	139 50.7 S60 53.3	
10	306 10.7	10 58.6 38.1	99 39.8 57.3	204 41.1 14.9	74 39.2 19.7	Sabik	102 12.0 S15 44.4	
11	321 13.1	25 59.1 38.1	114 42.2 57.3	219 43.6 14.9	89 41.6 19.7			
12	336 15.6	40 59.7 S16 38.1	129 44.5 S 7 57.3	234 46.2 N23 14.9	104 44.1 S16 19.7	Schedar	349 40.3 N56 37.0	
13	351 18.1	56 00.2 38.0	144 46.9 57.4	249 48.7 14.9	119 46.5 19.7	Shaula	96 21.4 S37 06.6	
14	6 20.5	71 00.7 38.0	159 49.3 57.4	264 51.2 15.0	134 48.9 19.7	Sirius	258 33.1 S16 44.5	
15	21 23.0	86 01.3 . . 38.0	174 51.7 . . 57.4	279 53.8 . . 15.0	149 51.4 . . 19.7	Spica	158 30.5 S11 14.2	
16	36 25.5	101 01.8 38.0	189 54.0 57.4	294 56.3 15.0	164 53.8 19.7	Suhail	222 51.6 S43 29.7	
17	51 27.9	116 02.4 37.9	204 56.4 57.4	309 58.8 15.0	179 56.3 19.7			
18	66 30.4	131 02.9 S16 37.9	219 58.8 S 7 57.4	325 01.4 N23 15.0	194 58.7 S16 19.7	Vega	80 38.8 N38 47.7	
19	81 32.9	146 03.5 37.9	235 01.1 57.5	340 03.9 15.0	210 01.2 19.7	Zuben'ubi	137 04.7 S16 06.0	
20	96 35.3	161 04.0 37.9	250 03.5 57.5	355 06.4 15.0	225 03.6 19.7			
21	111 37.8	176 04.5 . . 37.8	265 05.9 . . 57.5	10 09.0 . . 15.0	240 06.1 . . 19.7	AHS Paso Mer.		
22	126 40.2	191 05.1 37.8	280 08.3 57.5	25 11.5 15.0	255 08.5 19.7	Venus	65 51.8 9 17	
23	141 42.7	206 05.6 37.8	295 10.6 57.5	40 14.0 15.0	270 10.9 19.7	Marte	153 33.2 3 26	
						Júpiter	258 27.7 20 24	
						Saturno	128 29.3 5 06	
h m								
Paso Mer. 13 38.6	v 0.6 d 0.0	v 2.3 d 0.0	v 2.5 d 0.0	v 2.4 d 0.0				

UT (HmGr)	SOL				LUNA				Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec			AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	24	25	26	27
d h	°	'	°	'	°	'	°	'	°	'	h m	h m	h m	h m	h m	h m
L U N E S	N 72	05 30	06 48	07 58	■	■	07 35	07 18								
	N 70	05 33	06 43	07 46	06 22	06 47	06 53	06 55								
	N 68	05 35	06 39	07 37	05 23	06 04	06 25	06 36								
	N 66	05 37	06 36	07 28	04 49	05 34	06 03	06 22								
	N 64	05 38	06 33	07 22	04 24	05 12	05 46	06 09								
	N 62	05 39	06 30	07 16	04 05	04 55	05 32	05 59								
	N 60	05 40	06 28	07 10	03 49	04 40	05 19	05 50								
	N 58	05 41	06 26	07 06	03 35	04 27	05 09	05 42								
	N 56	05 41	06 24	07 02	03 23	04 16	05 00	05 35								
	N 54	05 41	06 22	06 58	03 13	04 07	04 52	05 29								
	N 52	05 42	06 21	06 55	03 04	03 58	04 44	05 23								
	N 50	05 42	06 19	06 52	02 56	03 50	04 38	05 18								
	N 45	05 41	06 15	06 45	02 39	03 34	04 23	05 07								
	N 40	05 41	06 12	06 40	02 24	03 20	04 12	04 58								
	N 35	05 40	06 09	06 35	02 12	03 09	04 02	04 50								
	N 30	05 38	06 06	06 30	02 02	02 59	03 53	04 43								
	N 20	05 35	06 01	06 23	01 44	02 42	03 38	04 31								
	N 10	05 30	05 55	06 16	01 28	02 27	03 24	04 20								
	N 0	05 24	05 49	06 10	01 14	02 12	03 12	04 10								
	S 10	05 17	05 42	06 03	00 59	01 58	02 59	04 00								
	S 20	05 07	05 34	05 56	00 43	01 43	02 46	03 50								
	S 30	04 55	05 23	05 48	00 26	01 26	02 31	03 38								
	S 35	04 46	05 17	05 43	00 15	01 16	02 22	03 31								
	S 40	04 36	05 10	05 38	00 03	01 05	02 12	03 23								
	S 45	04 24	05 01	05 31	24 51	00 51	02 00	03 13								
S 50	04 08	04 50	05 24	24 35	00 35	01 45	03 02									
S 52	04 00	04 44	05 20	24 27	00 27	01 38	02 56									
S 54	03 51	04 38	05 16	24 18	00 18	01 31	02 51									
S 56	03 41	04 32	05 12	24 08	00 08	01 22	02 44									
S 58	03 29	04 24	05 07	23 57	25 13	01 13	02 37									
S 60	03 15	04 16	05 01	23 45	25 02	01 02	02 28									
M A R T E S	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna											
			Civil	Náut.	24	25	26	27								
	°	h m	h m	h m	h m	h m	h m	h m								
	N 72	16 29	17 41	18 59	■	■	11 30	13 49								
	N 70	16 41	17 45	18 56	08 35	10 13	12 11	14 11								
	N 68	16 51	17 49	18 53	09 33	10 56	12 38	14 28								
	N 66	16 59	17 52	18 51	10 07	11 25	12 59	14 42								
	N 64	17 06	17 55	18 50	10 32	11 46	13 16	14 53								
	N 62	17 12	17 57	18 48	10 51	12 04	13 29	15 02								
	N 60	17 17	17 59	18 47	11 07	12 18	13 41	15 10								
	N 58	17 21	18 01	18 47	11 21	12 31	13 51	15 18								
	N 56	17 25	18 03	18 46	11 33	12 41	14 00	15 24								
	N 54	17 29	18 05	18 46	11 43	12 51	14 07	15 29								
	N 52	17 32	18 06	18 45	11 52	12 59	14 14	15 34								
	N 50	17 35	18 08	18 45	12 00	13 06	14 20	15 39								
	N 45	17 42	18 11	18 45	12 17	13 22	14 34	15 49								
	N 40	17 47	18 14	18 46	12 31	13 35	14 45	15 57								
	N 35	17 52	18 17	18 47	12 43	13 47	14 54	16 04								
	N 30	17 56	18 20	18 48	12 54	13 56	15 02	16 10								
	N 20	18 03	18 26	18 51	13 11	14 13	15 16	16 20								
	N 10	18 10	18 31	18 56	13 27	14 27	15 28	16 29								
	N 0	18 16	18 37	19 02	13 42	14 41	15 40	16 38								
	S 10	18 23	18 44	19 09	13 56	14 54	15 51	16 46								
	S 20	18 30	18 52	19 18	14 11	15 08	16 03	16 55								
	S 30	18 38	19 02	19 31	14 29	15 25	16 17	17 05								
S 35	18 42	19 08	19 39	14 39	15 34	16 24	17 11									
S 40	18 48	19 16	19 49	14 51	15 45	16 33	17 17									
S 45	18 54	19 24	20 01	15 05	15 57	16 44	17 25									
S 50	19 01	19 35	20 17	15 22	16 12	16 56	17 34									
S 52	19 05	19 40	20 24	15 30	16 20	17 02	17 38									
S 54	19 09	19 46	20 33	15 38	16 27	17 08	17 43									
S 56	19 13	19 53	20 43	15 48	16 36	17 15	17 48									
S 58	19 18	20 00	20 54	15 59	16 46	17 23	17 53									
S 60	19 23	20 08	21 08	16 12	16 58	17 32	18 00									
M I É R C O L E S	Día	SOL		Paso Mer.		LUNA										
		Ec. Tiempo			Paso Mer.	Mer. Inf.	Edad Fase									
		00 ^h	12 ^h													
	d	m s	m s	h m	h m	h m	d %									
	24	13 15	13 11	12 13	07 28	19 57	25 31									
	25	13 06	13 02	12 13	08 27	20 56	26 20									
	26	12 57	12 52	12 13	09 26	21 55	27 12									
																
		S/D 16.2	<i>d</i> 0.9	S/D 16.2	16.4	16.5										

UT (HmGr)	ARIES	VENUS -4.8	MARTE -0.5	JÚPITER -2.4	SATURNO +0.4	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
27 00	156 45.2	221 06.1 S16 37.7	310 13.0 S 7 57.5	55 16.6 N23 15.0	285 13.4 S16 19.6	Acamar 315 18.1 S40 15.2
01	171 47.6	236 06.6 37.7	325 15.4 57.5	70 19.1 15.0	300 15.8 19.6	Achernar 335 26.9 S57 10.2
02	186 50.1	251 07.2 37.7	340 17.8 57.5	85 21.6 15.1	315 18.3 19.6	Acrux 173 08.0 S63 10.6
03	201 52.6	266 07.7 . . 37.6	355 20.2 . . 57.5	100 24.1 . . 15.1	330 20.7 . . 19.6	Adhara 255 11.9 S28 59.9
04	216 55.0	281 08.2 37.6	10 22.6 57.6	115 26.7 15.1	345 23.2 19.6	Aldebarán 290 48.8 N16 32.1
05	231 57.5	296 08.7 37.6	25 24.9 57.6	130 29.2 15.1	0 25.6 19.6	
06	247 00.0	311 09.3 S16 37.5	40 27.3 S 7 57.6	145 31.7 N23 15.1	15 28.1 S16 19.6	Alioth 166 19.9 N55 52.7
07	262 02.4	326 09.8 37.5	55 29.7 57.6	160 34.3 15.1	30 30.5 19.6	Alkaid 152 58.2 N49 14.3
08	277 04.9	341 10.3 37.5	70 32.1 57.6	175 36.8 15.1	45 33.0 19.6	Al Na'ir 27 43.6 S46 53.5
09	292 07.4	356 10.8 . . 37.4	85 34.5 . . 57.6	190 39.3 . . 15.1	60 35.4 . . 19.6	Alnilam 275 45.8 S 1 11.9
10	307 09.8	11 11.3 37.4	100 36.9 57.6	205 41.8 15.1	75 37.9 19.6	Alphard 217 55.3 S 8 43.5
11	322 12.3	26 11.8 37.4	115 39.3 57.6	220 44.4 15.1	90 40.3 19.6	
12	337 14.7	41 12.3 S16 37.3	130 41.7 S 7 57.6	235 46.9 N23 15.1	105 42.8 S16 19.6	Alphecca 126 10.5 N26 39.9
13	352 17.2	56 12.8 37.3	145 44.1 57.6	250 49.4 15.1	120 45.2 19.6	Alpheratz 357 43.3 N29 10.1
14	7 19.7	71 13.3 37.2	160 46.5 57.6	265 51.9 15.2	135 47.6 19.6	Altair 62 08.0 N 8 54.4
15	22 22.1	86 13.8 . . 37.2	175 48.9 . . 57.6	280 54.5 . . 15.2	150 50.1 . . 19.6	Ankaa 353 15.6 S42 13.9
16	37 24.6	101 14.3 37.2	190 51.3 57.6	295 57.0 15.2	165 52.5 19.6	Antares 112 25.6 S26 27.6
17	52 27.1	116 14.8 37.1	205 53.7 57.7	310 59.5 15.2	180 55.0 19.6	
18	67 29.5	131 15.3 S16 37.1	220 56.1 S 7 57.7	326 02.0 N23 15.2	195 57.4 S16 19.6	Arcturus 145 55.1 N19 06.4
19	82 32.0	146 15.8 37.0	235 58.5 57.7	341 04.6 15.2	210 59.9 19.6	Atria 107 27.0 S69 02.8
20	97 34.5	161 16.3 37.0	251 00.9 57.7	356 07.1 15.2	226 02.3 19.6	Avior 234 17.2 S59 33.7
21	112 36.9	176 16.8 . . 36.9	266 03.3 . . 57.7	11 09.6 . . 15.2	241 04.8 . . 19.5	Bellatrix 278 31.4 N 6 21.5
22	127 39.4	191 17.3 36.9	281 05.7 57.7	26 12.1 15.2	256 07.2 19.5	Betelgeuse 271 00.6 N 7 24.3
23	142 41.9	206 17.8 36.9	296 08.1 57.7	41 14.7 15.2	271 09.7 19.5	
28 00	157 44.3	221 18.3 S16 36.8	311 10.5 S 7 57.7	56 17.2 N23 15.2	286 12.1 S16 19.5	Canopus 263 55.7 S52 42.7
01	172 46.8	236 18.8 36.8	326 12.9 57.7	71 19.7 15.2	301 14.6 19.5	Capella 280 33.6 N46 00.7
02	187 49.2	251 19.3 36.7	341 15.3 57.7	86 22.2 15.2	316 17.0 19.5	Deneb 49 31.5 N45 19.8
03	202 51.7	266 19.7 . . 36.7	356 17.7 . . 57.7	101 24.7 . . 15.3	331 19.5 . . 19.5	Denébola 182 32.8 N14 29.3
04	217 54.2	281 20.2 36.6	11 20.2 57.7	116 27.3 15.3	346 21.9 19.5	Diphda 348 55.7 S17 54.7
05	232 56.6	296 20.7 36.6	26 22.6 57.7	131 29.8 15.3	1 24.4 19.5	
06	247 59.1	311 21.2 S16 36.5	41 25.0 S 7 57.7	146 32.3 N23 15.3	16 26.8 S16 19.5	Dubhe 193 50.5 N61 40.3
07	263 01.6	326 21.7 36.5	56 27.4 57.7	161 34.8 15.3	31 29.3 19.5	Elnath 278 11.9 N28 37.0
08	278 04.0	341 22.1 36.4	71 29.8 57.7	176 37.3 15.3	46 31.7 19.5	Eltanin 90 46.1 N51 29.1
09	293 06.5	356 22.6 . . 36.4	86 32.2 . . 57.7	191 39.9 . . 15.3	61 34.2 . . 19.5	Enif 33 46.9 N 9 56.4
10	308 09.0	11 23.1 36.3	101 34.7 57.7	206 42.4 15.3	76 36.7 19.5	Fomalhaut 15 23.8 S29 32.8
11	323 11.4	26 23.5 36.3	116 37.1 57.7	221 44.9 15.3	91 39.1 19.5	
12	338 13.9	41 24.0 S16 36.2	131 39.5 S 7 57.7	236 47.4 N23 15.3	106 41.6 S16 19.5	Gacrux 171 59.7 S57 11.5
13	353 16.3	56 24.5 36.1	146 41.9 57.7	251 49.9 15.3	121 44.0 19.5	Gienah 175 51.5 S17 37.4
14	8 18.8	71 24.9 36.1	161 44.4 57.7	266 52.5 15.3	136 46.5 19.5	Hadar 148 46.7 S60 26.3
15	23 21.3	86 25.4 . . 36.0	176 46.8 . . 57.7	281 55.0 . . 15.3	151 48.9 . . 19.4	Hamal 328 00.4 N23 31.7
16	38 23.7	101 25.9 36.0	191 49.2 57.7	296 57.5 15.4	166 51.4 19.4	Kaus Aust. 83 43.3 S34 22.4
17	53 26.2	116 26.3 35.9	206 51.6 57.7	312 00.0 15.4	181 53.8 19.4	
18	68 28.7	131 26.8 S16 35.9	221 54.1 S 7 57.6	327 02.5 N23 15.4	196 56.3 S16 19.4	Kochab 137 19.7 N74 05.6
19	83 31.1	146 27.2 35.8	236 56.5 57.6	342 05.0 15.4	211 58.7 19.4	Markab 13 38.1 N15 16.9
20	98 33.6	161 27.7 35.7	251 58.9 57.6	357 07.5 15.4	227 01.2 19.4	Menkar 314 14.6 N 4 08.5
21	113 36.1	176 28.2 . . 35.7	267 01.4 . . 57.6	12 10.1 . . 15.4	242 03.6 . . 19.4	Menkent 148 06.7 S36 26.3
22	128 38.5	191 28.6 35.6	282 03.8 57.6	27 12.6 15.4	257 06.1 19.4	Miaplacidus 221 38.6 S69 46.8
23	143 41.0	206 29.1 35.6	297 06.2 57.6	42 15.1 15.4	272 08.5 19.4	
1 00	158 43.5	221 29.5 S16 35.5	312 08.7 S 7 57.6	57 17.6 N23 15.4	287 11.0 S16 19.4	Mirfak 308 39.7 N49 54.7
01	173 45.9	236 29.9 35.4	327 11.1 57.6	72 20.1 15.4	302 13.5 19.4	Nunki 75 57.9 S26 16.5
02	188 48.4	251 30.4 35.4	342 13.6 57.6	87 22.6 15.4	317 15.9 19.4	Peacock 53 19.0 S56 41.1
03	203 50.8	266 30.8 . . 35.3	357 16.0 . . 57.6	102 25.1 . . 15.4	332 18.4 . . 19.4	Póllux 243 26.9 N27 59.3
04	218 53.3	281 31.3 35.3	12 18.4 57.6	117 27.6 15.4	347 20.8 19.4	Procyon 244 59.0 N 5 11.0
05	233 55.8	296 31.7 35.2	27 20.9 57.6	132 30.2 15.4	2 23.3 19.4	
06	248 58.2	311 32.2 S16 35.1	42 23.3 S 7 57.6	147 32.7 N23 15.4	17 25.7 S16 19.4	Rasalhague 96 06.1 N12 33.0
07	264 00.7	326 32.6 35.1	57 25.8 57.5	162 35.2 15.5	32 28.2 19.3	Régulus 207 42.7 N11 53.6
08	279 03.2	341 33.0 35.0	72 28.2 57.5	177 37.7 15.5	47 30.6 19.3	Rigel 281 11.5 S 8 11.5
09	294 05.6	356 33.5 . . 34.9	87 30.7 . . 57.5	192 40.2 . . 15.5	62 33.1 . . 19.3	Rigel Kent. 139 50.6 S60 53.3
10	309 08.1	11 33.9 34.9	102 33.1 57.5	207 42.7 15.5	77 35.6 19.3	Sabik 102 12.0 S15 44.4
11	324 10.6	26 34.3 34.8	117 35.6 57.5	222 45.2 15.5	92 38.0 19.3	
12	339 13.0	41 34.8 S16 34.7	132 38.0 S 7 57.5	237 47.7 N23 15.5	107 40.5 S16 19.3	Schedar 349 40.3 N56 37.0
13	354 15.5	56 35.2 34.6	147 40.5 57.5	252 50.2 15.5	122 42.9 19.3	Shaula 96 21.3 S37 06.6
14	9 18.0	71 35.6 34.6	162 42.9 57.5	267 52.7 15.5	137 45.4 19.3	Sirius 258 33.1 S16 44.5
15	24 20.4	86 36.0 . . 34.5	177 45.4 . . 57.4	282 55.3 . . 15.5	152 47.8 . . 19.3	Spica 158 30.5 S11 14.2
16	39 22.9	101 36.5 34.4	192 47.8 57.4	297 57.8 15.5	167 50.3 19.3	Suhail 222 51.6 S43 29.7
17	54 25.3	116 36.9 34.4	207 50.3 57.4	313 00.3 15.5	182 52.7 19.3	
18	69 27.8	131 37.3 S16 34.3	222 52.8 S 7 57.4	328 02.8 N23 15.5	197 55.2 S16 19.3	Vega 80 38.8 N38 47.7
19	84 30.3	146 37.7 34.2	237 55.2 57.4	343 05.3 15.5	212 57.7 19.3	Zuben'ubi 137 04.7 S16 06.0
20	99 32.7	161 38.1 34.1	252 57.7 57.4	358 07.8 15.5	228 00.1 19.3	
21	114 35.2	176 38.6 . . 34.1	268 00.2 . . 57.3	13 10.3 . . 15.5	243 02.6 . . 19.2	AHS Paso Mer.
22	129 37.7	191 39.0 34.0	283 02.6 57.3	28 12.8 15.6	258 05.0 19.2	Venus 63 34.0 9 14
23	144 40.1	206 39.4 33.9	298 05.1 57.3	43 15.3 15.6	273 07.5 19.2	Marte 153 26.2 3 15
						Júpiter 258 32.9 20 11
						Saturno 128 27.8 4 54
Paso Mer. 13 26.8	v 0.5 d 0.1	v 2.4 d 0.0	v 2.5 d 0.0	v 2.5 d 0.0	v 2.5 d 0.0	

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph	Náut.		Civil	27		28	1	2		
d h	° /	° /	° /		° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m	
J U E V E S	N 72	05 15	06 33		07 43	07 18	07 08	06 59	06 51								
	N 70	05 20	06 30		07 32	06 55	06 54	06 53	06 52								
	68	05 23	06 27		07 24	06 36	06 43	06 48	06 52								
	66	05 26	06 25		07 17	06 22	06 34	06 44	06 52								
	64	05 28	06 23		07 11	06 09	06 26	06 40	06 53								
	62	05 30	06 21		07 06	05 59	06 20	06 37	06 53								
	60	05 32	06 20		07 02	05 50	06 14	06 35	06 53								
	N 58	05 33	06 18		06 58	05 42	06 09	06 32	06 53								
	56	05 34	06 17		06 54	05 35	06 04	06 30	06 54								
	54	05 35	06 16		06 51	05 29	06 00	06 28	06 54								
	52	05 35	06 14		06 48	05 23	05 57	06 26	06 54								
	50	05 36	06 13		06 46	05 18	05 53	06 25	06 54								
	45	05 37	06 10		06 40	05 07	05 46	06 21	06 55								
	N 40	05 37	06 08		06 35	04 58	05 40	06 18	06 55								
	35	05 36	06 06		06 31	04 50	05 34	06 16	06 55								
	30	05 35	06 03		06 27	04 43	05 30	06 13	06 55								
	20	05 33	05 59		06 21	04 31	05 21	06 10	06 56								
	N 10	05 29	05 54		06 15	04 20	05 14	06 06	06 56								
	0	05 24	05 48		06 09	04 10	05 08	06 03	06 57								
	S 10	05 18	05 42		06 03	04 00	05 01	06 00	06 57								
	20	05 09	05 35		05 57	03 50	04 54	05 56	06 58								
	30	04 57	05 26		05 50	03 38	04 45	05 52	06 58								
	35	04 49	05 20		05 46	03 31	04 41	05 50	06 59								
40	04 40	05 13		05 41	03 23	04 35	05 48	06 59									
45	04 29	05 05		05 35	03 13	04 29	05 45	06 59									
S 50	04 14	04 55		05 29	03 02	04 21	05 41	07 00									
52	04 07	04 50		05 26	02 56	04 18	05 40	07 00									
54	03 59	04 45		05 22	02 51	04 14	05 38	07 01									
56	03 50	04 39		05 18	02 44	04 10	05 36	07 01									
58	03 39	04 32		05 14	02 37	04 05	05 34	07 01									
S 60	03 26	04 24		05 09	02 28	03 59	05 31	07 02									
V I E R N E S	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna												
			Civil	Náut.	27	28	1	2									
	°	h m	h m	h m	h m	h m	h m	h m									
	N 72	16 44	17 54	19 12	13 49	15 58	18 01	20 01									
	N 70	16 54	17 57	19 08	14 11	16 09	18 05	19 56									
	68	17 03	17 59	19 04	14 28	16 18	18 07	19 53									
	66	17 09	18 01	19 01	14 42	16 26	18 09	19 50									
	64	17 15	18 03	18 58	14 53	16 32	18 11	19 47									
	62	17 20	18 05	18 56	15 02	16 38	18 12	19 45									
	60	17 24	18 07	18 55	15 10	16 42	18 14	19 43									
	N 58	17 28	18 08	18 53	15 18	16 46	18 15	19 42									
	56	17 32	18 09	18 52	15 24	16 50	18 16	19 40									
	54	17 35	18 10	18 51	15 29	16 53	18 17	19 39									
	52	17 38	18 12	18 51	15 34	16 56	18 18	19 38									
	50	17 40	18 13	18 50	15 39	16 59	18 19	19 37									
	45	17 46	18 15	18 49	15 49	17 05	18 20	19 34									
	N 40	17 51	18 18	18 49	15 57	17 10	18 22	19 32									
	35	17 55	18 20	18 49	16 04	17 14	18 23	19 31									
	30	17 58	18 22	18 50	16 10	17 17	18 24	19 29									
	20	18 05	18 27	18 52	16 20	17 24	18 26	19 26									
	N 10	18 10	18 32	18 56	16 29	17 29	18 27	19 24									
	0	18 16	18 37	19 01	16 38	17 34	18 29	19 22									
	S 10	18 21	18 43	19 07	16 46	17 39	18 30	19 20									
20	18 27	18 50	19 16	16 55	17 44	18 31	19 17										
30	18 34	18 59	19 27	17 05	17 50	18 33	19 14										
35	18 39	19 04	19 35	17 11	17 54	18 34	19 13										
40	18 43	19 11	19 44	17 17	17 58	18 35	19 11										
45	18 49	19 19	19 55	17 25	18 02	18 36	19 09										
S 50	18 55	19 29	20 10	17 34	18 07	18 38	19 07										
52	18 58	19 33	20 16	17 38	18 10	18 38	19 06										
54	19 02	19 39	20 24	17 43	18 12	18 39	19 04										
56	19 05	19 44	20 33	17 48	18 15	18 40	19 03										
58	19 09	19 51	20 44	17 53	18 18	18 40	19 02										
S 60	19 14	19 59	20 56	18 00	18 22	18 41	19 00										
S Á B A D O	Día	SOL		LUNA													
		Ec. Tiempo		Paso Mer.	Paso Mer.	Mer. Sup.	Inf.	Edad	Fase								
		00h	12h														
	d	m s	m s	h m	h m	h m	d	%									
	27	12 47	12 42	12 13	10 24	22 53	28	5									
	28	12 36	12 31	12 13	11 21	23 49	29	1									
	1	12 25	12 20	12 12	12 16	24 43	00	0									
	S/D	16.2	<i>d</i> 0.9	S/D	16.6	16.6	16.5										

UT (HmGr)	ARIES	VENUS -4.7	MARTE -0.5	JÚPITER -2.4	SATURNO +0.4	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
200	159 42.6	221 39.8 S16 33.8	313 07.5 S 7 57.3	58 17.8 N23 15.6	288 10.0 S16 19.2	Acamar	315 18.2 S40 15.2	
01	174 45.1	236 40.2 33.8	328 10.0 57.3	73 20.3 15.6	303 12.4 19.2	Achernar	335 26.9 S57 10.2	
02	189 47.5	251 40.6 33.7	343 12.5 57.3	88 22.8 15.6	318 14.9 19.2	Acrux	173 08.0 S63 10.6	
03	204 50.0	266 41.0 . . 33.6	358 15.0 . . 57.2	103 25.3 . . 15.6	333 17.3 . . 19.2	Adhara	255 11.9 S28 59.9	
04	219 52.4	281 41.4 33.5	13 17.4 57.2	118 27.8 15.6	348 19.8 19.2	Aldebarán	290 48.8 N16 32.1	
05	234 54.9	296 41.8 33.4	28 19.9 57.2	133 30.3 15.6	3 22.3 19.2			
06	249 57.4	311 42.2 S16 33.3	43 22.4 S 7 57.2	148 32.8 N23 15.6	18 24.7 S16 19.2	Alioth	166 19.8 N55 52.7	
07	264 59.8	326 42.6 33.3	58 24.9 57.2	163 35.3 15.6	33 27.2 19.2	Alkaid	152 58.2 N49 14.3	
08	280 02.3	341 43.0 33.2	73 27.3 57.1	178 37.8 15.6	48 29.6 19.2	Al Na'ir	27 43.6 S46 53.4	
09	295 04.8	356 43.4 . . 33.1	88 29.8 . . 57.1	193 40.3 . . 15.6	63 32.1 . . 19.2	Alnilam	275 45.8 S 1 11.9	
10	310 07.2	11 43.8 33.0	103 32.3 57.1	208 42.8 15.6	78 34.6 19.1	Alphard	217 55.3 S 8 43.5	
11	325 09.7	26 44.2 32.9	118 34.8 57.1	223 45.3 15.6	93 37.0 19.1			
12	340 12.2	41 44.6 S16 32.8	133 37.3 S 7 57.1	238 47.8 N23 15.6	108 39.5 S16 19.1	Alphecca	126 10.5 N26 39.9	
13	355 14.6	56 45.0 32.8	148 39.7 57.0	253 50.3 15.6	123 41.9 19.1	Alpheratz	357 43.3 N29 10.1	
14	10 17.1	71 45.4 32.7	163 42.2 57.0	268 52.8 15.7	138 44.4 19.1	Altair	62 08.0 N 8 54.4	
15	25 19.6	86 45.8 . . 32.6	178 44.7 . . 57.0	283 55.3 . . 15.7	153 46.9 . . 19.1	Ankaa	353 15.6 S42 13.9	
16	40 22.0	101 46.2 32.5	193 47.2 57.0	298 57.8 15.7	168 49.3 19.1	Antares	112 25.6 S26 27.6	
17	55 24.5	116 46.5 32.4	208 49.7 56.9	314 00.3 15.7	183 51.8 19.1			
18	70 26.9	131 46.9 S16 32.3	223 52.2 S 7 56.9	329 02.8 N23 15.7	198 54.2 S16 19.1	Arcturus	145 55.1 N19 06.4	
19	85 29.4	146 47.3 32.2	238 54.7 56.9	344 05.3 15.7	213 56.7 19.1	Atria	107 27.0 S69 02.8	
20	100 31.9	161 47.7 32.1	253 57.2 56.9	359 07.8 15.7	228 59.2 19.1	Avior	234 17.2 S59 33.7	
21	115 34.3	176 48.1 . . 32.0	268 59.6 . . 56.8	14 10.3 . . 15.7	244 01.6 . . 19.1	Bellatrix	278 31.4 N 6 21.5	
22	130 36.8	191 48.4 31.9	284 02.1 56.8	29 12.8 15.7	259 04.1 19.0	Betelgeuse	271 00.6 N 7 24.3	
23	145 39.3	206 48.8 31.9	299 04.6 56.8	44 15.3 15.7	274 06.6 19.0			
300	160 41.7	221 49.2 S16 31.8	314 07.1 S 7 56.8	59 17.8 N23 15.7	289 09.0 S16 19.0	Canopus	263 55.7 S52 42.7	
01	175 44.2	236 49.6 31.7	329 09.6 56.7	74 20.3 15.7	304 11.5 19.0	Capella	280 33.6 N46 00.7	
02	190 46.7	251 49.9 31.6	344 12.1 56.7	89 22.8 15.7	319 13.9 19.0	Deneb	49 31.5 N45 19.8	
03	205 49.1	266 50.3 . . 31.5	359 14.6 . . 56.7	104 25.3 . . 15.7	334 16.4 . . 19.0	Denébola	182 32.8 N14 29.3	
04	220 51.6	281 50.7 31.4	14 17.1 56.6	119 27.8 15.7	349 18.9 19.0	Diphda	348 55.7 S17 54.7	
05	235 54.0	296 51.1 31.3	29 19.6 56.6	134 30.3 15.7	4 21.3 19.0			
06	250 56.5	311 51.4 S16 31.2	44 22.1 S 7 56.6	149 32.7 N23 15.7	19 23.8 S16 19.0	Dubhe	193 50.5 N61 40.3	
07	265 59.0	326 51.8 31.1	59 24.6 56.5	164 35.2 15.7	34 26.3 19.0	Elnath	278 11.9 N28 37.0	
08	281 01.4	341 52.1 31.0	74 27.1 56.5	179 37.7 15.8	49 28.7 19.0	Eltanin	90 46.1 N51 29.1	
09	296 03.9	356 52.5 . . 30.9	89 29.7 . . 56.5	194 40.2 . . 15.8	64 31.2 . . 19.0	Enif	33 46.9 N 9 56.4	
10	311 06.4	11 52.9 30.8	104 32.2 56.5	209 42.7 15.8	79 33.7 18.9	Fomalhaut	15 23.8 S29 32.8	
11	326 08.8	26 53.2 30.7	119 34.7 56.4	224 45.2 15.8	94 36.1 18.9			
12	341 11.3	41 53.6 S16 30.6	134 37.2 S 7 56.4	239 47.7 N23 15.8	109 38.6 S16 18.9	Gacrux	171 59.7 S57 11.5	
13	356 13.8	56 53.9 30.5	149 39.7 56.4	254 50.2 15.8	124 41.1 18.9	Gienah	175 51.5 S17 37.4	
14	11 16.2	71 54.3 30.4	164 42.2 56.3	269 52.7 15.8	139 43.5 18.9	Hadar	148 46.7 S60 26.3	
15	26 18.7	86 54.7 . . 30.3	179 44.7 . . 56.3	284 55.2 . . 15.8	154 46.0 . . 18.9	Hamal	328 00.4 N23 31.7	
16	41 21.2	101 55.0 30.2	194 47.2 56.3	299 57.7 15.8	169 48.5 18.9	Kaus Aust.	83 43.3 S34 22.4	
17	56 23.6	116 55.4 30.1	209 49.8 56.2	315 00.1 15.8	184 50.9 18.9			
18	71 26.1	131 55.7 S16 29.9	224 52.3 S 7 56.2	330 02.6 N23 15.8	199 53.4 S16 18.9	Kochab	137 19.6 N74 05.6	
19	86 28.5	146 56.1 29.8	239 54.8 56.2	345 05.1 15.8	214 55.9 18.9	Markab	13 38.1 N15 16.9	
20	101 31.0	161 56.4 29.7	254 57.3 56.1	0 07.6 15.8	229 58.3 18.9	Menkar	314 14.6 N 4 08.5	
21	116 33.5	176 56.7 . . 29.6	269 59.9 . . 56.1	15 10.1 . . 15.8	245 00.8 . . 18.8	Menkent	148 06.7 S36 26.3	
22	131 35.9	191 57.1 29.5	285 02.4 56.0	30 12.6 15.8	260 03.3 18.8	Miaplacidus	221 38.6 S69 46.8	
23	146 38.4	206 57.4 29.4	300 04.9 56.0	45 15.1 15.8	275 05.7 18.8			
400	161 40.9	221 57.8 S16 29.3	315 07.4 S 7 56.0	60 17.6 N23 15.8	290 08.2 S16 18.8	Mirfak	308 39.7 N49 54.7	
01	176 43.3	236 58.1 29.2	330 10.0 55.9	75 20.0 15.8	305 10.7 18.8	Nunki	75 57.9 S26 16.5	
02	191 45.8	251 58.4 29.1	345 12.5 55.9	90 22.5 15.8	320 13.1 18.8	Peacock	53 19.0 S56 41.1	
03	206 48.3	266 58.8 . . 29.0	0 15.0 . . 55.9	105 25.0 . . 15.9	335 15.6 . . 18.8	Póllux	243 26.9 N27 59.3	
04	221 50.7	281 59.1 28.8	15 17.5 55.8	120 27.5 15.9	350 18.1 18.8	Procyon	244 59.0 N 5 11.0	
05	236 53.2	296 59.5 28.7	30 20.1 55.8	135 30.0 15.9	5 20.5 18.8			
06	251 55.6	311 59.8 S16 28.6	45 22.6 S 7 55.7	150 32.5 N23 15.9	20 23.0 S16 18.8	Rasalhague	96 06.1 N12 33.0	
07	266 58.1	327 00.1 28.5	60 25.1 55.7	165 34.9 15.9	35 25.5 18.7	Régulus	207 42.7 N11 53.6	
08	282 00.6	342 00.4 28.4	75 27.7 55.7	180 37.4 15.9	50 27.9 18.7	Rigel	281 11.5 S 8 11.5	
09	297 03.0	357 00.8 . . 28.3	90 30.2 . . 55.6	195 39.9 . . 15.9	65 30.4 . . 18.7	Rigel Kent.	139 50.6 S60 53.3	
10	312 05.5	12 01.1 28.1	105 32.8 55.6	210 42.4 15.9	80 32.9 18.7	Sabik	102 12.0 S15 44.4	
11	327 08.0	27 01.4 28.0	120 35.3 55.5	225 44.9 15.9	95 35.3 18.7			
12	342 10.4	42 01.8 S16 27.9	135 37.8 S 7 55.5	240 47.4 N23 15.9	110 37.8 S16 18.7	Schedar	349 40.4 N56 37.0	
13	357 12.9	57 02.1 27.8	150 40.4 55.4	255 49.8 15.9	125 40.3 18.7	Shaula	96 21.3 S37 06.6	
14	12 15.4	72 02.4 27.7	165 42.9 55.4	270 52.3 15.9	140 42.8 18.7	Sirius	258 33.1 S16 44.5	
15	27 17.8	87 02.7 . . 27.5	180 45.5 . . 55.4	285 54.8 . . 15.9	155 45.2 . . 18.7	Spica	158 30.5 S11 14.2	
16	42 20.3	102 03.0 27.4	195 48.0 55.3	300 57.3 15.9	170 47.7 18.7	Suhail	222 51.6 S43 29.7	
17	57 22.8	117 03.4 27.3	210 50.6 55.3	315 59.8 15.9	185 50.2 18.6			
18	72 25.2	132 03.7 S16 27.2	225 53.1 S 7 55.2	331 02.2 N23 15.9	200 52.6 S16 18.6	Vega	80 38.8 N38 47.7	
19	87 27.7	147 04.0 27.1	240 55.7 55.2	346 04.7 15.9	215 55.1 18.6	Zuben'ubi	137 04.7 S16 06.0	
20	102 30.1	162 04.3 26.9	255 58.2 55.1	1 07.2 15.9	230 57.6 18.6			
21	117 32.6	177 04.6 . . 26.8	271 00.8 . . 55.1	16 09.7 . . 15.9	246 00.1 . . 18.6			
22	132 35.1	192 04.9 26.7	286 03.3 55.0	31 12.2 15.9	261 02.5 18.6			
23	147 37.5	207 05.2 26.5	301 05.9 55.0	46 14.6 15.9	276 05.0 18.6			
h m								
Paso Mer. 13 15.0	v 0.4 d 0.1		v 2.5 d 0.0	v 2.5 d 0.0	v 2.5 d 0.0			
						AHS Paso Mer.		
						Venus	61 07.5 9 12	
						Marte	153 25.4 3 03	
						Júpiter	258 36.1 19 59	
						Saturno	128 27.3 4 43	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		2	3	4	5	
DOMINGO	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	00	176 56.6	S 7 19.1	169 42.1	8.8	S 0 48.3	12.0	60.2	05 00	06 18	07 27	06 51	06 43	06 35	06 26	
	01	191 56.8	18.1	184 09.9	8.8	0 36.3	12.0	60.1	05 11	06 16	07 12	06 52	06 56	07 01	07 07	
	02	206 56.9	17.2	198 37.7	8.9	0 24.3	12.0	60.1	05 15	06 14	07 06	06 52	07 01	07 10	07 22	
	03	221 57.0	16.2	213 05.6	8.9	0 12.3	12.0	60.1	05 18	06 13	07 01	06 53	07 05	07 18	07 34	
	04	236 57.1	15.2	227 33.5	8.9	S 0 00.3	12.0	60.1	05 21	06 12	06 57	06 53	07 08	07 25	07 44	
	05	251 57.3	14.3	242 01.4	8.9	N 0 11.7	12.0	60.0	05 23	06 11	06 53	06 53	07 12	07 31	07 53	
	06	266 57.4	S 7 13.3	256 29.3	9.0	N 0 23.7	11.9	60.0	05 25	06 10	06 50	06 53	07 14	07 36	08 01	
	07	281 57.5	12.4	270 57.3	9.0	0 35.6	11.9	60.0	05 27	06 10	06 47	06 54	07 17	07 41	08 08	
	08	296 57.6	11.4	285 25.3	9.1	0 47.5	12.0	60.0	05 28	06 09	06 44	06 54	07 19	07 45	08 14	
	09	311 57.8	10.5	299 53.4	9.0	0 59.5	11.9	59.9	05 29	06 08	06 42	06 54	07 21	07 49	08 19	
	10	326 57.9	09.5	314 21.4	9.1	1 11.4	11.8	59.9	05 30	06 07	06 40	06 54	07 23	07 53	08 25	
	11	341 58.0	08.6	328 49.5	9.2	1 23.2	11.9	59.9	05 31	06 05	06 35	06 55	07 27	08 00	08 35	
	12	356 58.1	S 7 07.6	343 17.7	9.1	N 1 35.1	11.8	59.8	05 32	06 04	06 31	06 55	07 31	08 07	08 45	
	13	11 58.3	06.7	357 45.8	9.2	1 46.9	11.9	59.8	05 32	06 02	06 27	06 55	07 34	08 12	08 52	
	14	26 58.4	05.7	12 14.0	9.2	1 58.8	11.8	59.8	05 32	06 00	06 24	06 55	07 36	08 17	08 59	
	15	41 58.5	04.7	26 42.2	9.3	2 10.6	11.7	59.8	05 31	05 56	06 18	06 56	07 41	08 26	09 11	
	16	56 58.6	03.8	41 10.5	9.2	2 22.3	11.8	59.7	05 28	05 52	06 13	06 56	07 45	08 34	09 22	
	17	71 58.8	02.8	55 38.7	9.3	2 34.1	11.7	59.7	05 24	05 48	06 09	06 57	07 49	08 41	09 32	
	18	86 58.9	S 7 01.9	70 07.0	9.3	N 2 45.8	11.7	59.7	05 18	05 43	06 04	06 57	07 53	08 48	09 42	
	19	101 59.0	00.9	84 35.3	9.4	2 57.5	11.6	59.6	05 10	05 36	05 58	06 58	07 57	08 56	09 53	
	20	116 59.1	7 00.0	99 03.7	9.3	3 09.1	11.6	59.6	04 59	05 28	05 52	06 58	08 02	09 05	10 05	
	21	131 59.3	6 59.0	113 32.0	9.4	3 20.7	11.6	59.6	04 53	05 23	05 49	06 59	08 05	09 10	10 12	
	22	146 59.4	58.0	128 00.4	9.4	3 32.3	11.6	59.5	04 44	05 17	05 44	06 59	08 08	09 16	10 20	
	23	161 59.5	57.1	142 28.8	9.5	3 43.9	11.5	59.5	04 34	05 10	05 40	06 59	08 12	09 23	10 30	
LUNES	300	176 59.7	S 6 56.1	156 57.3	9.4	N 3 55.4	11.5	59.5	04 20	05 00	05 34	07 00	08 17	09 31	10 41	
	01	191 59.8	55.2	171 25.7	9.5	4 06.9	11.4	59.4	04 13	04 56	05 31	07 00	08 19	09 35	10 47	
	02	206 59.9	54.2	185 54.2	9.5	4 18.3	11.4	59.4	04 06	04 51	05 28	07 01	08 21	09 39	10 53	
	03	222 00.0	53.3	200 22.7	9.6	4 29.7	11.4	59.4	03 58	04 46	05 25	07 01	08 24	09 44	10 59	
	04	237 00.2	52.3	214 51.3	9.5	4 41.1	11.3	59.3	03 48	04 40	05 21	07 01	08 27	09 49	11 07	
	05	252 00.3	51.3	229 19.8	9.6	4 52.4	11.3	59.3	03 36	04 33	05 17	07 02	08 30	09 55	11 15	
	06	267 00.4	S 6 50.4	243 48.4	9.6	N 5 03.7	11.2	59.3	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	282 00.6	49.4	258 17.0	9.6	5 14.9	11.2	59.2			Civil	Náut.	2	3	4	5
	08	297 00.7	48.5	272 45.6	9.7	5 26.1	11.1	59.2								
	09	312 00.8	47.5	287 14.3	9.6	5 37.2	11.1	59.2	N 72	h m	h m	h m	h m	h m	h m	h m
	10	327 01.0	46.6	301 42.9	9.7	5 48.3	11.1	59.1								
	11	342 01.1	45.6	316 11.6	9.7	5 59.4	11.0	59.1	16 59	18 08	19 26	20 01	21 58	23 54	25 53	
	12	357 01.2	S 6 44.6	330 40.3	9.7	N 6 10.4	11.0	59.1	17 07	18 09	19 20	19 56	21 46	23 32	25 16	
	13	12 01.3	43.7	345 09.0	9.7	6 21.4	10.9	59.0	17 14	18 10	19 15	19 53	21 36	23 15	24 50	
	14	27 01.5	42.7	359 37.7	9.8	6 32.3	10.8	59.0	17 20	18 11	19 11	19 50	21 28	23 02	24 31	
	15	42 01.6	41.8	14 06.5	9.8	6 43.1	10.8	59.0	17 24	18 12	19 07	19 47	21 21	22 51	24 15	
	16	57 01.7	40.8	28 35.3	9.8	6 53.9	10.8	58.9	17 28	18 13	19 04	19 45	21 15	22 41	24 02	
	17	72 01.9	39.8	43 04.1	9.8	7 04.7	10.6	58.9	17 32	18 14	19 02	19 43	21 10	22 33	23 51	
	18	87 02.0	S 6 38.9	57 32.9	9.8	N 7 15.3	10.7	58.8	17 35	18 15	19 00	19 42	21 06	22 26	23 42	
	19	102 02.1	37.9	72 01.7	9.9	7 26.0	10.6	58.8	17 38	18 15	18 58	19 40	21 02	22 20	23 33	
	20	117 02.3	37.0	86 30.6	9.8	7 36.6	10.5	58.8	17 41	18 16	18 57	19 39	20 58	22 14	23 26	
	21	132 02.4	36.0	100 59.4	9.9	7 47.1	10.4	58.7	17 43	18 17	18 56	19 38	20 55	22 09	23 19	
	22	147 02.5	35.0	115 28.3	9.9	7 57.5	10.4	58.7	17 45	18 18	18 55	19 37	20 52	22 05	23 13	
	23	162 02.7	34.1	129 57.2	9.9	8 07.9	10.4	58.7	17 50	18 19	18 53	19 34	20 46	21 55	23 00	
	MARTES	400	177 02.8	S 6 33.1	144 26.1	9.9	N 8 18.3	10.3	58.6	17 54	18 21	18 52	19 32	20 41	21 47	22 50
01		192 02.9	32.1	158 55.0	10.0	8 28.6	10.2	58.6	17 57	18 23	18 52	19 31	20 36	21 40	22 41	
02		207 03.1	31.2	173 24.0	9.9	8 38.8	10.2	58.5	18 00	18 24	18 52	19 29	20 32	21 34	22 33	
03		222 03.2	30.2	187 52.9	10.0	8 49.0	10.1	58.5	18 06	18 28	18 53	19 26	20 25	21 23	22 19	
04		237 03.3	29.3	202 21.9	10.0	8 59.1	10.0	58.5	18 11	18 32	18 56	19 24	20 19	21 14	22 07	
05		252 03.5	28.3	216 50.9	10.0	9 09.1	9.9	58.4	18 15	18 36	19 00	19 22	20 14	21 05	21 56	
06		267 03.6	S 6 27.3	231 19.9	10.0	N 9 19.0	9.9	58.4	18 20	18 41	19 06	19 20	20 08	20 57	21 45	
07		282 03.7	26.4	245 48.9	10.0	9 28.9	9.9	58.4	18 25	18 47	19 13	19 17	20 02	20 47	21 33	
08		297 03.9	25.4	260 17.9	10.1	9 38.8	9.7	58.3	18 31	18 55	19 24	19 14	19 55	20 37	21 19	
09		312 04.0	24.5	274 47.0	10.0	9 48.5	9.7	58.3	18 35	19 00	19 31	19 13	19 52	20 31	21 12	
10		327 04.1	23.5	289 16.0	10.1	9 58.2	9.7	58.2	18 39	19 06	19 39	19 11	19 47	20 24	21 03	
11		342 04.3	22.5	303 45.1	10.1	10 07.9	9.5	58.2	18 43	19 13	19 49	19 09	19 42	20 16	20 52	
12		357 04.4	S 6 21.6	318 14.2	10.1	N10 17.4	9.5	58.2	18 49	19 22	20 02	19 07	19 36	20 07	20 40	
13		12 04.6	20.6	332 43.3	10.1	10 26.9	9.4	58.1	18 52	19 26	20 09	19 06	19 33	20 02	20 34	
14		27 04.7	19.6	347 12.4	10.1	10 36.3	9.4	58.1	18 55	19 31	20 16	19 04	19 30	19 57	20 28	
15		42 04.8	18.7	1 41.5	10.2	10 45.7	9.2	58.1	18 58	19 36	20 24	19 03	19 27	19 52	20 20	
16		57 05.0	17.7	16 10.7	10.1	10 54.9	9.2	58.0	19 01	19 42	20 34	19 02	19 23	19 46	20 12	
17		72 05.1	16.7	30 39.8	10.2	11 04.1	9.2	58.0	19 05	19 49	20 45	19 00	19 19	19 39	20 03	
18		87 05.2	S 6 15.8	45 09.0	10.1	N11 13.3	9.0	57.9	Día	SOL		LUNA				
19		102 05.4	14.8	59 38.1	10.2	11 22.3	9.0	57.9		Ec. Tiempo	Paso Mer.	Paso Mer.		Edad	Fase	
20		117 05.5	13.9	74 07.3	10.2	11 31.3	8.9	57.9	00h			12h	Sup.			Inf.
21		132 05.7	12.9	88 36.5	10.2	11 40.2	8.8	57.8		d	m s			m s	h m		h m	d	%
22		147 05.8	11.9	103 05.7	10.2	11 49.0	8.8	57.8	2	12 14	12 08	12 12	13 09	00 43	01 2	
23		162 05.9	11.0	117 34.9	10.3	N11 57.8	8.6	57.7	3	12 02	11 55	12 12	14 02	01 36	02 6	
									4	11 49	11 43	12 12	14 53	02 27	03 13	
													</			

UT (HmGr)	ARIES	VENUS -4.7	MARTE -0.6	JÚPITER -2.4	SATURNO +0.4	ESTRELLAS		
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
5 00	162 40.0	222 05.5 S16 26.4	316 08.4 S 7 54.9	61 17.1 N23 15.9	291 07.5 S16 18.6	Acamar	315 18.2 S40 15.2	
01	177 42.5	237 05.9 26.3	331 11.0 54.9	76 19.6 16.0	306 09.9 18.6	Achernar	335 26.9 S57 10.1	
02	192 44.9	252 06.2 26.2	346 13.6 54.8	91 22.1 16.0	321 12.4 18.6	Acrux	173 07.9 S63 10.7	
03	207 47.4	267 06.5 . . 26.0	1 16.1 . . 54.8	106 24.5 . . 16.0	336 14.9 . . 18.5	Adhara	255 11.9 S28 59.9	
04	222 49.9	282 06.8 25.9	16 18.7 54.8	121 27.0 16.0	351 17.4 18.5	Aldebarán	290 48.8 N16 32.1	
05	237 52.3	297 07.1 25.8	31 21.2 54.7	136 29.5 16.0	6 19.8 18.5			
06	252 54.8	312 07.4 S16 25.6	46 23.8 S 7 54.7	151 32.0 N23 16.0	21 22.3 S16 18.5	Alioth	166 19.8 N55 52.7	
07	267 57.3	327 07.7 25.5	61 26.4 54.6	166 34.4 16.0	36 24.8 18.5	Alkaid	152 58.2 N49 14.3	
08	282 59.7	342 08.0 25.4	76 28.9 54.6	181 36.9 16.0	51 27.2 18.5	Al Na'ir	27 43.6 S46 53.4	
09	298 02.2	357 08.3 . . 25.2	91 31.5 . . 54.5	196 39.4 . . 16.0	66 29.7 . . 18.5	Alnilam	275 45.8 S 1 11.9	
10	313 04.6	12 08.6 25.1	106 34.1 54.4	211 41.9 16.0	81 32.2 18.5	Alphard	217 55.3 S 8 43.5	
11	328 07.1	27 08.9 25.0	121 36.7 54.4	226 44.3 16.0	96 34.7 18.5			
12	343 09.6	42 09.1 S16 24.8	136 39.2 S 7 54.3	241 46.8 N23 16.0	111 37.1 S16 18.4	Alphecca	126 10.5 N26 39.9	
13	358 12.0	57 09.4 24.7	151 41.8 54.3	256 49.3 16.0	126 39.6 18.4	Alpheratz	357 43.3 N29 10.1	
14	13 14.5	72 09.7 24.5	166 44.4 54.2	271 51.7 16.0	141 42.1 18.4	Altair	62 08.0 N 8 54.4	
15	28 17.0	87 10.0 . . 24.4	181 46.9 . . 54.2	286 54.2 . . 16.0	156 44.6 . . 18.4	Ankaa	353 15.6 S42 13.9	
16	43 19.4	102 10.3 24.3	196 49.5 54.1	301 56.7 16.0	171 47.0 18.4	Antares	112 25.6 S26 27.6	
17	58 21.9	117 10.6 24.1	211 52.1 54.1	316 59.2 16.0	186 49.5 18.4			
18	73 24.4	132 10.9 S16 24.0	226 54.7 S 7 54.0	332 01.6 N23 16.0	201 52.0 S16 18.4	Arcturus	145 55.1 N19 06.4	
19	88 26.8	147 11.2 23.8	241 57.3 54.0	347 04.1 16.0	216 54.5 18.4	Atria	107 26.9 S69 02.8	
20	103 29.3	162 11.4 23.7	256 59.8 53.9	2 06.6 16.0	231 56.9 18.4	Avior	234 17.3 S59 33.7	
21	118 31.7	177 11.7 . . 23.6	272 02.4 . . 53.9	17 09.0 . . 16.0	246 59.4 . . 18.3	Bellatrix	278 31.4 N 6 21.5	
22	133 34.2	192 12.0 23.4	287 05.0 53.8	32 11.5 16.0	262 01.9 18.3	Betelgeuse	271 00.7 N 7 24.3	
23	148 36.7	207 12.3 23.3	302 07.6 53.7	47 14.0 16.0	277 04.4 18.3			
6 00	163 39.1	222 12.6 S16 23.1	317 10.2 S 7 53.7	62 16.4 N23 16.0	292 06.8 S16 18.3	Canopus	263 55.7 S52 42.7	
01	178 41.6	237 12.8 23.0	332 12.8 53.6	77 18.9 16.0	307 09.3 18.3	Capella	280 33.6 N46 00.7	
02	193 44.1	252 13.1 22.8	347 15.4 53.6	92 21.4 16.0	322 11.8 18.3	Deneb	49 31.5 N45 19.8	
03	208 46.5	267 13.4 . . 22.7	2 18.0 . . 53.5	107 23.8 . . 16.0	337 14.3 . . 18.3	Denébola	182 32.8 N14 29.4	
04	223 49.0	282 13.7 22.5	17 20.5 53.5	122 26.3 16.1	352 16.8 18.3	Diphda	348 55.7 S17 54.7	
05	238 51.5	297 13.9 22.4	32 23.1 53.4	137 28.8 16.1	7 19.2 18.2			
06	253 53.9	312 14.2 S16 22.2	47 25.7 S 7 53.3	152 31.2 N23 16.1	22 21.7 S16 18.2	Dubhe	193 50.5 N61 40.3	
07	268 56.4	327 14.5 22.1	62 28.3 53.3	167 33.7 16.1	37 24.2 18.2	Elnath	278 11.9 N28 37.0	
08	283 58.9	342 14.7 21.9	77 30.9 53.2	182 36.2 16.1	52 26.7 18.2	Eltanin	90 46.0 N51 29.1	
09	299 01.3	357 15.0 . . 21.8	92 33.5 . . 53.1	197 38.6 . . 16.1	67 29.1 . . 18.2	Enif	33 46.9 N 9 56.4	
10	314 03.8	12 15.3 21.6	107 36.1 53.1	212 41.1 16.1	82 31.6 18.2	Fomalhaut	15 23.8 S29 32.8	
11	329 06.2	27 15.5 21.5	122 38.7 53.0	227 43.6 16.1	97 34.1 18.2			
12	344 08.7	42 15.8 S16 21.3	137 41.3 S 7 53.0	242 46.0 N23 16.1	112 36.6 S16 18.2	Gacrux	171 59.7 S57 11.6	
13	359 11.2	57 16.1 21.2	152 43.9 52.9	257 48.5 16.1	127 39.1 18.2	Gienah	175 51.4 S17 37.4	
14	14 13.6	72 16.3 21.0	167 46.5 52.8	272 51.0 16.1	142 41.5 18.1	Hadar	148 46.6 S60 26.3	
15	29 16.1	87 16.6 . . 20.9	182 49.1 . . 52.8	287 53.4 . . 16.1	157 44.0 . . 18.1	Hamal	328 00.4 N23 31.7	
16	44 18.6	102 16.8 20.7	197 51.7 52.7	302 55.9 16.1	172 46.5 18.1	Kaus Aust.	83 43.3 S34 22.4	
17	59 21.0	117 17.1 20.5	212 54.4 52.6	317 58.3 16.1	187 49.0 18.1			
18	74 23.5	132 17.4 S16 20.4	227 57.0 S 7 52.6	333 00.8 N23 16.1	202 51.4 S16 18.1	Kochab	137 19.6 N74 05.6	
19	89 26.0	147 17.6 20.2	242 59.6 52.5	348 03.3 16.1	217 53.9 18.1	Markab	13 38.1 N15 16.9	
20	104 28.4	162 17.9 20.1	258 02.2 52.5	3 05.7 16.1	232 56.4 18.1	Menkar	314 14.7 N 4 08.5	
21	119 30.9	177 18.1 . . 19.9	273 04.8 . . 52.4	18 08.2 . . 16.1	247 58.9 . . 18.1	Menkent	148 06.7 S36 26.3	
22	134 33.3	192 18.4 19.7	288 07.4 52.3	33 10.6 16.1	263 01.4 18.0	Miaplacidus	221 38.6 S69 46.8	
23	149 35.8	207 18.6 19.6	303 10.0 52.3	48 13.1 16.1	278 03.8 18.0			
7 00	164 38.3	222 18.9 S16 19.4	318 12.7 S 7 52.2	63 15.6 N23 16.1	293 06.3 S16 18.0	Mirfak	308 39.8 N49 54.7	
01	179 40.7	237 19.1 19.2	333 15.3 52.1	78 18.0 16.1	308 08.8 18.0	Nunki	75 57.9 S26 16.5	
02	194 43.2	252 19.4 19.1	348 17.9 52.0	93 20.5 16.1	323 11.3 18.0	Peacock	53 18.9 S56 41.1	
03	209 45.7	267 19.6 . . 18.9	3 20.5 . . 52.0	108 22.9 . . 16.1	338 13.8 . . 18.0	Póllux	243 26.9 N27 59.3	
04	224 48.1	282 19.8 18.7	18 23.1 51.9	123 25.4 16.1	353 16.2 18.0	Procyon	244 59.0 N 5 11.0	
05	239 50.6	297 20.1 18.6	33 25.8 51.8	138 27.9 16.1	8 18.7 18.0			
06	254 53.1	312 20.3 S16 18.4	48 28.4 S 7 51.8	153 30.3 N23 16.1	23 21.2 S16 17.9	Rasalhague	96 06.0 N12 33.0	
07	269 55.5	327 20.6 18.2	63 31.0 51.7	168 32.8 16.1	38 23.7 17.9	Régulus	207 42.7 N11 53.6	
08	284 58.0	342 20.8 18.1	78 33.6 51.6	183 35.2 16.1	53 26.2 17.9	Rigel	281 11.5 S 8 11.5	
09	300 00.5	357 21.0 . . 17.9	93 36.3 . . 51.6	198 37.7 . . 16.1	68 28.7 . . 17.9	Rigel Kent.	139 50.6 S60 53.4	
10	315 02.9	12 21.3 17.7	108 38.9 51.5	213 40.1 16.1	83 31.1 17.9	Sabik	102 12.0 S15 44.4	
11	330 05.4	27 21.5 17.6	123 41.5 51.4	228 42.6 16.1	98 33.6 17.9			
12	345 07.8	42 21.8 S16 17.4	138 44.2 S 7 51.3	243 45.0 N23 16.1	113 36.1 S16 17.9	Schedar	349 40.4 N56 37.0	
13	0 10.3	57 22.0 17.2	153 46.8 51.3	258 47.5 16.1	128 38.6 17.8	Shaula	96 21.3 S37 06.6	
14	15 12.8	72 22.2 17.0	168 49.4 51.2	273 49.9 16.2	143 41.1 17.8	Sirius	258 33.1 S16 44.5	
15	30 15.2	87 22.5 . . 16.9	183 52.1 . . 51.1	288 52.4 . . 16.2	158 43.6 . . 17.8	Spica	158 30.4 S11 14.2	
16	45 17.7	102 22.7 16.7	198 54.7 51.1	303 54.9 16.2	173 46.0 17.8	Suhail	222 51.6 S43 29.7	
17	60 20.2	117 22.9 16.5	213 57.3 51.0	318 57.3 16.2	188 48.5 17.8			
18	75 22.6	132 23.1 S16 16.3	229 00.0 S 7 50.9	333 59.8 N23 16.2	203 51.0 S16 17.8	Vega	80 38.8 N38 47.7	
19	90 25.1	147 23.4 16.2	244 02.6 50.8	349 02.2 16.2	218 53.5 17.8	Zuben'ubi	137 04.7 S16 06.0	
20	105 27.6	162 23.6 16.0	259 05.3 50.8	4 04.7 16.2	233 56.0 17.8			
21	120 30.0	177 23.8 . . 15.8	274 07.9 . . 50.7	19 07.1 . . 16.2	248 58.5 . . 17.7	AHS Paso Mer.		
22	135 32.5	192 24.0 15.6	289 10.6 50.6	34 09.6 16.2	264 00.9 17.7	Venus	58 33.4 9 11	
23	150 35.0	207 24.3 15.4	304 13.2 50.5	49 12.0 16.2	279 03.4 17.7	Marte	153 31.0 2 51	
						Júpiter	258 37.3 19 48	
						Saturno	128 27.7 4 31	
Paso Mer. 13 03.2	v 0.3 d 0.2		v 2.6 d 0.1	v 2.5 d 0.0	v 2.5 d 0.0			

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	ν	Dec	d		Ph	Náut.		Civil	5	6	7	8
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m
M I É R C O L E S	N 72	04 45	06 04	07 11	06 26	06 14	05 47								
	N 70	04 53	06 04	07 04	06 49	06 51	06 58	07 15							
	68	04 59	06 03	06 59	07 07	07 18	07 35	08 04							
	66	05 04	06 03	06 54	07 22	07 38	08 01	08 35							
	64	05 08	06 03	06 51	07 34	07 54	08 21	08 58							
	62	05 12	06 03	06 47	07 44	08 08	08 38	09 16							
	60	05 15	06 03	06 44	07 53	08 19	08 52	09 32							
	N 58	05 17	06 02	06 42	08 01	08 29	09 04	09 44							
	56	05 19	06 02	06 39	08 08	08 38	09 14	09 56							
	54	05 21	06 02	06 37	08 14	08 46	09 23	10 06							
	52	05 22	06 01	06 35	08 19	08 53	09 31	10 14							
	50	05 24	06 01	06 33	08 25	08 59	09 38	10 22							
	45	05 26	06 00	06 29	08 35	09 13	09 54	10 39							
	N 40	05 28	05 59	06 26	08 45	09 24	10 07	10 53							
	35	05 29	05 58	06 23	08 52	09 34	10 18	11 04							
	30	05 29	05 57	06 21	08 59	09 43	10 28	11 14							
	20	05 28	05 54	06 16	09 11	09 57	10 44	11 32							
	N 10	05 26	05 51	06 12	09 22	10 10	10 59	11 47							
	0	05 23	05 47	06 08	09 32	10 22	11 12	12 02							
	S 10	05 18	05 43	06 04	09 42	10 35	11 26	12 16							
	20	05 11	05 37	05 59	09 53	10 48	11 41	12 32							
	30	05 02	05 30	05 54	10 05	11 03	11 58	12 49							
	35	04 55	05 26	05 51	10 12	11 11	12 07	13 00							
	40	04 48	05 20	05 48	10 20	11 21	12 19	13 11							
	45	04 38	05 14	05 44	10 30	11 33	12 32	13 25							
S 50	04 26	05 06	05 39	10 41	11 47	12 48	13 42								
52	04 20	05 02	05 37	10 47	11 54	12 56	13 50								
54	04 13	04 58	05 34	10 53	12 02	13 04	13 59								
56	04 05	04 53	05 31	10 59	12 10	13 14	14 09								
S 58	03 57	04 47	05 28	11 07	12 19	13 24	14 21								
60	03 46	04 41	05 25	11 15	12 30	13 37	14 34								
J U E V E S	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna										
			Civil	Náut.	5	6	7	8							
	N 72	17 14	18 21	19 41	25 53	01 53	04 04								
	N 70	17 20	18 21	19 33	25 16	01 16	02 54	04 20							
	68	17 25	18 21	19 26	24 50	00 50	02 18	03 32							
	66	17 30	18 21	19 21	24 31	00 31	01 52	03 01							
	64	17 33	18 21	19 16	24 15	00 15	01 32	02 38							
	62	17 37	18 21	19 13	24 02	00 02	01 16	02 20							
	60	17 40	18 21	19 10	23 51	25 02	01 02	02 05							
	N 58	17 42	18 21	19 07	23 42	24 51	00 51	01 52							
	56	17 44	18 22	19 05	23 33	24 41	00 41	01 41							
	54	17 47	18 22	19 03	23 26	24 32	00 32	01 31							
	52	17 48	18 22	19 01	23 19	24 24	00 24	01 22							
	50	17 50	18 22	19 00	23 13	24 17	00 17	01 14							
	45	17 54	18 23	18 57	23 00	24 02	00 02	00 58							
	N 40	17 57	18 24	18 56	22 50	23 49	24 44	00 44							
	35	18 00	18 25	18 55	22 41	23 39	24 33	00 33							
	30	18 02	18 26	18 54	22 33	23 29	24 23	00 23							
	20	18 07	18 29	18 54	22 19	23 13	24 05	00 05							
	N 10	18 11	18 32	18 56	22 07	22 59	23 50	24 40							
	0	18 15	18 35	18 59	21 56	22 46	23 36	24 25							
	S 10	18 18	18 40	19 04	21 45	22 33	23 22	24 11							
	20	18 23	18 45	19 11	21 33	22 20	23 07	23 55							
	30	18 28	18 52	19 20	21 19	22 04	22 50	23 38							
	35	18 31	18 56	19 26	21 12	21 54	22 40	23 27							
40	18 34	19 01	19 34	21 03	21 44	22 28	23 15								
45	18 38	19 08	19 43	20 52	21 32	22 15	23 01								
S 50	18 43	19 16	19 55	20 40	21 17	21 58	22 44								
52	18 45	19 19	20 01	20 34	21 10	21 50	22 36								
54	18 47	19 24	20 08	20 28	21 02	21 42	22 27								
56	18 50	19 28	20 15	20 20	20 53	21 32	22 17								
58	18 53	19 33	20 24	20 12	20 44	21 21	22 06								
S 60	18 56	19 39	20 34	20 03	20 32	21 08	21 52								
V I E R N E S	Día	SOL		Paso Mer.		LUNA									
		Ec. Tiempo				Paso Mer. Sup.	Mer. Inf.	Edad	Fase						
		00h	12h												
	d	m s	m s	h m	h m	h m	d	%							
	5	11 36	11 29	12 11	15 44	03 19	04 21								
	6	11 23	11 16	12 11	16 34	04 09	05 30								
	7	11 09	11 01	12 11	17 24	04 59	06 40								
		S/D 16.1	d 1.0	S/D 15.6	15.4	15.2									

UT (HmGr)	ARIES	VENUS -4.7	MARTE -0.7	JÚPITER -2.4	SATURNO +0.4	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
8 00	165 37.4	222 24.5 S16 15.3	319 15.9 S 7 50.4	64 14.5 N23 16.2	294 05.9 S16 17.7	Acamar	315 18.2 S40 15.2	
01	180 39.9	237 24.7 15.1	334 18.5 50.4	79 16.9 16.2	309 08.4 17.7	Achernar	335 26.9 S57 10.1	
02	195 42.3	252 24.9 14.9	349 21.2 50.3	94 19.4 16.2	324 10.9 17.7	Acrux	173 07.9 S63 10.7	
03	210 44.8	267 25.1 . . 14.7	4 23.8 . . 50.2	109 21.8 . . 16.2	339 13.4 . . 17.7	Adhara	255 11.9 S28 59.9	
04	225 47.3	282 25.4 14.5	19 26.5 50.1	124 24.3 16.2	354 15.9 17.6	Aldebarán	290 48.8 N16 32.1	
05	240 49.7	297 25.6 14.3	34 29.1 50.1	139 26.7 16.2	9 18.3 17.6			
06	255 52.2	312 25.8 S16 14.2	49 31.8 S 7 50.0	154 29.2 N23 16.2	24 20.8 S16 17.6	Alioth	166 19.8 N55 52.8	
07	270 54.7	327 26.0 14.0	64 34.4 49.9	169 31.6 16.2	39 23.3 17.6	Alkaid	152 58.2 N49 14.3	
08	285 57.1	342 26.2 13.8	79 37.1 49.8	184 34.1 16.2	54 25.8 17.6	Al Na'ir	27 43.6 S46 53.4	
09	300 59.6	357 26.4 . . 13.6	94 39.7 . . 49.7	199 36.5 . . 16.2	69 28.3 . . 17.6	Alnilam	275 45.8 S 1 11.9	
10	316 02.1	12 26.6 13.4	109 42.4 49.6	214 38.9 16.2	84 30.8 17.6	Alphard	217 55.3 S 8 43.5	
11	331 04.5	27 26.8 13.2	124 45.1 49.6	229 41.4 16.2	99 33.3 17.6			
12	346 07.0	42 27.0 S16 13.0	139 47.7 S 7 49.5	244 43.8 N23 16.2	114 35.7 S16 17.5	Alphecca	126 10.4 N26 39.9	
13	1 09.5	57 27.2 12.8	154 50.4 49.4	259 46.3 16.2	129 38.2 17.5	Alpheratz	357 43.3 N29 10.1	
14	16 11.9	72 27.4 12.6	169 53.1 49.3	274 48.7 16.2	144 40.7 17.5	Altair	62 07.9 N 8 54.4	
15	31 14.4	87 27.7 . . 12.4	184 55.7 . . 49.2	289 51.2 . . 16.2	159 43.2 . . 17.5	Ankaa	353 15.6 S42 13.9	
16	46 16.8	102 27.9 12.3	199 58.4 49.2	304 53.6 16.2	174 45.7 17.5	Antares	112 25.5 S26 27.6	
17	61 19.3	117 28.1 12.1	215 01.1 49.1	319 56.1 16.2	189 48.2 17.5			
18	76 21.8	132 28.3 S16 11.9	230 03.7 S 7 49.0	334 58.5 N23 16.2	204 50.7 S16 17.5	Arcturus	145 55.0 N19 06.4	
19	91 24.2	147 28.5 11.7	245 06.4 48.9	350 00.9 16.2	219 53.2 17.4	Atria	107 26.8 S69 02.8	
20	106 26.7	162 28.7 11.5	260 09.1 48.8	5 03.4 16.2	234 55.6 17.4	Avior	234 17.3 S59 33.7	
21	121 29.2	177 28.9 . . 11.3	275 11.8 . . 48.7	20 05.8 . . 16.2	249 58.1 . . 17.4	Bellatrix	278 31.4 N 6 21.5	
22	136 31.6	192 29.1 11.1	290 14.4 48.6	35 08.3 16.2	265 00.6 17.4	Betelgeuse	271 00.7 N 7 24.3	
23	151 34.1	207 29.2 10.9	305 17.1 48.6	50 10.7 16.2	280 03.1 17.4			
9 00	166 36.6	222 29.4 S16 10.7	320 19.8 S 7 48.5	65 13.2 N23 16.2	295 05.6 S16 17.4	Canopus	263 55.7 S52 42.7	
01	181 39.0	237 29.6 10.5	335 22.5 48.4	80 15.6 16.2	310 08.1 17.4	Capella	280 33.7 N46 00.7	
02	196 41.5	252 29.8 10.3	350 25.2 48.3	95 18.0 16.2	325 10.6 17.3	Deneb	49 31.4 N45 19.8	
03	211 43.9	267 30.0 . . 10.1	5 27.8 . . 48.2	110 20.5 . . 16.2	340 13.1 . . 17.3	Denébola	182 32.8 N14 29.4	
04	226 46.4	282 30.2 09.9	20 30.5 48.1	125 22.9 16.2	355 15.6 17.3	Diphda	348 55.7 S17 54.7	
05	241 48.9	297 30.4 09.7	35 33.2 48.0	140 25.4 16.2	10 18.0 17.3			
06	256 51.3	312 30.6 S16 09.5	50 35.9 S 7 47.9	155 27.8 N23 16.2	25 20.5 S16 17.3	Dubhe	193 50.5 N61 40.3	
07	271 53.8	327 30.8 09.3	65 38.6 47.8	170 30.2 16.2	40 23.0 17.3	Elnath	278 11.9 N28 37.0	
08	286 56.3	342 31.0 09.0	80 41.3 47.8	185 32.7 16.2	55 25.5 17.2	Eltanin	90 46.0 N51 29.1	
09	301 58.7	357 31.1 . . 08.8	95 44.0 . . 47.7	200 35.1 . . 16.2	70 28.0 . . 17.2	Enif	33 46.9 N 9 56.4	
10	317 01.2	12 31.3 08.6	110 46.7 47.6	215 37.5 16.2	85 30.5 17.2	Fomalhaut	15 23.8 S29 32.8	
11	332 03.7	27 31.5 08.4	125 49.3 47.5	230 40.0 16.2	100 33.0 17.2			
12	347 06.1	42 31.7 S16 08.2	140 52.0 S 7 47.4	245 42.4 N23 16.2	115 35.5 S16 17.2	Gacrux	171 59.7 S57 11.6	
13	2 08.6	57 31.9 08.0	155 54.7 47.3	260 44.9 16.2	130 38.0 17.2	Gienah	175 51.4 S17 37.4	
14	17 11.1	72 32.0 07.8	170 57.4 47.2	275 47.3 16.2	145 40.5 17.2	Hadar	148 46.6 S60 26.3	
15	32 13.5	87 32.2 . . 07.6	186 00.1 . . 47.1	290 49.7 . . 16.2	160 43.0 . . 17.1	Hamal	328 00.4 N23 31.7	
16	47 16.0	102 32.4 07.4	201 02.8 47.0	305 52.2 16.2	175 45.4 17.1	Kaus Aust.	83 43.2 S34 22.4	
17	62 18.4	117 32.6 07.2	216 05.5 46.9	320 54.6 16.2	190 47.9 17.1			
18	77 20.9	132 32.8 S16 06.9	231 08.2 S 7 46.8	335 57.0 N23 16.2	205 50.4 S16 17.1	Kochab	137 19.5 N74 05.6	
19	92 23.4	147 32.9 06.7	246 10.9 46.7	350 59.5 16.2	220 52.9 17.1	Markab	13 38.1 N15 16.9	
20	107 25.8	162 33.1 06.5	261 13.6 46.6	6 01.9 16.2	235 55.4 17.1	Menkar	314 14.7 N 4 08.5	
21	122 28.3	177 33.3 . . 06.3	276 16.3 . . 46.5	21 04.3 . . 16.2	250 57.9 . . 17.1	Menkent	148 06.6 S36 26.3	
22	137 30.8	192 33.4 06.1	291 19.0 46.4	36 06.8 16.2	266 00.4 17.0	Miaplacidus	221 38.7 S69 46.9	
23	152 33.2	207 33.6 05.9	306 21.8 46.3	51 09.2 16.2	281 02.9 17.0			
10 00	167 35.7	222 33.8 S16 05.6	321 24.5 S 7 46.2	66 11.6 N23 16.2	296 05.4 S16 17.0	Mirfak	308 39.8 N49 54.7	
01	182 38.2	237 33.9 05.4	336 27.2 46.2	81 14.1 16.2	311 07.9 17.0	Nunki	75 57.8 S26 16.5	
02	197 40.6	252 34.1 05.2	351 29.9 46.1	96 16.5 16.2	326 10.4 17.0	Peacock	53 18.9 S56 41.1	
03	212 43.1	267 34.3 . . 05.0	6 32.6 . . 46.0	111 18.9 . . 16.2	341 12.9 . . 17.0	Póllux	243 26.9 N27 59.3	
04	227 45.6	282 34.4 04.8	21 35.3 45.9	126 21.4 16.2	356 15.4 16.9	Procyon	244 59.0 N 5 11.0	
05	242 48.0	297 34.6 04.5	36 38.0 45.8	141 23.8 16.2	11 17.9 16.9			
06	257 50.5	312 34.8 S16 04.3	51 40.8 S 7 45.7	156 26.2 N23 16.3	26 20.3 S16 16.9	Rasalhague	96 06.0 N12 33.0	
07	272 52.9	327 34.9 04.1	66 43.5 45.6	171 28.7 16.3	41 22.8 16.9	Régulus	207 42.7 N11 53.6	
08	287 55.4	342 35.1 03.9	81 46.2 45.5	186 31.1 16.3	56 25.3 16.9	Rigel	281 11.6 S 8 11.5	
09	302 57.9	357 35.3 . . 03.6	96 48.9 . . 45.4	201 33.5 . . 16.3	71 27.8 . . 16.9	Rigel Kent.	139 50.5 S60 53.4	
10	318 00.3	12 35.4 03.4	111 51.6 45.3	216 35.9 16.3	86 30.3 16.8	Sabik	102 11.9 S15 44.4	
11	333 02.8	27 35.6 03.2	126 54.4 45.2	231 38.4 16.3	101 32.8 16.8			
12	348 05.3	42 35.7 S16 03.0	141 57.1 S 7 45.1	246 40.8 N23 16.3	116 35.3 S16 16.8	Schedar	349 40.4 N56 37.0	
13	3 07.7	57 35.9 02.7	156 59.8 44.9	261 43.2 16.3	131 37.8 16.8	Shaula	96 21.2 S37 06.6	
14	18 10.2	72 36.0 02.5	172 02.5 44.8	276 45.6 16.3	146 40.3 16.8	Sirius	258 33.1 S16 44.5	
15	33 12.7	87 36.2 . . 02.3	187 05.3 . . 44.7	291 48.1 . . 16.3	161 42.8 . . 16.8	Spica	158 30.4 S11 14.2	
16	48 15.1	102 36.3 02.0	202 08.0 44.6	306 50.5 16.3	176 45.3 16.7	Suhail	222 51.6 S43 29.8	
17	63 17.6	117 36.5 01.8	217 10.7 44.5	321 52.9 16.3	191 47.8 16.7			
18	78 20.0	132 36.6 S16 01.6	232 13.5 S 7 44.4	336 55.4 N23 16.3	206 50.3 S16 16.7	Vega	80 38.7 N38 47.7	
19	93 22.5	147 36.8 01.3	247 16.2 44.3	351 57.8 16.3	221 52.8 16.7	Zuben'ubi	137 04.6 S16 06.0	
20	108 25.0	162 36.9 01.1	262 18.9 44.2	7 00.2 16.3	236 55.3 16.7			
21	123 27.4	177 37.1 . . 00.9	277 21.7 . . 44.1	22 02.6 . . 16.3	251 57.8 . . 16.7			
22	138 29.9	192 37.2 00.6	292 24.4 44.0	37 05.1 16.3	267 00.3 16.7			
23	153 32.4	207 37.4 00.4	307 27.1 43.9	52 07.5 16.3	282 02.8 16.6			
h m								
Paso Mer. 12 51.5	v 0.2 d 0.2		v 2.7 d 0.1	v 2.4 d 0.0	v 2.5 d 0.0			
						AHS Paso Mer.		
						Venus	55 52.9 h m	9 10
						Marte	153 43.2 d 2	38
						Júpiter	258 36.6 h m	19 36
						Saturno	128 29.0 d	4 19

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Naut.		Civil	8	9	10	11	
d h	°	'	°	'	°	'	'	°	h m	h m	h m	h m	h m	h m	h m	
S A B A D O	8 00	177 16.5	S 5 00.2	95 37.8	11.1	N18 40.6	2.1	55.3	N 72	04 29	05 49	06 56				09 53
	01	192 16.7	4 59.2	110 07.9	11.1	18 42.7	2.0	55.3	N 70	04 38	05 50	06 51	07 15	07 59	09 13	10 41
	02	207 16.8	58.2	124 38.0	11.2	18 44.7	1.9	55.2	68	04 46	05 51	06 46	08 04	08 50	09 55	11 11
	03	222 17.0	57.2	139 08.2	11.2	18 46.6	1.8	55.2	66	04 52	05 52	06 43	08 35	09 22	10 23	11 34
	04	237 17.1	56.3	153 38.4	11.2	18 48.4	1.7	55.2	64	04 58	05 53	06 40	08 58	09 46	10 44	11 52
	05	252 17.3	55.3	168 08.6	11.2	18 50.1	1.6	55.2	62	05 02	05 53	06 37	09 16	10 04	11 02	12 06
	06	267 17.4	S 4 54.3	182 38.8	11.2	N18 51.7	1.5	55.1	60	05 06	05 54	06 35	09 32	10 20	11 16	12 19
	07	282 17.6	53.3	197 09.0	11.3	18 53.2	1.5	55.1	N 58	05 09	05 54	06 33	09 44	10 33	11 28	12 29
	08	297 17.7	52.4	211 39.3	11.3	18 54.7	1.3	55.1	56	05 11	05 54	06 31	09 56	10 44	11 39	12 38
	09	312 17.9	51.4	226 09.6	11.3	18 56.0	1.2	55.1	54	05 14	05 55	06 30	10 06	10 54	11 48	12 46
	10	327 18.0	50.4	240 39.9	11.3	18 57.2	1.2	55.0	52	05 16	05 55	06 28	10 14	11 03	11 56	12 54
	11	342 18.2	49.4	255 10.2	11.3	18 58.4	1.0	55.0	50	05 17	05 55	06 27	10 22	11 11	12 04	13 00
	12	357 18.3	S 4 48.5	269 40.5	11.4	N18 59.4	1.0	55.0	45	05 21	05 55	06 24	10 39	11 27	12 20	13 14
	13	12 18.5	47.5	284 10.9	11.3	19 00.4	0.9	55.0	N 40	05 23	05 54	06 21	10 53	11 41	12 33	13 26
	14	27 18.7	46.5	298 41.2	11.4	19 01.3	0.7	54.9	35	05 25	05 54	06 19	11 04	11 53	12 44	13 36
	15	42 18.8	45.5	313 11.6	11.5	19 02.0	0.7	54.9	30	05 26	05 53	06 17	11 14	12 03	12 53	13 44
	16	57 19.0	44.6	327 42.1	11.4	19 02.7	0.6	54.9	20	05 26	05 52	06 14	11 32	12 21	13 10	13 59
	17	72 19.1	43.6	342 12.5	11.4	19 03.3	0.5	54.9	N 10	05 25	05 49	06 10	11 47	12 36	13 24	14 12
	18	87 19.3	S 4 42.6	356 42.9	11.5	N19 03.8	0.4	54.9	0	05 22	05 47	06 07	12 02	12 50	13 38	14 24
	19	102 19.4	41.6	11 13.4	11.5	19 04.2	0.3	54.8	S 10	05 18	05 43	06 04	12 16	13 05	13 51	14 36
	20	117 19.6	40.7	25 43.9	11.6	19 04.5	0.2	54.8	20	05 13	05 38	06 00	12 32	13 20	14 06	14 49
	21	132 19.7	39.7	40 14.5	11.5	19 04.7	0.2	54.8	30	05 04	05 32	05 56	12 49	13 38	14 22	15 04
	22	147 19.9	38.7	54 45.0	11.6	19 04.9	0.0	54.8	35	04 58	05 28	05 54	13 00	13 48	14 32	15 13
23	162 20.0	37.7	69 15.6	11.6	19 04.9	0.1	54.8	40	04 51	05 24	05 51	13 11	14 00	14 43	15 22	
								45	04 43	05 18	05 48	13 25	14 13	14 56	15 34	
D O M I N G O	9 00	177 20.2	S 4 36.8	83 46.2	11.6	N19 04.8	0.1	54.7	S 50	04 32	05 11	05 44	13 42	14 30	15 12	15 47
	01	192 20.4	35.8	98 16.8	11.6	19 04.7	0.2	54.7	52	04 26	05 08	05 42	13 50	14 38	15 19	15 54
	02	207 20.5	34.8	112 47.4	11.7	19 04.5	0.4	54.7	54	04 20	05 04	05 40	13 59	14 47	15 27	16 01
	03	222 20.7	33.8	127 18.1	11.6	19 04.1	0.4	54.7	56	04 13	05 00	05 38	14 09	14 57	15 36	16 09
	04	237 20.8	32.8	141 48.7	11.7	19 03.7	0.5	54.7	58	04 05	04 55	05 35	14 21	15 08	15 47	16 18
	05	252 21.0	31.9	156 19.4	11.8	19 03.2	0.6	54.6	S 60	03 56	04 49	05 32	14 34	15 21	15 58	16 28
	06	267 21.1	S 4 30.9	170 50.2	11.7	N19 02.6	0.7	54.6	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
	07	282 21.3	29.9	185 20.9	11.8	19 01.9	0.8	54.6			Civil		Náut.		8 9 10 11	
	08	297 21.5	28.9	199 51.7	11.8	19 01.1	0.8	54.6								
	09	312 21.6	28.0	214 22.5	11.8	19 00.3	1.0	54.6								
	10	327 21.8	27.0	228 53.3	11.9	18 59.3	1.0	54.6								
	11	342 21.9	26.0	243 24.2	11.9	18 58.3	1.2	54.5								
	12	357 22.1	S 4 25.0	257 55.1	11.8	N18 57.1	1.2	54.5	N 72	17 28	18 35	19 56				06 41
	13	12 22.2	24.0	272 25.9	12.0	18 55.9	1.3	54.5	N 70	17 32	18 33	19 46	04 20	05 18	05 43	05 52
	14	27 22.4	23.1	286 56.9	11.9	18 54.6	1.4	54.5	68	17 36	18 32	19 38	03 32	04 27	05 01	05 21
	15	42 22.6	22.1	301 27.8	12.0	18 53.2	1.5	54.5	66	17 40	18 31	19 31	03 01	03 55	04 33	04 58
	16	57 22.7	21.1	315 58.8	12.0	18 51.7	1.6	54.5	64	17 42	18 30	19 25	02 38	03 31	04 11	04 40
	17	72 22.9	20.1	330 29.8	12.0	18 50.1	1.6	54.4	62	17 45	18 29	19 21	02 20	03 12	03 53	04 25
	18	87 23.0	S 4 19.2	345 00.8	12.1	N18 48.5	1.8	54.4	60	17 47	18 29	19 17	02 05	02 57	03 39	04 12
	19	102 23.2	18.2	359 31.9	12.0	18 46.7	1.8	54.4	N 58	17 49	18 28	19 14	01 52	02 44	03 27	04 01
	20	117 23.4	17.2	14 02.9	12.1	18 44.9	1.9	54.4	56	17 51	18 28	19 11	01 41	02 32	03 16	03 52
	21	132 23.5	16.2	28 34.0	12.2	18 43.0	2.0	54.4	54	17 52	18 28	19 09	01 31	02 22	03 06	03 43
	22	147 23.7	15.2	43 05.2	12.1	18 41.0	2.1	54.4	52	17 54	18 27	19 07	01 22	02 14	02 58	03 36
23	162 23.8	14.3	57 36.3	12.2	18 38.9	2.2	54.4	50	17 55	18 27	19 05	01 14	02 06	02 50	03 29	
								45	17 58	18 27	19 01	00 58	01 49	02 34	03 14	
L U N E S	10 00	177 24.0	S 4 13.3	72 07.5	12.2	N18 36.7	2.3	54.4	N 40	18 00	18 27	18 59	00 44	01 35	02 21	03 02
	01	192 24.1	12.3	86 38.7	12.2	18 34.4	2.3	54.3	35	18 02	18 28	18 57	00 33	01 23	02 09	02 52
	02	207 24.3	11.3	101 09.9	12.3	18 32.1	2.4	54.3	30	18 04	18 28	18 56	00 23	01 13	02 00	02 43
	03	222 24.5	10.3	115 41.2	12.3	18 29.7	2.6	54.3	20	18 08	18 30	18 55	00 05	00 55	01 42	02 27
	04	237 24.6	09.4	130 12.5	12.3	18 27.1	2.6	54.3	N 10	18 11	18 32	18 56	24 40	00 40	01 27	02 13
	05	252 24.8	08.4	144 43.8	12.3	18 24.5	2.6	54.3	0	18 14	18 35	18 59	24 25	00 25	01 13	02 00
	06	267 24.9	S 4 07.4	159 15.1	12.4	N18 21.9	2.8	54.3	S 10	18 17	18 38	19 02	24 11	00 11	00 59	01 48
	07	282 25.1	06.4	173 46.5	12.4	18 19.1	2.9	54.3	20	18 20	18 42	19 08	23 55	24 44	00 44	01 34
	08	297 25.3	05.4	188 17.9	12.4	18 16.2	2.9	54.3	30	18 24	18 48	19 16	23 38	24 27	00 27	01 18
	09	312 25.4	04.5	202 49.3	12.4	18 13.3	3.0	54.3	35	18 27	18 52	19 22	23 27	24 17	00 17	01 09
	10	327 25.6	03.5	217 20.7	12.5	18 10.3	3.1	54.2	40	18 29	18 57	19 29	23 15	24 06	00 06	00 58
	11	342 25.8	02.5	231 52.2	12.5	18 07.2	3.2	54.2	45	18 32	19 02	19 37	23 01	23 52	24 45	00 45
	12	357 25.9	S 4 01.5	246 23.7	12.5	N18 04.0	3.2	54.2	S 50	18 36	19 09	19 48	22 44	23 35	24 30	00 30
	13	12 26.1	4 00.5	260 55.2	12.6	18 00.8	3.4	54.2	52	18 38	19 12	19 53	22 36	23 27	24 23	00 23
	14	27 26.2	3 59.6	275 26.8	12.5	17 57.4	3.4	54.2	54	18 40	19 16	19 59	22 27	23 19	24 15	00 15
	15	42 26.4	58.6	289 58.3	12.6	17 54.0	3.5	54.2	56	18 42	19 20	20 06	22 17	23 09	24 06	00 06
	16	57 26.6	57.6	304 29.9	12.7	17 50.5	3.6	54.2	58	18 45	19 25	20 14	22 06	22 58	23 56	25 00
	17	72 26.7	56.6	319 01.6	12.6	17 46.9	3.6	54.2	S 60	18 47	19 30	20 23	21 52	22 45	23 45	24 50
	18	87 26.9	S 3 55.6	333 33.2	12.7	N17 43.3	3.8	54.2	SOL		LUNA					
	19	102 27.0	54.7	348 04.9	12.7											

UT (HmGr)	ARIES	VENUS -4.6	MARTE -0.8	JÚPITER -2.3	SATURNO +0.4	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
11 00	168 34.8	222 37.5 S16 00.2	322 29.9 S 7 43.8	67 09.9 N23 16.3	297 05.3 S16 16.6	Acamar 315 18.2 S40 15.2
01	183 37.3	237 37.7 15 59.9	337 32.6 43.7	82 12.3 16.3	312 07.8 16.6	Achernar 335 26.9 S57 10.1
02	198 39.8	252 37.8 59.7	352 35.4 43.6	97 14.7 16.3	327 10.3 16.6	Acrux 173 07.9 S63 10.7
03	213 42.2	267 38.0 . . 59.4	7 38.1 . . 43.5	112 17.2 . . 16.3	342 12.8 . . 16.6	Adhara 255 12.0 S28 59.9
04	228 44.7	282 38.1 59.2	22 40.9 43.4	127 19.6 16.3	357 15.3 16.6	Aldebarán 290 48.8 N16 32.1
05	243 47.2	297 38.2 59.0	37 43.6 43.3	142 22.0 16.3	12 17.8 16.5	
06	258 49.6	312 38.4 S15 58.7	52 46.3 S 7 43.1	157 24.4 N23 16.3	27 20.3 S16 16.5	Alioth 166 19.8 N55 52.8
07	273 52.1	327 38.5 58.5	67 49.1 43.0	172 26.9 16.3	42 22.8 16.5	Alkaid 152 58.1 N49 14.3
08	288 54.5	342 38.7 58.2	82 51.8 42.9	187 29.3 16.3	57 25.3 16.5	Al Na'ir 27 43.6 S46 53.4
09	303 57.0	357 38.8 . . 58.0	97 54.6 . . 42.8	202 31.7 . . 16.3	72 27.8 . . 16.5	Alnilam 275 45.8 S 1 11.9
10	318 59.5	12 38.9 57.7	112 57.4 42.7	217 34.1 16.3	87 30.3 16.5	Alphard 217 55.3 S 8 43.5
11	334 01.9	27 39.1 57.5	128 00.1 42.6	232 36.5 16.3	102 32.8 16.4	
12	349 04.4	42 39.2 S15 57.2	143 02.9 S 7 42.5	247 39.0 N23 16.3	117 35.3 S16 16.4	Alphecca 126 10.4 N26 39.9
13	4 06.9	57 39.3 57.0	158 05.6 42.4	262 41.4 16.3	132 37.8 16.4	Alpheratz 357 43.3 N29 10.1
14	19 09.3	72 39.5 56.8	173 08.4 42.3	277 43.8 16.3	147 40.3 16.4	Altair 62 07.9 N 8 54.4
15	34 11.8	87 39.6 . . 56.5	188 11.1 . . 42.1	292 46.2 . . 16.3	162 42.8 . . 16.4	Ankaa 353 15.6 S42 13.8
16	49 14.3	102 39.7 56.3	203 13.9 42.0	307 48.6 16.3	177 45.3 16.3	Antares 112 25.5 S26 27.6
17	64 16.7	117 39.8 56.0	218 16.7 41.9	322 51.0 16.3	192 47.8 16.3	
18	79 19.2	132 40.0 S15 55.7	233 19.4 S 7 41.8	337 53.5 N23 16.3	207 50.3 S16 16.3	Arcturus 145 55.0 N19 06.4
19	94 21.7	147 40.1 55.5	248 22.2 41.7	352 55.9 16.3	222 52.8 16.3	Atria 107 26.8 S69 02.8
20	109 24.1	162 40.2 55.2	263 25.0 41.6	7 58.3 16.3	237 55.3 16.3	Avior 234 17.3 S59 33.7
21	124 26.6	177 40.4 . . 55.0	278 27.7 . . 41.5	23 00.7 . . 16.3	252 57.8 . . 16.3	Bellatrix 278 31.4 N 6 21.5
22	139 29.0	192 40.5 54.7	293 30.5 41.3	38 03.1 16.3	268 00.3 16.2	Betelgeuse 271 00.7 N 7 24.3
23	154 31.5	207 40.6 54.5	308 33.3 41.2	53 05.5 16.3	283 02.8 16.2	
12 00	169 34.0	222 40.7 S15 54.2	323 36.0 S 7 41.1	68 08.0 N23 16.3	298 05.3 S16 16.2	Canopus 263 55.8 S52 42.7
01	184 36.4	237 40.8 54.0	338 38.8 41.0	83 10.4 16.3	313 07.8 16.2	Capella 280 33.7 N46 00.7
02	199 38.9	252 41.0 53.7	353 41.6 40.9	98 12.8 16.3	328 10.3 16.2	Deneb 49 31.4 N45 19.8
03	214 41.4	267 41.1 . . 53.4	8 44.4 . . 40.7	113 15.2 . . 16.3	343 12.8 . . 16.2	Denébola 182 32.8 N14 29.4
04	229 43.8	282 41.2 53.2	23 47.1 40.6	128 17.6 16.3	358 15.3 16.1	Diphda 348 55.7 S17 54.7
05	244 46.3	297 41.3 52.9	38 49.9 40.5	143 20.0 16.3	13 17.8 16.1	
06	259 48.8	312 41.4 S15 52.7	53 52.7 S 7 40.4	158 22.4 N23 16.2	28 20.3 S16 16.1	Dubhe 193 50.5 N61 40.3
07	274 51.2	327 41.6 52.4	68 55.5 40.3	173 24.8 16.2	43 22.8 16.1	Elnath 278 11.9 N28 37.0
08	289 53.7	342 41.7 52.1	83 58.2 40.2	188 27.3 16.2	58 25.3 16.1	Eltanin 90 46.0 N51 29.1
09	304 56.1	357 41.8 . . 51.9	99 01.0 . . 40.0	203 29.7 . . 16.2	73 27.8 . . 16.1	Enif 33 46.9 N 9 56.4
10	319 58.6	12 41.9 51.6	114 03.8 39.9	218 32.1 16.2	88 30.3 16.0	Fomalhaut 15 23.8 S29 32.8
11	335 01.1	27 42.0 51.3	129 06.6 39.8	233 34.5 16.2	103 32.8 16.0	
12	350 03.5	42 42.1 S15 51.1	144 09.4 S 7 39.7	248 36.9 N23 16.2	118 35.3 S16 16.0	Gacrux 171 59.7 S57 11.6
13	5 06.0	57 42.2 50.8	159 12.2 39.5	263 39.3 16.2	133 37.8 16.0	Gienah 175 51.4 S17 37.4
14	20 08.5	72 42.3 50.5	174 15.0 39.4	278 41.7 16.2	148 40.3 16.0	Hadar 148 46.6 S60 26.3
15	35 10.9	87 42.4 . . 50.3	189 17.7 . . 39.3	293 44.1 . . 16.2	163 42.8 . . 15.9	Hamal 328 00.4 N23 31.7
16	50 13.4	102 42.6 50.0	204 20.5 39.2	308 46.5 16.2	178 45.3 15.9	Kaus Aust. 83 43.2 S34 22.4
17	65 15.9	117 42.7 49.7	219 23.3 39.1	323 49.0 16.2	193 47.8 15.9	
18	80 18.3	132 42.8 S15 49.5	234 26.1 S 7 38.9	338 51.4 N23 16.2	208 50.3 S16 15.9	Kochab 137 19.5 N74 05.6
19	95 20.8	147 42.9 49.2	249 28.9 38.8	353 53.8 16.2	223 52.8 15.9	Markab 13 38.1 N15 16.9
20	110 23.3	162 43.0 48.9	264 31.7 38.7	8 56.2 16.2	238 55.3 15.9	Menkar 314 14.7 N 4 08.5
21	125 25.7	177 43.1 . . 48.7	279 34.5 . . 38.6	23 58.6 . . 16.2	253 57.8 . . 15.8	Menkent 148 06.6 S36 26.3
22	140 28.2	192 43.2 48.4	294 37.3 38.4	39 01.0 16.2	269 00.3 15.8	Miaplacidus 221 38.7 S69 46.9
23	155 30.6	207 43.3 48.1	309 40.1 38.3	54 03.4 16.2	284 02.9 15.8	
13 00	170 33.1	222 43.4 S15 47.8	324 42.9 S 7 38.2	69 05.8 N23 16.2	299 05.4 S16 15.8	Mirfak 308 39.8 N49 54.7
01	185 35.6	237 43.5 47.6	339 45.7 38.0	84 08.2 16.2	314 07.9 15.8	Nunki 75 57.8 S26 16.5
02	200 38.0	252 43.6 47.3	354 48.5 37.9	99 10.6 16.2	329 10.4 15.7	Peacock 53 18.9 S56 41.1
03	215 40.5	267 43.7 . . 47.0	9 51.3 . . 37.8	114 13.0 . . 16.2	344 12.9 . . 15.7	Póllux 243 26.9 N27 59.3
04	230 43.0	282 43.8 46.7	24 54.1 37.7	129 15.4 16.2	359 15.4 15.7	Procyon 244 59.0 N 5 11.0
05	245 45.4	297 43.9 46.4	39 56.9 37.5	144 17.8 16.2	14 17.9 15.7	
06	260 47.9	312 44.0 S15 46.2	54 59.8 S 7 37.4	159 20.2 N23 16.2	29 20.4 S16 15.7	Rasalhague 96 06.0 N12 33.0
07	275 50.4	327 44.1 45.9	70 02.6 37.3	174 22.6 16.2	44 22.9 15.6	Régulus 207 42.7 N11 53.6
08	290 52.8	342 44.2 45.6	85 05.4 37.1	189 25.0 16.2	59 25.4 15.6	Rigel 281 11.6 S 8 11.5
09	305 55.3	357 44.3 . . 45.3	100 08.2 . . 37.0	204 27.4 . . 16.2	74 27.9 . . 15.6	Rigel Kent. 139 50.5 S60 53.4
10	320 57.8	12 44.3 45.0	115 11.0 36.9	219 29.8 16.2	89 30.4 15.6	Sabik 102 11.9 S15 44.4
11	336 00.2	27 44.4 44.7	130 13.8 36.8	234 32.2 16.2	104 32.9 15.6	
12	351 02.7	42 44.5 S15 44.5	145 16.6 S 7 36.6	249 34.6 N23 16.2	119 35.4 S16 15.6	Schedar 349 40.4 N56 37.0
13	6 05.1	57 44.6 44.2	160 19.5 36.5	264 37.0 16.2	134 38.0 15.5	Shaula 96 21.2 S37 06.6
14	21 07.6	72 44.7 43.9	175 22.3 36.4	279 39.4 16.2	149 40.5 15.5	Sirius 258 33.1 S16 44.5
15	36 10.1	87 44.8 . . 43.6	190 25.1 . . 36.2	294 41.8 . . 16.2	164 43.0 . . 15.5	Spica 158 30.4 S11 14.2
16	51 12.5	102 44.9 43.3	205 27.9 36.1	309 44.2 16.2	179 45.5 15.5	Suhail 222 51.7 S43 29.8
17	66 15.0	117 45.0 43.0	220 30.7 36.0	324 46.6 16.2	194 48.0 15.5	
18	81 17.5	132 45.1 S15 42.7	235 33.6 S 7 35.8	339 49.0 N23 16.2	209 50.5 S16 15.4	Vega 80 38.7 N38 47.7
19	96 19.9	147 45.1 42.4	250 36.4 35.7	354 51.4 16.2	224 53.0 15.4	Zuben'ubi 137 04.6 S16 06.0
20	111 22.4	162 45.2 42.1	265 39.2 35.6	9 53.8 16.2	239 55.5 15.4	
21	126 24.9	177 45.3 . . 41.9	280 42.1 . . 35.4	24 56.2 . . 16.2	254 58.0 . . 15.4	AHS Paso Mer.
22	141 27.3	192 45.4 41.6	295 44.9 35.3	39 58.6 16.2	270 00.5 15.4	Venus 53 06.8 9 09
23	156 29.8	207 45.5 41.3	310 47.7 35.1	55 01.0 16.2	285 03.0 15.3	Marte 154 02.1 2 25
	h m					Júpiter 258 34.0 19 24
Paso Mer. 12 39.7	v 0.1 d 0.3		v 2.8 d 0.1	v 2.4 d 0.0	v 2.5 d 0.0	Saturno 128 31.3 4 07

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		11	12	13	14		
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m		
11 M A R T E S	00	177 27.9	S 3	49.8	60 43.7	12.9	N17 19.7	4.2	54.1	N 72	04 12	05 33	06 40	09 53	11 43	13 25	15 05
	01	192 28.0		48.8	75 15.6	12.9	17 15.5	4.3	54.1	N 70	04 24	05 36	06 37	10 41	12 12	13 44	15 16
	02	207 28.2		47.8	89 47.5	12.9	17 11.2	4.4	54.1	68	04 33	05 39	06 34	11 11	12 34	13 58	15 24
	03	222 28.3		46.8	104 19.4	12.9	17 06.8	4.4	54.1	66	04 40	05 41	06 32	11 34	12 51	14 10	15 31
	04	237 28.5		45.8	118 51.3	12.9	17 02.4	4.5	54.1	64	04 47	05 42	06 30	11 52	13 04	14 20	15 38
	05	252 28.7		44.9	133 23.2	13.0	16 57.9	4.6	54.1	62	04 52	05 44	06 28	12 06	13 16	14 28	15 43
	06	267 28.8	S 3	43.9	147 55.2	13.0	N16 53.3	4.7	54.1	60	04 56	05 45	06 26	12 19	13 26	14 35	15 47
	07	282 29.0		42.9	162 27.2	13.1	16 48.6	4.7	54.1	N 58	05 00	05 46	06 25	12 29	13 34	14 42	15 51
	08	297 29.2		41.9	176 59.3	13.0	16 43.9	4.8	54.1	56	05 03	05 47	06 24	12 38	13 42	14 47	15 55
	09	312 29.3		40.9	191 31.3	13.1	16 39.1	4.9	54.1	54	05 06	05 47	06 23	12 46	13 48	14 52	15 58
12 A B R I L	00	327 29.5		39.9	206 03.4	13.1	16 34.2	5.0	54.1	52	05 09	05 48	06 21	12 54	13 54	14 57	16 01
	01	342 29.7		39.0	220 35.5	13.2	16 29.2	5.0	54.1	50	05 11	05 48	06 21	13 00	14 00	15 01	16 03
	02	357 29.8	S 3	38.0	235 07.7	13.1	N16 24.2	5.1	54.1	45	05 15	05 49	06 18	13 14	14 11	15 10	16 09
	03	12 30.0		37.0	249 39.8	13.2	16 19.1	5.2	54.1	N 40	05 18	05 50	06 17	13 26	14 21	15 17	16 14
	04	27 30.2		36.0	264 12.0	13.2	16 13.9	5.2	54.1	35	05 21	05 50	06 15	13 36	14 29	15 23	16 18
	05	42 30.3		35.0	278 44.2	13.3	16 08.7	5.3	54.1	30	05 22	05 50	06 14	13 44	14 36	15 29	16 21
	06	57 30.5		34.1	293 16.5	13.3	16 03.4	5.4	54.1	20	05 24	05 49	06 11	13 59	14 49	15 38	16 28
	07	72 30.7		33.1	307 48.8	13.2	15 58.0	5.4	54.1	N 10	05 23	05 48	06 09	14 12	15 00	15 46	16 33
	08	87 30.8	S 3	32.1	322 21.0	13.4	N15 52.6	5.6	54.1	0	05 22	05 46	06 06	14 24	15 10	15 54	16 38
	09	102 31.0		31.1	336 53.4	13.3	15 47.0	5.6	54.1	S 10	05 19	05 43	06 04	14 36	15 20	16 02	16 43
13 M A Y	00	117 31.1		30.1	351 25.7	13.4	15 41.4	5.6	54.1	20	05 14	05 39	06 01	14 49	15 31	16 10	16 49
	01	132 31.3		29.1	5 58.1	13.4	15 35.8	5.8	54.1	30	05 06	05 34	05 58	15 04	15 43	16 20	16 55
	02	147 31.5		28.2	20 30.5	13.4	15 30.0	5.8	54.1	35	05 01	05 31	05 56	15 13	15 50	16 25	16 58
	03	162 31.6		27.2	35 02.9	13.4	15 24.2	5.8	54.1	40	04 55	05 27	05 54	15 22	15 58	16 31	17 02
	04	177 31.8	S 3	26.2	49 35.3	13.5	N15 18.4	6.0	54.1	45	04 47	05 22	05 52	15 34	16 08	16 38	17 07
	05	192 32.0		25.2	64 07.8	13.5	15 12.4	6.0	54.1	S 50	04 37	05 16	05 49	15 47	16 19	16 47	17 12
	06	207 32.1		24.2	78 40.3	13.5	15 06.4	6.0	54.1	52	04 32	05 13	05 47	15 54	16 24	16 51	17 15
	07	222 32.3		23.2	93 12.8	13.6	15 00.4	6.2	54.1	54	04 27	05 10	05 46	16 01	16 30	16 55	17 18
	08	237 32.5		22.3	107 45.4	13.5	14 54.2	6.2	54.1	56	04 20	05 06	05 44	16 09	16 36	17 00	17 21
	09	252 32.6		21.3	122 17.9	13.6	14 48.0	6.2	54.1	58	04 13	05 02	05 42	16 18	16 43	17 05	17 24
14 J U N	00	267 32.8	S 3	20.3	136 50.5	13.6	N14 41.8	6.4	54.1	S 60	04 05	04 57	05 40	16 28	16 51	17 11	17 28
	01	282 33.0		19.3	151 23.1	13.6	14 35.4	6.4	54.1	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	02	297 33.2		18.3	165 55.7	13.7	14 29.0	6.4	54.1			Civil	Náut.	11	12	13	14
	03	312 33.3		17.3	180 28.4	13.7	14 22.6	6.5	54.1					h m	h m	h m	h m
	04	327 33.5		16.4	195 01.1	13.7	14 16.1	6.6	54.1	N 72	h m	h m	h m	h m	h m	h m	h m
	05	342 33.7		15.4	209 33.8	13.7	14 09.5	6.7	54.1	N 70	17 42	18 49	19 11	06 41	06 26	06 16	06 08
	06	357 33.8	S 3	14.4	224 06.5	13.7	N14 02.8	6.7	54.1	N 70	17 45	18 46	19 59	05 52	05 55	05 56	05 55
	07	12 34.0		13.4	238 39.2	13.8	13 56.1	6.7	54.1	68	17 47	18 43	19 49	05 21	05 33	05 40	05 45
	08	27 34.2		12.4	253 12.0	13.8	13 49.4	6.9	54.1	66	17 50	18 41	19 41	04 58	05 15	05 28	05 37
	09	42 34.3		11.4	267 44.8	13.8	13 42.5	6.9	54.1	64	17 51	18 39	19 35	04 40	05 01	05 17	05 30
15 J U L	00	57 34.5		10.5	282 17.6	13.8	13 35.6	6.9	54.1	62	17 53	18 37	19 29	04 25	04 49	05 08	05 23
	01	72 34.7		9.5	296 50.4	13.9	13 28.7	7.0	54.1	60	17 55	18 36	19 25	04 12	04 39	05 00	05 18
	02	87 34.8	S 3	08.5	311 23.3	13.8	N13 21.7	7.1	54.2	N 58	17 56	18 35	19 21	04 01	04 30	04 53	05 13
	03	102 35.0		07.5	325 56.1	13.9	13 14.6	7.1	54.2	56	17 57	18 34	19 17	03 52	04 22	04 47	05 09
	04	117 35.2		06.5	340 29.0	13.9	13 07.5	7.2	54.2	54	17 58	18 33	19 15	03 43	04 15	04 41	05 05
	05	132 35.3		05.5	355 01.9	14.0	13 00.3	7.2	54.2	52	17 59	18 33	19 12	03 36	04 08	04 36	05 02
	06	147 35.5		04.6	9 34.9	13.9	12 53.1	7.3	54.2	50	18 00	18 32	19 10	03 29	04 02	04 32	04 59
	07	162 35.7		03.6	24 07.8	14.0	12 45.8	7.4	54.2	45	18 02	18 31	19 05	03 14	03 50	04 22	04 52
	08	177 35.8	S 3	02.6	38 40.8	14.0	N12 38.4	7.4	54.2	N 40	18 03	18 30	19 02	03 02	03 40	04 14	04 46
	09	192 36.0		01.6	53 13.8	14.0	12 31.0	7.5	54.2	35	18 05	18 30	19 00	02 52	03 31	04 07	04 41
16 A G O	00	207 36.2		00.6	67 46.8	14.0	12 23.5	7.5	54.2	30	18 06	18 30	18 58	02 43	03 23	04 01	04 36
	01	222 36.4	2	59.6	82 19.8	14.0	12 16.0	7.6	54.2	20	18 09	18 31	18 56	02 27	03 09	03 50	04 29
	02	237 36.5		58.6	96 52.8	14.1	12 08.4	7.6	54.2	N 10	18 11	18 32	18 56	02 13	02 58	03 40	04 22
	03	252 36.7		57.7	111 25.9	14.1	12 00.8	7.7	54.2	0	18 13	18 34	18 58	02 00	02 46	03 31	04 15
	04	267 36.9	S 2	56.7	125 59.0	14.0	N11 53.1	7.8	54.2	S 10	18 15	18 36	19 01	01 48	02 35	03 22	04 09
	05	282 37.0		55.7	140 32.0	14.2	11 45.3	7.8	54.2	20	18 18	18 40	19 06	01 34	02 23	03 13	04 02
	06	297 37.2		54.7	155 05.2	14.1	11 37.5	7.8	54.2	30	18 21	18 45	19 13	01 18	02 09	03 01	03 54
	07	312 37.4		53.7	169 38.3	14.1	11 29.7	7.9	54.3	35	18 23	18 48	19 18	01 09	02 01	02 55	03 49
	08	327 37.6		52.7	184 11.4	14.2	11 21.8	7.9	54.3	40	18 25	18 52	19 24	00 58	01 52	02 48	03 44
	09	342 37.7		51.8	198 44.6	14.1	11 13.9	8.0	54.3	45	18 27	18 56	19 31	00 45	01 41	02 39	03 38
17 S E P	00	357 37.9	S 2	50.8	213 17.7	14.2	N11 05.9	8.1	54.3	S 50	18 30	19 02	19 41	00 30	01 28	02 29	03 31
	01	12 38.1		49.8	227 50.9	14.2	10 57.8	8.1	54.3	52	18 31	19 05	19 46	00 23	01 22	02 24	03 27
	02	27 38.2		48.8	242 24.1	14.2	10 49.7	8.1	54.3	54	18 33	19 08	19 51	00 15	01 16	02 19	03 24
	03	42 38.4		47.8	256 57.3	14.2	10 41.6	8.2	54.3	56	18 34	19 12	19 57	00 06	01 08	02 13	03 19
	04	57 38.6		46.8	271 30.5	14.3	10 33.4	8.3	54.3	58	18 36	19 16	20 04	25 00	01 00	02 06	03 15
	05	72 38.7		45.8	286 03.8	14.2	10 25.1	8.3	54.3	S 60	18 38	19 20	20 12	24 50	00 50	01	

UT (HmGr)		ARIES		VENUS -4.6		MARTE -0.9		JÚPITER -2.3		SATURNO +0.4		ESTRELLAS		
		AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre		AHS	Dec
VIERNES	00	171 32.2	222 45.5	S15 41.0	325 50.5	S 7 35.0	70 03.4	N23 16.2	300 05.6	S16 15.3	Acamar	315 18.2	S40 15.2	
	01	186 34.7	237 45.6	40.7	340 53.4	34.9	85 05.8	16.2	315 08.1	15.3	Achernar	335 27.0	S57 10.1	
	02	201 37.2	252 45.7	40.4	355 56.2	34.7	100 08.2	16.2	330 10.6	15.3	Acrux	173 07.9	S63 10.7	
	03	216 39.6	267 45.8	40.1	10 59.0	34.6	115 10.6	16.2	345 13.1	15.3	Adhara	255 12.0	S28 59.9	
	04	231 42.1	282 45.9	39.8	26 01.9	34.5	130 13.0	16.2	0 15.6	15.2	Aldebarán	290 48.9	N16 32.1	
	05	246 44.6	297 45.9	39.5	41 04.7	34.3	145 15.4	16.2	15 18.1	15.2				
	06	261 47.0	312 46.0	S15 39.2	56 07.6	S 7 34.2	160 17.8	N23 16.2	30 20.6	S16 15.2	Alioth	166 19.8	N55 52.8	
	07	276 49.5	327 46.1	38.9	71 10.4	34.0	175 20.2	16.2	45 23.1	15.2	Alkaid	152 58.1	N49 14.3	
	08	291 52.0	342 46.2	38.6	86 13.2	33.9	190 22.6	16.2	60 25.6	15.2	Al Na'ir	27 43.5	S46 53.4	
	09	306 54.4	357 46.2	38.3	101 16.1	33.8	205 25.0	16.2	75 28.2	15.1	Anilam	275 45.8	S 1 11.1	
	10	321 56.9	12 46.3	38.0	116 18.9	33.6	220 27.4	16.2	90 30.7	15.1	Alphard	217 55.3	S 8 43.5	
	11	336 59.4	27 46.4	37.7	131 21.8	33.5	235 29.8	16.2	105 33.2	15.1				
	12	352 01.8	42 46.4	S15 37.4	146 24.6	S 7 33.3	250 32.2	N23 16.2	120 35.7	S16 15.1	Alphecca	126 10.4	N26 39.9	
	13	7 04.3	57 46.5	37.1	161 27.5	33.2	265 34.6	16.2	135 38.2	15.1	Alpheratz	357 43.3	N29 10.1	
	14	22 06.7	72 46.6	36.8	176 30.3	33.1	280 37.0	16.2	150 40.7	15.0	Altair	62 07.9	N 8 54.4	
	15	37 09.2	87 46.7	36.4	191 33.2	32.9	295 39.4	16.2	165 43.2	15.0	Ankaa	353 15.6	S42 13.8	
	16	52 11.7	102 46.7	36.1	206 36.0	32.8	310 41.7	16.2	180 45.7	15.0	Antares	112 25.5	S26 27.6	
	17	67 14.1	117 46.8	35.8	221 38.9	32.6	325 44.1	16.2	195 48.2	15.0				
	18	82 16.6	132 46.9	S15 35.5	236 41.7	S 7 32.5	340 46.5	N23 16.2	210 50.8	S16 15.0	Arcturus	145 55.0	N19 06.4	
	19	97 19.1	147 46.9	35.2	251 44.6	32.3	355 48.9	16.2	225 53.3	14.9	Atria	107 26.7	S69 02.8	
	20	112 21.5	162 47.0	34.9	266 47.5	32.2	10 51.3	16.2	240 55.8	14.9	Avior	234 17.3	S59 33.7	
	21	127 24.0	177 47.0	34.6	281 50.3	32.0	25 53.7	16.2	255 58.3	14.9	Bellatrix	278 31.5	N 6 21.5	
	22	142 26.5	192 47.1	34.3	296 53.2	31.9	40 56.1	16.1	271 00.8	14.9	Betelgeuse	271 00.7	N 7 24.3	
23	157 28.9	207 47.2	34.0	311 56.0	31.8	55 58.5	16.1	286 03.3	14.9					
SÁBADO	00	172 31.4	222 47.2	S15 33.6	326 58.9	S 7 31.6	71 00.9	N23 16.1	301 05.8	S16 14.8	Canopus	263 55.8	S52 42.7	
	01	187 33.8	237 47.3	33.3	342 01.8	31.5	86 03.3	16.1	316 08.4	14.8	Capella	289 33.7	N46 00.7	
	02	202 36.3	252 47.4	33.0	357 04.6	31.3	101 05.6	16.1	331 10.9	14.8	Deneb	49 31.4	N45 19.8	
	03	217 38.8	267 47.4	32.7	12 07.5	31.2	116 08.0	16.1	346 13.4	14.8	Denébola	182 32.8	N14 29.4	
	04	232 41.2	282 47.5	32.4	27 10.4	31.0	131 10.4	16.1	1 15.9	14.8	Diphda	348 55.7	S17 54.7	
	05	247 43.7	297 47.5	32.1	42 13.2	30.9	146 12.8	16.1	16 18.4	14.7				
	06	262 46.2	312 47.6	S15 31.7	57 16.1	S 7 30.7	161 15.2	N23 16.1	31 20.9	S16 14.7	Dubhe	193 50.5	N61 40.3	
	07	277 48.6	327 47.6	31.4	72 19.0	30.6	176 17.6	16.1	46 23.4	14.7	El Nath	278 12.0	N28 37.0	
	08	292 51.1	342 47.7	31.1	87 21.9	30.4	191 20.0	16.1	61 26.0	14.7	Eltanin	90 45.9	N51 29.1	
	09	307 53.6	357 47.7	30.8	102 24.7	30.3	206 22.3	16.1	76 28.5	14.7	Enif	33 46.9	N 9 56.4	
	10	322 56.0	12 47.8	30.5	117 27.6	30.1	221 24.7	16.1	91 31.0	14.6	Fomalhaut	15 23.8	S29 32.8	
	11	337 58.5	27 47.9	30.1	132 30.5	30.0	236 27.1	16.1	106 33.5	14.6				
	12	353 01.0	42 47.9	S15 29.8	147 33.4	S 7 29.8	251 29.5	N23 16.1	121 36.0	S16 14.6	Gacrux	171 59.7	S57 11.6	
	13	8 03.4	57 48.0	29.5	162 36.2	29.7	266 31.9	16.1	136 38.5	14.6	Gienah	175 51.4	S17 37.4	
	14	23 05.9	72 48.0	29.2	177 39.1	29.5	281 34.3	16.1	151 41.1	14.6	Hadar	148 46.5	S60 26.3	
	15	38 08.3	87 48.1	28.8	192 42.0	29.4	296 36.6	16.1	166 43.6	14.5	Hamal	328 00.4	N23 31.7	
	16	53 10.8	102 48.1	28.5	207 44.9	29.2	311 39.0	16.1	181 46.1	14.5	Kaus Aust.	83 43.2	S34 22.4	
	17	68 13.3	117 48.2	28.2	222 47.8	29.1	326 41.4	16.1	196 48.6	14.5				
	18	83 15.7	132 48.2	S15 27.9	237 50.7	S 7 28.9	341 43.8	N23 16.1	211 51.1	S16 14.5	Kochab	137 19.4	N74 05.6	
	19	98 18.2	147 48.2	27.5	252 53.5	28.8	356 46.2	16.1	226 53.6	14.5	Markab	13 38.1	N15 16.9	
	20	113 20.7	162 48.3	27.2	267 56.4	28.6	11 48.6	16.1	241 56.2	14.4	Menkar	314 14.7	N 4 08.5	
	21	128 23.1	177 48.3	26.9	282 59.3	28.4	26 50.9	16.1	256 58.7	14.4	Menkent	148 06.6	S36 26.3	
	22	143 25.6	192 48.4	26.5	298 02.2	28.3	41 53.3	16.1	272 01.2	14.4	Miaplacidus	221 38.7	S69 46.9	
23	158 28.1	207 48.4	26.2	313 05.1	28.1	56 55.7	16.1	287 03.7	14.4					
DOMINGO	00	173 30.5	222 48.5	S15 25.9	328 08.0	S 7 28.0	71 58.1	N23 16.1	302 06.2	S16 14.3	Mirfak	308 39.8	N49 54.7	
	01	188 33.0	237 48.5	25.5	343 10.9	27.8	87 00.5	16.1	317 08.8	14.3	Nunki	75 57.8	S26 16.5	
	02	203 35.4	252 48.6	25.2	358 13.8	27.7	102 02.8	16.1	332 11.3	14.3	Peacock	53 18.8	S56 41.0	
	03	218 37.9	267 48.6	24.9	13 16.7	27.5	117 05.2	16.1	347 13.8	14.3	Póllux	243 26.9	N27 59.3	
	04	233 40.4	282 48.6	24.5	28 19.6	27.4	132 07.6	16.1	2 16.3	14.3	Procyon	244 59.0	N 5 11.0	
	05	248 42.8	297 48.7	24.2	43 22.5	27.2	147 10.0	16.1	17 18.8	14.2				
	06	263 45.3	312 48.7	S15 23.8	58 25.4	S 7 27.0	162 12.4	N23 16.1	32 21.3	S16 14.2	Rasalhague	96 06.0	N12 33.0	
	07	278 47.8	327 48.8	23.5	73 28.3	26.9	177 14.7	16.1	47 23.9	14.2	Régulus	207 42.7	N11 53.6	
	08	293 50.2	342 48.8	23.2	88 31.2	26.7	192 17.1	16.0	62 26.4	14.2	Rigel	281 11.6	S 8 11.5	
	09	308 52.7	357 48.8	22.8	103 34.1	26.6	207 19.5	16.0	77 28.9	14.2	Rigel Kent.	139 50.5	S60 53.4	
	10	323 55.2	12 48.9	22.5	118 37.0	26.4	222 21.9	16.0	92 31.4	14.1	Sabik	102 11.9	S15 44.4	
	11	338 57.6	27 48.9	22.1	133 39.9	26.2	237 24.2	16.0	107 33.9	14.1				
	12	354 00.1	42 48.9	S15 21.8	148 42.8	S 7 26.1	252 26.6	N23 16.0	122 36.5	S16 14.1	Schedar	349 40.4	N56 36.9	
	13	9 02.6	57 49.0	21.4	163 45.7	25.9	267 29.0	16.0	137 39.0	14.1	Shaula	96 21.2	S37 06.6	
	14	24 05.0	72 49.0	21.1	178 48.6	25.8	282 31.4	16.0	152 41.5	14.0	Sirius	258 33.2	S16 44.5	
	15	39 07.5	87 49.0	20.8	193 51.5	25.6	297 33.7	16.0	167 44.0	14.0	Spica	158 30.4	S11 14.2	
	16	54 09.9	102 49.1	20.4	208 54.5	25.4	312 36.1	16.0	182 46.5	14.0	Suhail	222 51.7	S43 29.8	
	17	69 12.4	117 49.1	20.1	223 57.4	25.3	327 38.5	16.0	197 49.1	14.0				
	18	84 14.9	132 49.1	S15 19.7	239 00.3	S 7 25.1	342 40.9	N23 16.0	212 51.6	S16 14.0	Vega	80 38.7	N38 47.7	
	19	99 17.3	147 49.2	19.4	254 03.2	24.9	357 43.2	16.0	227 54.1	13.9	Zuben'ubi	137 04.6	S16 06.0	
	20	114 19.8	162 49.2	19.0	269 06.1	24.8	12 45.6	16.0	242 56.6	13.9				
	21	129 22.3	177 49.2	18.7	284 09.0	24.6	27 48.0	16.0	257 59.2	13.9				
	22	144 24.7	192 49.2	18.3	299 12.0	24.5	42 50.4	16.0	273 01.7	13.9	Venus	50 15.8	h 9 09	
23	159 27.2	207 49.3	18.0	314 14.9	24.3	57 52.7	16.0	288 04.2	13.8	Marte	154 27.5	2 12		
Paso Mer. 12 27.9		<i>v</i> 0.1	<i>d</i> 0.3	<i>v</i> 2.9	<i>d</i> 0.2	<i>v</i> 2.4	<i>d</i> 0.0	<i>v</i> 2.5	<i>d</i> 0.0	Saturno	128 34.5	3 55		

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d		Ph	Náut.		Civil	14	15	16	17
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	
V I E R N E S	14 00	177 40.0	S 2 38.9	27 56.7	14.4	N 9 26.1	8.6 54.4	N 72	03 54	05 18	06 25	15 05	16 43	18 23	19 56
	01	192 40.1	38.0	42 30.1	14.3	9 17.5	8.7 54.4	N 70	04 08	05 22	06 23	15 16	16 48	18 21	19 54
	02	207 40.3	37.0	57 03.4	14.3	9 08.8	8.7 54.4	68	04 19	05 26	06 21	15 24	16 51	18 19	19 49
	03	222 40.5	36.0	71 36.7	14.4	9 00.1	8.7 54.4	66	04 28	05 29	06 20	15 31	16 54	18 18	19 44
	04	237 40.6	35.0	86 10.1	14.4	8 51.4	8.8 54.5	64	04 36	05 32	06 19	15 38	16 57	18 17	19 39
	05	252 40.8	34.0	100 43.5	14.3	8 42.6	8.9 54.5	62	04 42	05 34	06 18	15 43	16 59	18 16	19 35
	06	267 41.0	S 2 33.0	115 16.8	14.4	N 8 33.7	8.8 54.5	60	04 47	05 36	06 17	15 47	17 01	18 15	19 31
	07	282 41.2	32.0	129 50.2	14.4	8 24.9	8.9 54.5	N 58	04 51	05 38	06 16	15 51	17 02	18 14	19 28
	08	297 41.3	31.1	144 23.6	14.4	8 16.0	9.0 54.5	56	04 55	05 39	06 16	15 55	17 04	18 14	19 25
	09	312 41.5	30.1	158 57.0	14.4	8 07.0	9.0 54.5	54	04 59	05 40	06 15	15 58	17 05	18 13	19 23
	10	327 41.7	29.1	173 30.4	14.4	8 07.0	9.0 54.5	52	05 02	05 41	06 15	16 01	17 06	18 13	19 21
	11	342 41.9	28.1	188 03.8	14.4	7 58.0	9.0 54.5	50	05 04	05 42	06 14	16 03	17 07	18 12	19 19
	12	357 42.0	S 2 27.1	202 37.2	14.4	7 49.0	9.0 54.5	45	05 10	05 44	06 13	16 09	17 10	18 11	19 14
	13	12 42.2	26.1	217 10.6	14.4	7 40.0	9.1 54.6	N 40	05 13	05 45	06 12	16 14	17 12	18 10	19 10
	14	27 42.4	25.1	231 44.0	14.4	7 30.9	9.2 54.6	35	05 16	05 46	06 11	16 18	17 13	18 10	19 07
	15	42 42.6	24.2	246 17.4	14.4	7 21.7	9.1 54.6	30	05 19	05 46	06 10	16 21	17 15	18 09	19 05
	16	57 42.7	23.2	260 50.8	14.4	7 12.6	9.2 54.6	20	05 21	05 47	06 09	16 28	17 18	18 08	19 00
	17	72 42.9	22.2	275 24.2	14.5	7 03.4	9.3 54.6	N 10	05 22	05 46	06 07	16 33	17 20	18 07	18 56
	18	87 43.1	S 2 21.2	289 57.7	14.4	6 54.1	9.3 54.6	0	05 21	05 45	06 06	16 38	17 22	18 06	18 52
	19	102 43.3	20.2	304 31.1	14.4	6 44.8	9.3 54.6	S 10	05 19	05 43	06 04	16 43	17 24	18 05	18 48
	20	117 43.4	19.2	319 04.5	14.5	6 35.5	9.3 54.6	20	05 15	05 40	06 02	16 49	17 27	18 05	18 44
	21	132 43.6	18.2	333 38.0	14.4	6 26.2	9.4 54.7	30	05 08	05 36	06 00	16 55	17 29	18 04	18 39
	22	147 43.8	17.3	348 11.4	14.4	6 16.8	9.4 54.7	35	05 04	05 34	05 59	16 58	17 31	18 03	18 36
	23	162 44.0	16.3	2 44.8	14.4	6 07.4	9.4 54.7	40	04 58	05 30	05 57	17 02	17 32	18 02	18 33
						5 58.0	9.5 54.7	45	04 51	05 26	05 56	17 07	17 34	18 02	18 30
S Á B A D O	15 00	177 44.1	S 2 15.3	17 18.2	14.5	N 5 48.5	9.5 54.7	S 50	04 42	05 21	05 54	17 12	17 37	18 01	18 26
	01	192 44.3	14.3	31 51.7	14.4	5 39.0	9.5 54.7	52	04 38	05 19	05 53	17 15	17 38	18 01	18 24
	02	207 44.5	13.3	46 25.1	14.4	5 29.5	9.6 54.8	54	04 33	05 16	05 51	17 18	17 39	18 00	18 22
	03	222 44.7	12.3	60 58.5	14.4	5 19.9	9.6 54.8	56	04 28	05 13	05 50	17 21	17 40	18 00	18 20
	04	237 44.8	11.3	75 31.9	14.4	5 10.3	9.6 54.8	58	04 21	05 09	05 49	17 24	17 42	17 59	18 17
	05	252 45.0	10.3	90 05.3	14.5	5 00.7	9.6 54.8	S 60	04 14	05 05	05 47	17 28	17 43	17 59	18 14
	06	267 45.2	S 2 09.4	104 38.8	14.4	N 4 51.1	9.7 54.8	Ocaso Sol		Crepúsculo		Ocaso Luna			
	07	282 45.4	08.4	119 12.2	14.4	4 41.4	9.7 54.8	Lat.				14	15	16	17
	08	297 45.5	07.4	133 45.6	14.4	4 31.7	9.7 54.8			Civil	Náut.				
	09	312 45.7	06.4	148 19.0	14.4	4 22.0	9.7 54.9					h m	h m	h m	h m
	10	327 45.9	05.4	162 52.4	14.4	4 12.3	9.8 54.9	N 72	h m	h m	h m	h m	h m	h m	h m
	11	342 46.1	04.4	177 25.8	14.3	4 02.5	9.8 54.9	N 70	17 56	19 03	20 28	06 08	06 01	05 54	05 47
	12	357 46.2	S 2 03.4	191 59.1	14.4	N 3 52.7	9.8 54.9	N 70	17 57	18 58	20 13	05 55	05 54	05 53	05 51
	13	12 46.4	02.5	206 32.5	14.4	3 42.9	9.8 54.9	68	17 58	18 54	20 02	05 45	05 49	05 52	05 55
	14	27 46.6	01.5	221 05.9	14.3	3 33.1	9.9 54.9	66	17 59	18 51	19 52	05 37	05 44	05 51	05 58
	15	42 46.8	00.5	235 39.2	14.4	3 23.2	9.9 55.0	64	18 00	18 48	19 45	05 30	05 40	05 50	06 00
	16	57 46.9	1 59.5	250 12.6	14.3	3 13.3	9.9 55.0	62	18 01	18 45	19 38	05 23	05 37	05 50	06 03
	17	72 47.1	58.5	264 45.9	14.3	3 03.4	9.9 55.0	60	18 02	18 43	19 33	05 18	05 34	05 49	06 05
	18	87 47.3	S 1 57.5	279 19.2	14.4	N 2 53.5	9.9 55.0	N 58	18 03	18 42	19 28	05 13	05 32	05 49	06 06
	19	102 47.5	56.5	293 52.6	14.3	2 43.6	10.0 55.0	56	18 03	18 40	19 24	05 09	05 29	05 48	06 08
	20	117 47.7	55.5	308 25.9	14.3	2 33.6	9.9 55.0	54	18 04	18 39	19 20	05 05	05 27	05 48	06 09
	21	132 47.8	54.6	322 59.2	14.2	2 23.7	10.0 55.1	52	18 04	18 38	19 17	05 02	05 25	05 48	06 11
	22	147 48.0	53.6	337 32.4	14.3	2 13.7	10.0 55.1	50	18 05	18 37	19 15	04 59	05 23	05 47	06 12
	23	162 48.2	52.6	352 05.7	14.3	2 03.7	10.0 55.1	45	18 06	18 35	19 09	04 52	05 20	05 47	06 14
	D O M I N G O	16 00	177 48.4	S 1 51.6	6 39.0	14.2	N 1 53.7	10.1 55.1	N 40	18 07	18 34	19 05	04 46	05 16	05 46	06 17
01		192 48.5	50.6	21 12.2	14.2	1 43.6	10.0 55.1	35	18 07	18 33	19 02	04 41	05 14	05 46	06 18
02		207 48.7	49.6	35 45.4	14.3	1 33.6	10.1 55.1	30	18 08	18 32	19 00	04 36	05 11	05 45	06 20
03		222 48.9	48.6	50 18.7	14.2	1 23.5	10.0 55.2	20	18 10	18 32	18 57	04 29	05 07	05 45	06 23
04		237 49.1	47.6	64 51.9	14.1	1 13.5	10.1 55.2	N 10	18 11	18 32	18 56	04 22	05 03	05 44	06 26
05		252 49.3	46.7	79 25.0	14.2	1 03.4	10.1 55.2	0	18 12	18 33	18 57	04 15	04 59	05 43	06 28
06		267 49.4	S 1 45.7	93 58.2	14.2	N 0 53.3	10.1 55.2	S 10	18 14	18 35	18 59	04 09	04 56	05 43	06 30
07		282 49.6	44.7	108 31.4	14.1	0 43.2	10.1 55.2	20	18 15	18 37	19 03	04 02	04 52	05 42	06 33
08		297 49.8	43.7	123 04.5	14.1	0 33.1	10.2 55.3	30	18 17	18 41	19 09	03 54	04 47	05 41	06 36
09		312 50.0	42.7	137 37.6	14.1	0 22.9	10.1 55.3	35	18 18	18 44	19 13	03 49	04 45	05 40	06 37
10		327 50.1	41.7	152 10.7	14.1	0 12.8	10.1 55.3	40	18 20	18 47	19 19	03 44	04 42	05 40	06 39
11		342 50.3	40.7	166 43.8	14.0	N 0 02.7	10.2 55.3	45	18 21	18 51	19 25	03 38	04 38	05 39	06 41
12		357 50.5	S 1 39.7	181 16.8	14.1	S 0 07.5	10.1 55.3	S 50	18 23	18 56	19 34	03 31	04 34	05 38	06 44
13		12 50.7	38.8	195 49.9	14.0	0 17.6	10.2 55.3	52	18 24	18 58	19 38	03 27	04 32	05 38	06 45
14		27 50.9	37.8	210 22.9	14.0	0 07.8	10.1 55.4	54	18 25	19 01	19 43	03 24	04 30	05 38	06 46
15		42 51.0	36.8	224 55.9	14.0	0 37.9	10.2 55.4	56	18 26	19 04	19 49	03 19	04 28	05 37	06 48
16		57 51.2	35.8	239 28.9	13.9	0 48.1	10.2 55.4	58	18 28	19 07	19 55	03 15	04 25	05 37	06 49
17		72 51.4	34.8	254 01.8	14.0	0 58.3	10.1 55.4	S 60	18 29	19 11	20 02	03 10	04 22	05 36	06 51
18		87 51.6	S 1 33.8	268 34.8	13.9	S 1 08.4	10.2 55.4	SOL		LUNA					
19		102 51.8	32.8	283 07.7	13.8	1 18.6	10.2 55.5	Día				Paso Mer.		Edad	Fase
20		117 51.9	31.8	297 40.5	13.9	1 28.8	10.2 55.5		Ec. Tiempo		Paso Mer.	Paso Mer.	Sup.	Inf.	
21		132 52.1	30.9	312 13.4	13.8	1 39.0	10.1 55.5		00h	12h					
22		147 52.3	29.9	326 46.2											

UT (HmGr)	ARIES	VENUS -4.6	MARTE -1.0	JÚPITER -2.3	SATURNO +0.3	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
LUNES								
17 00	174 29.7	222 49.3 S15 17.6	329 17.8 S 7 24.1	72 55.1 N23 16.0	303 06.7 S16 13.8	Acamar	315 18.2 S40 15.2	
01	189 32.1	237 49.3 17.3	344 20.7 24.0	87 57.5 16.0	318 09.2 13.8	Achernar	335 27.0 S57 10.1	
02	204 34.6	252 49.3 16.9	359 23.7 23.8	102 59.8 16.0	333 11.8 13.8	Acrux	173 07.9 S63 10.7	
03	219 37.1	267 49.4 . . 16.5	14 26.6 . . 23.6	118 02.2 . . 16.0	348 14.3 . . 13.8	Adhara	255 12.0 S28 59.9	
04	234 39.5	282 49.4 16.2	29 29.5 23.5	133 04.6 16.0	3 16.8 13.7	Aldebarán	290 48.9 N16 32.1	
05	249 42.0	297 49.4 15.8	44 32.4 23.3	148 07.0 16.0	18 19.3 13.7			
06	264 44.4	312 49.4 S15 15.5	59 35.4 S 7 23.1	163 09.3 N23 16.0	33 21.9 S16 13.7	Alioth	166 19.8 N55 52.8	
07	279 46.9	327 49.4 15.1	74 38.3 23.0	178 11.7 16.0	48 24.4 13.7	Alkaid	152 58.1 N49 14.4	
08	294 49.4	342 49.5 14.7	89 41.2 22.8	193 14.1 16.0	63 26.9 13.6	Al Na'ir	27 43.5 S46 53.4	
09	309 51.8	357 49.5 . . 14.4	104 44.2 . . 22.6	208 16.4 . . 16.0	78 29.4 . . 13.6	Alnilam	275 45.8 S 1 11.9	
10	324 54.3	12 49.5 14.0	119 47.1 22.5	223 18.8 16.0	93 32.0 13.6	Alphard	217 55.3 S 8 43.5	
11	339 56.8	27 49.5 13.7	134 50.0 22.3	238 21.2 15.9	108 34.5 13.6			
12	354 59.2	42 49.5 S15 13.3	149 53.0 S 7 22.1	253 23.5 N23 15.9	123 37.0 S16 13.6	Alphecca	126 10.4 N26 39.9	
13	10 01.7	57 49.6 12.9	164 55.9 21.9	268 25.9 15.9	138 39.5 13.5	Alpheratz	357 43.3 N29 10.1	
14	25 04.2	72 49.6 12.6	179 58.9 21.8	283 28.3 15.9	153 42.1 13.5	Altair	62 07.9 N 8 54.4	
15	40 06.6	87 49.6 . . 12.2	195 01.8 . . 21.6	298 30.6 . . 15.9	168 44.6 . . 13.5	Ankaa	353 15.6 S42 13.8	
16	55 09.1	102 49.6 11.8	210 04.7 21.4	313 33.0 15.9	183 47.1 13.5	Antares	112 25.5 S26 27.6	
17	70 11.5	117 49.6 11.5	225 07.7 21.3	328 35.4 15.9	198 49.6 13.4			
18	85 14.0	132 49.6 S15 11.1	240 10.6 S 7 21.1	343 37.7 N23 15.9	213 52.2 S16 13.4	Arcturus	145 55.0 N19 06.4	
19	100 16.5	147 49.6 10.7	255 13.6 20.9	358 40.1 15.9	228 54.7 13.4	Atria	107 26.7 S69 02.8	
20	115 18.9	162 49.7 10.4	270 16.5 20.7	13 42.5 15.9	243 57.2 13.4	Avior	234 17.4 S59 33.7	
21	130 21.4	177 49.7 . . 10.0	285 19.5 . . 20.6	28 44.8 . . 15.9	258 59.7 . . 13.3	Bellatrix	278 31.5 N 6 21.5	
22	145 23.9	192 49.7 09.6	300 22.4 20.4	43 47.2 15.9	274 02.3 13.3	Betelgeuse	271 00.7 N 7 24.3	
23	160 26.3	207 49.7 09.3	315 25.4 20.2	58 49.5 15.9	289 04.8 13.3			
MARTES								
18 00	175 28.8	222 49.7 S15 08.9	330 28.3 S 7 20.0	73 51.9 N23 15.9	304 07.3 S16 13.3	Canopus	263 55.8 S52 42.7	
01	190 31.3	237 49.7 08.5	345 31.3 19.9	88 54.3 15.9	319 09.8 13.3	Capella	280 33.7 N46 00.7	
02	205 33.7	252 49.7 08.1	0 34.2 19.7	103 56.6 15.9	334 12.4 13.2	Deneb	49 31.4 N45 19.8	
03	220 36.2	267 49.7 . . 07.8	15 37.2 . . 19.5	118 59.0 . . 15.9	349 14.9 . . 13.2	Denébola	182 32.8 N14 29.4	
04	235 38.7	282 49.7 07.4	30 40.2 19.3	134 01.4 15.9	4 17.4 13.2	Diphda	348 55.7 S17 54.6	
05	250 41.1	297 49.7 07.0	45 43.1 19.2	149 03.7 15.9	19 19.9 13.2			
06	265 43.6	312 49.7 S15 06.6	60 46.1 S 7 19.0	164 06.1 N23 15.9	34 22.5 S16 13.1	Dubhe	193 50.5 N61 40.3	
07	280 46.0	327 49.7 06.2	75 49.0 18.8	179 08.4 15.9	49 25.0 13.1	Elnath	278 12.0 N28 37.0	
08	295 48.5	342 49.8 05.9	90 52.0 18.6	194 10.8 15.9	64 27.5 13.1	Eltanin	90 45.9 N51 29.1	
09	310 51.0	357 49.8 . . 05.5	105 55.0 . . 18.5	209 13.2 . . 15.8	79 30.1 . . 13.1	Enif	33 46.9 N 9 56.4	
10	325 53.4	12 49.8 05.1	120 57.9 18.3	224 15.5 15.8	94 32.6 13.0	Fomalhaut	15 23.8 S29 32.8	
11	340 55.9	27 49.8 04.7	136 00.9 18.1	239 17.9 15.8	109 35.1 13.0			
12	355 58.4	42 49.8 S15 04.3	151 03.9 S 7 17.9	254 20.2 N23 15.8	124 37.6 S16 13.0	Gacrux	171 59.7 S57 11.6	
13	11 00.8	57 49.8 04.0	166 06.8 17.7	269 22.6 15.8	139 40.2 13.0	Gienah	175 51.4 S17 37.4	
14	26 03.3	72 49.8 03.6	181 09.8 17.6	284 25.0 15.8	154 42.7 12.9	Hadar	148 46.5 S60 26.4	
15	41 05.8	87 49.8 . . 03.2	196 12.8 . . 17.4	299 27.3 . . 15.8	169 45.2 . . 12.9	Hamal	328 00.4 N23 31.7	
16	56 08.2	102 49.8 02.8	211 15.8 17.2	314 29.7 15.8	184 47.8 12.9	Kaus Aust.	83 43.2 S34 22.4	
17	71 10.7	117 49.8 02.4	226 18.7 17.0	329 32.0 15.8	199 50.3 12.9			
18	86 13.1	132 49.8 S15 02.0	241 21.7 S 7 16.8	344 34.4 N23 15.8	214 52.8 S16 12.9	Kochab	137 19.4 N74 05.6	
19	101 15.6	147 49.8 01.6	256 24.7 16.7	359 36.7 15.8	229 55.3 12.8	Markab	13 38.1 N15 16.9	
20	116 18.1	162 49.8 01.2	271 27.7 16.5	14 39.1 15.8	244 57.9 12.8	Menkar	314 14.7 N 4 08.5	
21	131 20.5	177 49.8 . . 00.9	286 30.6 . . 16.3	29 41.5 . . 15.8	260 00.4 . . 12.8	Menkent	148 06.6 S36 26.3	
22	146 23.0	192 49.7 00.5	301 33.6 16.1	44 43.8 15.8	275 02.9 12.8	Miaplacidus	221 38.8 S69 46.9	
23	161 25.5	207 49.7 15 00.1	316 36.6 15.9	59 46.2 15.8	290 05.5 12.7			
MIÉRCOLES								
19 00	176 27.9	222 49.7 S14 59.7	331 39.6 S 7 15.7	74 48.5 N23 15.8	305 08.0 S16 12.7	Mirfak	308 39.8 N49 54.7	
01	191 30.4	237 49.7 59.3	346 42.6 15.6	89 50.9 15.8	320 10.5 12.7	Nunki	75 57.8 S26 16.5	
02	206 32.9	252 49.7 58.9	1 45.6 15.4	104 53.2 15.8	335 13.1 12.7	Peacock	53 18.8 S56 41.0	
03	221 35.3	267 49.7 . . 58.5	16 48.5 . . 15.2	119 55.6 . . 15.8	350 15.6 . . 12.6	Póllux	243 26.9 N27 59.3	
04	236 37.8	282 49.7 58.1	31 51.5 15.0	134 57.9 15.8	5 18.1 12.6	Procyon	244 59.0 N 5 11.0	
05	251 40.3	297 49.7 57.7	46 54.5 14.8	150 00.3 15.7	20 20.6 12.6			
06	266 42.7	312 49.7 S14 57.3	61 57.5 S 7 14.6	165 02.6 N23 15.7	35 23.2 S16 12.6	Rasalhague	96 05.9 N12 33.0	
07	281 45.2	327 49.7 56.9	77 00.5 14.4	180 05.0 15.7	50 25.7 12.5	Régulus	207 42.7 N11 53.6	
08	296 47.6	342 49.7 56.5	92 03.5 14.3	195 07.3 15.7	65 28.2 12.5	Rigel	281 11.6 S 8 11.5	
09	311 50.1	357 49.7 . . 56.1	107 06.5 . . 14.1	210 09.7 . . 15.7	80 30.8 . . 12.5	Rigel Kent.	139 50.4 S60 53.4	
10	326 52.6	12 49.7 55.7	122 09.5 13.9	225 12.0 15.7	95 33.3 12.5	Sabik	102 11.9 S15 44.4	
11	341 55.0	27 49.6 55.3	137 12.5 13.7	240 14.4 15.7	110 35.8 12.4			
12	356 57.5	42 49.6 S14 54.9	152 15.5 S 7 13.5	255 16.7 N23 15.7	125 38.4 S16 12.4	Schedar	349 40.4 N56 36.9	
13	12 00.0	57 49.6 54.5	167 18.5 13.3	270 19.1 15.7	140 40.9 12.4	Shaula	96 21.2 S37 06.6	
14	27 02.4	72 49.6 54.1	182 21.5 13.1	285 21.4 15.7	155 43.4 12.4	Sirius	258 33.2 S16 44.5	
15	42 04.9	87 49.6 . . 53.7	197 24.5 . . 12.9	300 23.8 . . 15.7	170 46.0 . . 12.3	Spica	158 30.4 S11 14.2	
16	57 07.4	102 49.6 53.3	212 27.5 12.8	315 26.1 15.7	185 48.5 12.3	Suhail	222 51.7 S43 29.8	
17	72 09.8	117 49.6 52.9	227 30.5 12.6	330 28.5 15.7	200 51.0 12.3			
18	87 12.3	132 49.5 S14 52.5	242 33.5 S 7 12.4	345 30.8 N23 15.7	215 53.6 S16 12.3	Vega	80 38.7 N38 47.7	
19	102 14.7	147 49.5 52.1	257 36.5 12.2	0 33.2 15.7	230 56.1 12.2	Zuben'ubi	137 04.6 S16 06.0	
20	117 17.2	162 49.5 51.7	272 39.5 12.0	15 35.5 15.7	245 58.6 12.2			
21	132 19.7	177 49.5 . . 51.3	287 42.5 . . 11.8	30 37.9 . . 15.7	261 01.2 . . 12.2	AHS Paso Mer.		
22	147 22.1	192 49.5 50.8	302 45.5 11.6	45 40.2 15.6	276 03.7 12.2	Venus	47 20.9 h 9 m	
23	162 24.6	207 49.4 50.4	317 48.5 11.4	60 42.6 15.6	291 06.2 12.1	Marte	154 59.5 1 58	
						Júpiter	258 23.1 19 02	
						Saturno	128 38.5 3 43	
Paso Mer. 12 16.1	v 0.0 d 0.4		v 3.0 d 0.2	v 2.4 d 0.0	v 2.5 d 0.0			

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		17	18	19	20	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
L U N E S	N 72	03 35	05 02	06 09	20 04	21 50	23 43	25 48								
	N 70	03 52	05 08	06 09	19 56	21 34	23 16	25 01								
	68	04 05	05 13	06 09	19 49	21 21	22 56	24 30								
	66	04 15	05 18	06 09	19 44	21 11	22 40	24 08								
	64	04 24	05 21	06 08	19 39	21 02	22 27	23 50								
	62	04 31	05 24	06 08	19 35	20 55	22 16	23 36								
	60	04 37	05 27	06 08	19 31	20 49	22 07	23 23								
	N 58	04 43	05 29	06 08	19 28	20 43	21 58	23 13								
	56	04 47	05 31	06 08	19 25	20 38	21 51	23 04								
	54	04 51	05 33	06 08	19 23	20 34	21 45	22 55								
	52	04 55	05 34	06 08	19 21	20 30	21 39	22 48								
	50	04 58	05 35	06 08	19 19	20 26	21 34	22 42								
	45	05 04	05 38	06 07	19 14	20 18	21 23	22 28								
	N 40	05 09	05 40	06 07	19 10	20 12	21 14	22 16								
	35	05 12	05 42	06 07	19 07	20 06	21 06	22 07								
	30	05 15	05 43	06 07	19 05	20 01	20 59	21 58								
	20	05 18	05 44	06 06	19 00	19 53	20 47	21 43								
	N 10	05 20	05 44	06 05	18 56	19 45	20 37	21 31								
	0	05 20	05 44	06 05	18 52	19 38	20 27	21 19								
	S 10	05 19	05 43	06 04	18 48	19 32	20 18	21 07								
	20	05 16	05 41	06 03	18 44	19 24	20 08	20 54								
	30	05 10	05 38	06 02	18 39	19 16	19 56	20 40								
	35	05 06	05 36	06 01	18 36	19 12	19 50	20 32								
	40	05 02	05 33	06 01	18 33	19 06	19 42	20 22								
	45	04 56	05 30	06 00	18 30	19 00	19 33	20 11								
S 50	04 48	05 26	05 58	18 26	18 53	19 23	19 58									
52	04 44	05 24	05 58	18 24	18 49	19 18	19 52									
54	04 39	05 22	05 57	18 22	18 46	19 13	19 45									
56	04 34	05 19	05 56	18 20	18 42	19 07	19 37									
58	04 29	05 16	05 56	18 17	18 37	19 00	19 29									
S 60	04 22	05 13	05 55	18 14	18 32	18 53	19 19									
M A R T E S	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna											
			Civil	Náut.	17	18	19	20								
	N 72	h m	h m	h m	h m	h m	h m	h m								
	N 70	18 09	19 17	20 45	05 47	05 39	05 31	05 21								
	N 68	18 09	19 11	20 28	05 51	05 50	05 49	05 49								
	67	18 09	19 05	20 14	05 55	05 58	06 03	06 10								
	66	18 09	19 01	20 03	05 58	06 05	06 15	06 27								
	64	18 09	18 57	19 54	06 00	06 11	06 24	06 41								
	62	18 09	18 54	19 47	06 03	06 16	06 33	06 53								
	60	18 09	18 51	19 41	06 05	06 21	06 40	07 03								
	N 58	18 09	18 49	19 35	06 06	06 25	06 46	07 12								
	56	18 09	18 46	19 31	06 08	06 29	06 52	07 19								
	54	18 09	18 45	19 26	06 09	06 32	06 57	07 26								
	52	18 09	18 43	19 23	06 11	06 35	07 02	07 32								
	50	18 09	18 42	19 20	06 12	06 37	07 06	07 38								
	45	18 10	18 39	19 13	06 14	06 43	07 15	07 50								
	N 40	18 10	18 37	19 08	06 17	06 48	07 22	08 00								
	35	18 10	18 35	19 05	06 18	06 52	07 29	08 09								
	30	18 10	18 34	19 02	06 20	06 56	07 35	08 16								
	20	18 10	18 32	18 58	06 23	07 03	07 45	08 29								
	N 10	18 11	18 32	18 56	06 26	07 08	07 53	08 41								
	0	18 11	18 32	18 56	06 28	07 14	08 02	08 52								
	S 10	18 12	18 33	18 57	06 30	07 19	08 10	09 02								
	20	18 13	18 35	19 00	06 33	07 25	08 19	09 14								
	30	18 14	18 37	19 05	06 36	07 32	08 29	09 27								
35	18 14	18 39	19 09	06 37	07 35	08 35	09 35									
40	18 15	18 42	19 14	06 39	07 40	08 41	09 44									
45	18 16	18 45	19 20	06 41	07 45	08 49	09 54									
S 50	18 17	18 49	19 27	06 44	07 51	08 58	10 06									
52	18 17	18 51	19 31	06 45	07 53	09 03	10 12									
54	18 18	18 53	19 35	06 46	07 56	09 07	10 18									
56	18 19	18 56	19 40	06 48	08 00	09 13	10 26									
58	18 19	18 58	19 46	06 49	08 04	09 19	10 34									
S 60	18 20	19 02	19 52	06 51	08 08	09 25	10 43									
M I É R C O L E S	SOL					LUNA										
	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase								
		00 ^h	12 ^h		Sup.	Inf.										
	d	m s	m s	h m	h m	h m	d %									
	17	08 30	08 21	12 08	00 17	12 40	16 99									
	18	08 12	08 04	12 08	01 03	13 26	17 97									
	19	07 55	07 46	12 08	01 50	14 14	18 92									
		S/D 16.1	<i>d</i> 1.0	S/D 15.2	15.3	15.5										

UT (HmGr)	ARIES				VENUS -4.5				MARTE -1.1				JÚPITER -2.3				SATURNO +0.3				ESTRELLAS			
	AHGr	AHGr	Dec		AHGr	Dec		AHGr	Dec		AHGr	Dec		AHGr	Dec		Nombre	AHS	Dec					
2000	177 27.1	222 49.4	S14 50.0		332 51.5	S 7 11.2		75 44.9	N23 15.6		306 08.8	S16 12.1		Acamar	315 18.3	S40 15.2								
	01 192 29.5	237 49.4	49.6		347 54.5	11.0		90 47.3	15.6		321 11.3	12.1		Achernar	335 27.0	S57 10.1								
	02 207 32.0	252 49.4	49.2		2 57.6	10.8		105 49.6	15.6		336 13.8	12.1		Acrux	173 07.9	S63 10.7								
	03 222 34.5	267 49.4	48.8		18 00.6	10.6		120 52.0	15.6		351 16.4	12.0		Adhara	255 12.0	S28 59.9								
	04 237 36.9	282 49.3	48.4		33 03.6	10.4		135 54.3	15.6		6 18.9	12.0		Aldebarán	290 48.9	N16 32.1								
	05 252 39.4	297 49.3	47.9		48 06.6	10.3		150 56.6	15.6		21 21.4	12.0												
	06 267 41.9	312 49.3	S14 47.5		63 09.6	S 7 10.1		165 59.0	N23 15.6		36 24.0	S16 12.0		Alioth	166 19.8	N55 52.8								
	07 282 44.3	327 49.3	47.1		78 12.6	09.9		181 01.3	15.6		51 26.5	11.9		Alkaid	152 58.1	N49 14.4								
	08 297 46.8	342 49.2	46.7		93 15.7	09.7		196 03.7	15.6		66 29.0	11.9		Al Na'ir	27 43.5	S46 53.3								
	09 312 49.2	357 49.2	46.3		108 18.7	09.5		211 06.0	15.6		81 31.6	11.9		Alnilam	275 45.9	S 1 11.9								
J U E V E S	10 327 51.7	12 49.2	45.9		123 21.7	09.3		226 08.4	15.6		96 34.1	11.9		Alphard	217 55.3	S 8 43.5								
	11 342 54.2	27 49.2	45.4		138 24.7	09.1		241 10.7	15.6		111 36.7	11.8												
	12 357 56.6	42 49.1	S14 45.0		153 27.8	S 7 08.9		256 13.1	N23 15.6		126 39.2	S16 11.8		Alphecca	126 10.4	N26 39.9								
	13 12 59.1	57 49.1	44.6		168 30.8	08.7		271 15.4	15.6		141 41.7	11.8		Alpheratz	357 43.3	N29 10.1								
	14 28 01.6	72 49.1	44.2		183 33.8	08.5		286 17.7	15.6		156 44.3	11.8		Altair	62 07.9	N 8 54.4								
	15 43 04.0	87 49.1	43.7		198 36.9	08.3		301 20.1	15.5		171 46.8	11.7		Ankaa	353 15.6	S42 13.8								
	16 58 06.5	102 49.0	43.3		213 39.9	08.1		316 22.4	15.5		186 49.3	11.7		Antares	112 25.5	S26 27.6								
	17 73 09.0	117 49.0	42.9		228 42.9	07.9		331 24.8	15.5		201 51.9	11.7												
	18 88 11.4	132 49.0	S14 42.5		243 45.9	S 7 07.7		346 27.1	N23 15.5		216 54.4	S16 11.7		Arcturus	145 55.0	N19 06.4								
	19 103 13.9	147 48.9	42.0		258 49.0	07.5		1 29.4	15.5		231 57.0	11.6		Atria	107 26.6	S69 02.8								
V I E R N E S	20 118 16.4	162 48.9	41.6		273 52.0	07.3		16 31.8	15.5		246 59.5	11.6		Avior	234 17.4	S59 33.8								
	21 133 18.8	177 48.9	41.2		288 55.1	07.1		31 34.1	15.5		262 02.0	11.6		Bellatrix	278 31.5	N 6 21.5								
	22 148 21.3	192 48.8	40.7		303 58.1	06.9		46 36.5	15.5		277 04.6	11.6		Betelgeuse	271 00.7	N 7 24.3								
	23 163 23.7	207 48.8	40.3		319 01.1	06.7		61 38.8	15.5		292 07.1	11.5												
	00 178 26.2	222 48.8	S14 39.9		334 04.2	S 7 06.5		76 41.1	N23 15.5		307 09.6	S16 11.5		Canopus	263 55.9	S52 42.7								
	01 193 28.7	237 48.7	39.5		349 07.2	06.3		91 43.5	15.5		322 12.2	11.5		Capella	280 33.7	N46 00.7								
	02 208 31.1	252 48.7	39.0		4 10.3	06.1		106 45.8	15.5		337 14.7	11.5		Deneb	49 31.4	N45 19.8								
	03 223 33.6	267 48.7	38.6		19 13.3	05.9		121 48.1	15.5		352 17.3	11.4		Denébola	182 32.8	N14 29.4								
	04 238 36.1	282 48.6	38.1		34 16.3	05.7		136 50.5	15.5		7 19.8	11.4		Diphda	348 55.7	S17 54.6								
	05 253 38.5	297 48.6	37.7		49 19.4	05.5		151 52.8	15.5		22 22.3	11.4												
S Á B A D O	06 268 41.0	312 48.6	S14 37.3		64 22.4	S 7 05.3		166 55.2	N23 15.4		37 24.9	S16 11.4		Dubhe	193 50.5	N61 40.4								
	07 283 43.5	327 48.5	36.8		79 25.5	05.1		181 57.5	15.4		52 27.4	11.3		Elnath	278 12.0	N28 37.0								
	08 298 45.9	342 48.5	36.4		94 28.5	04.9		196 59.8	15.4		67 30.0	11.3		Eltanin	90 45.9	N51 29.1								
	09 313 48.4	357 48.5	36.0		109 31.6	04.7		212 02.2	15.4		82 32.5	11.3		Enif	33 46.9	N 9 56.4								
	10 328 50.8	12 48.4	35.5		124 34.6	04.5		227 04.5	15.4		97 35.0	11.2		Fomalhaut	15 23.8	S29 32.8								
	11 343 53.3	27 48.4	35.1		139 37.7	04.2		242 06.8	15.4		112 37.6	11.2												
	12 358 55.8	42 48.3	S14 34.6		154 40.7	S 7 04.0		257 09.2	N23 15.4		127 40.1	S16 11.2		Gacrux	171 59.6	S57 11.6								
	13 13 58.2	57 48.3	34.2		169 43.8	03.8		272 11.5	15.4		142 42.7	11.2		Gienah	175 51.4	S17 37.4								
	14 29 00.7	72 48.3	33.8		184 46.9	03.6		287 13.8	15.4		157 45.2	11.1		Hadar	148 46.5	S60 26.4								
	15 44 03.2	87 48.2	33.3		199 49.9	03.4		302 16.2	15.4		172 47.7	11.1		Hamal	328 00.4	N23 31.7								
Paso Mer.	16 59 05.6	102 48.2	32.9		214 53.0	03.2		317 18.5	15.4		187 50.3	11.1		Kaus Aust.	83 43.2	S34 22.4								
	17 74 08.1	117 48.1	32.4		229 56.0	03.0		332 20.8	15.4		202 52.8	11.1												
	18 89 10.6	132 48.1	S14 32.0		244 59.1	S 7 02.8		347 23.2	N23 15.4		217 55.4	S16 11.0		Kochab	137 19.3	N74 05.6								
	19 104 13.0	147 48.0	31.5		260 02.2	02.6		2 25.5	15.4		232 57.9	11.0		Markab	13 38.1	N15 16.9								
	20 119 15.5	162 48.0	31.1		275 05.2	02.4		17 27.8	15.3		248 00.4	11.0		Menkar	314 14.7	N 4 08.5								
	21 134 18.0	177 48.0	30.6		290 08.3	02.2		32 30.1	15.3		263 03.0	11.0		Menkent	148 06.6	S36 26.4								
	22 149 20.4	192 47.9	30.2		305 11.4	02.0		47 32.5	15.3		278 05.5	10.9		Miaplacidus	221 38.8	S69 46.9								
	23 164 22.9	207 47.9	29.7		320 14.4	01.8		62 34.8	15.3		293 08.1	10.9												
	00 179 25.3	222 47.8	S14 29.3		335 17.5	S 7 01.5		77 37.1	N23 15.3		308 10.6	S16 10.9		Miraf	308 39.9	N49 54.5								
	01 194 27.8	237 47.8	28.8		350 20.6	01.3		92 39.5	15.3		323 13.2	10.9		Nunki	75 57.7	S26 16.5								
02 209 30.3	252 47.7	28.4		5 23.6	01.1		107 41.8	15.3		338 15.7	10.8		Peacock	53 18.8	S56 41.0									
03 224 32.7	267 47.7	27.9		20 26.7	00.9		122 44.1	15.3		353 18.2	10.8		Póllux	243 26.9	N27 59.3									
04 239 35.2	282 47.6	27.5		35 29.8	00.7		137 46.5	15.3		8 20.8	10.8		Procyon	244 59.1	N 5 11.0									
S Á B A D O	05 254 37.7	297 47.6	27.0		50 32.9	00.5		152 48.8	15.3		23 23.3	10.7												
	06 269 40.1	312 47.5	S14 26.6		65 35.9	S 7 00.3		167 51.1	N23 15.3		38 25.9	S16 10.7		Rasalhague	96 05.9	N12 33.0								
	07 284 42.6	327 47.5	26.1		80 39.0	7 00.1		182 53.4	15.3		53 28.4	10.7		Régulus	207 42.7	N11 53.6								
	08 299 45.1	342 47.4	25.6		95 42.1	6 59.9		197 55.8	15.3		68 31.0	10.7		Rigel	281 11.6	S 8 11.5								
	09 314 47.5	357 47.4	25.2		110 45.2	5 59.6		212 58.1	15.3		83 33.5	10.6		Rigel Kent.	139 50.4	S60 53.4								
	10 329 50.0	12 47.3	24.7		125 48.2	59.4		228 00.4	15.2		98 36.0	10.6		Sabik	102 11.9	S15 44.4								
	11 344 52.5	27 47.3	24.3		140 51.3	59.2		243 02.7	15.2		113 38.6	10.6												
	12 359 54.9	42 47.2	S14 23.8		155 54.4	S 6 59.0		258 05.1	N23 15.2		128 41.1	S16 10.6		Schedar	349 40.4	N56 36.9								
	13 14 57.4	57 47.2	23.3		170 57.5	58.8		273 07.4	15.2		143 43.7	10.5		Shaula	96 21.1	S37 06.6								
	14 29 59.8	72 47.1	22.9		186 00.6	58.6		288 09.7	15.2		158 46.2	10.5		Sirius	258 33.2	S16 44.5								
15 45 02.3	87 47.1	22.4		201 03.7	58.4		303 12.0	15.2		173 48.8	10.5		Spica	158 30.7	S11 14.2									
Paso Mer.	16 60 04.8	102 47.0	22.0		216 06.7	58.1		318 14.4	15.2		188 51.3	10.4		Suhail	222 51.4	S43 29.8								
	17 75 07.2	117 47.0	21.5		231 09.8	57.9		333 16.7	15.2		203 53.9	10.4												
	18 90 09.7	132 46.9	S14 21.0		246 12.9	S 6 57.7		348 19.0	N23 15.2		218 56.4	S16 10.4		Vega	80 38.7	N38 47.7								
	19 105 12.2	147 46.9	20.6		261 16.0	57.5		3 21.3	15.2		233 58.9	10.4		Zuben'ubi	137 04.6	S16 06.0								
	20 120 14.6	162 46.8	20.1		276 19.1	57.3		18 23.7	15.2		249 01.5	10.3												
	21 135 17.1	177 46.8	19.6		291 22.2	57.1		33 26.0	15.2		264 04.0	10.3												
	22 150 19.6	192 46.7	19.2		306 25.3	56.8		48 28.3	15.2		279 06.6	10.3		Venus	44 22.6	h 9 09								
	23 165 22.0	207 46.6	18.7		321 28.4	56.6																		

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		20	21	22	23	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
J U E V E S	20 00	178 05.8 S	0 16.7	321 29.7	10.5	13 22.0	7.7	57.0	N 72	03 15	04 46	05 54	25 48	01 48	■	■
	01	193 06.0	15.8	335 59.2	10.5	13 29.7	7.7	57.0	N 70	03 35	04 54	05 55	25 01	01 01	02 44	04 08
	02	208 06.2	14.8	350 28.7	10.5	13 37.4	7.6	57.1	68	03 50	05 00	05 56	24 30	00 30	02 00	03 13
	03	223 06.3	13.8	4 58.2	10.4	13 45.0	7.5	57.1	66	04 02	05 06	05 57	24 08	00 08	01 30	02 40
	04	238 06.5	12.8	19 27.6	10.3	13 52.5	7.5	57.1	64	04 12	05 10	05 58	23 50	25 08	01 08	02 16
	05	253 06.7	11.8	33 56.9	10.3	14 00.0	7.3	57.1	62	04 21	05 14	05 59	23 36	24 51	00 51	01 56
	06	268 06.9 S	0 10.8	48 26.2	10.2	14 07.3	7.4	57.1	N 60	04 28	05 18	05 59	23 23	24 36	00 36	01 41
	07	283 07.1	09.8	62 55.4	10.1	14 14.7	7.2	57.2	N 58	04 34	05 20	06 00	23 13	24 24	00 24	01 27
	08	298 07.3	08.8	77 24.5	10.1	14 21.9	7.2	57.2	56	04 39	05 23	06 00	23 04	24 13	00 13	01 16
	09	313 07.5	07.9	91 53.6	10.1	14 29.1	7.0	57.2	54	04 43	05 25	06 00	22 56	24 03	00 03	01 06
	10	328 07.6	06.9	106 22.7	10.0	14 36.1	7.1	57.2	52	04 47	05 27	06 01	22 48	23 55	24 57	00 57
	11	343 07.8	05.9	120 51.7	9.9	14 43.2	6.9	57.2	50	04 51	05 29	06 01	22 42	23 47	24 49	00 49
	12	358 08.0 S	0 04.9	135 20.6	9.9	14 50.1	6.9	57.3	45	04 58	05 32	06 02	22 28	23 31	24 32	00 32
	13	13 08.2	03.9	149 49.5	9.8	14 57.0	6.7	57.3	N 40	05 04	05 35	06 02	22 16	23 18	24 18	00 18
	14	28 08.4	02.9	164 18.3	9.7	15 03.7	6.7	57.3	35	05 08	05 37	06 03	22 07	23 07	24 06	00 06
	15	43 08.6	01.9	178 47.0	9.7	15 10.4	6.7	57.3	30	05 11	05 39	06 03	21 58	22 57	23 56	24 52
	16	58 08.8 S	00.9	193 15.7	9.7	15 17.1	6.5	57.3	20	05 16	05 41	06 03	21 43	22 40	23 38	24 34
	17	73 08.9 N	00.1	207 44.4	9.6	15 23.6	6.5	57.4	N 10	05 18	05 43	06 04	21 31	22 26	23 22	24 19
	18	88 09.1 N	0 01.0	222 13.0	9.5	15 30.1	6.4	57.4	0	05 19	05 43	06 04	21 19	22 12	23 08	24 05
	19	103 09.3	02.0	236 41.5	9.5	15 36.5	6.3	57.4	S 10	05 19	05 43	06 04	21 07	21 59	22 54	23 51
	20	118 09.5	03.0	251 10.0	9.4	15 42.8	6.2	57.4	20	05 16	05 42	06 04	20 54	21 44	22 38	23 36
	21	133 09.7	04.0	265 38.4	9.3	15 49.0	6.1	57.4	30	05 12	05 40	06 04	20 40	21 28	22 21	23 18
	22	148 09.9	05.0	280 06.7	9.3	15 55.1	6.1	57.5	35	05 09	05 39	06 04	20 32	21 18	22 10	23 08
	23	163 10.1	06.0	294 35.0	9.3	16 01.2	5.9	57.5	40	05 05	05 37	06 04	20 22	21 07	21 59	22 56
	V I E R N E S	00	178 10.2 N	0 07.0	309 03.3	9.2	16 07.1	5.9	57.5	S 50	04 53	05 31	06 03	19 58	20 39	21 28	22 26
01		193 10.4	08.0	323 31.5	9.1	16 13.0	5.8	57.5	52	04 49	05 29	06 03	19 52	20 32	21 20	22 18
02		208 10.6	08.9	337 59.6	9.1	16 18.8	5.7	57.5	54	04 46	05 27	06 03	19 45	20 24	21 12	22 10
03		223 10.8	09.9	352 27.7	9.0	16 24.5	5.6	57.6	56	04 41	05 25	06 03	19 37	20 15	21 02	22 00
04		238 11.0	10.9	6 55.7	9.0	16 30.1	5.5	57.6	58	04 36	05 23	06 02	19 29	20 05	20 51	21 49
05		253 11.2	11.9	21 23.7	8.9	16 35.6	5.4	57.6	S 60	04 30	05 20	06 02	19 19	19 53	20 38	21 36
06		268 11.4 N	0 12.9	35 51.6	8.8	16 41.0	5.3	57.6	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
07		283 11.5	13.9	50 19.4	8.8	16 46.3	5.3	57.7			Civil		Náut.		20	21
08		298 11.7	14.9	64 47.2	8.8	16 51.6	5.1	57.7							22	23
09		313 11.9	15.9	79 15.0	8.7	16 56.7	5.0	57.7							h m	h m
10		328 12.1	16.8	93 42.7	8.6	17 01.7	5.0	57.7	N 72	h m	h m	h m	h m	h m	h m	h m
11		343 12.3	17.8	108 10.3	8.6	17 06.7	4.9	57.7	N 70	18 23	19 32	20 43	05 21	05 04	■	■
12		358 12.5 N	0 18.8	122 37.9	8.5	17 11.6	4.7	57.8	N 70	18 21	19 23	20 43	05 49	05 52	06 02	06 34
13		13 12.7	19.8	137 05.4	8.5	17 16.3	4.7	57.8	68	18 20	19 16	20 27	06 10	06 23	06 46	07 30
14		28 12.9	20.8	151 32.9	8.4	17 21.0	4.5	57.8	66	18 19	19 11	20 15	06 27	06 46	07 16	08 03
15		43 13.0	21.8	166 00.3	8.4	17 25.5	4.5	57.8	64	18 18	19 06	20 05	06 41	07 05	07 38	08 27
16		58 13.2	22.8	180 27.7	8.3	17 30.0	4.4	57.8	62	18 17	19 02	19 56	06 53	07 20	07 56	08 46
17		73 13.4	23.7	194 55.0	8.3	17 34.4	4.2	57.9	60	18 17	18 58	19 49	07 03	07 32	08 11	09 02
18		88 13.6 N	0 24.7	209 22.3	8.2	17 38.6	4.2	57.9	N 58	18 16	18 55	19 43	07 12	07 43	08 24	09 15
19		103 13.8	25.7	223 49.5	8.2	17 42.8	4.0	57.9	56	18 16	18 53	19 37	07 19	07 53	08 35	09 27
20		118 14.0	26.7	238 16.7	8.2	17 46.8	4.0	57.9	54	18 15	18 50	19 33	07 26	08 01	08 44	09 37
21		133 14.2	27.7	252 43.9	8.0	17 50.8	3.8	57.9	52	18 15	18 48	19 28	07 32	08 09	08 53	09 46
22		148 14.3	28.7	267 10.9	8.1	17 54.6	3.8	58.0	50	18 14	18 47	19 25	07 38	08 16	09 01	09 54
23		163 14.5	29.7	281 38.0	8.0	17 58.4	3.6	58.0	45	18 13	18 43	19 17	07 50	08 30	09 17	10 11
S Á B A D O		00	178 14.7 N	0 30.7	296 05.0	7.9	18 02.0	3.6	58.0	N 40	18 13	18 40	19 12	08 00	08 42	09 31	10 25
	01	193 14.9	31.6	310 31.9	7.9	18 05.6	3.4	58.0	35	18 12	18 38	19 07	08 09	08 53	09 42	10 37
	02	208 15.1	32.6	324 58.8	7.8	18 09.0	3.3	58.0	30	18 12	18 36	19 04	08 16	09 02	09 52	10 47
	03	223 15.3	33.6	339 25.6	7.8	18 12.3	3.2	58.1	20	18 11	18 33	18 59	08 29	09 18	10 10	11 05
	04	238 15.5	34.6	353 52.4	7.8	18 15.5	3.1	58.1	N 10	18 11	18 32	18 56	08 41	09 31	10 25	11 21
	05	253 15.7	35.6	8 19.2	7.7	18 18.6	3.0	58.1	0	18 10	18 31	18 55	08 52	09 44	10 39	11 35
	06	268 15.8 N	0 36.6	22 45.9	7.7	18 21.6	2.9	58.1	S 10	18 10	18 31	18 56	09 02	09 57	10 53	11 50
	07	283 16.0	37.6	37 12.6	7.6	18 24.5	2.8	58.1	20	18 10	18 32	18 58	09 14	10 11	11 08	12 05
	08	298 16.2	38.6	51 39.2	7.6	18 27.3	2.7	58.2	30	18 10	18 34	19 02	09 27	10 26	11 25	12 23
	09	313 16.4	39.5	66 05.8	7.5	18 30.0	2.5	58.2	35	18 10	18 35	19 05	09 35	10 35	11 35	12 33
	10	328 16.6	40.5	80 32.3	7.5	18 32.5	2.5	58.2	40	18 10	18 37	19 09	09 44	10 46	11 47	12 45
	11	343 16.8	41.5	94 58.8	7.5	18 35.0	2.3	58.2	45	18 10	18 39	19 14	09 54	10 58	12 00	12 58
	12	358 17.0 N	0 42.5	109 25.3	7.4	18 37.3	2.2	58.2	S 50	18 10	18 42	19 20	10 06	11 13	12 17	13 15
	13	13 17.2	43.5	123 51.7	7.4	18 39.5	2.1	58.3	52	18 10	18 44	19 24	10 12	11 20	12 24	13 23
	14	28 17.3	44.5	138 18.1	7.3	18 41.6	2.0	58.3	54	18 10	18 46	19 27	10 18	11 28	12 33	13 32
	15	43 17.5	45.5	152 44.4	7.3	18 43.6	1.9	58.3	56	18 11	18 48	19 32	10 26	11 36	12 43	13 42
	16	58 17.7	46.4	167 10.7	7.3	18 45.5	1.8	58.3	58	18 11	18 50	19 36	10 34	11 46	12 54	13 53
	17	73 17.9	47.4	181 37.0	7.2	18 47.3	1.6	58.3	S 60	18 11	18 52	19 42	10 43	11 58	13 07	14 06
	18	88 18.1 N	0 48.4	196 03.2	7.2	18 48.9	1.5	58.4	Día		SOL		LUNA			
	19	103 18.3	49.4	210 29.4	7.2	18 50.4	1.5	58.4			Ec. Tiempo		Paso Mer.		Paso Mer.	Sup.
	20	118 18.5	50.4	224 55.6	7.1	18 51.9	1.3	58.4			00h 12h				Inf.	Edad
	21	133 18.7	51.4	239 21.7	7.1	18 53.2	1.1	58.4								Fase

UT (HmGr)	ARIES	VENUS -4.5	MARTE -1.1	JÚPITER -2.3	SATURNO +0.3	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
DOMINGO								
23 00	180 24.5	222 46.6 S14 18.2	336 31.5 S 6 56.4	78 32.9 N23 15.1	309 11.7 S16 10.2	Acamar	315 18.3 S40 15.2	
01	195 26.9	237 46.5 17.7	351 34.6 56.2	93 35.3 15.1	324 14.2 10.2	Achernar	335 27.0 S57 10.1	
02	210 29.4	252 46.5 17.3	6 37.7 56.0	108 37.6 15.1	339 16.8 10.2	Acrux	173 07.9 S63 10.8	
03	225 31.9	267 46.4 . . 16.8	21 40.8 . . 55.7	123 39.9 . . 15.1	354 19.3 . . 10.1	Adhara	255 12.0 S28 59.9	
04	240 34.3	282 46.3 16.3	36 43.9 55.5	138 42.2 15.1	9 21.9 10.1	Aldebarán	290 48.9 N16 32.1	
05	255 36.8	297 46.3 15.9	51 47.0 55.3	153 44.5 15.1	24 24.4 10.1			
06	270 39.3	312 46.2 S14 15.4	66 50.1 S 6 55.1	168 46.9 N23 15.1	39 26.9 S16 10.1	Alioth	166 19.7 N55 52.8	
07	285 41.7	327 46.2 14.9	81 53.2 54.9	183 49.2 15.1	54 29.5 10.0	Alkaid	152 58.1 N49 14.4	
08	300 44.2	342 46.1 14.4	96 56.3 54.6	198 51.5 15.1	69 32.0 10.0	Al Na'ir	62 07.8 N 8 54.4	
09	315 46.7	357 46.0 . . 13.9	111 59.4 . . 54.4	213 53.8 . . 15.1	84 34.6 . . 10.0	Alnilam	275 45.9 S 1 11.9	
10	330 49.1	12 46.0 13.5	127 02.5 54.2	228 56.1 15.1	99 37.1 09.9	Alphard	217 55.3 S 8 43.5	
11	345 51.6	27 45.9 13.0	142 05.6 54.0	243 58.5 15.0	114 39.7 09.9			
12	0 54.1	42 45.9 S14 12.5	157 08.7 S 6 53.8	259 00.8 N23 15.0	129 42.2 S16 09.9	Alphecca	126 10.3 N26 39.9	
13	15 56.5	57 45.8 12.0	172 11.8 53.5	274 03.1 15.0	144 44.8 09.9	Alpheratz	357 43.3 N29 10.1	
14	30 59.0	72 45.7 11.5	187 14.9 53.3	289 05.4 15.0	159 47.3 09.8	Altair	62 07.8 N 8 54.4	
15	46 01.4	87 45.7 . . 11.1	202 18.1 . . 53.1	304 07.7 . . 15.0	174 49.9 . . 09.8	Ankaa	353 15.6 S42 13.8	
16	61 03.9	102 45.6 10.6	217 21.2 52.9	319 10.0 15.0	189 52.4 09.8	Antares	112 25.4 S26 27.6	
17	76 06.4	117 45.5 10.1	232 24.3 52.6	334 12.4 15.0	204 55.0 09.8			
18	91 08.8	132 45.5 S14 09.6	247 27.4 S 6 52.4	349 14.7 N23 15.0	219 57.5 S16 09.7	Arcturus	145 55.0 N19 06.4	
19	106 11.3	147 45.4 09.1	262 30.5 52.2	4 17.0 15.0	235 00.1 09.7	Atria	107 26.6 S69 02.8	
20	121 13.8	162 45.3 08.6	277 33.6 52.0	19 19.3 15.0	250 02.6 09.7	Avior	234 17.4 S59 33.8	
21	136 16.2	177 45.3 . . 08.2	292 36.8 . . 51.7	34 21.6 . . 15.0	265 05.2 . . 09.6	Bellatrix	278 31.5 N 6 21.5	
22	151 18.7	192 45.2 07.7	307 39.9 51.5	49 23.9 15.0	280 07.7 09.6	Betelgeuse	271 00.7 N 7 24.3	
23	166 21.2	207 45.1 07.2	322 43.0 51.3	64 26.2 14.9	295 10.3 09.6			
LUNES								
24 00	181 23.6	222 45.1 S14 06.7	337 46.1 S 6 51.1	79 28.6 N23 14.9	310 12.8 S16 09.6	Canopus	263 55.9 S52 42.7	
01	196 26.1	237 45.0 06.2	352 49.2 50.8	94 30.9 14.9	325 15.4 09.5	Capella	280 33.8 N46 00.7	
02	211 28.6	252 44.9 05.7	7 52.4 50.6	109 33.2 14.9	340 17.9 09.5	Deneb	49 31.3 N45 19.8	
03	226 31.0	267 44.9 . . 05.2	22 55.5 . . 50.4	124 35.5 . . 14.9	355 20.5 . . 09.5	Denébola	182 32.8 N14 29.4	
04	241 33.5	282 44.8 04.7	37 58.6 50.2	139 37.8 14.9	10 23.0 09.4	Diphda	348 55.7 S17 54.6	
05	256 35.9	297 44.7 04.2	53 01.7 49.9	154 40.1 14.9	25 25.6 09.4			
06	271 38.4	312 44.7 S14 03.7	68 04.9 S 6 49.7	169 42.4 N23 14.9	40 28.1 S16 09.4	Dubhe	193 50.5 N61 40.4	
07	286 40.9	327 44.6 03.2	83 08.0 49.5	184 44.7 14.9	55 30.7 09.4	Elnath	278 12.0 N28 37.0	
08	301 43.3	342 44.5 02.7	98 11.1 49.2	199 47.1 14.9	70 33.2 09.3	Eltanin	90 45.9 N51 29.1	
09	316 45.8	357 44.4 . . 02.2	113 14.3 . . 49.0	214 49.4 . . 14.9	85 35.8 . . 09.3	Enif	33 46.8 N 9 56.4	
10	331 48.3	12 44.4 01.7	128 17.4 48.8	229 51.7 14.8	100 38.3 09.3	Fomalhaut	15 23.8 S29 32.8	
11	346 50.7	27 44.3 01.3	143 20.5 48.6	244 54.0 14.8	115 40.9 09.2			
12	1 53.2	42 44.2 S14 00.8	158 23.7 S 6 48.3	259 56.3 N23 14.8	130 43.4 S16 09.2	Gacrux	171 59.6 S57 11.7	
13	16 55.7	57 44.1 14 00.3	173 26.8 48.1	274 58.6 14.8	145 46.0 09.2	Gienah	175 51.4 S17 37.4	
14	31 58.1	72 44.1 13 59.8	188 29.9 47.9	290 00.9 14.8	160 48.5 09.2	Hadar	148 46.5 S60 26.4	
15	47 00.6	87 44.0 . . 59.3	203 33.1 . . 47.6	305 03.2 . . 14.8	175 51.1 . . 09.1	Hamal	328 00.4 N23 31.7	
16	62 03.1	102 43.9 58.7	218 36.2 47.4	320 05.5 14.8	190 53.6 09.1	Kaus Aust.	83 43.1 S34 22.4	
17	77 05.5	117 43.8 58.2	233 39.4 47.2	335 07.8 14.8	205 56.2 09.1			
18	92 08.0	132 43.8 S13 57.7	248 42.5 S 6 46.9	350 10.1 N23 14.8	220 58.7 S16 09.0	Kochab	137 19.3 N74 05.7	
19	107 10.4	147 43.7 57.2	263 45.7 46.7	5 12.4 14.8	236 01.3 09.0	Markab	13 38.1 N15 16.9	
20	122 12.9	162 43.6 56.7	278 48.8 46.5	20 14.8 14.8	251 03.9 09.0	Menkar	314 14.7 N 4 08.5	
21	137 15.4	177 43.5 . . 56.2	293 51.9 . . 46.2	35 17.1 . . 14.7	266 06.4 . . 08.9	Menkent	148 06.6 S36 26.4	
22	152 17.8	192 43.5 55.7	308 55.1 46.0	50 19.4 14.7	281 09.0 08.9	Miaplacidus	221 38.8 S69 46.9	
23	167 20.3	207 43.4 55.2	323 58.2 45.8	65 21.7 14.7	296 11.5 08.9			
MARTE								
25 00	182 22.8	222 43.3 S13 54.7	339 01.4 S 6 45.5	80 24.0 N23 14.7	311 14.1 S16 08.9	Mirfak	308 39.9 N49 54.7	
01	197 25.2	237 43.2 54.2	354 04.5 45.3	95 26.3 14.7	326 16.6 08.8	Nunki	75 57.7 S26 16.5	
02	212 27.7	252 43.2 53.7	9 07.7 45.1	110 28.6 14.7	341 19.2 08.8	Peacock	53 18.8 S56 41.0	
03	227 30.2	267 43.1 . . 53.2	24 10.8 . . 44.8	125 30.9 . . 14.7	356 21.7 . . 08.8	Póllux	243 27.0 N27 59.3	
04	242 32.6	282 43.0 52.7	39 14.0 44.6	140 33.2 14.7	11 24.3 08.7	Procyon	244 59.1 N 5 11.0	
05	257 35.1	297 42.9 52.1	54 17.1 44.4	155 35.5 14.7	26 26.8 08.7			
06	272 37.5	312 42.8 S13 51.6	69 20.3 S 6 44.1	170 37.8 N23 14.7	41 29.4 S16 08.7	Rasalhague	96 05.9 N12 33.0	
07	287 40.0	327 42.8 51.1	84 23.5 43.9	185 40.1 14.7	56 31.9 08.7	Régulus	207 42.7 N11 53.6	
08	302 42.5	342 42.7 50.6	99 26.6 43.7	200 42.4 14.6	71 34.5 08.6	Rigel	281 11.6 S 8 11.5	
09	317 44.9	357 42.6 . . 50.1	114 29.8 . . 43.4	215 44.7 . . 14.6	86 37.1 . . 08.6	Rigel Kent.	139 50.4 S60 53.4	
10	332 47.4	12 42.5 49.6	129 32.9 43.2	230 47.0 14.6	101 39.6 08.6	Sabik	102 11.8 S15 44.4	
11	347 49.9	27 42.4 49.1	144 36.1 42.9	245 49.3 14.6	116 42.2 08.5			
12	2 52.3	42 42.3 S13 48.5	159 39.3 S 6 42.7	260 51.6 N23 14.6	131 44.7 S16 08.5	Schedar	349 40.4 N56 36.9	
13	17 54.8	57 42.3 48.0	174 42.4 42.5	275 53.9 14.6	146 47.3 08.5	Shaula	96 21.1 S37 06.6	
14	32 57.3	72 42.2 47.5	189 45.6 42.2	290 56.2 14.6	161 49.8 08.4	Sirius	258 33.2 S16 44.5	
15	47 59.7	87 42.1 . . 47.0	204 48.7 . . 42.0	305 58.5 . . 14.6	176 52.4 . . 08.4	Spica	158 30.4 S11 14.2	
16	63 02.2	102 42.0 46.5	219 51.9 41.8	321 00.8 14.6	191 55.0 08.4	Suhail	222 51.7 S43 29.8	
17	78 04.7	117 41.9 45.9	234 55.1 41.5	336 03.1 14.6	206 57.5 08.4			
18	93 07.1	132 41.8 S13 45.4	249 58.2 S 6 41.3	351 05.4 N23 14.5	222 00.1 S16 08.3	Vega	80 38.6 N38 47.7	
19	108 09.6	147 41.8 44.9	265 01.4 41.0	6 07.7 14.5	237 02.6 08.3	Zuben'ubi	137 04.6 S16 06.0	
20	123 12.0	162 41.7 44.4	280 04.6 40.8	21 10.0 14.5	252 05.2 08.3			
21	138 14.5	177 41.6 . . 43.8	295 07.8 . . 40.6	36 12.3 . . 14.5	267 07.7 . . 08.2			
22	153 17.0	192 41.5 43.3	310 10.9 40.3	51 14.6 14.5	282 10.3 08.2			
23	168 19.4	207 41.4 42.8	325 14.1 40.1	66 16.9 14.5	297 12.8 08.2			
Paso Mer. 11 52.5	v -0.1	d 0.5	v 3.1 d 0.2	v 2.3 d 0.0	v 2.6 d 0.0			
							AHS	Paso Mer.
								h m
							Venus	41 21.4 9 09
							Marte	156 22.5 1 29
							Júpiter	258 04.9 18 39
							Saturno	128 49.2 3 19

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		23	24	25	26	
d h	° /	°	° /	°	° /	°	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
DOMINGO	23 00	178 19.2	N 0 54.3	282 40.0	7.0	S 18 56.3	0.9	58.5	N 72	02 54	04 29	05 38	04 08	04 48	05 01	05 33
	01	193 19.4	55.3	297 06.0	6.9	18 57.2	0.7	58.5	N 68	03 17	04 39	05 41	04 08	04 48	05 01	05 04
	02	208 19.6	56.3	311 31.9	7.0	18 57.9	0.6	58.5	66	03 49	04 54	05 46	02 40	03 31	04 04	04 26
	03	223 19.8	57.3	325 57.9	6.9	18 58.5	0.5	58.5	64	04 00	04 59	05 47	02 16	03 08	03 45	04 11
	04	238 20.0	58.3	340 23.8	6.9	18 59.0	0.3	58.6	62	04 10	05 04	05 49	01 56	02 50	03 30	04 00
	05	253 20.2	0 59.3	354 49.7	6.9	18 59.3	0.2	58.6	60	04 18	05 08	05 50	01 41	02 34	03 17	03 49
	06	268 20.3	N 1 00.2	9 15.6	6.8	S 18 59.5	0.2	58.6	N 58	04 24	05 12	05 51	01 27	02 22	03 06	03 41
	07	283 20.5	01.2	23 41.4	6.9	18 59.7	0.1	58.6	56	04 30	05 15	05 52	01 16	02 10	02 56	03 33
	08	298 20.7	02.2	38 07.3	6.8	18 59.6	0.1	58.6	54	04 35	05 18	05 53	01 06	02 01	02 47	03 29
	09	313 20.9	03.2	52 33.1	6.7	18 59.5	0.2	58.7	52	04 40	05 20	05 54	00 57	01 52	02 39	03 20
	10	328 21.1	04.2	66 58.8	6.8	18 59.3	0.4	58.7	50	04 44	05 22	05 54	00 49	01 44	02 32	03 14
	11	343 21.3	05.2	81 24.6	6.7	18 58.9	0.5	58.7	45	04 52	05 27	05 56	00 32	01 27	02 17	03 02
	12	358 21.5	N 1 06.2	95 50.3	6.8	S 18 58.4	0.6	58.7	N 40	04 59	05 30	05 57	00 18	01 14	02 05	02 51
	13	13 21.7	07.1	110 16.1	6.7	18 57.8	0.7	58.7	35	05 04	05 33	05 58	00 06	01 02	01 54	02 43
	14	28 21.8	08.1	124 41.8	6.6	18 57.1	0.9	58.8	30	05 07	05 35	05 59	24 52	00 52	01 45	02 35
	15	43 22.0	09.1	139 07.4	6.7	18 56.2	0.9	58.8	20	05 13	05 39	06 01	24 34	00 34	01 29	02 22
	16	58 22.2	10.1	153 33.1	6.7	18 55.3	1.1	58.8	N 10	05 17	05 41	06 02	24 19	00 19	01 15	02 10
	17	73 22.4	11.1	167 58.8	6.6	18 54.2	1.3	58.8	0	05 18	05 42	06 03	24 05	00 05	01 02	01 59
	18	88 22.6	N 1 12.1	182 24.4	6.6	S 18 52.9	1.3	58.8	S 10	05 19	05 43	06 04	23 51	24 49	00 49	01 48
	19	103 22.8	13.1	196 50.0	6.6	18 51.6	1.5	58.9	20	05 17	05 43	06 05	23 36	24 35	00 35	01 36
	20	118 23.0	14.0	211 15.6	6.6	18 50.1	1.5	58.9	30	05 14	05 42	06 06	23 18	24 19	00 19	01 23
	21	133 23.2	15.0	225 41.2	6.6	18 48.6	1.7	58.9	35	05 12	05 41	06 06	23 08	24 10	00 10	01 15
	22	148 23.4	16.0	240 06.8	6.6	18 46.9	1.9	58.9	40	05 08	05 40	06 07	22 56	23 59	25 06	01 06
	23	163 23.5	17.0	254 32.4	6.5	18 45.0	1.9	58.9	45	05 04	05 38	06 07	22 43	23 47	24 56	00 56
	LUNES	24 00	178 23.7	N 1 18.0	268 57.9	6.6	S 18 43.1	2.1	58.9	S 50	04 58	05 36	06 08	22 26	23 32	24 43	00 43
01		193 23.9	19.0	283 23.5	6.6	18 41.0	2.2	59.0	52	04 55	05 34	06 08	22 18	23 25	24 38	00 38
02		208 24.1	20.0	297 49.1	6.5	18 38.8	2.3	59.0	54	04 52	05 33	06 08	22 10	23 17	24 31	00 31
03		223 24.3	20.9	312 14.6	6.5	18 36.5	2.4	59.0	56	04 48	05 32	06 09	22 00	23 08	24 24	00 24
04		238 24.5	21.9	326 40.1	6.6	18 34.1	2.6	59.0	58	04 43	05 30	06 09	21 49	22 58	24 16	00 16
05		253 24.7	22.9	341 05.7	6.5	18 31.5	2.6	59.0	S 60	04 38	05 28	06 09	21 36	22 46	24 06	00 06
06		268 24.9	N 1 23.9	355 31.2	6.5	S 18 28.9	2.8	59.1	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
07		283 25.0	24.9	9 56.7	6.6	18 26.1	3.0	59.1				23	24	25	26	
08		298 25.2	25.9	24 22.3	6.5	18 23.1	3.0	59.1	N 72	h m	h m	h m	h m	h m	h m	h m
09		313 25.4	26.8	38 47.8	6.5	18 20.1	3.2	59.1								
10		328 25.6	27.8	53 13.3	6.5	18 16.9	3.2	59.1	N 70	h m	h m	h m	h m	h m	h m	h m
11		343 25.8	28.8	67 38.8	6.5	18 13.7	3.4	59.1	N 68	18 37	19 47	21 25	06 34	07 54	09 41	11 08
12		358 26.0	N 1 29.8	82 04.3	6.6	S 18 10.3	3.6	59.2	N 70	18 34	19 36	21 00	06 34	07 54	09 41	11 35
13		13 26.2	30.8	96 29.9	6.5	18 06.7	3.6	59.2	68	18 31	19 28	20 41	07 30	08 40	10 13	11 56
14		28 26.4	31.8	110 55.4	6.5	18 03.1	3.7	59.2	66	18 29	19 21	20 27	08 03	09 11	10 36	12 12
15		43 26.6	32.7	125 20.9	6.6	17 59.4	3.9	59.2	64	18 27	19 15	20 15	08 27	09 33	10 55	12 25
16		58 26.7	33.7	139 46.5	6.5	17 55.5	4.0	59.2	62	18 25	19 10	20 05	08 46	09 51	11 10	12 36
17		73 26.9	34.7	154 12.0	6.6	17 51.5	4.1	59.2	60	18 24	19 06	19 57	09 02	10 06	11 22	12 46
18		88 27.1	N 1 35.7	168 37.6	6.5	S 17 47.4	4.3	59.3	N 58	18 23	19 02	19 50	09 15	10 19	11 33	12 54
19		103 27.3	36.7	183 03.1	6.6	17 43.1	4.3	59.3	56	18 22	18 59	19 44	09 27	10 30	11 42	13 01
20		118 27.5	37.7	197 28.7	6.6	17 38.8	4.5	59.3	54	18 21	18 56	19 39	09 37	10 39	11 51	13 08
21		133 27.7	38.6	211 54.3	6.6	17 34.3	4.5	59.3	52	18 20	18 54	19 34	09 46	10 48	11 58	13 13
22		148 27.9	39.6	226 19.9	6.6	17 29.8	4.7	59.3	50	18 19	18 51	19 30	09 54	10 56	12 05	13 19
23		163 28.1	40.6	240 45.5	6.6	17 25.1	4.9	59.3	45	18 17	18 47	19 21	10 11	11 12	12 19	13 30
MARTES		24 00	178 28.2	N 1 41.6	255 11.1	6.6	S 17 20.2	4.9	59.4	N 40	18 16	18 43	19 15	10 25	11 25	12 31	13 39
	01	193 28.4	42.6	269 36.7	6.6	17 15.3	5.0	59.4	35	18 15	18 40	19 10	10 37	11 37	12 41	13 47
	02	208 28.6	43.6	284 02.3	6.7	17 10.3	5.2	59.4	30	18 14	18 38	19 06	10 47	11 47	12 49	13 54
	03	223 28.8	44.5	298 28.0	6.6	17 05.1	5.2	59.4	20	18 12	18 34	19 00	11 05	12 04	13 04	14 06
	04	238 29.0	45.5	312 53.6	6.7	16 59.9	5.4	59.4	N 10	18 11	18 32	18 56	11 21	12 19	13 17	14 16
	05	253 29.2	46.5	327 19.3	6.7	16 54.5	5.5	59.4	0	18 10	18 30	18 54	11 35	12 32	13 29	14 26
	06	268 29.4	N 1 47.5	341 45.0	6.7	S 16 49.0	5.6	59.5	S 10	18 08	18 29	18 54	11 50	12 46	13 42	14 35
	07	283 29.6	48.5	356 10.7	6.7	16 43.4	5.7	59.5	20	18 07	18 29	18 55	12 05	13 01	13 54	14 45
	08	298 29.8	49.5	10 36.4	6.7	16 37.7	5.9	59.5	30	18 06	18 30	18 58	12 23	13 17	14 09	14 57
	09	313 29.9	50.4	25 02.1	6.8	16 31.8	5.9	59.5	35	18 06	18 31	19 00	12 33	13 27	14 17	15 04
	10	328 30.1	51.4	39 27.9	6.8	16 25.9	6.1	59.5	40	18 05	18 32	19 04	12 45	13 38	14 27	15 11
	11	343 30.3	52.4	53 53.7	6.8	16 19.8	6.1	59.5	45	18 05	18 34	19 08	12 58	13 51	14 38	15 20
	12	358 30.5	N 1 53.4	68 19.5	6.8	S 16 13.7	6.3	59.5	S 50	18 04	18 36	19 14	13 15	14 07	14 52	15 30
	13	13 30.7	54.4	82 45.3	6.8	16 07.4	6.4	59.6	52	18 03	18 37	19 16	13 23	14 14	14 58	15 35
	14	28 30.9	55.4	97 11.1	6.9	16 01.0	6.4	59.6	54	18 03	18 38	19 20	13 32	14 22	15 05	15 40
	15	43 31.1	56.3	111 37.0	6.8	15 54.6	6.6	59.6	56	18 03	18 40	19 23	13 42	14 32	15 13	15 46
	16	58 31.3	57.3	126 02.8	6.9	15 48.0	6.7	59.6	58	18 02	18 41	19 27	13 53	14 42	15 21	15 53
	17	73 31.5	58.3	140 28.7	6.9	15 41.3	6.8	59.6	S 60	18 02	18 43	19 32	14 06	14 54	15 31	16 00
	18	88 31.6	N 1 59.3	154 54.6	7.0	S 15 34.5	6.9	59.6	Día	SOL		Paso Mer.	LUNA			
	19	103 31.8	2 00.3	169 20.6	7.0	15 27.6	7.0	59.6		Ec. Tiempo	Paso Mer.		Paso Mer.		Edad	Fase
	20	118 32.0	01.3	183 46.6	6.9	15 20.6	7.1	59.6	00h	12h		Sup.	Inf.			
	21	133 32.2	02.2	198 12.5	7.1	15 13.5	7.2	59.7	d	m s	m s	h m	h m	d	%	
	22	148 32.4	03.2	212 38.6	7.0	15 06.3	7.3	59.7	23	06 44	06 34	12 07	05 22	17 50	22 57	
	23	163 32.6	04.2	227 04.6	7.1	S 14 59.0	7.4	59.7	24							

UT (HmGr)	ARIES				VENUS -4.5				MARTE -1.2				JÚPITER -2.2				SATURNO+0.3				ESTRELLAS						
	AHGr		AHGr		Dec		AHGr		Dec		AHGr		Dec		AHGr		Dec		Nombre		AHS		Dec				
26	d	h	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'			
	00	183	21.9		222	41.3	S13	42.3	340	17.3	S	6	39.8	81	19.2	N23	14.5	312	15.4	S16	08.1	Acamar	315	18.3	S40	15.2	
	01	198	24.4		237	41.2		41.7	355	20.4			39.6	96	21.5		14.5	327	18.0		08.1	Achernar	335	27.0	S57	10.0	
	02	213	26.8		252	41.1		41.2	10	23.6			39.3	111	23.8		14.5	342	20.5		08.1	Acrux	173	07.9	S63	10.8	
	03	228	29.3		267	41.1		40.7	25	26.8			39.1	126	26.1		14.5	357	23.1		08.1	Adhara	255	12.0	S28	59.9	
	04	243	31.8		282	41.0		40.1	40	30.0			38.9	141	28.4		14.4	12	25.6		08.0	Aldebarán	290	48.9	N16	32.1	
	05	258	34.2		297	40.9		39.6	55	33.2			38.6	156	30.7		14.4	27	28.2		08.0						
	06	273	36.7		312	40.8	S13	39.1	70	36.3	S	6	38.4	171	33.0	N23	14.4	42	30.8	S16	08.0	Alioth	166	19.7	N55	52.8	
	07	288	39.2		327	40.7		38.5	85	39.5			38.1	186	35.3		14.4	57	33.3		07.9	Alkaid	152	58.1	N49	14.4	
	08	303	41.6		342	40.6		38.0	100	42.7			37.9	201	37.6		14.4	72	35.9		07.9	Al Na'ir	27	43.5	S46	53.1	
M I E R C O L E S	09	318	44.1		357	40.5		37.5	115	45.9		37.6	216	39.9		14.4	87	38.4		07.9	Anilam	275	45.9	S	1	11.9	
	10	333	46.5		12	40.4		36.9	130	49.1		37.4	231	42.2		14.4	102	41.0		07.8	Alphard	217	55.3	S	8	43.5	
	11	348	49.0		27	40.3		36.4	145	52.2		37.2	246	44.4		14.4	117	43.5		07.8							
	12	3	51.5		42	40.2	S13	35.9	160	55.4	S	6	36.9	261	46.7	N23	14.4	132	46.1	S16	07.8	Alphecca	126	10.3	N26	39.9	
	13	18	53.9		57	40.2		35.3	175	58.6		36.7	276	49.0		14.4	147	48.7		07.8	Alpheratz	357	43.3	N29	10.1		
	14	33	56.4		72	40.1		34.8	191	01.8		36.4	291	51.3		14.3	162	51.2		07.7	Altair	62	07.8	N	8	54.4	
	15	48	58.9		87	40.0		34.3	206	05.0		36.2	306	53.6		14.3	177	53.8		07.7	Ankaa	353	15.6	S42	13.8		
	16	64	01.3		102	39.9		33.7	221	08.2		35.9	321	55.9		14.3	192	56.3		07.7	Antares	112	25.4	S26	27.7		
	17	79	03.8		117	39.8		33.2	236	11.4		35.7	336	58.2		14.3	207	58.9		07.6							
	18	94	06.3		132	39.7	S13	32.6	251	14.6	S	6	35.4	352	00.5	N23	14.3	223	01.5	S16	07.6	Arcturus	145	55.0	N19	06.4	
19	109	08.7		147	39.6		32.1	266	17.8		35.2	7	02.8	14.3	238	04.0		07.6			Atria	107	26.5	S69	02.8		
J U V E S	20	124	11.1		162	39.5		31.5	281	21.0		34.9	22	05.1	14.3	253	06.6		07.5			Avior	234	17.4	S59	33.8	
	21	139	13.6		177	39.4		31.0	296	24.1		34.7	37	07.4		14.3	268	09.1		07.5	Bellatrix	278	31.8	N	6	21.5	
	22	154	16.1		192	39.3		30.5	311	27.3		34.4	52	09.7	14.3	283	11.7		07.5			Betelgeuse	271	00.8	N	7	24.3
	23	169	18.6		207	39.2		29.9	326	30.5		34.2	67	11.9	14.2	298	14.3		07.4								
	00	184	21.0		222	39.1	S13	29.4	341	33.7	S	6	33.9	82	14.2	N23	14.2	313	16.8	S16	07.4	Canopus	263	55.9	S52	42.7	
	01	199	23.5		237	39.0		28.8	356	36.9		33.7	97	16.5		14.2	328	19.4		07.4	Capella	280	33.8	N46	00.7		
	02	214	26.0		252	38.9		28.3	11	40.1		33.5	112	18.8		14.2	343	22.0		07.4	Deneb	49	31.3	N45	19.8		
	03	229	28.4		267	38.8		27.7	26	43.3		33.2	127	21.1		14.2	358	24.5		07.3	Denebola	182	32.8	N14	29.4		
	04	244	30.9		282	38.7		27.2	41	46.5		33.0	142	23.4		14.2	13	27.1		07.3	Diphda	348	55.7	S17	54.6		
	05	259	33.4		297	38.6		26.6	56	49.7		32.7	157	25.7		14.2	28	29.6		07.3							
D I P H O L A S	06	274	35.8		312	38.5	S13	26.1	71	52.9	S	6	32.5	172	28.0	N23	14.2	43	32.2	S16	07.2	Dubhe	193	50.5	N61	40.4	
	07	289	38.3		327	38.4		25.5	86	56.2		32.2	187	30.2		14.2	58	34.8		07.2	Elnath	278	12.0	N28	37.0		
	08	304	40.8		342	38.3		25.0	101	59.4		32.0	202	32.5		14.1	73	37.3		07.2	Eltanin	90	45.8	N51	29.1		
	09	319	43.2		357	38.2		24.4	117	02.6		31.7	217	34.8		14.1	88	39.9		07.1	Enif	33	46.8	N	9	56.4	
	10	334	45.7		12	38.1		23.9	132	05.8		31.4	232	37.1		14.1	103	42.5		07.1	Fomalhaut	15	23.7	S29	32.8		
	11	349	48.1		27	38.0		23.3	147	09.0		31.2	247	39.4		14.1	118	45.0		07.1							
	12	4	50.6		42	37.9	S13	22.8	162	12.2	S	6	30.9	262	41.7	N23	14.1	133	47.6	S16	07.0	Gacrux	171	59.6	S57	11.7	
	13	19	53.1		57	37.8		22.2	177	15.4		30.7	277	44.0		14.1	148	50.1		07.0	Gienah	175	51.4	S17	37.4		
	14	34	55.5		72	37.7		21.6	192	18.6		30.4	292	46.2		14.1	163	52.7		07.0	Hadar	148	46.4	S60	26.4		
	15	49	58.0		87	37.6		21.1	207	21.8		30.2	307	48.5		14.1	178	55.3		06.9	Hamal	328	00.0	N23	31.7		
K A U S A U S	16	65	00.5		102	37.5		20.5	222	25.0		29.9	322	50.8		14.1	193	57.8		06.9	Kaus Aust.	83	43.1	S34	22.4		
	17	80	02.9		117	37.4		20.0	237	28.3		29.7	337	53.1		14.0	209	00.4		06.9							
	18	95	05.4		132	37.3	S13	19.4	252	31.5	S	6	29.4	352	55.4	N23	14.0	224	03.0	S16	06.9	Kochab	137	19.2	N74	05.7	
	19	110	07.9		147	37.2		18.8	267	34.7		29.2	7	57.7	14.0	239	05.5		06.8	Markab	13	38.1	N15	16.9			
	20	125	10.3		162	37.1		18.3	282	37.9		28.9	22	59.9	14.0	254	08.1		06.8	Menkar	314	14.7	N	4	08.5		
	21	140	12.8		177	37.0		17.7	297	41.1		28.7	38	02.2		14.0	269	10.7		06.8	Menkent	148	06.5	S36	26.4		
	22	155	15.3		192	36.9		17.2	312	44.3		28.4	53	04.5	14.0	284	13.2		06.7	Miaplacidus	221	38.9	S69	46.9			
	23	170	17.7		207	36.8		16.6	327	47.6		28.2	68	06.8	14.0	299	15.8		06.7								
	28	00	185	20.2		222	36.7	S13	16.0	342	50.8	S	6	27.9	83	09.1	N23	14.0	314	18.3	S16	06.7	Mirfak	308	39.9	N49	54.7
		01	200	22.6		237	36.6		15.5	357	54.0		27.7	98	11.4		14.0	329	20.9		06.6	Nunki	75	57.7	S26	16.5	
02		215	25.1		252	36.5		14.9	12	57.2		27.1	113	13.6		13.9	344	23.5		06.6	Peacock	53	18.7	S56	41.1		
03		230	27.6		267	36.4		14.3	28	00.4		27.1	128	15.9		13.9	359	26.0		06.6	Póllux	243	27.0	N27	59.3		
04		245	30.0		282	36.3		13.8	43	03.7		26.9	143	18.2		13.9	14	28.6		06.5	Procyon	244	59.1	N	5	11.0	
05		260	32.5		297	36.2		13.2	58	06.9		26.6	158	20.5		13.9	29	31.2		06.5							
06		275	35.0		312	36.1	S13	12.6	73	10.1	S	6	26.4	173	22.8	N23	13.9	44	33.7	S16	06.5	Rasalhague	96	05.9	N12	33.0	
07		290	37.4		327	36.0		12.1	88	13.3		26.1	188	25.0		13.9	59	36.3		06.4	Régulus	207	42.7	N11	53.6		
08		305	39.9		342	35.9		11.5	103	16.6		25.9	203	27.3		13.9	74	38.9		06.4	Rigel	281	11.6	S	8	11.5	
09		320	42.4		357	35.8		10.9	118	19.8		25.6	218	29.6		13.9	89	41.4		06.4	Rigil Kent.	139	50.3	S60	53.4		
V I E R N E S	10	335	44.8		12	35.7		10.3	133	23.0		25.3	233	31.9		13.9	104	44.0		06.3	Sabik	102	11.8	S15	44.4		
	11	350	47.3		27	35.6		09.8	148	26.3		25.1	248	34.1		13.8	119	46.6		06.3							
	12	5	49.7		42	35.5	S13	09.2	163	29.5	S	6	24.8	263	36.4	N23	13.8	134	49.1	S16	06.3	Schedar	349	40.4	N56	36.9	
	13	20	52.2		57	35.4		08.6	178	32.7		24.6	278	38.7		13.8	149	51.7		06.2	Shaula	96	21.1	S37	06.6		
	14	35	54.7		72																						

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		26	27	28	29
M I É R C O L E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m
	00	178 32.8	N 2 05.2	241 30.7	7.1	S14 51.6	7.5 59.7	N 70	02 30	04 12	05 23	05 33	05 22	05 14	05 06
	01	193 33.0	06.2	255 56.8	7.1	14 44.1	7.6 59.7	68	03 19	04 34	05 31	04 43	04 51	04 57	05 02
	02	208 33.1	07.1	270 22.9	7.1	14 36.5	7.7 59.7	66	03 35	04 42	05 34	04 26	04 40	04 51	05 00
	03	223 33.3	08.1	284 49.0	7.2	14 28.8	7.8 59.7	64	03 48	04 48	05 37	04 11	04 31	04 46	04 58
	04	238 33.5	09.1	299 15.2	7.2	14 21.0	7.9 59.7	62	03 58	04 54	05 39	04 00	04 22	04 41	04 57
	05	253 33.7	10.1	313 41.4	7.2	14 13.1	8.0 59.8	60	04 07	04 59	05 41	03 49	04 15	04 37	04 56
	06	268 33.9	N 2 11.1	328 07.6	7.3	S14 05.1	8.0 59.8	N 58	04 15	05 03	05 43	03 41	04 09	04 33	04 55
	07	283 34.1	12.0	342 33.9	7.2	13 57.1	8.2 59.8	56	04 22	05 07	05 44	03 33	04 03	04 30	04 54
	08	298 34.3	13.0	357 00.1	7.3	13 48.9	8.3 59.8	54	04 27	05 10	05 46	03 26	03 59	04 27	04 53
	09	313 34.5	14.0	11 26.4	7.4	13 40.6	8.3 59.8	52	04 32	05 13	05 47	03 20	03 54	04 24	04 52
	10	328 34.7	15.0	25 52.8	7.3	13 32.3	8.5 59.8	50	04 37	05 16	05 48	03 14	03 50	04 22	04 52
	11	343 34.8	16.0	40 19.1	7.4	13 23.8	8.5 59.8	45	04 46	05 21	05 50	03 02	03 41	04 17	04 50
	12	358 35.0	N 2 17.0	54 45.5	7.5	S13 15.3	8.6 59.8	N 40	04 53	05 25	05 52	02 51	03 33	04 12	04 49
	13	13 35.2	17.9	69 12.0	7.4	13 06.7	8.7 59.8	35	04 59	05 29	05 54	02 43	03 27	04 08	04 48
	14	28 35.4	18.9	83 38.4	7.5	12 58.0	8.8 59.8	30	05 04	05 32	05 56	02 35	03 21	04 05	04 47
	15	43 35.6	19.9	98 04.9	7.5	12 49.2	8.9 59.8	20	05 10	05 36	05 58	02 22	03 12	03 59	04 45
	16	58 35.8	20.9	112 31.4	7.6	12 40.3	8.9 59.9	N 10	05 15	05 39	06 00	02 10	03 03	03 54	04 44
	17	73 36.0	21.9	126 58.0	7.5	12 31.4	9.1 59.9	0	05 17	05 41	06 02	01 59	02 55	03 49	04 42
	18	88 36.2	N 2 22.8	141 24.5	7.6	S12 22.3	9.1 59.9	S 10	05 19	05 43	06 04	01 48	02 47	03 44	04 41
	19	103 36.4	23.8	155 51.1	7.7	12 13.2	9.2 59.9	20	05 18	05 44	06 06	01 36	02 38	03 39	04 40
	20	118 36.5	24.8	170 17.8	7.6	12 04.0	9.2 59.9	30	05 16	05 44	06 08	01 23	02 28	03 33	04 38
	21	133 36.7	25.8	184 44.4	7.7	11 54.8	9.4 59.9	35	05 14	05 43	06 09	01 15	02 22	03 30	04 37
	22	148 36.9	26.8	199 11.1	7.7	11 45.4	9.4 59.9	40	05 11	05 43	06 10	01 06	02 16	03 26	04 36
	23	163 37.1	27.7	213 37.8	7.8	11 36.0	9.5 59.9	45	05 08	05 42	06 11	00 56	02 08	03 22	04 35
J U E V E S	00	178 37.3	N 2 28.7	228 04.6	7.8	S11 26.5	9.6 59.9	S 50	05 03	05 40	06 13	00 43	01 59	03 16	04 34
	01	193 37.5	29.7	242 31.4	7.8	11 16.9	9.7 59.9	52	05 00	05 40	06 13	00 38	01 55	03 14	04 33
	02	208 37.7	30.7	256 58.2	7.8	11 07.2	9.7 59.9	54	04 57	05 39	06 14	00 31	01 50	03 11	04 32
	03	223 37.9	31.7	271 25.0	7.9	10 57.5	9.8 59.9	56	04 54	05 38	06 15	00 24	01 45	03 08	04 31
	04	238 38.0	32.6	285 51.9	7.9	10 47.7	9.9 59.9	58	04 51	05 37	06 16	00 16	01 39	03 05	04 31
	05	253 38.2	33.6	300 18.8	8.0	10 37.8	9.9 59.9	S 60	04 46	05 35	06 17	00 06	01 32	03 01	04 30
	06	268 38.4	N 2 34.6	314 45.8	7.9	S10 27.9	10.0 59.9	Lat.	Ocaso Sol	Crepúsculo Civil	Náut.	Ocaso Luna			
	07	283 38.6	35.6	329 12.7	8.1	10 17.9	10.1 59.9					26	27	28	29
	08	298 38.8	36.6	343 39.8	8.0	10 07.8	10.1 59.9	N 72	h m	h m	h m	h m	h m	h m	h m
	09	313 39.0	37.5	358 06.8	8.0	9 57.7	10.2 59.9								
	10	328 39.2	38.5	12 33.8	8.1	9 47.5	10.3 59.9	N 70	18 51	20 02	21 48	11 08	13 14	15 16	17 14
	11	343 39.4	39.5	27 00.9	8.2	9 37.2	10.3 60.0	68	18 46	19 50	21 18	11 35	13 30	15 22	17 13
	12	358 39.6	N 2 40.5	41 28.1	8.1	S 9 26.9	10.4 60.0	66	18 42	19 40	20 56	11 56	13 42	15 28	17 13
	13	13 39.7	41.4	55 55.2	8.2	9 16.5	10.4 60.0	64	18 39	19 31	20 39	12 12	13 52	15 32	17 12
	14	28 39.9	42.4	70 22.4	8.2	9 06.1	10.5 60.0	62	18 36	19 25	20 26	12 25	14 00	15 36	17 12
	15	43 40.1	43.4	84 49.6	8.3	8 55.6	10.6 60.0	60	18 33	19 19	20 15	12 36	14 07	15 40	17 11
	16	58 40.3	44.4	99 16.9	8.2	8 45.0	10.6 60.0	58	18 31	19 14	20 06	12 46	14 13	15 42	17 11
	17	73 40.5	45.4	113 44.1	8.3	8 34.4	10.6 60.0	N 58	18 29	19 09	19 58	12 54	14 19	15 45	17 11
	18	88 40.7	N 2 46.3	128 11.4	8.4	S 8 23.8	10.8 60.0	56	18 28	19 05	19 51	13 01	14 24	15 47	17 11
	19	103 40.9	47.3	142 38.8	8.3	8 13.0	10.7 60.0	54	18 26	19 02	19 45	13 08	14 28	15 49	17 10
	20	118 41.1	48.3	157 06.1	8.4	8 02.3	10.8 60.0	52	18 25	18 59	19 40	13 13	14 32	15 51	17 10
	21	133 41.2	49.3	171 33.5	8.4	7 51.5	10.9 60.0	50	18 24	18 56	19 35	13 19	14 35	15 53	17 10
	22	148 41.4	50.2	186 00.9	8.5	7 40.6	10.9 60.0	45	18 21	18 51	19 26	13 30	14 43	15 56	17 10
	23	163 41.6	51.2	200 28.4	8.5	7 29.7	11.0 60.0	N 40	18 19	18 46	19 18	13 39	14 49	15 59	17 09
	V I E R N E S	00	178 41.8	N 2 52.2	214 55.9	8.5	S 7 18.7	11.0 60.0	35	18 17	18 43	19 12	13 47	14 54	16 02	17 09
01		193 42.0	53.2	229 23.4	8.5	7 07.7	11.0 60.0	30	18 16	18 40	19 08	13 54	14 59	16 04	17 09
02		208 42.2	54.2	243 50.9	8.6	6 56.7	11.1 60.0	20	18 13	18 35	19 01	14 06	15 07	16 08	17 08
03		223 42.4	55.1	258 18.5	8.6	6 45.6	11.2 59.9	N 10	18 11	18 32	18 56	14 16	15 14	16 11	17 08
04		238 42.6	56.1	272 46.1	8.6	6 34.4	11.1 59.9	0	18 09	18 29	18 53	14 26	15 21	16 15	17 07
05		253 42.7	57.1	287 13.7	8.6	6 23.3	11.2 59.9	S 10	18 07	18 28	18 52	14 35	15 27	16 18	17 07
06		268 42.9	N 2 58.1	301 41.3	8.7	S 6 12.1	11.3 59.9	20	18 05	18 27	18 52	14 45	15 34	16 21	17 06
07		283 43.1	2 59.0	316 09.0	8.7	6 00.8	11.3 59.9	30	18 03	18 27	18 54	14 57	15 42	16 25	17 06
08		298 43.3	3 00.0	330 36.7	8.7	5 49.5	11.3 59.9	35	18 02	18 27	18 56	15 04	15 46	16 27	17 06
09		313 43.5	01.0	345 04.4	8.8	5 38.2	11.3 59.9	40	18 00	18 27	18 59	15 11	15 51	16 29	17 05
10		328 43.7	02.0	359 32.2	8.7	5 26.9	11.4 59.9	45	17 59	18 28	19 02	15 20	15 57	16 32	17 05
11		343 43.9	02.9	13 59.9	8.8	5 15.5	11.4 59.9	S 50	17 57	18 29	19 07	15 30	16 04	16 35	17 04
12		358 44.1	N 3 03.9	28 27.7	8.9	S 5 04.1	11.5 59.9	52	17 57	18 30	19 09	15 35	16 07	16 36	17 04
13		13 44.3	04.9	42 55.6	8.8	4 52.6	11.5 59.9	54	17 56	18 31	19 12	15 40	16 11	16 38	17 04
14		28 44.4	05.9	57 23.4	8.9	4 41.1	11.4 59.9	56	17 55	18 32	19 15	15 46	16 15	16 40	17 03
15		43 44.6	06.9	71 51.3	8.9	4 29.7	11.6 59.9	58	17 54	18 33	19 19	15 53	16 19	16 42	17 03
16		58 44.8	07.8	86 19.2	8.9	4 18.1	11.5 59.9	S 60	17 53	18 34	19 23	16 00	16 24	16 44	17 03
17		73 45.0	08.8	100 47.1	9.0	4 06.6	11.6 59.9	Día	SOL		Paso Mer.	LUNA			
18		88 45.2	N 3 09.8	115 15.1	8.9	S 3 55.0	11.6 59.9		Ec. Tiempo			Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase
19		103 45.4	10.8	129 43.0	9.0	3 43.4	11.6 59.9	00h	12h						
20		118 45.6	11.7	144 11.0	9.0	3 31.8	11.6 59.9								
21		133 45.8	12.7	158 39.0	9.1	3 20.2	11.6 59.8	d	m s	m s	h m	h m	h m	d %	
22		148 45.9	13.7	173 07.1	9.0	3 08.6	11.7 59.8	26	05 49	05 40	12 06	08 12	20 40	25 23	
23		163 46.1	14.7	187 35.1	9.1	S 2 56.9	11.7 59.8	27	05 31	05 22	12 05	09 08	21 35	26 14	
		S/D 16.1	<i>d</i> 1.0	S/D 16.3	16.3	16.3	16.3</								

UT (HmGr)	ARIES	VENUS -4.4	MARTE -1.3	JÚPITER -2.2	SATURNO +0.3	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
29 00	186 19.3	222 34.2 S13 02.2	344 08.3 S 6 21.7	84 03.7 N23 13.7	315 20.0 S16 05.9	Acamar 315 18.3 S40 15.2
01	201 21.8	237 34.0 01.7	359 11.6 21.4	99 06.0 13.7	330 22.5 05.9	Achernar 335 27.0 S57 10.0
02	216 24.2	252 33.9 01.1	14 14.8 21.2	114 08.3 13.7	345 25.1 05.8	Acrux 173 07.9 S63 10.8
03	231 26.7	267 33.8 13 00.5	29 18.1 . . 20.9	129 10.5 . . 13.6	0 27.7 . . 05.8	Adhara 255 12.1 S28 59.9
04	246 29.2	282 33.7 12 59.9	44 21.3 20.7	144 12.8 13.6	15 30.2 05.8	Aldebarán 290 48.9 N16 32.1
05	261 31.6	297 33.6 59.3	59 24.6 20.4	159 15.1 13.6	30 32.8 05.7	
06	276 34.1	312 33.5 S12 58.7	74 27.8 S 6 20.1	174 17.4 N23 13.6	45 35.4 S16 05.7	Alioth 166 19.7 N55 52.8
07	291 36.6	327 33.4 58.1	89 31.1 19.9	189 19.6 13.6	60 37.9 05.7	Alkaid 152 58.1 N49 14.4
08	306 39.0	342 33.3 57.6	104 34.3 19.6	204 21.9 13.6	75 40.5 05.6	Al Na'ir 27 43.5 S46 53.3
09	321 41.5	357 33.2 . . 57.0	119 37.6 . . 19.3	219 24.2 . . 13.6	90 43.1 . . 05.6	Alnilam 275 45.9 S 1 11.9
10	336 44.0	12 33.0 56.4	134 40.8 19.1	234 26.4 13.6	105 45.6 05.6	Alphard 217 55.3 S 8 43.5
11	351 46.4	27 32.9 55.8	149 44.1 18.8	249 28.7 13.5	120 48.2 05.5	
12	6 48.9	42 32.8 S12 55.2	164 47.3 S 6 18.6	264 31.0 N23 13.5	135 50.8 S16 05.5	Alphecca 126 10.3 N26 39.9
13	21 51.3	57 32.7 54.6	179 50.6 18.3	279 33.2 13.5	150 53.4 05.5	Alpheratz 357 43.3 N29 10.1
14	36 53.8	72 32.6 54.0	194 53.8 18.0	294 35.5 13.5	165 55.9 05.4	Altair 62 07.8 N 8 54.4
15	51 56.3	87 32.5 . . 53.4	209 57.1 . . 17.8	309 37.8 . . 13.5	180 58.5 . . 05.4	Ankaa 353 15.6 S42 13.8
16	66 58.7	102 32.4 52.8	225 00.3 17.5	324 40.1 13.5	196 01.1 05.4	Antares 112 25.4 S26 27.7
17	82 01.2	117 32.2 52.2	240 03.6 17.2	339 42.3 13.5	211 03.6 05.3	
18	97 03.7	132 32.1 S12 51.6	255 06.9 S 6 17.0	354 44.6 N23 13.5	226 06.2 S16 05.3	Arcturus 145 54.9 N19 06.4
19	112 06.1	147 32.0 51.0	270 10.1 16.7	9 46.9 13.4	241 08.8 05.3	Atria 107 26.5 S69 02.8
20	127 08.6	162 31.9 50.4	285 13.4 16.4	24 49.1 13.4	256 11.4 05.2	Avior 234 17.5 S59 33.8
21	142 11.1	177 31.8 . . 49.8	300 16.6 . . 16.2	39 51.4 . . 13.4	271 13.9 . . 05.2	Bellatrix 278 31.5 N 6 21.5
22	157 13.5	192 31.7 49.2	315 19.9 15.9	54 53.7 13.4	286 16.5 05.2	Betelgeuse 271 00.8 N 7 24.3
23	172 16.0	207 31.5 48.6	330 23.2 15.6	69 55.9 13.4	301 19.1 05.1	
30 00	187 18.5	222 31.4 S12 48.0	345 26.4 S 6 15.4	84 58.2 N23 13.4	316 21.6 S16 05.1	Canopus 263 55.9 S52 42.7
01	202 20.9	237 31.3 47.4	0 29.7 15.1	100 00.5 13.4	331 24.2 05.1	Capella 280 33.8 N46 00.7
02	217 23.4	252 31.2 46.8	15 33.0 14.8	115 02.7 13.4	346 26.8 05.0	Deneb 49 31.3 N45 19.7
03	232 25.8	267 31.1 . . 46.2	30 36.2 . . 14.6	130 05.0 . . 13.3	1 29.4 . . 05.0	Denébola 182 32.8 N14 29.4
04	247 28.3	282 31.0 45.6	45 39.5 14.3	145 07.2 13.3	16 31.9 05.0	Diphda 348 55.7 S17 54.6
05	262 30.8	297 30.8 45.0	60 42.8 14.0	160 09.5 13.3	31 34.5 04.9	
06	277 33.2	312 30.7 S12 44.4	75 46.0 S 6 13.8	175 11.8 N23 13.3	46 37.1 S16 04.9	Dubhe 193 50.5 N61 40.4
07	292 35.7	327 30.6 43.8	90 49.3 13.5	190 14.0 13.3	61 39.7 04.9	Elnath 278 12.0 N28 37.0
08	307 38.2	342 30.5 43.2	105 52.6 13.2	205 16.3 13.3	76 42.2 04.8	Eltanin 90 45.8 N51 29.1
09	322 40.6	357 30.4 . . 42.6	120 55.8 . . 13.0	220 18.6 . . 13.3	91 44.8 . . 04.8	Enif 33 46.8 N 9 56.4
10	337 43.1	12 30.2 42.0	135 59.1 12.7	235 20.8 13.2	106 47.4 04.8	Fomalhaut 15 23.7 S29 32.8
11	352 45.6	27 30.1 41.4	151 02.4 12.4	250 23.1 13.2	121 49.9 04.7	
12	7 48.0	42 30.0 S12 40.8	166 05.6 S 6 12.2	265 25.3 N23 13.2	136 52.5 S16 04.7	Gacrux 171 59.6 S57 11.7
13	22 50.5	57 29.9 40.2	181 08.9 11.9	280 27.6 13.2	151 55.1 04.7	Gienah 175 51.4 S17 37.4
14	37 52.9	72 29.8 39.5	196 12.2 11.6	295 29.9 13.2	166 57.7 04.6	Hadar 148 46.4 S60 26.4
15	52 55.4	87 29.7 . . 38.9	211 15.5 . . 11.3	310 32.1 . . 13.2	182 00.2 . . 04.6	Hamal 328 00.4 N23 31.7
16	67 57.9	102 29.5 38.3	226 18.7 11.1	325 34.4 13.2	197 02.8 04.6	Kaus Aust. 83 43.1 S34 22.4
17	83 00.3	117 29.4 37.7	241 22.0 10.8	340 36.7 13.2	212 05.4 04.5	
18	98 02.8	132 29.3 S12 37.1	256 25.3 S 6 10.5	355 38.9 N23 13.1	227 08.0 S16 04.5	Kochab 137 19.2 N74 05.7
19	113 05.3	147 29.2 36.5	271 28.6 10.3	10 41.2 13.1	242 10.5 04.5	Markab 13 38.1 N15 16.8
20	128 07.7	162 29.0 35.9	286 31.9 10.0	25 43.4 13.1	257 13.1 04.4	Menkar 314 14.7 N 4 08.5
21	143 10.2	177 28.9 . . 35.2	301 35.1 . . 09.7	40 45.7 . . 13.1	272 15.7 . . 04.4	Menkent 148 06.5 S36 26.4
22	158 12.7	192 28.8 34.6	316 38.4 09.5	55 47.9 13.1	287 18.3 04.4	Miaplacidus 221 38.9 S69 47.0
23	173 15.1	207 28.7 34.0	331 41.7 09.2	70 50.2 13.1	302 20.8 04.3	
31 00	188 17.6	222 28.6 S12 33.4	346 45.0 S 6 08.9	85 52.5 N23 13.1	317 23.4 S16 04.3	Mirfak 308 39.9 N49 54.7
01	203 20.1	237 28.4 32.8	1 48.3 08.6	100 54.7 13.0	332 26.0 04.3	Nunki 75 57.7 S26 16.5
02	218 22.5	252 28.3 32.1	16 51.5 08.4	115 57.0 13.0	347 28.6 04.2	Peacock 53 18.7 S56 41.0
03	233 25.0	267 28.2 . . 31.5	31 54.8 . . 08.1	130 59.2 . . 13.0	2 31.1 . . 04.2	Póllux 243 27.0 N27 59.3
04	248 27.4	282 28.1 30.9	46 58.1 07.8	146 01.5 13.0	17 33.7 04.2	Procyon 244 59.1 N 5 11.0
05	263 29.9	297 27.9 30.3	62 01.4 07.5	161 03.7 13.0	32 36.3 04.1	
06	278 32.4	312 27.8 S12 29.7	77 04.7 S 6 07.3	176 06.0 N23 13.0	47 38.9 S16 04.1	Rasalhague 96 05.9 N12 33.0
07	293 34.8	327 27.7 29.0	92 08.0 07.0	191 08.3 13.0	62 41.4 04.0	Régulus 207 42.7 N11 53.6
08	308 37.3	342 27.6 28.4	107 11.3 06.7	206 10.5 12.9	77 44.0 04.0	Rigel 281 11.7 S 8 11.5
09	323 39.8	357 27.4 . . 27.8	122 14.5 . . 06.5	221 12.8 . . 12.9	92 46.6 . . 04.0	Rigel Kent. 139 50.3 S60 53.5
10	338 42.2	12 27.3 27.2	137 17.8 06.2	236 15.0 12.9	107 49.2 03.9	Sabik 102 11.8 S15 44.4
11	353 44.7	27 27.2 26.5	152 21.1 05.9	251 17.3 12.9	122 51.8 03.9	
12	8 47.2	42 27.1 S12 25.9	167 24.4 S 6 05.6	266 19.5 N23 12.9	137 54.3 S16 03.9	Schedar 349 40.4 N56 36.9
13	23 49.6	57 26.9 25.3	182 27.7 05.4	281 21.8 12.9	152 56.9 03.8	Shaula 96 21.1 S37 06.6
14	38 52.1	72 26.8 24.6	197 31.0 05.1	296 24.0 12.9	167 59.5 03.8	Sirius 258 33.2 S16 44.5
15	53 54.6	87 26.7 . . 24.0	212 34.3 . . 04.8	311 26.3 . . 12.8	183 02.1 . . 03.8	Spica 158 30.4 S11 14.2
16	68 57.0	102 26.6 23.4	227 37.6 04.5	326 28.5 12.8	198 04.6 03.7	Suhail 222 51.7 S43 29.8
17	83 59.5	117 26.4 22.8	242 40.9 04.3	341 30.8 12.8	213 07.2 03.7	
18	99 01.9	132 26.3 S12 22.1	257 44.2 S 6 04.0	356 33.0 N23 12.8	228 09.8 S16 03.7	Vega 80 38.6 N38 47.7
19	114 04.4	147 26.2 21.5	272 47.5 03.7	11 35.3 12.8	243 12.4 03.6	Zuben'ubi 137 04.5 S16 06.0
20	129 06.9	162 26.1 20.9	287 50.8 03.4	26 37.6 12.8	258 15.0 03.6	
21	144 09.3	177 25.9 . . 20.2	302 54.1 . . 03.2	41 39.8 . . 12.8	273 17.5 . . 03.6	AHS Paso Mer.
22	159 11.8	192 25.8 19.6	317 57.4 02.9	56 42.1 12.7	288 20.1 03.5	Venus 35 13.0 9 10
23	174 14.3	207 25.7 19.0	333 00.7 02.6	71 44.3 12.7	303 22.7 03.5	Marte 158 08.0 0 58
						Júpiter 257 39.7 18 17
						Saturno 129 03.2 2 54
Paso Mer. 11 28.9	v -0.1 d 0.6		v 3.3 d 0.3	v 2.3 d 0.0	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	29		30	31	1	
d h	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	h m	h m	h m	h m	h m	h m	h m	
29	00	178 46.3 N	3 15.6	202 03.2	9.1 S	2 45.2	11.7	59.8	N 72	02 02	03 54	05 07	05 06	04 59	04 52	04 44
	01	193 46.5	16.6	216 31.3	9.1	2 33.5	11.7	59.8	N 70	02 37	04 09	05 13	05 04	05 03	05 02	05 02
	02	208 46.7	17.6	230 59.4	9.1	2 21.8	11.7	59.8	68	03 02	04 20	05 18	05 02	05 06	05 11	05 17
	03	223 46.9	18.6	245 27.5	9.2	2 10.1	11.7	59.8	66	03 20	04 29	05 22	05 00	05 08	05 18	05 28
	04	238 47.1	19.5	259 55.7	9.2	1 58.4	11.7	59.8	64	03 35	04 37	05 26	04 58	05 11	05 24	05 38
	05	253 47.3	20.5	274 23.9	9.2	1 46.7	11.7	59.8	62	03 47	04 44	05 29	04 57	05 13	05 29	05 47
	06	268 47.4 N	3 21.5	288 52.1	9.2 S	1 35.0	11.8	59.7	60	03 57	04 49	05 32	04 56	05 14	05 33	05 54
	07	283 47.6	22.5	303 20.3	9.2	1 23.2	11.7	59.7	N 58	04 05	04 54	05 34	04 55	05 16	05 37	06 01
	08	298 47.8	23.4	317 48.5	9.3	1 11.5	11.8	59.7	56	04 13	04 59	05 36	04 54	05 17	05 41	06 07
	09	313 48.0	24.4	332 16.8	9.3	0 59.7	11.7	59.7	54	04 19	05 02	05 38	04 53	05 18	05 44	06 12
	10	328 48.2	25.4	346 45.1	9.2	0 48.0	11.8	59.7	52	04 25	05 06	05 40	04 52	05 20	05 47	06 17
	11	343 48.4	26.3	1 13.3	9.4	0 36.2	11.7	59.7	50	04 30	05 09	05 41	04 52	05 21	05 50	06 21
	12	358 48.6 N	3 27.3	15 41.7	9.3 S	0 24.5	11.7	59.7	45	04 40	05 15	05 45	04 50	05 23	05 56	06 30
	13	13 48.8	28.3	30 10.0	9.3	0 12.8	11.8	59.7	N 40	04 48	05 20	05 48	04 49	05 25	06 01	06 38
	14	28 48.9	29.3	44 38.3	9.4 S	0 01.0	11.7	59.6	35	04 55	05 25	05 50	04 48	05 26	06 05	06 45
	15	43 49.1	30.2	59 06.7	9.3 N	0 10.7	11.7	59.6	30	05 00	05 28	05 52	04 47	05 28	06 09	06 51
	16	58 49.3	31.2	73 35.0	9.4	0 22.4	11.7	59.6	20	05 08	05 33	05 56	04 45	05 30	06 15	07 01
	17	73 49.5	32.2	88 03.4	9.4	0 34.1	11.7	59.6	N 10	05 13	05 37	05 59	04 44	05 33	06 21	07 10
	18	88 49.7 N	3 33.2	102 31.8	9.4 N	0 45.8	11.7	59.6	0	05 16	05 40	06 01	04 42	05 35	06 27	07 19
	19	103 49.9	34.1	117 00.2	9.5	0 57.5	11.7	59.6	S 10	05 18	05 43	06 04	04 41	05 37	06 32	07 27
	20	118 50.1	35.1	131 28.7	9.4	1 09.2	11.7	59.5	20	05 19	05 44	06 06	04 40	05 39	06 38	07 36
	21	133 50.3	36.1	145 57.1	9.5	1 20.9	11.7	59.5	30	05 18	05 45	06 09	04 38	05 42	06 45	07 47
	22	148 50.4	37.1	160 25.6	9.4	1 32.6	11.6	59.5	35	05 16	05 46	06 11	04 37	05 44	06 49	07 53
23	163 50.6	38.0	174 54.0	9.5	1 44.2	11.6	59.5	40	05 14	05 46	06 13	04 36	05 46	06 54	08 00	
								45	05 12	05 46	06 15	04 35	05 48	06 59	08 09	
30	00	178 50.8 N	3 39.0	189 22.5	9.5 N	1 55.8	11.6	59.5	S 50	05 08	05 45	06 17	04 34	05 50	07 06	08 18
	01	193 51.0	40.0	203 51.0	9.5	2 07.4	11.6	59.5	52	05 05	05 45	06 18	04 33	05 51	07 09	08 23
	02	208 51.2	40.9	218 19.5	9.5	2 19.0	11.6	59.4	54	05 03	05 44	06 20	04 32	05 53	07 12	08 28
	03	223 51.4	41.9	232 48.0	9.5	2 30.6	11.5	59.4	56	05 00	05 44	06 21	04 31	05 54	07 15	08 34
	04	238 51.6	42.9	247 16.5	9.6	2 42.1	11.5	59.4	58	04 57	05 43	06 22	04 31	05 56	07 19	08 40
	05	253 51.7	43.9	261 45.1	9.5	2 53.6	11.5	59.4	S 60	04 54	05 42	06 24	04 30	05 58	07 24	08 47
	06	268 51.9 N	3 44.8	276 13.6	9.6 N	3 05.1	11.5	59.4	Ocaso Sol		Crepúsculo		Ocaso Luna			
	07	283 52.1	45.8	290 42.2	9.5	3 16.6	11.4	59.3	Lat.	Náut.	Civil	Náut.	29	30	31	1
	08	298 52.3	46.8	305 10.7	9.6	3 28.0	11.4	59.3								
	09	313 52.5	47.7	319 39.3	9.6	3 39.4	11.4	59.3	h m		h m		h m		h m	
	10	328 52.7	48.7	334 07.9	9.6	3 50.8	11.4	59.3	N 72	19 05	20 19	22 16	17 14	19 10	21 07	23 05
	11	343 52.9	49.7	348 36.5	9.6	4 02.2	11.3	59.2	N 70	18 58	20 04	21 37	17 13	19 02	20 50	22 36
	12	358 53.1 N	3 50.7	3 05.1	9.6 N	4 13.5	11.3	59.2	68	18 53	19 52	21 12	17 13	18 56	20 37	22 16
	13	13 53.2	51.6	17 33.7	9.6	4 24.8	11.2	59.2	66	18 48	19 42	20 52	17 12	18 50	20 27	21 59
	14	28 53.4	52.6	32 02.3	9.7	4 36.0	11.3	59.2	64	18 45	19 34	20 37	17 12	18 46	20 18	21 46
	15	43 53.6	53.6	46 31.0	9.6	4 47.3	11.1	59.2	62	18 41	19 27	20 25	17 11	18 42	20 10	21 35
	16	58 53.8	54.5	60 59.6	9.7	4 58.4	11.2	59.1	60	18 39	19 21	20 14	17 11	18 38	20 04	21 25
	17	73 54.0	55.5	75 28.3	9.6	5 09.6	11.1	59.1	N 58	18 36	19 16	20 06	17 11	18 35	19 58	21 17
	18	88 54.2 N	3 56.5	89 56.9	9.7 N	5 20.7	11.1	59.1	56	18 34	19 12	19 58	17 11	18 33	19 53	21 09
	19	103 54.4	57.4	104 25.6	9.6	5 31.8	11.0	59.1	54	18 32	19 08	19 51	17 10	18 30	19 48	21 03
	20	118 54.5	58.4	118 54.2	9.7	5 42.8	11.0	59.0	52	18 30	19 04	19 46	17 10	18 28	19 44	20 57
	21	133 54.7	59.4	133 22.9	9.7	5 53.8	10.9	59.0	50	18 28	19 01	19 40	17 10	18 26	19 40	20 52
	22	148 54.9	60.4	147 51.6	9.7	6 04.7	10.9	59.0	45	18 25	18 55	19 30	17 10	18 22	19 32	20 40
23	163 55.1	61.3	162 20.3	9.6	6 15.6	10.9	59.0	N 40	18 22	18 49	19 22	17 09	18 18	19 26	20 31	
31	00	178 55.3 N	4 02.3	176 48.9	9.7 N	6 26.5	10.8	58.9	35	18 20	18 45	19 15	17 09	18 15	19 20	20 23
	01	193 55.5	03.3	191 17.6	9.7	6 37.3	10.7	58.9	30	18 17	18 41	19 10	17 09	18 12	19 15	20 16
	02	208 55.7	04.2	205 46.3	9.7	6 48.0	10.7	58.9	20	18 14	18 36	19 02	17 08	18 08	19 06	20 04
	03	223 55.8	05.2	220 15.0	9.7	6 58.7	10.7	58.9	N 10	18 11	18 32	18 56	17 08	18 04	18 59	19 53
	04	238 56.0	06.2	234 43.7	9.8	7 09.4	10.6	58.8	0	18 08	18 28	18 53	17 07	18 00	18 51	19 43
	05	253 56.2	07.1	249 12.5	9.7	7 20.0	10.5	58.8	S 10	18 05	18 26	18 50	17 07	17 56	18 44	19 33
	06	268 56.4 N	4 08.1	263 41.2	9.7 N	7 30.5	10.5	58.8	20	18 02	18 24	18 50	17 06	17 52	18 37	19 23
	07	283 56.6	09.1	278 09.9	9.7	7 41.0	10.5	58.8	30	17 59	18 23	18 51	17 06	17 47	18 28	19 11
	08	298 56.8	10.0	292 38.6	9.7	7 51.5	10.4	58.7	35	17 57	18 23	18 52	17 06	17 44	18 23	19 04
	09	313 57.0	11.0	307 07.3	9.8	8 01.9	10.3	58.7	40	17 56	18 22	18 54	17 05	17 41	18 18	18 56
	10	328 57.1	12.0	321 36.1	9.7	8 12.2	10.3	58.7	45	17 53	18 23	18 57	17 05	17 37	18 11	18 47
	11	343 57.3	13.0	336 04.8	9.7	8 22.5	10.2	58.6	S 50	17 51	18 23	19 00	17 04	17 33	18 03	18 36
	12	358 57.5 N	4 13.9	350 33.5	9.8 N	8 32.7	10.2	58.6	52	17 50	18 23	19 02	17 04	17 31	18 00	18 30
	13	13 57.7	14.9	5 02.3	9.7	8 42.9	10.1	58.6	54	17 48	18 23	19 04	17 04	17 29	17 56	18 25
	14	28 57.9	15.9	19 31.0	9.8	8 53.0	10.0	58.6	56	17 47	18 24	19 07	17 03	17 27	17 51	18 19
	15	43 58.1	16.8	33 59.8	9.7	9 03.0	10.0	58.5	58	17 45	18 24	19 10	17 03	17 24	17 46	18 12
	16	58 58.3	17.8	48 28.5	9.8	9 13.0	9.9	58.5	S 60	17 44	18 25	19 13	17 03	17 21	17 41	18 04
	17	73 58.4	18.8	62 57.3	9.7	9 22.9	9.9	58.5	SOL		LUNA					
	18	88 58.6 N	4 19.7	77 26.0	9.8 N	9 32.8	9.8	58.4	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	

UT (HmGr)	ARIES	VENUS −4.4	MARTE −1.4	JÚPITER −2.2	SATURNO +0.3	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
MARTES	1001189 16.7	222 25.6 S12 18.3	348 04.0 S 6 02.3	86 46.6 N23 12.7	318 25.3 S16 03.5	Acamar	315 18.3	S40 15.1
	01204 19.2	237 25.4 17.7	3 07.3 02.1	101 48.8 12.7	333 27.9 03.4	Achernar	335 27.0	S57 10.0
	02219 21.7	252 25.3 17.0	18 10.6 01.8	116 51.1 12.7	348 30.4 03.4	Acrux	173 07.9	S63 10.8
	03234 24.1	267 25.2 16.4	33 13.9 01.5	131 53.3 12.7	3 33.0 03.4	Adhara	255 12.1	S28 59.9
	04249 26.6	282 25.0 15.8	48 17.2 01.2	146 55.6 12.7	18 35.6 03.3	Aldebarán	290 48.9	N16 32.1
	05264 29.0	297 24.9 15.1	63 20.5 00.9	161 57.8 12.6	33 38.2 03.3			
	06279 31.5	312 24.8 S12 14.5	78 23.8 S 6 00.7	177 00.0 N23 12.6	48 40.8 S16 03.2	Alioth	166 19.7	N55 52.9
	07294 34.0	327 24.7 13.8	93 27.1 00.4	192 02.3 12.6	63 43.3 03.2	Alkaid	152 58.1	N49 14.4
	08309 36.4	342 24.5 13.2	108 30.4 6 00.1	207 04.5 12.6	78 45.9 03.2	Al Na'ir	27 43.4	S46 53.3
	09324 38.9	357 24.4 12.6	123 33.7 5 59.8	222 06.8 12.6	93 48.5 03.1	Alnilam	275 45.9	S 1 11.9
MARTES	10339 41.4	12 24.3 11.9	138 37.0 59.6	237 09.0 12.6	108 51.1 03.1	Alphard	217 55.4	S 8 43.5
	11354 43.8	27 24.1 11.3	153 40.3 59.3	252 11.3 12.6	123 53.7 03.1			
	129 46.3	42 24.0 S12 10.6	168 43.6 S 5 59.0	267 13.5 N23 12.5	138 56.2 S16 03.0	Alphecca	126 10.3	N26 39.9
	1324 48.8	57 23.9 10.0	183 46.9 58.7	282 15.8 12.5	153 58.8 03.0	Alpheratz	357 43.3	N29 10.0
	1439 51.2	72 23.7 09.3	198 50.2 58.4	297 18.0 12.5	169 01.4 03.0	Altair	62 07.8	N 8 54.4
	1554 53.7	87 23.6 08.7	213 53.5 58.2	312 20.3 12.5	184 04.0 02.9	Ankaa	353 15.6	S42 13.8
	1669 56.2	102 23.5 08.0	228 56.8 57.9	327 22.5 12.5	199 06.6 02.9	Antares	112 25.4	S26 27.7
	1784 58.6	117 23.4 07.4	244 00.2 57.6	342 24.8 12.5	214 09.1 02.9			
	18100 01.1	132 23.2 S12 06.7	259 03.5 S 5 57.3	357 27.0 N23 12.5	229 11.7 S16 02.8	Arcturus	145 54.9	N19 06.4
	19115 03.5	147 23.1 06.1	274 06.8 57.0	12 29.2 12.4	244 14.3 02.8	Atria	107 26.4	S69 02.8
MARTES	20130 06.0	162 23.0 05.4	289 10.1 56.8	27 31.5 12.4	259 16.9 02.8	Avior	234 17.5	S59 33.8
	21145 08.5	177 22.8 04.8	304 13.4 56.5	42 33.7 12.4	274 19.5 02.7	Bellatrix	278 31.5	N 6 21.5
	22160 10.9	192 22.7 04.1	319 16.7 56.2	57 36.0 12.4	289 22.0 02.7	Betelgeuse	271 00.8	N 7 24.3
	23175 13.4	207 22.6 03.5	334 20.0 55.9	72 38.2 12.4	304 24.6 02.6			
	2001190 15.9	222 22.4 S12 02.8	349 23.4 S 5 55.6	87 40.5 N23 12.4	319 27.2 S16 02.6	Canopus	263 56.0	S52 42.7
	01205 18.3	237 22.3 02.2	4 26.7 55.4	102 42.7 12.3	334 29.8 02.6	Capella	280 33.8	N46 00.7
	02220 20.8	252 22.0 01.5	19 30.0 55.1	117 44.9 12.3	349 32.4 02.5	Deneb	49 31.3	S45 19.7
	03235 23.3	267 22.0 00.9	34 33.3 54.8	132 47.2 12.3	4 35.0 02.5	Denebola	182 32.8	N14 29.4
	04250 25.7	282 21.9 12 00.2	49 36.6 54.5	147 49.4 12.3	19 37.5 02.5	Diphda	348 55.7	S17 54.6
	05265 28.2	297 21.8 11 59.5	64 39.9 54.2	162 51.7 12.3	34 40.1 02.4			
MARTES	06280 30.6	312 21.6 S11 58.9	79 43.3 S 5 54.0	177 53.9 N23 12.3	49 42.7 S16 02.4	Dubhe	193 50.5	N61 40.4
	07295 33.1	327 21.5 58.2	94 46.6 53.7	192 56.2 12.3	64 45.3 02.4	Elmath	278 12.1	N28 37.0
	08310 35.6	342 21.4 57.6	109 49.9 53.4	207 58.4 12.2	79 47.9 02.3	Eltanin	90 45.8	N51 29.1
	09325 38.0	357 21.2 56.9	124 53.2 53.1	223 00.6 12.2	94 50.5 02.3	Enif	33 46.8	N 9 56.4
	10340 40.5	12 21.1 56.2	139 56.5 52.8	238 02.9 12.2	109 53.0 02.3	Fomalhaut	15 23.7	S29 32.7
	11355 43.0	27 21.0 55.6	154 59.9 52.6	253 05.1 12.2	124 55.6 02.2			
	1210 45.4	42 20.8 S11 54.9	170 03.2 S 5 52.3	268 07.4 N23 12.2	139 58.2 S16 02.2	Gacrux	171 59.6	S57 11.7
	1325 47.9	57 20.7 54.3	185 06.5 52.0	283 09.6 12.2	155 08.0 02.1	Gienah	175 51.4	S17 37.4
	1440 50.4	72 20.6 53.6	200 09.8 51.7	298 11.8 12.1	170 03.4 02.1	Hadar	148 46.4	S60 26.4
	1555 52.8	87 20.4 52.9	215 13.2 51.4	313 14.1 12.1	185 06.0 02.1	Hamal	328 00.4	N23 31.6
MARTES	1670 55.3	102 20.3 52.3	230 16.5 51.1	328 16.3 12.1	200 08.6 02.0	Kaus Aust.	83 43.0	S34 22.4
	1785 57.8	117 20.2 51.6	245 19.8 50.9	343 18.5 12.1	215 11.1 02.0			
	18101 00.2	132 20.0 S11 50.9	260 23.1 S 5 50.6	358 20.8 N23 12.1	230 13.7 S16 02.0	Kochab	137 19.2	N74 05.7
	19116 02.7	147 19.9 50.3	275 26.5 50.3	13 23.0 12.1	245 16.3 01.9	Markab	13 38.1	N15 16.8
	20131 05.1	162 19.7 49.6	290 29.8 50.0	28 25.3 12.1	260 18.9 01.9	Menkar	314 14.7	N 4 08.5
	21146 07.6	177 19.6 48.9	305 33.1 49.7	43 27.5 12.0	275 21.5 01.9	Menkent	148 06.5	S36 26.4
	22161 10.1	192 19.5 48.3	320 36.5 49.4	58 29.7 12.0	290 24.1 01.8	Miaplacidus	221 38.9	S69 47.0
	23176 12.5	207 19.3 47.6	335 39.8 49.2	73 32.0 12.0	305 26.6 01.8			
	3001191 15.0	222 19.2 S11 46.9	350 43.1 S 5 48.9	88 34.2 N23 12.0	320 29.2 S16 01.7	Mirfak	308 59.9	N49 54.6
	01206 17.5	237 19.1 46.3	5 46.4 48.6	103 36.4 12.0	335 31.8 01.7	Nunki	75 57.7	S26 16.5
02221 19.9	252 18.9 45.6	20 49.8 48.3	118 38.7 12.0	350 34.4 01.7	Peacock	53 18.7	S56 41.0	
03236 22.4	267 18.8 44.9	35 53.1 48.0	133 40.9 11.9	5 37.0 01.6	Póllux	243 27.0	N27 59.3	
04251 24.9	282 18.7 44.2	50 56.4 47.7	148 43.1 11.9	20 39.6 01.6	Procyon	244 59.1	N 5 11.0	
05266 27.3	297 18.5 43.6	65 59.8 47.5	163 45.4 11.9	35 42.2 01.6				
06281 29.8	312 18.4 S11 42.9	81 03.1 S 5 47.2	178 47.6 N23 11.9	50 44.8 S16 01.5	Rasalhague	96 05.8	N12 33.0	
07296 32.3	327 18.2 42.2	96 06.4 46.9	193 49.8 11.9	65 47.3 01.5	Régulus	207 42.7	N11 53.6	
08311 34.7	342 18.1 41.5	111 09.8 46.6	208 52.1 11.9	80 49.9 01.5	Rigel	281 11.7	S 8 11.5	
09326 37.2	357 18.0 40.9	126 13.1 46.3	232 54.3 11.8	95 52.5 01.4	Rigel Kent.	139 50.3	S60 53.5	
10341 39.6	12 17.8 40.2	141 16.4 46.0	238 56.5 11.8	110 55.1 01.4	Sabik	102 11.8	S15 44.4	
11356 42.1	27 17.7 39.5	156 19.8 45.7	253 58.8 11.8	125 57.7 01.3				
1211 44.6	42 17.5 S11 38.8	171 23.1 S 5 45.5	269 01.0 N23 11.8	141 00.3 S16 01.3	Schedar	349 40.4	N56 36.9	
1326 47.0	57 17.4 38.1	186 26.5 45.2	284 03.2 11.8	156 02.9 01.3	Shaula	96 21.0	S37 06.6	
1441 49.5	72 17.3 37.5	201 29.8 44.9	299 05.5 11.8	171 05.4 01.2	Sirius	258 33.3	S16 44.5	
1556 52.0	87 17.1 36.8	216 33.1 44.6	314 07.7 11.7	186 08.0 01.2	Spica	158 30.3	S11 14.2	
1671 54.4	102 17.0 36.1	231 36.5 44.3	329 09.9 11.7	201 10.6 01.2	Suhail	222 51.8	S43 29.8	
1786 56.9	117 16.9 35.4	246 39.8 44.0	344 12.1 11.7	216 13.2 01.1				
18101 59.4	132 16.7 S11 34.7	261 43.1 S 5 43.7	359 14.4 N23 11.7	231 15.8 S16 01.1	Vega	80 38.6	N38 47.7	
19117 01.8	147 16.6 34.0	276 46.5 43.5	14 16.6 11.7	246 18.4 01.1	Zuben'ubi	137 04.5	S16 06.1	
20132 04.3	162 16.4 33.4	291 49.8 43.2	29 18.8 11.7	261 21.0 01.0				
21147 06.7	177 16.3 32.7	306 53.2 42.9	44 21.1 11.6	276 23.6 01.0		AHS	Paso Mer.	
22162 09.2	192 16.2 32.0	321 56.5 42.6	59 23.3 11.6	291 26.2 00.9	Venus	32 06.6	h 11	
23177 11.7	207 16.0 31.3	336 59.9 42.3	74 25.5 11.6	306 28.7 00.9	Marte	159 07.5	0 42	
					Júpiter	257 24.6	18 07	
					Saturno	129 11.4	2 42	
Paso Mer. 11 17.1	<i>v</i> −0.1	<i>d</i> 0.7	<i>v</i> 3.3 <i>d</i> 0.3	<i>v</i> 2.2 <i>d</i> 0.0	<i>v</i> 2.6 <i>d</i> 0.0			

UT (HmGr)	SOL			LUNA							Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec		AHGr	v	Dec	d	Ph	Náut.	Civil		1	2		3	4		
d h	° /	° /		° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m		
M A R T E S	1 00	178 59.7	N 4 25.5	164 18.6	9.8	N10 30.5	9.4	58.3	N 72	01 26	03 36	04 51	04 44	04 35	04 20			
	01	193 59.9	26.5	178 47.4	9.7	10 39.9	9.4	58.2	N 70	02 14	03 53	04 59	05 02	05 04	05 09	05 21		
	02	209 00.1	27.5	193 16.1	9.8	10 49.3	9.2	58.2	68	02 43	04 06	05 06	05 17	05 26	05 40	06 04		
	03	224 00.3	28.4	207 44.9	9.8	10 58.5	9.2	58.2	66	03 05	04 17	05 11	05 28	05 43	06 03	06 32		
	04	239 00.5	29.4	222 13.7	9.8	11 07.7	9.1	58.1	64	03 21	04 26	05 15	05 38	05 57	06 21	06 54		
	05	254 00.7	30.4	236 42.5	9.7	11 16.8	9.0	58.1	62	03 35	04 33	05 19	05 47	06 09	06 36	07 12		
	06	269 00.9	N 4 31.3	251 11.2	9.8	N11 25.8	9.0	58.1	60	03 46	04 40	05 23	05 54	06 19	06 49	07 26		
	07	284 01.0	32.3	265 40.0	9.8	11 34.8	8.8	58.1	N 58	03 56	04 45	05 26	06 01	06 28	07 00	07 39		
	08	299 01.2	33.2	280 08.8	9.8	11 43.6	8.8	58.0	56	04 04	04 50	05 28	06 07	06 36	07 10	07 50		
	09	314 01.4	34.2	294 37.6	9.8	11 52.4	8.8	58.0	54	04 11	04 55	05 31	06 12	06 43	07 18	07 59		
	10	329 01.6	35.2	309 06.4	9.8	12 01.2	8.6	58.0	52	04 17	04 59	05 33	06 17	06 49	07 26	08 08		
	11	344 01.8	36.1	323 35.2	9.8	12 09.8	8.6	57.9	50	04 23	05 02	05 35	06 21	06 55	07 33	08 15		
	12	359 02.0	N 4 37.1	338 04.0	9.8	N12 18.4	8.5	57.9	45	04 34	05 10	05 39	06 30	07 07	07 47	08 32		
	13	14 02.1	38.1	352 32.8	9.7	12 26.9	8.4	57.9	N 40	04 43	05 15	05 43	06 38	07 17	08 00	08 45		
	14	29 02.3	39.0	7 01.5	9.8	12 35.3	8.3	57.8	35	04 50	05 20	05 46	06 45	07 26	08 10	08 56		
	15	44 02.5	40.0	21 30.3	9.9	12 43.6	8.3	57.8	30	04 56	05 24	05 48	06 51	07 34	08 19	09 06		
	16	59 02.7	41.0	35 59.2	9.8	12 51.9	8.1	57.8	20	05 05	05 31	05 53	07 01	07 47	08 35	09 23		
	17	74 02.9	41.9	50 28.0	9.8	13 00.0	8.1	57.7	N 10	05 11	05 36	05 57	07 10	07 59	08 49	09 38		
	18	89 03.1	N 4 42.9	64 56.8	9.8	N13 08.1	8.0	57.7	0	05 15	05 40	06 00	07 19	08 10	09 02	09 52		
	19	104 03.3	43.9	79 25.6	9.8	13 16.1	8.0	57.7	S 10	05 18	05 43	06 04	07 27	08 21	09 15	10 07		
	20	119 03.4	44.8	93 54.4	9.8	13 24.1	7.8	57.6	20	05 20	05 45	06 07	07 36	08 33	09 29	10 22		
	21	134 03.6	45.8	108 23.2	9.8	13 31.9	7.7	57.6	30	05 20	05 47	06 11	07 47	08 47	09 45	10 39		
	22	149 03.8	46.7	122 52.0	9.8	13 39.6	7.7	57.6	35	05 19	05 48	06 13	07 53	08 55	09 54	10 49		
	23	164 04.0	47.7	137 20.8	9.9	13 47.3	7.6	57.5	40	05 17	05 49	06 16	08 00	09 04	10 05	11 01		
	M I É R C O L E S	2 00	179 04.2	N 4 48.7	151 49.7	9.8	N13 54.9	7.5	57.5	45	05 15	05 49	06 19	08 09	09 15	10 17	11 14	
01		194 04.4	49.6	166 18.5	9.8	14 02.4	7.4	57.5	S 50	05 12	05 50	06 22	08 18	09 28	10 32	11 31		
02		209 04.5	50.6	180 47.3	9.9	14 09.8	7.3	57.4	52	05 11	05 50	06 23	08 23	09 34	10 40	11 39		
03		224 04.7	51.6	195 16.2	9.8	14 17.1	7.3	57.4	54	05 09	05 50	06 25	08 28	09 41	10 48	11 47		
04		239 04.9	52.5	209 45.0	9.9	14 24.4	7.1	57.4	56	05 07	05 50	06 27	08 34	09 48	10 57	11 57		
05		254 05.1	53.5	224 13.9	9.8	14 31.5	7.1	57.3	58	05 04	05 50	06 29	08 40	09 57	11 07	12 09		
06		269 05.3	N 4 54.4	238 42.7	9.9	N14 38.6	7.0	57.3	S 60	05 01	05 50	06 31	08 47	10 06	11 19	12 21		
07		284 05.5	55.4	253 11.6	9.8	14 45.6	6.8	57.3	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna					
08		299 05.6	56.4	267 40.4	9.9	14 52.4	6.8	57.2					1	2	3	4		
09		314 05.8	57.3	282 09.3	9.9	14 59.2	6.7	57.2										
10		329 06.0	58.3	296 38.2	9.9	15 05.9	6.6	57.2										
11		344 06.2	4 59.2	311 07.1	9.9	15 12.5	6.6	57.1	N 72	19 19	20 36	22 54	23 05	25 07	01 07			
12		359 06.4	N 5 00.2	325 36.0	9.8	N15 19.1	6.4	57.1	N 70	19 11	20 18	22 00	22 36	24 19	00 19	01 53		
13		14 06.6	01.2	340 04.8	9.9	15 25.5	6.3	57.1	68	19 04	20 04	21 29	22 16	23 48	25 11	01 11		
14		29 06.7	02.1	354 33.7	10.0	15 31.8	6.3	57.1	66	18 58	19 53	21 06	21 59	23 26	24 42	00 42		
15		44 06.9	03.1	9 02.7	9.9	15 38.1	6.1	57.0	64	18 54	19 44	20 49	21 46	23 08	24 21	00 21		
16		59 07.1	04.0	23 31.6	9.9	15 44.2	6.1	57.0	62	18 49	19 36	20 35	21 35	22 53	24 03	00 03		
17		74 07.3	05.0	38 00.5	9.9	15 50.3	6.0	57.0	60	18 46	19 29	20 23	21 25	22 41	23 49	24 47		
18		89 07.5	N 5 06.0	52 29.4	10.0	N15 56.3	5.8	56.9	N 58	18 43	19 23	20 14	21 17	22 30	23 37	24 34		
19		104 07.7	06.9	66 58.4	9.9	16 02.1	5.8	56.9	56	18 40	19 18	20 05	21 09	22 21	23 26	24 23		
20		119 07.8	07.9	81 27.3	9.9	16 07.9	5.7	56.9	54	18 38	19 14	19 58	21 03	22 13	23 17	24 13		
21		134 08.0	08.8	95 56.2	10.0	16 13.6	5.6	56.8	52	18 35	19 10	19 51	20 57	22 06	23 08	24 04		
22		149 08.2	09.8	110 25.2	10.0	16 19.2	5.5	56.8	50	18 33	19 06	19 46	20 52	21 59	23 01	23 56		
23		164 08.4	10.8	124 54.2	10.0	16 24.7	5.4	56.8	45	18 29	18 59	19 34	20 40	21 45	22 45	23 39		
J U E V E S		3 00	179 08.6	N 5 11.7	139 23.2	10.0	N16 30.1	5.3	56.7	N 40	18 25	18 52	19 25	20 31	21 33	22 32	23 26	
	01	194 08.8	12.7	153 52.2	10.0	16 35.4	5.2	56.7	35	18 22	18 47	19 18	20 23	21 24	22 21	23 14		
	02	209 08.9	13.6	168 21.2	10.0	16 40.6	5.1	56.7	30	18 19	18 43	19 12	20 16	21 15	22 11	23 04		
	03	224 09.1	14.6	182 50.2	10.0	16 45.7	5.0	56.6	20	18 15	18 37	19 03	20 04	21 00	21 54	22 46		
	04	239 09.3	15.6	197 19.2	10.0	16 50.7	4.9	56.6	N 10	18 11	18 32	18 56	19 53	20 47	21 40	22 31		
	05	254 09.5	16.5	211 48.2	10.1	16 55.6	4.9	56.6	0	18 07	18 28	18 52	19 43	20 35	21 26	22 17		
	06	269 09.7	N 5 17.5	226 17.3	10.0	N17 00.5	4.7	56.5	S 10	18 03	18 24	18 49	19 33	20 23	21 12	22 02		
	07	284 09.9	18.4	240 46.3	10.1	17 05.2	4.6	56.5	20	18 00	18 22	18 47	19 23	20 10	20 58	21 47		
	08	299 10.0	19.4	255 15.4	10.1	17 09.8	4.5	56.5	30	17 56	18 19	18 47	19 11	19 55	20 41	21 29		
	09	314 10.2	20.3	269 44.5	10.1	17 14.3	4.5	56.4	35	17 53	18 19	18 48	19 04	19 46	20 32	21 19		
	10	329 10.4	21.3	284 13.6	10.1	17 18.8	4.3	56.4	40	17 51	18 18	18 49	18 56	19 37	20 20	21 07		
	11	344 10.6	22.3	298 42.7	10.1	17 23.1	4.3	56.4	45	17 48	18 17	18 51	18 47	19 25	20 07	20 54		
	12	359 10.8	N 5 23.2	313 11.8	10.1	N17 27.4	4.1	56.3	S 50	17 44	18 17	18 54	18 36	19 11	19 52	20 37		
	13	14 11.0	24.2	327 40.9	10.2	17 31.5	4.0	56.3	52	17 43	18 16	18 55	18 30	19 05	19 44	20 29		
	14	29 11.1	25.1	342 10.1	10.2	17 35.5	4.0	56.3	54	17 41	18 16	18 57	18 25	18 58	19 36	20 20		
	15	44 11.3	26.1	356 39.3	10.1	17 39.5	3.8	56.3	56	17 39	18 16	18 59	18 19	18 50	19 27	20 10		
	16	59 11.5	27.0	11 08.4	10.2	17 43.3	3.8	56.2	58	17 37	18 16	19 02	18 12	18 41	19 16	19 59		
	17	74 11.7	28.0	25 37.6	10.2	17 47.1	3.6	56.2	S 60	17 35	18 16	19 04	18 04	18 31	19 04	19 46		
	18	89 11.9	N 5 29.0	40 06.8	10.3	N17 50.7	3.6	56.2	SOL		LUNA							
	19	104 12.0	29.9	54 36.1	10.2	17 54.3	3.5	56.1	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase		
	20	119 12.2	30.9	69 05.3	10.3	17 57.8	3.3	56.1										
	21	134 12.4	31.8	83 34.6	10.3	18 01.1	3.3	56.1										
	22																	

UT (HmGr)	ARIES	VENUS -4.4	MARTE -1.4	JÚPITER -2.2	SATURNO +0.2	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° ' "	° ' "	° ' "	° ' "	° ' "		° ' "	° ' "
4 00	192 14.1	222 15.9 S11 30.6	352 03.2 S 5 42.0	89 27.7 N23 11.6	321 31.3 S16 00.9	Acamar	315 18.3 S40 15.1	
01	207 16.6	237 15.7 29.9	7 06.5 41.7	104 30.0 11.6	336 33.9 00.8	Achernar	335 27.0 S57 10.0	
02	222 19.1	252 15.6 29.2	22 09.9 41.5	119 32.2 11.6	351 36.5 00.8	Acrux	173 07.9 S63 10.8	
03	237 21.5	267 15.5 . . 28.5	37 13.2 . . 41.2	134 34.4 . . 11.5	6 39.1 . . 00.8	Adhara	255 12.1 S28 59.9	
04	252 24.0	282 15.3 27.9	52 16.6 40.9	149 36.7 11.5	21 41.7 00.7	Aldebarán	290 48.9 N16 32.1	
05	267 26.5	297 15.2 27.2	67 19.9 40.6	164 38.9 11.5	36 44.3 00.7			
06	282 28.9	312 15.0 S11 26.5	82 23.3 S 5 40.3	179 41.1 N23 11.5	51 46.9 S16 00.6	Alioth	166 19.7 N55 52.9	
07	297 31.4	327 14.9 25.8	97 26.6 40.0	194 43.3 11.5	66 49.5 00.6	Alkaid	152 58.0 N49 14.4	
08	312 33.9	342 14.7 25.1	112 30.0 39.7	209 45.6 11.5	81 52.0 00.6	Al Na'ir	27 43.4 S46 53.3	
09	327 36.3	357 14.6 . . 24.4	127 33.3 . . 39.4	224 47.8 . . 11.4	96 54.6 . . 00.5	Alnilam	275 45.9 S 1 11.9	
10	342 38.8	12 14.5 23.7	142 36.7 39.2	239 50.0 11.4	111 57.2 00.5	Alphard	217 55.4 S 8 43.5	
11	357 41.2	27 14.3 23.0	157 40.0 38.9	254 52.2 11.4	126 59.8 00.5			
12	12 43.7	42 14.2 S11 22.3	172 43.3 S 5 38.6	269 54.5 N23 11.4	142 02.4 S16 00.4	Alphecca	126 10.3 N26 39.9	
13	27 46.2	57 14.0 21.6	187 46.7 38.3	284 56.7 11.4	157 05.0 00.4	Alpheratz	357 43.2 N29 10.0	
14	42 48.6	72 13.9 20.9	202 50.0 38.0	299 58.9 11.4	172 07.6 00.3	Altair	62 07.8 N 8 54.4	
15	57 51.1	87 13.7 . . 20.2	217 53.4 . . 37.7	315 01.1 . . 11.3	187 10.2 . . 00.3	Ankaa	353 15.6 S42 13.7	
16	72 53.6	102 13.6 19.5	232 56.7 37.4	330 03.3 11.3	202 12.8 00.3	Antares	112 25.3 S26 27.7	
17	87 56.0	117 13.5 18.8	248 00.1 37.1	345 05.6 11.3	217 15.4 00.2			
18	102 58.5	132 13.3 S11 18.1	263 03.4 S 5 36.9	0 07.8 N23 11.3	232 18.0 S16 00.2	Arcturus	145 54.9 N19 06.4	
19	118 01.0	147 13.2 17.4	278 06.8 36.6	15 10.0 11.3	247 20.5 00.2	Atria	107 26.4 S69 02.8	
20	133 03.4	162 13.0 16.7	293 10.2 36.3	30 12.2 11.3	262 23.1 00.1	Avior	234 17.5 S59 33.8	
21	148 05.9	177 12.9 . . 16.0	308 13.5 . . 36.0	45 14.5 . . 11.2	277 25.7 . . 00.1	Bellatrix	278 31.6 N 6 21.5	
22	163 08.4	192 12.7 15.3	323 16.9 35.7	60 16.7 11.2	292 28.3 00.0	Betelgeuse	271 00.8 N 7 24.3	
23	178 10.8	207 12.6 14.6	338 20.2 35.4	75 18.9 11.2	307 30.9 00.0			
5 00	193 13.3	222 12.5 S11 13.9	353 23.6 S 5 35.1	90 21.1 N23 11.2	322 33.5 S16 00.0	Canopus	263 56.0 S52 42.7	
01	208 15.7	237 12.3 13.2	8 26.9 34.8	105 23.3 11.2	337 36.1 15 59.9	Capella	280 33.8 N46 00.7	
02	223 18.2	252 12.2 12.5	23 30.3 34.5	120 25.6 11.2	352 38.7 59.9	Deneb	49 31.2 N45 19.7	
03	238 20.7	267 12.0 . . 11.8	38 33.6 . . 34.3	135 27.8 . . 11.1	7 41.3 . . 59.9	Denébola	182 32.8 N14 29.4	
04	253 23.1	282 11.9 11.1	53 37.0 34.0	150 30.0 11.1	22 43.9 59.8	Diphda	348 55.7 S17 54.6	
05	268 25.6	297 11.7 10.4	68 40.3 33.7	165 32.2 11.1	37 46.5 59.8			
06	283 28.1	312 11.6 S11 09.7	83 43.7 S 5 33.4	180 34.4 N23 11.1	52 49.1 S15 59.7	Dubhe	193 50.6 N61 40.4	
07	298 30.5	327 11.4 09.0	98 47.1 33.1	195 36.7 11.1	67 51.7 59.7	Elnath	278 12.1 N28 37.0	
08	313 33.0	342 11.3 08.2	113 50.4 32.8	210 38.9 11.0	82 54.3 59.7	Eltanin	90 45.7 N51 29.1	
09	328 35.5	357 11.2 . . 07.5	128 53.8 . . 32.5	225 41.1 . . 11.0	97 56.8 . . 59.6	Enif	33 46.8 N 9 56.4	
10	343 37.9	12 11.0 06.8	143 57.1 32.2	240 43.3 11.0	112 59.4 59.6	Fomalhaut	15 23.7 S29 32.7	
11	358 40.4	27 10.9 06.1	159 00.5 31.9	255 45.5 11.0	128 02.0 59.6			
12	13 42.8	42 10.7 S11 05.4	174 03.8 S 5 31.6	270 47.7 N23 11.0	143 04.6 S15 59.5	Gacrux	171 59.6 S57 11.7	
13	28 45.3	57 10.6 04.7	189 07.2 31.4	285 50.0 11.0	158 07.2 59.5	Gienah	175 51.4 S17 37.5	
14	43 47.8	72 10.4 04.0	204 10.6 31.1	300 52.2 10.9	173 09.8 59.4	Hadar	148 46.4 S60 26.4	
15	58 50.2	87 10.3 . . 03.3	219 13.9 . . 30.8	315 54.4 . . 10.9	188 12.4 . . 59.4	Hamal	328 00.4 N23 31.6	
16	73 52.7	102 10.1 02.5	234 17.3 30.5	330 56.6 10.9	203 15.0 59.4	Kaus Aust.	83 43.0 S34 22.4	
17	88 55.2	117 10.0 01.8	249 20.6 30.2	345 58.8 10.9	218 17.6 59.3			
18	103 57.6	132 09.8 S11 01.1	264 24.0 S 5 29.9	1 01.0 N23 10.9	233 20.2 S15 59.3	Kochab	137 19.1 N74 05.7	
19	119 00.1	147 09.7 11 00.4	279 27.4 29.6	16 03.3 10.9	248 22.8 59.3	Markab	13 38.0 N15 16.8	
20	134 02.6	162 09.6 10 59.7	294 30.7 29.3	31 05.5 10.8	263 25.4 59.2	Menkar	314 14.7 N 4 08.5	
21	149 05.0	177 09.4 . . 59.0	309 34.1 . . 29.0	46 07.7 . . 10.8	278 28.0 . . 59.2	Menkent	148 06.5 S36 26.4	
22	164 07.5	192 09.3 58.2	324 37.5 28.7	61 09.9 10.8	293 30.6 59.1	Miaplacidus	221 39.0 S69 47.0	
23	179 10.0	207 09.1 57.5	339 40.8 28.5	76 12.1 10.8	308 33.2 59.1			
6 00	194 12.4	222 09.0 S10 56.8	354 44.2 S 5 28.2	91 14.3 N23 10.8	323 35.8 S15 59.1	Mirfak	308 39.9 N49 54.6	
01	209 14.9	237 08.8 56.1	9 47.6 27.9	106 16.5 10.7	338 38.4 59.0	Nunki	75 57.6 S26 16.5	
02	224 17.3	252 08.7 55.4	24 50.9 27.6	121 18.7 10.7	353 41.0 59.0	Peacock	53 18.6 S56 41.0	
03	239 19.8	267 08.5 . . 54.6	39 54.3 . . 27.3	136 21.0 . . 10.7	8 43.5 . . 58.9	Póllux	243 27.0 N27 59.3	
04	254 22.3	282 08.4 53.9	54 57.6 27.0	151 23.2 10.7	23 46.1 58.9	Procyon	244 59.1 N 5 11.0	
05	269 24.7	297 08.2 53.2	70 01.0 26.7	166 25.4 10.7	38 48.7 58.9			
06	284 27.2	312 08.1 S10 52.5	85 04.4 S 5 26.4	181 27.6 N23 10.7	53 51.3 S15 58.8	Rasalhague	96 05.8 N12 33.0	
07	299 29.7	327 07.9 51.7	100 07.7 26.1	196 29.8 10.6	68 53.9 58.8	Régulus	207 42.7 N11 53.6	
08	314 32.1	342 07.8 51.0	115 11.1 25.8	211 32.0 10.6	83 56.5 58.8	Rigel	281 11.7 S 8 11.5	
09	329 34.6	357 07.6 . . 50.3	130 14.5 . . 25.6	226 34.2 . . 10.6	98 59.1 . . 58.7	Rigel Kent.	139 50.3 S60 53.5	
10	344 37.1	12 07.5 49.6	145 17.8 25.3	241 36.4 10.6	114 01.7 58.7	Sabik	102 11.7 S15 44.4	
11	359 39.5	27 07.3 48.8	160 21.2 25.0	256 38.6 10.6	129 04.3 58.6			
12	14 42.0	42 07.2 S10 48.1	175 24.6 S 5 24.7	271 40.9 N23 10.5	144 06.9 S15 58.6	Schedar	349 40.4 N56 36.9	
13	29 44.5	57 07.0 47.4	190 27.9 24.4	286 43.1 10.5	159 09.5 58.6	Shaula	96 21.0 S37 06.6	
14	44 46.9	72 06.9 46.7	205 31.3 24.1	301 45.3 10.5	174 12.1 58.5	Sirius	258 33.3 S16 44.5	
15	59 49.4	87 06.7 . . 45.9	220 34.7 . . 23.8	316 47.5 . . 10.5	189 14.7 . . 58.5	Spica	158 30.3 S11 14.2	
16	74 51.8	102 06.6 45.2	235 38.1 23.5	331 49.7 10.5	204 17.3 58.4	Suhail	222 51.8 S43 29.8	
17	89 54.3	117 06.4 44.5	250 41.4 23.2	346 51.9 10.4	219 19.9 58.4			
18	104 56.8	132 06.3 S10 43.7	265 44.8 S 5 22.9	1 54.1 N23 10.4	234 22.5 S15 58.4	Vega	80 38.5 N38 47.7	
19	119 59.2	147 06.2 43.0	280 48.2 22.6	16 56.3 10.4	249 25.1 58.3	Zuben'ubi	137 04.5 S16 06.1	
20	135 01.7	162 06.0 42.3	295 51.5 22.4	31 58.5 10.4	264 27.7 58.3			
21	150 04.2	177 05.9 . . 41.5	310 54.9 . . 22.1	47 00.7 . . 10.4	279 30.3 . . 58.2			
22	165 06.6	192 05.7 40.8	325 58.3 21.8	62 02.9 10.4	294 32.9 58.2			
23	180 09.1	207 05.6 40.1	341 01.6 21.5	77 05.1 10.3	309 35.5 58.2			
h m								
Paso Mer. 11 05.3		v -0.1 d 0.7	v 3.4 d 0.3	v 2.2 d 0.0	v 2.6 d 0.0			
						AHS	Paso Mer.	
						° ' "	h m	
						Venus	28 59.2 9 11	
						Marte	160 10.3 0 26	
						Júpiter	257 07.8 17 56	
						Saturno	129 20.2 2 29	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		4	5	6	7
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m
4 00	179 13.0	N 5 34.7	127 02.5	10.3	N18 10.6	3.0	56.0	N 72	00 17	03 16	04 35	☐	☐	☐	07 22
	194 13.1	35.6	141 31.8	10.4	18 13.6	2.8	56.0	N 68	01 47	03 36	04 45	05 21	05 53	06 57	08 20
	209 13.3	36.6	156 01.2	10.3	18 16.4	2.8	55.9	66	02 48	04 04	04 59	06 32	07 15	08 11	09 19
	224 13.5	37.6	170 30.5	10.4	18 19.2	2.7	55.9	64	03 07	04 14	05 05	06 54	07 38	08 33	09 38
	239 13.7	38.5	184 59.9	10.4	18 21.9	2.6	55.9	62	03 23	04 23	05 10	07 12	07 57	08 51	09 53
V I E R N E S	254 13.9	39.5	199 29.3	10.5	18 24.5	2.4	55.8	60	03 35	04 30	05 14	07 26	08 12	09 06	10 06
	269 14.0	N 5 40.4	213 58.8	10.4	N18 26.9	2.4	55.8	N 58	03 46	04 37	05 17	07 39	08 25	09 18	10 17
	284 14.2	41.4	228 28.2	10.5	18 29.3	2.3	55.8	56	03 55	04 42	05 21	07 50	08 36	09 29	10 27
	299 14.4	42.3	242 57.7	10.5	18 31.6	2.2	55.7	54	04 03	04 47	05 23	07 59	08 46	09 39	10 36
	314 14.6	43.3	257 27.2	10.5	18 33.8	2.1	55.7	52	04 09	04 52	05 26	08 08	08 55	09 47	10 43
	329 14.8	44.2	271 56.7	10.5	18 35.9	1.9	55.7	50	04 16	04 55	05 29	08 15	09 03	09 55	10 50
	344 14.9	45.2	286 26.2	10.6	18 37.8	1.9	55.7	45	04 28	05 04	05 34	08 32	09 19	10 11	11 05
	359 15.1	N 5 46.1	300 55.8	10.6	N18 39.7	1.8	55.6	N 40	04 38	05 11	05 38	08 45	09 33	10 24	11 17
	14 15.3	47.1	315 25.4	10.6	18 41.5	1.7	55.6	35	04 46	05 16	05 42	08 56	09 45	10 35	11 27
	29 15.5	48.0	329 55.0	10.6	18 43.2	1.6	55.6	30	04 52	05 21	05 45	09 06	09 55	10 45	11 36
	44 15.7	49.0	344 24.6	10.7	18 44.8	1.5	55.6	20	05 02	05 28	05 50	09 23	10 13	11 02	11 52
	59 15.8	49.9	358 54.3	10.7	18 46.3	1.4	55.5	N 10	05 09	05 34	05 55	09 38	10 28	11 17	12 06
	74 16.0	50.9	13 24.0	10.7	18 47.7	1.3	55.5	0	05 15	05 39	05 59	09 52	10 42	11 31	12 18
	89 16.2	N 5 51.8	27 53.7	10.7	N18 49.0	1.2	55.5	S 10	05 18	05 43	06 04	10 07	10 57	11 45	12 31
	104 16.4	52.8	42 23.4	10.7	18 50.2	1.2	55.5	20	05 20	05 46	06 08	10 22	11 12	12 00	12 44
	119 16.6	53.7	56 53.1	10.8	18 51.4	1.0	55.4	30	05 21	05 49	06 13	10 39	11 30	12 17	13 00
	134 16.7	54.7	71 22.9	10.8	18 52.4	0.9	55.4	35	05 21	05 50	06 16	10 49	11 40	12 26	13 09
	149 16.9	55.7	85 52.7	10.9	18 53.3	0.8	55.4	40	05 20	05 52	06 19	11 01	11 52	12 38	13 19
23	164 17.1	56.6	100 22.6	10.8	18 54.1	0.8	55.4	45	05 19	05 53	06 22	11 14	12 06	12 51	13 31
5 00	179 17.3	N 5 57.6	114 52.4	10.9	N18 54.9	0.6	55.3	S 50	05 17	05 54	06 27	11 31	12 22	13 07	13 45
	194 17.5	58.5	129 22.3	10.9	18 55.5	0.5	55.3	52	05 16	05 55	06 29	11 39	12 30	13 15	13 52
	209 17.6	5 59.5	143 52.2	11.0	18 56.0	0.5	55.3	54	05 14	05 55	06 31	11 47	12 39	13 23	14 00
	224 17.8	6 00.4	158 22.2	10.9	18 56.5	0.3	55.3	56	05 13	05 56	06 33	11 57	12 49	13 32	14 08
	239 18.0	01.4	172 52.1	11.0	18 56.8	0.3	55.2	58	05 11	05 56	06 36	12 09	13 01	13 43	14 17
S Á B A D O	254 18.2	02.3	187 22.1	11.1	18 57.1	0.1	55.2	S 60	05 08	05 57	06 38	12 21	13 14	13 55	14 28
	269 18.4	N 6 03.3	201 52.2	11.0	N18 57.2	0.1	55.2	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	284 18.5	04.2	216 22.2	11.1	18 57.3	0.0	55.2				Civil	Náut.	4	5	6	7
	299 18.7	05.2	230 52.3	11.1	18 57.3	0.1	55.1	N 72	h m	h m	h m	h m	h m	h m	h m
	314 18.9	06.1	245 22.4	11.1	18 57.2	0.3	55.1								
	329 19.1	07.0	259 52.5	11.2	18 56.9	0.3	55.1								
	344 19.3	08.0	274 22.7	11.2	18 56.6	0.4	55.1								
	359 19.4	N 6 08.9	288 52.9	11.3	N18 56.2	0.5	55.0								
	14 19.6	09.9	303 23.2	11.2	18 55.7	0.5	55.0	N 70	19 23	20 33	22 28	01 53	03 05	03 44	03 59
	29 19.8	10.8	317 53.4	11.3	18 55.2	0.7	55.0	68	19 15	20 17	21 48	01 11	02 15	02 59	03 25
	44 20.0	11.8	332 23.7	11.3	18 54.5	0.8	55.0	66	19 08	20 04	21 21	00 42	01 44	02 29	03 00
	59 20.2	12.7	346 54.0	11.4	18 53.7	0.8	55.0	64	19 03	19 54	21 01	00 21	01 20	02 07	02 40
	74 20.3	13.7	1 24.4	11.4	18 52.9	1.0	54.9	62	18 58	19 45	20 46	00 03	01 02	01 49	02 24
	89 20.5	N 6 14.6	15 54.8	11.4	N18 51.9	1.0	54.9	60	18 53	19 37	20 33	24 47	00 47	01 34	02 11
	104 20.7	15.6	30 25.2	11.4	18 50.9	1.2	54.9	N 58	18 49	19 31	20 22	24 34	00 34	01 21	01 59
	119 20.9	16.5	44 55.6	11.5	18 49.7	1.2	54.9	56	18 46	19 25	20 13	24 23	00 23	01 10	01 49
	134 21.0	17.5	59 26.1	11.5	18 48.5	1.3	54.9	54	18 43	19 20	20 05	24 13	00 13	01 00	01 41
	149 21.2	18.4	73 56.6	11.6	18 47.2	1.4	54.8	52	18 40	19 15	19 57	24 04	00 04	00 52	01 33
23	164 21.4	19.4	88 27.2	11.6	18 45.8	1.5	54.8	50	18 38	19 11	19 51	23 56	24 44	00 44	01 26
6 00	179 21.6	N 6 20.3	102 57.8	11.6	N18 44.3	1.6	54.8	45	18 33	19 03	19 38	23 39	24 28	00 28	01 10
	194 21.8	21.3	117 28.4	11.6	18 42.7	1.6	54.8	N 40	18 28	18 56	19 28	23 26	24 14	00 14	00 58
	209 21.9	22.2	131 59.0	11.7	18 41.1	1.8	54.8	35	18 24	18 50	19 20	23 14	24 03	00 03	00 47
	224 22.1	23.2	146 29.7	11.7	18 39.3	1.8	54.7	30	18 21	18 45	19 14	23 04	23 53	24 38	00 38
	239 22.3	24.1	161 00.4	11.8	18 37.5	2.0	54.7	20	18 15	18 38	19 04	22 46	23 35	24 21	00 21
	254 22.5	25.0	175 31.2	11.7	18 35.5	2.0	54.7	N 10	18 10	18 32	18 56	22 31	23 20	24 07	00 07
	269 22.6	N 6 26.0	190 01.9	11.9	N18 33.5	2.1	54.7	0	18 06	18 27	18 51	22 17	23 06	23 54	24 41
	284 22.8	26.9	204 32.8	11.8	18 31.4	2.2	54.7	S 10	18 02	18 23	18 47	22 02	22 52	23 41	24 29
	299 23.0	27.9	219 03.6	11.9	18 29.2	2.3	54.7	20	17 57	18 19	18 45	21 47	22 37	23 26	24 16
	314 23.2	28.8	233 34.5	11.9	18 26.9	2.3	54.6	30	17 52	18 16	18 44	21 29	22 19	23 10	24 01
	329 23.4	29.8	248 05.4	11.9	18 24.6	2.5	54.6	35	17 49	18 14	18 44	21 19	22 09	23 00	23 53
	344 23.5	30.7	262 36.3	12.0	18 22.1	2.5	54.6	40	17 46	18 13	18 44	21 07	21 57	22 49	23 43
	359 23.7	N 6 31.7	277 07.3	12.0	N18 19.6	2.6	54.6	45	17 42	18 12	18 46	20 54	21 43	22 36	23 32
	14 23.9	32.6	291 38.3	12.1	18 17.0	2.7	54.6	S 50	17 38	18 10	18 48	20 37	21 27	22 21	23 18
	29 24.1	33.5	306 09.4	12.1	18 14.3	2.8	54.6	52	17 36	18 10	18 49	20 29	21 19	22 13	23 11
	44 24.2	34.5	320 40.5	12.1	18 11.5	2.9	54.6	54	17 34	18 09	18 50	20 20	21 10	22 05	23 04
	59 24.4	35.4	335 11.6	12.1	18 08.6	2.9	54.5	56	17 31	18 09	18 51	20 10	21 00	21 56	22 56
	74 24.6	36.4	349 42.7	12.2	18 05.7	3.1	54.5	58	17 29	18 08	18 53	19 59	20 49	21 45	22 47
89 24.8	N 6 37.3	4 13.9	12.3	N18 02.6	3.1	54.5	S 60	17 26	18 07	18 55	19 46	20 36	21 33	22 37	
104 24.9	38.3	18 45.2	12.2	17 59.5	3.2	54.5	Día	SOL		Paso Mer.	LUNA				
119 25.1	39.2	33 16.4	12.3	17 56.3	3.2	54.5		Ec. Tiempo	12h		Paso Mer. Sup.	Paso Mer. Inf.	Edad	Fase	
134 25.3	40.1	47 47.7	12.3	17 53.1	3.4	54.5	d	m s	m s	h m	h m	h m	d	%	
21	149 25.5	41.1	62 19.0	12.4	17 49.7	3.4	54.5	4	03 09	03 00	12 03	16 05	03 39	05 24	
22	164 25.7	42.0	76 50.4	12.4	N17 46.3	3.6	54.4	5	02 51	02 43	12 03	16 54	04 30	06 33	
23	S/D 16.0	<i>d</i> 0.9	S/D 15.2</												

UT (HmGr)		ARIES		VENUS -4.3		MARTE -1.5		JÚPITER -2.2		SATURNO +0.2		ESTRELLAS		
		AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre		AHS	Dec
L U N E S	7 00	195 11.6	222 05.4	S10 39.3	356 05.0	S 5 21.2	92 07.4	N23 10.3	324 38.1	S15 58.1	Acamar	315 18.3	S40 15.1	
	01	210 14.0	237 05.3	38.6	11 08.4	20.9	107 09.6	10.3	339 40.7	58.1	Achernar	335 27.0	S57 10.0	
	02	225 16.5	252 05.1	37.8	26 11.8	20.6	122 11.8	10.3	354 43.3	58.1	Acrux	173 07.9	S63 10.8	
	03	240 19.0	267 05.0	37.1	41 15.1	20.3	137 14.0	10.3	9 45.9	58.0	Adhara	255 12.1	S28 59.9	
	04	255 21.4	282 04.8	36.4	56 18.5	20.0	152 16.2	10.2	24 48.5	58.0	Aldebarán	290 48.9	N16 32.1	
	05	270 23.9	297 04.7	35.6	71 21.9	19.7	167 18.4	10.2	39 51.1	57.9				
	06	285 26.3	312 04.5	S10 34.9	86 25.2	S 5 19.4	182 20.6	N23 10.2	54 53.7	S15 57.9	Alioth	166 19.7	N55 52.9	
	07	300 28.8	327 04.4	34.1	101 28.6	19.1	197 22.8	10.2	69 56.3	57.9	Alkaid	152 58.0	N49 14.4	
	08	315 31.3	342 04.2	33.4	116 32.0	18.9	212 25.0	10.2	84 58.9	57.8	Al Na'ir	27 43.4	S46 53.3	
	09	330 33.7	357 04.1	32.7	131 35.4	18.6	227 27.2	10.1	100 01.5	57.8	Anilam	275 45.9	S 1 11.1	
	10	345 36.2	12 03.9	31.9	146 38.7	18.3	242 29.4	10.1	115 04.1	57.7	Alphard	217 55.4	S 8 43.6	
	11	0 38.7	27 03.7	31.2	161 42.1	18.0	257 31.6	10.1	130 06.7	57.7				
	12	15 41.1	42 03.6	S10 30.4	176 45.5	S 5 17.7	272 33.8	N23 10.1	145 09.3	S15 57.7	Alphecca	126 10.3	N26 39.9	
	13	30 43.6	57 03.4	29.7	191 48.9	17.4	287 36.0	10.1	160 11.9	57.6	Alpheratz	357 43.2	N29 10.0	
	14	45 46.1	72 03.3	28.9	206 52.2	17.1	302 38.2	10.0	175 14.5	57.6	Altair	62 07.7	N 8 54.4	
	15	60 48.5	87 03.1	28.2	221 55.6	16.8	317 40.4	10.0	190 17.1	57.5	Ankaa	353 15.6	S42 13.7	
	16	75 51.0	102 03.0	27.5	236 59.0	16.5	332 42.6	10.0	205 19.7	57.5	Antares	112 25.3	S26 27.7	
	17	90 53.4	117 02.8	26.7	252 02.4	16.2	347 44.8	10.0	220 22.3	57.5				
	18	105 55.9	132 02.7	S10 26.0	267 05.7	S 5 15.9	2 47.0	N23 10.0	235 24.9	S15 57.4	Arcturus	145 54.9	N19 06.4	
	19	120 58.4	147 02.5	25.2	282 09.1	15.6	17 49.2	09.9	250 27.5	57.4	Atria	107 26.3	S69 02.8	
	20	136 00.8	162 02.4	24.5	297 12.5	15.4	32 51.4	09.9	265 30.1	57.3	Avior	234 17.6	S59 33.8	
	21	151 03.3	177 02.2	23.7	312 15.9	15.1	47 53.6	09.9	280 32.7	57.3	Bellatrix	278 31.6	N 6 21.5	
	22	166 05.8	192 02.1	23.0	327 19.3	14.8	62 55.8	09.9	295 35.3	57.3	Betelgeuse	271 00.8	N 7 24.3	
23	181 08.2	207 01.9	22.2	342 22.6	14.5	77 58.0	09.9	310 37.9	57.2					
M A R T E S	8 00	196 10.7	222 01.8	S10 21.5	357 26.0	S 5 14.2	93 00.2	N23 09.9	325 40.5	S15 57.2	Canopus	263 56.0	S52 42.7	
	01	211 13.2	237 01.6	20.7	12 29.4	13.9	108 02.4	09.8	340 43.1	57.1	Capella	249 33.8	N46 00.7	
	02	226 15.6	252 01.5	19.9	27 32.8	13.6	123 04.6	09.8	355 45.7	57.1	Deneb	49 31.2	N45 19.7	
	03	241 18.1	267 01.3	19.2	42 36.1	13.3	138 06.8	09.8	10 48.3	57.1	Denebola	182 32.8	N14 29.4	
	04	256 20.6	282 01.2	18.4	57 39.5	13.0	153 09.0	09.8	25 50.9	57.0	Diphda	348 55.7	S17 54.6	
	05	271 23.0	297 01.0	17.7	72 42.9	12.7	168 11.2	09.8	40 53.5	57.0				
	06	286 25.5	312 00.9	S10 16.9	87 46.3	S 5 12.4	183 13.4	N23 09.7	55 56.1	S15 57.0	Dubhe	193 50.6	N61 40.4	
	07	301 27.9	327 00.7	16.2	102 49.7	12.1	198 15.6	09.7	70 58.7	56.9	Elnath	278 12.1	N28 37.0	
	08	316 30.4	342 00.6	15.4	117 53.0	11.9	213 17.8	09.7	86 01.3	56.9	Eltanin	90 45.7	N51 29.1	
	09	331 32.9	357 00.4	14.7	132 56.4	11.6	228 20.0	09.7	101 03.9	56.8	Enif	33 46.8	N 9 56.4	
	10	346 35.3	12 00.2	13.9	147 59.8	11.3	243 22.2	09.7	116 06.5	56.8	Fomalhaut	15 23.7	S29 32.7	
	11	1 37.8	27 00.1	13.1	163 03.2	11.0	258 24.4	09.6	131 09.1	56.8				
	12	16 40.3	41 59.9	S10 12.4	178 06.6	S 5 10.7	273 26.6	N23 09.6	146 11.7	S15 56.7	Gacrux	171 59.6	S57 11.7	
	13	31 42.7	56 59.8	11.6	193 09.9	10.4	288 28.8	09.6	161 14.3	56.7	Gienah	175 51.4	S17 37.5	
	14	46 45.2	71 59.6	10.9	208 13.3	10.1	303 31.0	09.6	176 16.9	56.6	Hadar	148 46.4	S60 26.5	
	15	61 47.7	86 59.5	10.1	223 16.7	09.8	318 33.2	09.6	191 19.5	56.6	Hamal	328 00.4	N23 31.6	
	16	76 50.1	101 59.3	09.3	238 20.1	09.5	333 35.4	09.5	206 22.1	56.6	Kaus Aust.	83 43.0	S34 22.4	
	17	91 52.6	116 59.2	08.6	253 23.5	09.2	348 37.6	09.5	221 24.7	56.5				
	18	106 55.1	131 59.0	S10 07.8	268 26.8	S 5 08.9	3 39.7	N23 09.5	236 27.3	S15 56.5	Kochab	137 19.1	N74 05.7	
	19	121 57.5	146 58.9	07.0	283 30.2	08.6	18 41.9	09.5	251 29.9	56.4	Makrab	13 38.0	N15 16.8	
	20	137 00.0	161 58.7	06.3	298 33.6	08.4	33 44.1	09.4	266 32.5	56.4	Menkar	314 14.7	N 4 08.5	
	21	152 02.4	176 58.6	05.5	313 37.0	08.1	48 46.3	09.4	281 35.1	56.4	Menkent	148 06.5	S36 26.4	
	22	167 04.9	191 58.4	04.8	328 40.4	07.8	63 48.5	09.4	296 37.7	56.3	Miaplacidus	221 29.0	S69 47.0	
23	182 07.4	206 58.2	04.0	343 43.7	07.5	78 50.7	09.4	311 40.3	56.3					
M I É R C O L E S	9 00	197 09.8	221 58.1	S10 03.2	358 47.1	S 5 07.2	93 52.9	N23 09.4	326 42.9	S15 56.2	Miraf	308 39.9	N49 54.6	
	01	212 12.3	236 57.9	02.5	13 50.5	06.9	108 55.1	09.3	341 45.6	56.2	Nunki	75 57.6	S26 16.5	
	02	227 14.8	251 57.8	01.7	28 53.9	06.6	123 57.3	09.3	356 48.2	56.1	Peacock	53 18.6	S56 41.0	
	03	242 17.2	266 57.6	00.9	43 57.3	06.3	138 59.5	09.3	11 50.8	56.1	Póllux	243 27.0	N27 59.3	
	04	257 19.7	281 57.5	10 00.1	59 00.7	06.0	154 01.7	09.3	26 53.4	56.1	Procyon	244 59.1	N 5 11.0	
	05	272 22.2	296 57.3	9 59.4	74 04.0	05.7	169 03.9	09.2	41 56.0	56.0				
	06	287 24.6	311 57.2	S 9 58.6	89 07.4	S 5 05.4	184 06.0	N23 09.2	56 58.6	S15 56.0	Rasalhague	96 05.8	N12 33.0	
	07	302 27.1	326 57.0	57.8	104 10.8	05.1	199 08.2	09.2	72 01.2	55.9	Régulus	207 42.7	N11 53.6	
	08	317 29.5	341 56.9	57.1	119 14.2	04.9	214 10.4	09.2	87 03.8	55.9	Rigel	281 11.7	S 8 11.4	
	09	332 32.0	356 56.7	56.3	134 17.6	04.6	229 12.6	09.2	102 06.4	55.9	Rigel Kent.	139 50.3	S60 53.5	
	10	347 34.5	11 56.5	55.5	149 20.9	04.3	244 14.8	09.2	117 09.0	55.8	Sabik	102 11.7	S15 44.4	
	11	2 36.9	26 56.4	54.7	164 24.3	04.0	259 17.0	09.1	132 11.6	55.8				
	12	17 39.4	41 56.2	S 9 54.0	179 27.7	S 5 03.7	274 19.2	N23 09.1	147 14.2	S15 55.7	Schedar	349 40.4	N56 36.8	
	13	32 41.9	56 56.1	53.2	194 31.1	03.4	289 21.4	09.1	162 16.8	55.7	Shaula	96 21.0	S37 06.6	
	14	47 44.3	71 55.9	52.4	209 34.5	03.1	304 23.6	09.1	177 19.4	55.7	Sirius	258 33.3	S16 44.5	
	15	62 46.8	86 55.8	51.6	224 37.9	02.8	319 25.8	09.1	192 22.0	55.6	Spica	158 30.3	S11 14.3	
	16	77 49.3	101 55.6	50.9	239 41.2	02.5	334 27.9	09.0	207 24.6	55.6	Suhail	222 51.8	S43 29.9	
	17	92 51.7	116 55.5	50.1	254 44.6	02.2	349 30.1	09.0	222 27.2	55.5				
	18	107 54.2	131 55.3	S 9 49.3	269 48.0	S 5 01.9	4 32.3	N23 09.0	237 29.8	S15 55.5	Vega	80 38.5	N38 47.7	
	19	122 56.7	146 55.1	48.5	284 51.4	01.7	19 34.5	09.0	252 32.4	55.5	Zuben'ubi	137 04.5	S16 06.1	
	20	137 59.1	161 55.0	47.7	299 54.8	01.4	34 36.7	09.0	267 35.1	55.4				
	21	153 01.6	176 54.8	47.0	314 58.2	01.1	49 38.9	08.9	282 37.7	55.4				
	22	168 04.0	191 54.7	46.2	330 01.6	00.8	64 41.1	08.9	297 40.3	55.3	Venus	25 51.1	h 9 12	
23	183 06.5	206 54.5	45.4	345 04.9	00.5	79 43.2	08.9	312 42.9	55.3	Marte	161 15.3	0 10		
Paso Mer. 10 53.5		<i>v</i> -0.2	<i>d</i> 0.8	<i>v</i> 3.4	<i>d</i> 0.3	<i>v</i> 2.2	<i>d</i> 0.0	<i>v</i> 2.6	<i>d</i> 0.0	Júpiter	256 49.5	17 45		
										Saturno	129 29.8	2 17		

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	7	8	9	10
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m
L U N E S	7 00	179 25.8	N 6 43.0	91 21.8	12.4	N17 42.7	3.6 54.4	N 72	01 11	03 19	04 31	08 20	09 50	11 21	12 52
	01	194 26.0	43.9	105 53.2	12.5	17 39.1	3.6 54.4	68	02 01	03 37	04 40	08 54	10 14	11 38	13 03
	02	209 26.2	44.8	120 24.7	12.5	17 35.5	3.8 54.4	66	02 31	03 51	04 48	09 19	10 33	11 51	13 12
	03	224 26.4	45.8	134 56.2	12.5	17 31.7	3.8 54.4	64	02 53	04 03	04 54	09 38	10 48	12 03	13 19
	04	239 26.5	46.7	149 27.7	12.6	17 27.9	4.0 54.4	62	03 10	04 12	05 00	09 53	11 01	12 12	13 26
	05	254 26.7	47.7	163 59.3	12.6	17 23.9	3.9 54.4	60	03 24	04 21	05 05	10 06	11 12	12 20	13 31
	06	269 26.9	N 6 48.6	178 30.9	12.6	N17 20.0	4.1 54.4	N 58	03 36	04 28	05 09	10 17	11 21	12 27	13 36
	07	284 27.1	49.5	193 02.5	12.7	17 15.9	4.2 54.4	56	03 46	04 34	05 13	10 27	11 29	12 34	13 40
	08	299 27.2	50.5	207 34.2	12.7	17 11.7	4.2 54.4	54	03 54	04 39	05 16	10 36	11 36	12 39	13 44
	09	314 27.4	51.4	222 05.9	12.7	17 07.5	4.3 54.3	52	04 02	04 44	05 19	10 43	11 43	12 44	13 48
	10	329 27.6	52.4	236 37.6	12.8	17 03.2	4.4 54.3	50	04 08	04 49	05 22	10 50	11 49	12 49	13 51
	11	344 27.8	53.3	251 09.4	12.8	16 58.8	4.4 54.3	45	04 22	04 58	05 28	11 05	12 01	12 59	13 58
	12	359 27.9	N 6 54.2	265 41.2	12.8	N16 54.4	4.5 54.3	N 40	04 33	05 06	05 33	11 17	12 12	13 07	14 03
	13	14 28.1	55.2	280 13.0	12.9	16 49.9	4.6 54.3	35	04 42	05 12	05 38	11 27	12 20	13 14	14 08
	14	29 28.3	56.1	294 44.9	12.9	16 45.3	4.7 54.3	30	04 49	05 17	05 41	11 36	12 28	13 20	14 13
	15	44 28.5	57.1	309 16.8	12.9	16 40.6	4.7 54.3	20	05 00	05 26	05 48	11 52	12 41	13 31	14 20
	16	59 28.6	58.0	323 48.7	13.0	16 35.9	4.9 54.3	N 10	05 08	05 32	05 53	12 06	12 53	13 40	14 27
	17	74 28.8	58.9	338 20.7	13.0	16 31.0	4.9 54.3	0	05 14	05 38	05 59	12 18	13 04	13 49	14 33
	18	89 29.0	N 6 59.9	352 52.7	13.0	N16 26.1	4.9 54.3	S 10	05 18	05 42	06 04	12 31	13 15	13 57	14 39
	19	104 29.2	7 00.8	7 24.7	13.0	16 21.2	5.1 54.3	20	05 21	05 47	06 09	12 44	13 27	14 07	14 45
	20	119 29.3	01.8	21 56.7	13.1	16 16.1	5.1 54.3	30	05 23	05 51	06 15	13 00	13 40	14 17	14 53
	21	134 29.5	02.7	36 28.8	13.2	16 11.0	5.1 54.3	35	05 23	05 53	06 18	13 09	13 47	14 23	14 57
	22	149 29.7	03.6	51 01.0	13.1	16 05.9	5.3 54.3	40	05 23	05 55	06 22	13 19	13 56	14 30	15 02
	23	164 29.9	04.6	65 33.1	13.2	16 00.6	5.3 54.2	45	05 23	05 57	06 26	13 31	14 06	14 38	15 07
	M A R T E S	8 00	179 30.0	N 7 05.5	80 05.3	13.2	N15 55.3	5.4 54.2	S 50	05 21	05 59	06 31	13 45	14 19	14 48	15 14
01		194 30.2	06.4	94 37.5	13.3	15 49.9	5.4 54.2	52	05 21	06 00	06 34	13 52	14 24	14 52	15 17
02		209 30.4	07.4	109 09.8	13.3	15 44.5	5.6 54.2	54	05 20	06 01	06 36	14 00	14 30	14 57	15 21
03		224 30.6	08.3	123 42.1	13.3	15 38.9	5.6 54.2	56	05 19	06 02	06 39	14 08	14 37	15 02	15 24
04		239 30.7	09.2	138 14.4	13.3	15 33.3	5.6 54.2	58	05 17	06 03	06 42	14 17	14 45	15 08	15 28
05		254 30.9	10.2	152 46.7	13.4	15 27.7	5.7 54.2	S 60	05 16	06 04	06 46	14 28	14 54	15 15	15 33
06		269 31.1	N 7 11.1	167 19.1	13.4	N15 22.0	5.8 54.2	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
07		284 31.2	12.0	181 51.5	13.4	15 16.2	5.9 54.2				7	8	9	10	
08		299 31.4	13.0	196 23.9	13.5	15 10.3	5.9 54.2	N 72	h m	h m	h m	h m	h m	h m	h m
09		314 31.6	13.9	210 56.4	13.5	15 04.4	6.0 54.2									19 48	21 13	22 13	04 58	04 40	04 30	04 22
10		329 31.8	14.9	225 28.9	13.5	14 58.4	6.1 54.2	N 70	19 36	20 49	23 08	03 59	04 05	04 07	04 07
11		344 31.9	15.8	240 01.4	13.6	14 52.3	6.1 54.2	68	19 26	20 30	22 10	03 25	03 40	03 49	03 55
12		359 32.1	N 7 16.7	254 34.0	13.5	N14 46.2	6.2 54.2	66	19 18	20 16	21 37	03 00	03 20	03 34	03 45
13		14 32.3	17.7	269 06.5	13.6	14 40.0	6.2 54.2	64	19 11	20 04	21 15	02 40	03 04	03 22	03 36
14		29 32.5	18.6	283 39.1	13.7	14 33.8	6.4 54.2	62	19 06	19 54	20 57	02 24	02 51	03 12	03 29
15		44 32.6	19.5	298 11.8	13.6	14 27.4	6.3 54.2	60	19 01	19 45	20 42	02 11	02 40	03 03	03 23
16		59 32.8	20.5	312 44.4	13.7	14 21.1	6.5 54.2	N 58	18 56	19 38	20 30	01 59	02 30	02 56	03 17
17		74 33.0	21.4	327 17.1	13.7	14 14.6	6.5 54.2	56	18 52	19 31	20 20	01 49	02 22	02 49	03 12
18		89 33.1	N 7 22.3	341 49.8	13.8	N14 08.1	6.5 54.2	54	18 49	19 26	20 11	01 41	02 14	02 43	03 08
19		104 33.3	23.3	356 22.6	13.7	14 01.6	6.6 54.2	52	18 46	19 21	20 04	01 33	02 07	02 37	03 04
20		119 33.5	24.2	10 55.3	13.8	13 55.0	6.7 54.2	50	18 43	19 16	19 57	01 26	02 01	02 32	03 00
21		134 33.7	25.1	25 28.1	13.8	13 48.3	6.8 54.2	45	18 36	19 07	19 43	01 10	01 48	02 21	02 52
22		149 33.8	26.0	40 00.9	13.9	13 41.5	6.8 54.2	N 40	18 31	18 59	19 32	00 58	01 37	02 12	02 45
23		164 34.0	27.0	54 33.8	13.8	13 34.7	6.8 54.2	35	18 27	18 52	19 23	00 47	01 28	02 05	02 39
M I É R C O L E S		9 00	179 34.2	N 7 27.9	69 06.6	13.9	N13 27.9	7.0 54.2	30	18 23	18 47	19 16	00 38	01 19	01 58	02 34
	01	194 34.3	28.8	83 39.5	13.9	13 20.9	6.9 54.2	20	18 16	18 38	19 05	00 21	01 05	01 46	02 25
	02	209 34.5	29.8	98 12.4	13.9	13 14.0	7.1 54.2	N 10	18 10	18 32	18 56	00 07	00 52	01 36	02 17
	03	224 34.7	30.7	112 45.3	14.0	13 06.9	7.1 54.2	0	18 05	18 26	18 50	24 41	00 41	01 26	02 10
	04	239 34.9	31.6	127 18.3	14.0	12 59.8	7.1 54.2	S 10	18 00	18 21	18 46	24 29	00 29	01 16	02 03
	05	254 35.0	32.6	141 51.3	14.0	12 52.7	7.2 54.2	20	17 55	18 17	18 42	24 16	00 16	01 05	01 55
	06	269 35.2	N 7 33.5	156 24.3	14.0	N12 45.5	7.3 54.2	30	17 49	18 13	18 40	24 01	00 01	00 53	01 45
	07	284 35.4	34.4	170 57.3	14.0	12 38.2	7.3 54.2	35	17 45	18 11	18 40	23 53	24 46	00 46	01 40
	08	299 35.5	35.4	185 30.3	14.1	12 30.9	7.4 54.3	40	17 41	18 08	18 40	23 43	24 38	00 38	01 34
	09	314 35.7	36.3	200 03.4	14.1	12 23.5	7.4 54.3	45	17 37	18 06	18 40	23 32	24 29	00 29	01 27
	10	329 35.9	37.2	214 36.5	14.1	12 16.1	7.5 54.3	S 50	17 32	18 04	18 41	23 18	24 17	00 17	01 18
	11	344 36.1	38.1	229 09.6	14.1	12 08.6	7.5 54.3	52	17 29	18 03	18 42	23 11	24 12	00 12	01 14
	12	359 36.2	N 7 39.1	243 42.7	14.2	N12 01.1	7.6 54.3	54	17 27	18 02	18 43	23 04	24 06	00 06	01 10
	13	14 36.4	40.0	258 15.9	14.1	11 53.5	7.7 54.3	56	17 24	18 01	18 44	22 56	24 00	00 00	01 05
	14	29 36.6	40.9	272 49.0	14.2	11 45.8	7.6 54.3	58	17 21	18 00	18 45	22 47	23 52	25 00	01 00
	15	44 36.7	41.9	287 22.2	14.2	11 38.2	7.8 54.3	S 60	17 17	17 59	18 47	22 37	23 44	24 54	00 54
	16	59 36.9	42.8	301 55.4	14.2	11 30.4	7.8 54.3	Dia	SOL		Paso Mer.	LUNA			
	17	74 37.1	43.7	316 28.6	14.2	11 22.6	7.8 54.3		Ec. Tiempo	12h		Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase
	18	89 37.2	N 7 44.6	331 01.8	14.3	N11 14.8	7.9 54.3	d	m s	m s	h m	h m	h m	d	%
	19	104 37.4	45.6	345 35.1	14.2	11 06.9	8.0 54.3	7	02 17	02 09	12 02	18 29	06 06	08 52	
	20	119 37.6	46.5	0 08.3	14.3	10 58.9	8.0 54.3	8	02 00	01 52	12 02	19 15	06 52	09 61	
	21	134 37.8	47.4	14 41.6	14.3	10 50.9	8.0 54.3	9	01 44	01 35	12 02	19 59	07 37	10 70	
	22	149 37.9	48.3	29 14.9	14.3	10 42.9	8.1 54.3								
	23	164 38.1	49.3	43 48.2	14.3	N10 34.8	8.2 54.4								
			S/D 16.0	<i>d</i> 0.9	S/D 14.8	14									

UT (HmGr)	ARIES	VENUS -4.3	MARTE -1.5	JÚPITER -2.1	SATURNO +0.2	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
10 00	198 09.0	221 54.4 S 9 44.6	0 08.3 S 5 00.2	94 45.4 N23 08.9	327 45.5 S15 55.3	Acamar 315 18.3 S40 15.1
01	213 11.4	236 54.2 43.8	15 11.7 4 59.9	109 47.6 08.8	342 48.1 55.2	Achernar 335 27.0 S57 10.0
02	228 13.9	251 54.0 43.1	30 15.1 59.6	124 49.8 08.8	357 50.7 55.2	Acrux 173 07.9 S63 10.9
03	243 16.4	266 53.9 . . 42.3	45 18.5 . . 59.3	139 52.0 . . 08.8	12 53.3 . . 55.1	Adhara 255 12.1 S28 59.9
04	258 18.8	281 53.7 41.5	60 21.9 59.0	154 54.2 08.8	27 55.9 55.1	Aldebarán 290 49.0 N16 32.1
05	273 21.3	296 53.6 40.7	75 25.2 58.8	169 56.4 08.8	42 58.5 55.1	
06	288 23.8	311 53.4 S 9 39.9	90 28.6 S 4 58.5	184 58.5 N23 08.7	58 01.1 S15 55.0	Alioth 166 19.7 N55 52.9
07	303 26.2	326 53.3 39.1	105 32.0 58.2	200 00.7 08.7	73 03.7 55.0	Alkaid 152 58.0 N49 14.5
08	318 28.7	341 53.1 38.3	120 35.4 57.9	215 02.9 08.7	88 06.3 54.9	Al Na'ir 27 43.4 S46 53.3
09	333 31.1	356 52.9 . . 37.6	135 38.8 . . 57.6	230 05.1 . . 08.7	103 09.0 . . 54.9	Alnilam 275 46.0 S 1 11.9
10	348 33.6	11 52.8 36.8	150 42.2 57.3	245 07.3 08.7	118 11.6 54.8	Alphard 217 55.4 S 8 43.6
11	3 36.1	26 52.6 36.0	165 45.6 57.0	260 09.4 08.6	133 14.2 54.8	
12	18 38.5	41 52.5 S 9 35.2	180 48.9 S 4 56.7	275 11.6 N23 08.6	148 16.8 S15 54.8	Alphecca 126 10.2 N26 39.9
13	33 41.0	56 52.3 34.4	195 52.3 56.4	290 13.8 08.6	163 19.4 54.7	Alpheratz 357 43.2 N29 10.0
14	48 43.5	71 52.2 33.6	210 55.7 56.1	305 16.0 08.6	178 22.0 54.7	Altair 62 07.7 N 8 54.4
15	63 45.9	86 52.0 . . 32.8	225 59.1 . . 55.9	320 18.2 . . 08.5	193 24.6 . . 54.6	Ankaa 353 15.6 S42 13.7
16	78 48.4	101 51.8 32.0	241 02.5 55.6	335 20.4 08.5	208 27.2 54.6	Antares 112 25.3 S26 27.7
17	93 50.9	116 51.7 31.2	256 05.9 55.3	350 22.5 08.5	223 29.8 54.6	
18	108 53.3	131 51.5 S 9 30.4	271 09.3 S 4 55.0	5 24.7 N23 08.5	238 32.4 S15 54.5	Arcturus 145 54.9 N19 06.4
19	123 55.8	146 51.4 29.6	286 12.6 54.7	20 26.9 08.5	253 35.0 54.5	Atria 107 26.3 S69 02.8
20	138 58.3	161 51.2 28.9	301 16.0 54.4	35 29.1 08.4	268 37.6 54.4	Avior 234 17.6 S59 33.8
21	154 00.7	176 51.1 . . 28.1	316 19.4 . . 54.1	50 31.3 . . 08.4	283 40.3 . . 54.4	Bellatrix 278 31.6 N 6 21.5
22	169 03.2	191 50.9 27.3	331 22.8 53.8	65 33.4 08.4	298 42.9 54.4	Betelgeuse 271 00.8 N 7 24.3
23	184 05.6	206 50.7 26.5	346 26.2 53.5	80 35.6 08.4	313 45.5 54.3	
11 00	199 08.1	221 50.6 S 9 25.7	1 29.6 S 4 53.3	95 37.8 N23 08.3	328 48.1 S15 54.3	Canopus 263 56.0 S52 42.7
01	214 10.6	236 50.4 24.9	16 32.9 53.0	110 40.0 08.3	343 50.7 54.2	Capella 280 33.9 N46 00.7
02	229 13.0	251 50.3 24.1	31 36.3 52.7	125 42.1 08.3	358 53.3 54.2	Deneb 49 31.2 N45 19.7
03	244 15.5	266 50.1 . . 23.3	46 39.7 . . 52.4	140 44.3 . . 08.3	13 55.9 . . 54.1	Denébola 182 32.8 N14 29.4
04	259 18.0	281 49.9 22.5	61 43.1 52.1	155 46.5 08.3	28 58.5 54.1	Diphda 348 55.7 S17 54.6
05	274 20.4	296 49.8 21.7	76 46.5 51.8	170 48.7 08.2	44 01.1 54.1	
06	289 22.9	311 49.6 S 9 20.9	91 49.9 S 4 51.5	185 50.9 N23 08.2	59 03.7 S15 54.0	Dubhe 193 50.6 N61 40.4
07	304 25.4	326 49.5 20.1	106 53.3 51.2	200 53.0 08.2	74 06.4 54.0	Elnath 278 12.1 N28 37.0
08	319 27.8	341 49.3 19.3	121 56.6 50.9	215 55.2 08.2	89 09.0 53.9	Eltanin 90 45.7 N51 29.1
09	334 30.3	356 49.1 . . 18.5	137 00.0 . . 50.7	230 57.4 . . 08.1	104 11.6 . . 53.9	Enif 33 46.7 N 9 56.4
10	349 32.8	11 49.0 17.7	152 03.4 50.4	245 59.6 08.1	119 14.2 53.9	Fomalhaut 15 23.7 S29 32.7
11	4 35.2	26 48.8 16.9	167 06.8 50.1	261 01.7 08.1	134 16.8 53.8	
12	19 37.7	41 48.7 S 9 16.1	182 10.2 S 4 49.8	276 03.9 N23 08.1	149 19.4 S15 53.8	Gacrux 171 59.6 S57 11.7
13	34 40.1	56 48.5 15.3	197 13.6 49.5	291 06.1 08.1	164 22.0 53.7	Gienah 175 51.4 S17 37.5
14	49 42.6	71 48.4 14.5	212 17.0 49.2	306 08.3 08.0	179 24.6 53.7	Hadar 148 46.4 S60 26.5
15	64 45.1	86 48.2 . . 13.6	227 20.3 . . 48.9	321 10.4 . . 08.0	194 27.2 . . 53.6	Hamal 328 00.4 N23 31.6
16	79 47.5	101 48.0 12.8	242 23.7 48.6	336 12.6 08.0	209 29.9 53.6	Kaus Aust. 83 43.0 S34 22.4
17	94 50.0	116 47.9 12.0	257 27.1 48.4	351 14.8 08.0	224 32.5 53.6	
18	109 52.5	131 47.7 S 9 11.2	272 30.5 S 4 48.1	6 17.0 N23 07.9	239 35.1 S15 53.5	Kochab 137 19.1 N74 05.7
19	124 54.9	146 47.6 10.4	287 33.9 47.8	21 19.1 07.9	254 37.7 53.5	Markab 13 38.0 N15 16.8
20	139 57.4	161 47.4 09.6	302 37.3 47.5	36 21.3 07.9	269 40.3 53.4	Menkar 314 14.8 N 4 08.5
21	154 59.9	176 47.2 . . 08.8	317 40.7 . . 47.2	51 23.5 . . 07.9	284 42.9 . . 53.4	Menkent 148 06.5 S36 26.4
22	170 02.3	191 47.1 08.0	332 44.0 46.9	66 25.7 07.9	299 45.5 53.4	Miaplacidus 221 39.0 S69 47.0
23	185 04.8	206 46.9 07.2	347 47.4 46.6	81 27.8 07.8	314 48.1 53.3	
12 00	200 07.2	221 46.8 S 9 06.4	2 50.8 S 4 46.3	96 30.0 N23 07.8	329 50.8 S15 53.3	Mirfak 308 39.9 N49 54.6
01	215 09.7	236 46.6 05.6	17 54.2 46.1	111 32.2 07.8	344 53.4 53.2	Nunki 75 57.6 S26 16.5
02	230 12.2	251 46.4 04.7	32 57.6 45.8	126 34.3 07.8	359 56.0 53.2	Peacock 53 18.5 S56 41.0
03	245 14.6	266 46.3 . . 03.9	48 01.0 . . 45.5	141 36.5 . . 07.7	14 58.6 . . 53.1	Póllux 243 27.0 N27 59.3
04	260 17.1	281 46.1 03.1	63 04.3 45.2	156 38.7 07.7	30 01.2 53.1	Procyon 244 59.1 N 5 11.0
05	275 19.6	296 46.0 02.3	78 07.7 44.9	171 40.9 07.7	45 03.8 53.1	
06	290 22.0	311 45.8 S 9 01.5	93 11.1 S 4 44.6	186 43.0 N23 07.7	60 06.4 S15 53.0	Rasalhague 96 05.8 N12 33.0
07	305 24.5	326 45.6 9 00.7	108 14.5 44.3	201 45.2 07.6	75 09.0 53.0	Régulus 207 42.7 N11 53.6
08	320 27.0	341 45.5 8 59.9	123 17.9 44.1	216 47.4 07.6	90 11.7 52.9	Rigel 281 11.7 S 8 11.4
09	335 29.4	356 45.3 . . 59.0	138 21.3 . . 43.8	231 49.5 . . 07.6	105 14.3 . . 52.9	Rigel Kent. 139 50.2 S60 53.5
10	350 31.9	11 45.1 58.2	153 24.6 43.5	246 51.7 07.6	120 16.9 52.8	Sabik 102 11.7 S15 44.4
11	5 34.4	26 45.0 57.4	168 28.0 43.2	261 53.9 07.6	135 19.5 52.8	
12	20 36.8	41 44.8 S 8 56.6	183 31.4 S 4 42.9	276 56.0 N23 07.5	150 22.1 S15 52.8	Schedar 349 40.3 N56 36.8
13	35 39.3	56 44.7 55.8	198 34.8 42.6	291 58.2 07.5	165 24.7 52.7	Shaula 96 21.0 S37 06.6
14	50 41.7	71 44.5 55.0	213 38.2 42.3	307 00.4 07.5	180 27.3 52.7	Sirius 258 33.3 S16 44.5
15	65 44.2	86 44.3 . . 54.1	228 41.6 . . 42.1	322 02.5 . . 07.5	195 30.0 . . 52.6	Spica 158 30.3 S11 14.3
16	80 46.7	101 44.2 53.3	243 44.9 41.8	337 04.7 07.4	210 32.6 52.6	Suhail 222 51.8 S43 29.9
17	95 49.1	116 44.0 52.5	258 48.3 41.5	352 06.9 07.4	225 35.2 52.6	
18	110 51.6	131 43.9 S 8 51.7	273 51.7 S 4 41.2	7 09.0 N23 07.4	240 37.8 S15 52.5	Vega 80 38.5 N38 47.7
19	125 54.1	146 43.7 50.8	288 55.1 40.9	22 11.2 07.4	255 40.4 52.5	Zuben'ubi 137 04.5 S16 06.1
20	140 56.5	161 43.5 50.0	303 58.5 40.6	37 13.4 07.3	270 43.0 52.4	
21	155 59.0	176 43.4 . . 49.2	319 01.9 . . 40.3	52 15.5 . . 07.3	285 45.6 . . 52.4	AHS Paso Mer.
22	171 01.5	191 43.2 48.4	334 05.2 40.1	67 17.7 07.3	300 48.3 52.3	Venus 22 42.5 9 13
23	186 03.9	206 43.1 47.6	349 08.6 39.8	82 19.9 07.3	315 50.9 52.3	Marte 162 21.5 23 49
						Júpiter 256 29.7 17 35
						Saturno 129 40.0 2 04
Paso Mer. 10 41.7	v -0.2 d 0.8		v 3.4 d 0.3	v 2.2 d 0.0	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna								
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		10	11	12	13					
d h	° /	° /	° /		° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m				
1000	179	38.3	N 7	50.2	58	21.5	14.4	N 10	26.6	8.1	54.4	N 72	////	02 33	04 03	12 39	14 17			
	01	194	38.4	51.1	72	54.9	14.3	10	18.5	8.3	54.4	N 70	////	03 01	04 16	12 52	14 23			
	02	209	38.6	52.0	87	28.2	14.4	10	10.2	8.3	54.4	66	02 12	03 38	04 36	13 12	14 33			
	03	224	38.8	53.0	102	01.6	14.4	10	01.9	8.3	54.4	64	02 37	03 51	04 44	13 19	14 37			
	04	239	38.9	53.9	116	35.0	14.3	9	53.6	8.4	54.4	62	02 57	04 02	04 50	13 26	14 41			
	05	254	39.1	54.8	131	08.3	14.4	9	45.2	8.4	54.4	60	03 12	04 11	04 56	13 31	14 43			
	06	269	39.3	N 7	55.7	145	41.7	14.4	N 9	36.8	8.4	54.4	N 58	03 25	04 19	05 01	13 36			
	07	284	39.4	56.7	160	15.1	14.4	9	28.4	8.6	54.4	56	03 36	04 26	05 05	13 40	14 48			
	08	299	39.6	57.6	174	48.5	14.5	9	19.8	8.5	54.4	54	03 46	04 32	05 09	13 44	14 50			
	09	314	39.8	58.5	189	22.0	14.4	9	11.3	8.6	54.5	52	03 54	04 37	05 13	13 48	14 52			
JUEVES	10	329	39.9	7 59.4	203	55.4	14.4	9	02.7	8.6	54.5	50	04 01	04 42	05 16	13 51	14 54			
	11	344	40.1	8 00.4	218	28.8	14.5	8	54.1	8.7	54.5	45	04 16	04 53	05 23	13 58	14 58			
	12	359	40.3	N 8	01.3	233	02.3	14.4	N 8	45.4	8.7	54.5	N 40	04 28	05 01	05 29	14 03			
	13	14	40.5	02.2	247	35.7	14.5	8	36.7	8.8	54.5	35	04 37	05 08	05 34	14 08	15 03			
	14	29	40.6	03.1	262	09.2	14.5	8	27.9	8.8	54.5	30	04 45	05 14	05 38	14 13	15 06			
	15	44	40.8	04.1	276	42.7	14.4	8	19.1	8.8	54.5	20	04 57	05 23	05 45	14 20	15 10			
	16	59	41.0	05.0	291	16.1	14.5	8	10.3	8.9	54.5	N 10	05 06	05 31	05 52	14 27	15 13			
	17	74	41.1	05.9	305	49.6	14.5	8	01.4	8.9	54.6	0	05 13	05 37	05 58	14 33	15 16			
	18	89	41.3	N 8	06.8	320	23.1	14.5	N 7	52.5	9.0	54.6	S 10	05 18	05 42	06 04	14 39			
	19	104	41.5	07.7	334	56.6	14.5	7	43.5	9.0	54.6	20	05 22	05 48	06 10	14 45	15 23			
VIERNES	20	119	41.6	08.7	349	30.1	14.5	7	34.5	9.0	54.6	30	05 25	05 52	06 17	14 53	15 27			
	21	134	41.8	09.6	4	03.6	14.5	7	25.5	9.1	54.6	35	05 26	05 55	06 20	14 57	15 30			
	22	149	42.0	10.5	18	37.1	14.4	7	16.4	9.1	54.6	40	05 26	05 58	06 25	15 02	15 32			
	23	164	42.1	11.4	33	10.5	14.5	7	07.3	9.1	54.6	45	05 26	06 00	06 30	15 07	15 35			
	1100	179	42.3	N 8	12.4	47	44.0	14.5	N 6	58.2	9.2	54.7	S 50	05 26	06 03	06 36	15 14			
	01	194	42.5	13.3	62	17.5	14.5	6	49.0	9.2	54.7	52	05 26	06 05	06 39	15 17	15 41			
	02	209	42.6	14.2	76	51.0	14.5	6	39.8	9.3	54.7	54	05 25	06 06	06 42	15 21	15 42			
	03	224	42.8	15.1	91	24.5	14.5	6	30.5	9.2	54.7	56	05 24	06 07	06 45	15 24	15 44			
	04	239	43.0	16.0	105	58.0	14.5	6	21.3	9.4	54.7	58	05 24	06 09	06 49	15 28	15 47			
	05	254	43.1	16.9	120	31.5	14.5	6	11.9	9.3	54.7	S 60	05 22	06 11	06 53	15 33	15 49			
SÁBADO	06	269	43.3	N 8	17.9	135	05.0	14.5	N 6	02.6	9.4	54.8	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
	07	284	43.4	18.8	149	38.5	14.5	5	53.2	9.4	54.8			Civil		Náut.		10	11	
	08	299	43.6	19.7	164	12.0	14.4	5	43.8	9.4	54.8							12	13	
	09	314	43.8	20.6	178	45.4	14.5	5	34.4	9.5	54.8							h m	h m	
	10	329	43.9	21.5	193	18.9	14.5	5	24.9	9.5	54.8	N 72	h m	h m	h m	h m	h m	h m		
	11	344	44.1	22.5	207	52.4	14.4	5	15.4	9.5	54.8	N 70	20 03	21 35	////	04 22	04 15	04 08		
	12	359	44.3	N 8	23.4	222	25.8	14.5	N 5	05.9	9.6	54.9	N 68	19 49	21 06	////	04 07	04 06	04 05	
	13	14	44.4	24.3	236	59.3	14.4	4	56.3	9.6	54.9	70	19 38	20 44	22 37	03 55	03 59	04 02		
	14	29	44.6	25.2	251	32.7	14.5	4	46.7	9.6	54.9	66	19 28	20 27	21 56	03 45	03 53	04 00		
	15	44	44.8	26.1	266	06.2	14.4	4	37.1	9.6	54.9	64	19 20	20 14	21 29	03 36	03 48	03 58		
Domingo	16	59	44.9	27.0	280	39.6	14.4	4	27.5	9.7	54.9	62	19 14	20 03	21 08	03 29	03 43	03 57		
	17	74	45.1	28.0	295	13.0	14.4	4	17.8	9.7	54.9	60	19 08	19 53	20 52	03 23	03 40	03 55		
	18	89	45.3	N 8	28.9	309	46.4	14.4	N 4	08.1	9.7	55.0	N 58	19 03	19 45	20 39	03 17	03 36		
	19	104	45.4	29.8	324	19.8	14.4	3	58.4	9.7	55.0	56	18 58	19 38	20 28	03 12	03 33			
	20	119	45.6	30.7	338	53.2	14.4	3	48.7	9.8	55.0	54	18 54	19 32	20 18	03 08	03 30			
	21	134	45.8	31.6	353	26.6	14.4	3	38.9	9.8	55.0	52	18 51	19 26	20 10	03 04	03 28			
	22	149	45.9	32.5	8	00.0	14.3	3	29.1	9.8	55.0	50	18 47	19 21	20 02	03 00	03 25			
	23	164	46.1	33.4	22	33.3	14.4	3	19.3	9.8	55.1	45	18 40	19 11	19 47	02 52	03 20			
	1200	179	46.2	N 8	34.4	37	06.7	14.3	N 3	09.5	9.9	55.1	N 40	18 34	19 02	19 35	02 45	03 16		
	01	194	46.4	35.3	51	40.0	14.3	2	59.6	9.8	55.1	35	18 29	18 55	19 26	02 39	03 12			
02	209	46.6	36.2	66	13.3	14.3	2	49.8	9.9	55.1	30	18 25	18 49	19 18	02 34	03 09				
03	224	46.7	37.1	80	46.6	14.3	2	39.9	10.0	55.1	20	18 17	18 39	19 06	02 25	03 04				
04	239	46.9	38.0	95	19.9	14.3	2	29.9	9.9	55.2	N 10	18 10	18 32	18 56	02 17	02 59				
05	254	47.1	38.9	109	53.2	14.2	2	20.0	9.9	55.2	0	18 04	18 25	18 50	02 10	02 54				
06	269	47.2	N 8	39.8	124	26.4	14.2	N 2	10.1	10.0	55.2	S 10	17 58	18 20	18 44	02 03				
07	284	47.4	40.8	138	59.6	14.2	2	00.1	10.0	55.2	20	17 52	18 14	18 40	01 55	02 44				
08	299	47.5	41.7	153	32.8	14.2	1	50.1	10.0	55.2	30	17 45	18 09	18 37	01 45	02 38				
09	314	47.7	42.6	168	06.0	14.2	1	40.1	10.0	55.3	35	17 41	18 07	18 36	01 40	02 35				
10	329	47.9	43.5	182	39.2	14.2	1	30.1	10.0	55.3	40	17 37	18 04	18 35	01 34	02 31				
11	344	48.0	44.4	197	12.4	14.1	1	20.1	10.1	55.3	45	17 32	18 01	18 35	01 27	02 26				
12	359	48.2	N 8	45.3	211	45.5	14.1	N 1	10.0	10.0	55.3	S 50	17 25	17 58	18 35	01 18				
13	14	48.4	46.2	226	18.6	14.1	1	00.0	10.1	55.4	52	17 23	17 57	18 36	01 14	02 18				
14	29	48.5	47.1	240	51.7	14.0	0	49.9	10.1	55.4	54	17 20	17 55	18 36	01 10	02 16				
15	44	48.7	48.0	255	24.7	14.1	0	39.8	10.1	55.4	56	17 16	17 54	18 37	01 05	02 13				
16	59	48.8	49.0	269	57.8	14.0	0	29.7	10.1	55.4	58	17 12	17 52	18 37	01 00	02 09				
17	74	49.0	49.9	284	30.8	14.0	0	19.6	10.1	55.4	S 60	17 08	17 50	18 38	00 54	02 05				
18	89	49.2	N 8	50.8	299	03.8	14.0	N 0	09.5	10.2	55.5	Día		SOL Ec. Tiempo		LUNA		Edad		
19	104	49.3	51.7	313	36.8	13.9	S 0	00.7	10.1	55.5			Paso Mer.		Paso Mer.		Fase			
20	119	49.5	52.6	328	09.7	13.9	0	10.8	10.1	55.5										
21	134	49.6	53.5	342	42.6	13.9	0	20.9	10.2	55.5										
22	149	49.8	54.4	357	15.5	13.9	0	31.1	10.1	55.5										
23	164	50.0	55.3	11	48.4	13.8	S 0	41.2	10.2	55.6										
	S/D	16.0	<i>d</i> 0.9	S/D	14.8	14.9	15.1					d	m s	m s	h m	h m	h m	d %		

UT (HmGr)	ARIES	VENUS -4.3	MARTE -1.4	JÚPITER -2.1	SATURNO +0.2	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
DOMINGO								
13 00	201 06.4	221 42.9 S 8 46.7	4 12.0 S 4 39.5	97 22.0 N23 07.3	330 53.5 S15 52.3	Acamar	315 18.3 S40 15.1	
01	216 08.8	236 42.7 45.9	19 15.4 39.2	112 24.2 07.2	345 56.1 52.2	Achernar	335 27.0 S57 09.9	
02	231 11.3	251 42.6 45.1	34 18.8 38.9	127 26.4 07.2	0 58.7 52.2	Acrux	173 07.9 S63 10.9	
03	246 13.8	266 42.4 . . 44.3	49 22.1 . . 38.6	142 28.5 . . 07.2	16 01.3 . . 52.1	Adhara	255 12.1 S28 59.9	
04	261 16.2	281 42.2 43.4	64 25.5 38.4	157 30.7 07.2	31 03.9 52.1	Aldebarán	290 49.0 N16 32.1	
05	276 18.7	296 42.1 42.6	79 28.9 38.1	172 32.9 07.1	46 06.6 52.0			
06	291 21.2	311 41.9 S 8 41.8	94 32.3 S 4 37.8	187 35.0 N23 07.1	61 09.2 S15 52.0	Alioth	166 19.7 N55 52.9	
07	306 23.6	326 41.8 40.9	109 35.7 37.5	202 37.2 07.1	76 11.8 52.0	Alkaid	152 58.0 N49 14.5	
08	321 26.1	341 41.6 40.1	124 39.1 37.2	217 39.4 07.1	91 14.4 51.9	Al Na'ir	27 43.4 S46 53.3	
09	336 28.6	356 41.4 . . 39.3	139 42.4 . . 36.9	232 41.5 . . 07.0	106 17.0 . . 51.9	Alnilam	275 46.0 S 1 11.9	
10	351 31.0	11 41.3 38.4	154 45.8 36.7	247 43.7 07.0	121 19.6 51.8	Alphard	217 55.4 S 8 43.6	
11	6 33.5	26 41.1 37.6	169 49.2 36.4	262 45.8 07.0	136 22.3 51.8			
12	21 36.0	41 40.9 S 8 36.8	184 52.6 S 4 36.1	277 48.0 N23 07.0	151 24.9 S15 51.7	Alphecca	126 10.2 N26 39.9	
13	36 38.4	56 40.8 36.0	199 56.0 35.8	292 50.2 06.9	166 27.5 51.7	Alpheratz	357 43.2 N29 10.0	
14	51 40.9	71 40.6 35.1	214 59.3 35.5	307 52.3 06.9	181 30.1 51.7	Altair	62 07.7 N 8 54.4	
15	66 43.3	86 40.5 . . 34.3	230 02.7 . . 35.3	322 54.5 . . 06.9	196 32.7 . . 51.6	Ankaa	353 15.6 S42 13.7	
16	81 45.8	101 40.3 33.5	245 06.1 35.0	337 56.7 06.9	211 35.3 51.6	Antares	112 25.3 S26 27.7	
17	96 48.3	116 40.1 32.6	260 09.5 34.7	352 58.8 06.8	226 38.0 51.5			
18	111 50.7	131 40.0 S 8 31.8	275 12.9 S 4 34.4	8 01.0 N23 06.8	241 40.6 S15 51.5	Arcturus	145 54.9 N19 06.4	
19	126 53.2	146 39.8 30.9	290 16.2 34.1	23 03.1 06.8	256 43.2 51.4	Atria	107 26.2 S69 02.8	
20	141 55.7	161 39.6 30.1	305 19.6 33.8	38 05.3 06.8	271 45.8 51.4	Avior	234 17.6 S59 33.8	
21	156 58.1	176 39.5 . . 29.3	320 23.0 . . 33.6	53 07.5 . . 06.7	286 48.4 . . 51.4	Bellatrix	278 31.6 N 6 21.5	
22	172 00.6	191 39.3 28.4	335 26.4 33.3	68 09.6 06.7	301 51.0 51.3	Betelgeuse	271 00.8 N 7 24.3	
23	187 03.1	206 39.2 27.6	350 29.7 33.0	83 11.8 06.7	316 53.7 51.3			
LUNES								
14 00	202 05.5	221 39.0 S 8 26.8	5 33.1 S 4 32.7	98 13.9 N23 06.7	331 56.3 S15 51.2	Canopus	263 56.1 S52 42.7	
01	217 08.0	236 38.8 25.9	20 36.5 32.4	113 16.1 06.6	346 58.9 51.2	Capella	280 33.9 N46 00.6	
02	232 10.4	251 38.7 25.1	35 39.9 32.2	128 18.2 06.6	2 01.5 51.1	Deneb	49 31.2 N45 19.7	
03	247 12.9	266 38.5 . . 24.2	50 43.3 . . 31.9	143 20.4 . . 06.6	17 04.1 . . 51.1	Denébola	182 32.8 N14 29.4	
04	262 15.4	281 38.3 23.4	65 46.6 31.6	158 22.6 06.6	32 06.7 51.1	Diphda	348 55.7 S17 54.6	
05	277 17.8	296 38.2 22.6	80 50.0 31.3	173 24.7 06.6	47 09.4 51.0			
06	292 20.3	311 38.0 S 8 21.7	95 53.4 S 4 31.0	188 26.9 N23 06.5	62 12.0 S15 51.0	Dubhe	193 50.6 N61 40.5	
07	307 22.8	326 37.9 20.9	110 56.8 30.8	203 29.0 06.5	77 14.6 50.9	Elnath	278 12.1 N28 37.0	
08	322 25.2	341 37.7 20.0	126 00.1 30.5	218 31.2 06.5	92 17.2 50.9	Eltanin	90 45.7 N51 29.1	
09	337 27.7	356 37.5 . . 19.2	141 03.5 . . 30.2	233 33.3 . . 06.5	107 19.8 . . 50.8	Enif	33 46.7 N 9 56.4	
10	352 30.2	11 37.4 18.3	156 06.9 29.9	248 35.5 06.4	122 22.5 50.8	Fomalhaut	15 23.7 S29 32.7	
11	7 32.6	26 37.2 17.5	171 10.3 29.6	263 37.7 06.4	137 25.1 50.8			
12	22 35.1	41 37.0 S 8 16.7	186 13.6 S 4 29.4	278 39.8 N23 06.4	152 27.7 S15 50.7	Gacrux	171 59.6 S57 11.8	
13	37 37.6	56 36.9 15.8	201 17.0 29.1	293 42.0 06.4	167 30.3 50.7	Gienah	175 51.4 S17 37.5	
14	52 40.0	71 36.7 15.0	216 20.4 28.8	308 44.1 06.3	182 32.9 50.6	Hadar	148 46.4 S60 26.5	
15	67 42.5	86 36.5 . . 14.1	231 23.8 . . 28.5	323 46.3 . . 06.3	197 35.5 . . 50.6	Hamal	328 00.4 N23 31.6	
16	82 44.9	101 36.4 13.3	246 27.1 28.3	338 48.4 06.3	212 38.2 50.5	Kaus Aust.	83 42.9 S34 22.4	
17	97 47.4	116 36.2 12.4	261 30.5 28.0	353 50.6 06.3	227 40.8 50.5			
18	112 49.9	131 36.0 S 8 11.6	276 33.9 S 4 27.7	8 52.7 N23 06.2	242 43.4 S15 50.5	Kochab	137 19.1 N74 05.8	
19	127 52.3	146 35.9 10.7	291 37.3 27.4	23 54.9 06.2	257 46.0 50.4	Markab	13 38.0 N15 16.8	
20	142 54.8	161 35.7 09.9	306 40.6 27.1	38 57.1 06.2	272 48.6 50.4	Menkar	314 14.8 N 4 08.5	
21	157 57.3	176 35.6 . . 09.0	321 44.0 . . 26.9	53 59.2 . . 06.2	287 51.3 . . 50.3	Menkent	148 06.5 S36 26.4	
22	172 59.7	191 35.4 08.2	336 47.4 26.6	69 01.4 06.1	302 53.9 50.3	Miaplacidus	221 39.1 S69 47.0	
23	188 02.2	206 35.2 07.3	351 50.7 26.3	84 03.5 06.1	317 56.5 50.2			
MARTE								
15 00	203 04.7	221 35.1 S 8 06.5	6 54.1 S 4 26.0	99 05.7 N23 06.1	332 59.1 S15 50.2	Mirfak	308 39.9 N49 54.6	
01	218 07.1	236 34.9 05.6	21 57.5 25.8	114 07.8 06.1	348 01.7 50.1	Nunki	75 57.6 S26 16.5	
02	233 09.6	251 34.7 04.8	37 00.9 25.5	129 10.0 06.0	3 04.4 50.1	Peacock	53 18.5 S56 41.0	
03	248 12.1	266 34.6 . . 03.9	52 04.2 . . 25.2	144 12.1 . . 06.0	18 07.0 . . 50.1	Póllux	243 27.1 N27 59.3	
04	263 14.5	281 34.4 03.1	67 07.6 24.9	159 14.3 06.0	33 09.6 50.0	Procyon	244 59.2 N 5 11.0	
05	278 17.0	296 34.2 02.2	82 11.0 24.7	174 16.4 05.9	48 12.2 50.0			
06	293 19.4	311 34.1 S 8 01.3	97 14.3 S 4 24.4	189 18.6 N23 05.9	63 14.8 S15 49.9	Rasalhague	96 05.8 N12 33.0	
07	308 21.9	326 33.9 8 00.5	112 17.7 24.1	204 20.7 05.9	78 17.5 49.9	Régulus	207 42.7 N11 53.6	
08	323 24.4	341 33.7 7 59.6	127 21.1 23.8	219 22.9 05.9	93 20.1 49.8	Rigel	281 11.7 S 8 11.4	
09	338 26.8	356 33.6 . . 58.8	142 24.4 . . 23.6	234 25.0 . . 05.8	108 22.7 . . 49.8	Rigel Kent.	139 50.2 S60 53.5	
10	353 29.3	11 33.4 57.9	157 27.8 23.3	249 27.2 05.8	123 25.3 49.8	Sabik	102 11.7 S15 44.4	
11	8 31.8	26 33.3 57.1	172 31.2 23.0	264 29.3 05.8	138 27.9 49.7			
12	23 34.2	41 33.1 S 7 56.2	187 34.6 S 4 22.7	279 31.5 N23 05.8	153 30.6 S15 49.7	Schedar	349 40.3 N56 36.8	
13	38 36.7	56 32.9 55.3	202 37.9 22.5	294 33.6 05.7	168 33.2 49.6	Shaula	96 20.9 S37 06.6	
14	53 39.2	71 32.8 54.5	217 41.3 22.2	309 35.8 05.7	183 35.8 49.6	Sirius	258 33.3 S16 44.5	
15	68 41.6	86 32.6 . . 53.6	232 44.7 . . 21.9	324 37.9 . . 05.7	198 38.4 . . 49.5	Spica	158 30.3 S11 14.3	
16	83 44.1	101 32.4 52.8	247 48.0 21.6	339 40.1 05.7	213 41.1 49.5	Suhail	222 51.8 S43 29.9	
17	98 46.5	116 32.3 51.9	262 51.4 21.4	354 42.2 05.6	228 43.7 49.4			
18	113 49.0	131 32.1 S 7 51.0	277 54.8 S 4 21.1	9 44.4 N23 05.6	243 46.3 S15 49.4	Vega	80 38.5 N38 47.7	
19	128 51.5	146 31.9 50.2	292 58.1 20.8	24 46.5 05.6	258 48.9 49.4	Zuben'ubi	137 04.5 S16 06.1	
20	143 53.9	161 31.8 49.3	308 01.5 20.5	39 48.7 05.6	273 51.5 49.3			
21	158 56.4	176 31.6 . . 48.5	323 04.9 . . 20.3	54 50.8 . . 05.5	288 54.2 . . 49.3			
22	173 58.9	191 31.4 47.6	338 08.2 20.0	69 53.0 05.5	303 56.8 49.2			
23	189 01.3	206 31.3 46.7	353 11.6 19.7	84 55.1 05.5	318 59.4 49.2			
Paso Mer. 10 29.9	v -0.2 d 0.8		v 3.4 d 0.3	v 2.2 d 0.0	v 2.6 d 0.0			
						AHS Paso Mer.		
						Venus	19 33.5 h 9 13	
						Marte	163 27.6 d 23 32	
						Júpiter	256 08.4 d 17 25	
						Saturno	129 50.8 d 1 52	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	13	14	15	16		
DOMINGO	d h	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m			
	13 00	179 50.1	N 8 56.2	26 21.2	13.8	S 0 51.4	10.2	55.6	66	01 50	03 24	04 24	17 22	18 50	20 19	21 50	
	01	194 50.3	57.1	40 54.0	13.8	1 01.6	10.2	55.6	68	00 58	03 06	04 14	17 26	18 58	20 33	22 36	
	02	209 50.5	58.0	55 26.8	13.7	1 11.8	10.1	55.6	66	01 50	03 24	04 24	17 22	18 50	20 19	21 50	
	03	224 50.6	59.0	69 59.5	13.7	1 21.9	10.2	55.7	64	02 21	03 39	04 33	17 19	18 42	20 08	21 34	
	04	239 50.8	8 59.9	84 32.2	13.7	1 32.1	10.2	55.7	62	02 43	03 51	04 40	17 16	18 36	19 58	21 20	
	05	254 50.9	9 00.8	99 04.9	13.6	1 42.3	10.2	55.7	60	03 01	04 01	04 47	17 13	18 31	19 50	21 09	
	06	269 51.1	N 9 01.7	113 37.5	13.7	S 1 52.5	10.2	55.7	N 58	03 15	04 10	04 52	17 11	18 26	19 43	21 00	
	07	284 51.2	02.6	128 10.2	13.5	2 02.7	10.1	55.8	56	03 27	04 17	04 57	17 09	18 22	19 37	20 51	
	08	299 51.4	03.5	142 42.7	13.6	2 12.8	10.2	55.8	54	03 37	04 24	05 02	17 07	18 19	19 31	20 44	
	09	314 51.6	04.4	157 15.3	13.5	2 23.0	10.2	55.8	52	03 46	04 30	05 06	17 06	18 15	19 26	20 37	
	10	329 51.7	05.3	171 47.8	13.5	2 33.2	10.2	55.8	50	03 54	04 36	05 10	17 04	18 12	19 21	20 31	
	11	344 51.9	06.2	186 20.3	13.4	2 43.4	10.2	55.9	45	04 10	04 47	05 17	17 01	18 06	19 11	20 18	
	12	359 52.0	N 9 07.1	200 52.7	13.4	S 2 53.6	10.1	55.9	N 40	04 23	04 56	05 24	16 59	18 00	19 03	20 07	
	13	14 52.2	08.0	215 25.1	13.4	3 03.7	10.2	55.9	35	04 33	05 04	05 30	16 57	17 56	18 56	19 58	
	14	29 52.4	08.9	229 57.5	13.3	3 13.9	10.2	55.9	30	04 41	05 10	05 35	16 55	17 51	18 50	19 50	
	15	44 52.5	09.8	244 29.8	13.3	3 24.1	10.1	55.9	20	04 54	05 21	05 43	16 51	17 44	18 39	19 36	
	16	59 52.7	10.7	259 02.1	13.3	3 34.2	10.2	56.0	N 10	05 04	05 29	05 50	16 48	17 38	18 30	19 24	
	17	74 52.8	11.6	273 34.4	13.2	3 44.4	10.1	56.0	0	05 12	05 36	05 57	16 46	17 33	18 21	19 13	
	18	89 53.0	N 9 12.5	288 06.6	13.2	S 3 54.5	10.1	56.0	S 10	05 18	05 42	06 04	16 43	17 27	18 13	19 02	
	19	104 53.2	13.4	302 38.8	13.1	4 04.6	10.2	56.0	20	05 23	05 48	06 11	16 40	17 21	18 04	18 50	
	20	119 53.3	14.3	317 10.9	13.1	4 14.8	10.1	56.1	30	05 26	05 54	06 18	16 37	17 14	17 53	18 37	
	21	134 53.5	15.2	331 43.0	13.0	4 24.9	10.1	56.1	35	05 28	05 57	06 23	16 35	17 10	17 48	18 29	
	22	149 53.6	16.1	346 15.0	13.1	4 35.0	10.1	56.1	40	05 29	06 00	06 28	16 33	17 06	17 41	18 20	
	23	164 53.8	17.1	0 47.1	12.9	4 45.1	10.0	56.1	45	05 30	06 04	06 34	16 31	17 00	17 33	18 10	
LUNES	14 00	179 53.9	N 9 18.0	15 19.0	12.9	S 4 55.1	10.1	56.2	S 50	05 30	06 08	06 41	16 28	16 54	17 24	17 58	
	01	194 54.1	18.9	29 50.9	12.9	5 05.2	10.0	56.2	52	05 30	06 09	06 44	16 27	16 52	17 20	17 52	
	02	209 54.3	19.8	44 22.8	12.9	5 15.2	10.1	56.2	54	05 30	06 11	06 47	16 25	16 49	17 15	17 46	
	03	224 54.4	20.7	58 54.7	12.8	5 25.3	10.0	56.2	56	05 30	06 13	06 51	16 24	16 45	17 10	17 39	
	04	239 54.6	21.6	73 26.5	12.7	5 35.3	10.0	56.3	58	05 30	06 15	06 55	16 22	16 41	17 04	17 31	
	05	254 54.7	22.5	87 58.2	12.7	5 45.3	10.0	56.3	S 60	05 29	06 17	07 00	16 20	16 37	16 57	17 22	
	06	269 54.9	N 9 23.4	102 29.9	12.7	S 5 55.3	9.9	56.3	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
	07	284 55.0	24.3	117 01.6	12.6	6 05.2	10.0	56.3			Civil	Náut.	13	14	15	16	
	08	299 55.2	25.2	131 33.2	12.5	6 15.2	9.9	56.4									
	09	314 55.3	26.1	146 04.7	12.5	6 25.1	9.9	56.4									
	10	329 55.5	27.0	160 36.2	12.5	6 35.0	9.8	56.4									
	11	344 55.7	27.9	175 07.7	12.4	6 44.8	9.9	56.4	N 72	h m	h m	h m	h m	h m	h m	h m	
	12	359 55.8	N 9 28.8	189 39.1	12.4	S 6 54.7	9.8	56.5	N 70	20 02	21 24	23 19	04 04	04 02	04 02	04 02	
	13	14 56.0	29.7	204 10.5	12.3	7 04.5	9.8	56.5	68	19 49	20 59	23 19	04 05	04 09	04 13	04 20	
	14	29 56.1	30.6	218 41.8	12.3	7 14.3	9.8	56.5	66	19 39	20 40	22 17	04 07	04 14	04 23	04 35	
	15	44 56.3	31.5	233 13.1	12.2	7 24.1	9.7	56.5	64	19 30	20 24	21 44	04 08	04 19	04 31	04 47	
	16	59 56.4	32.3	247 44.3	12.1	7 33.8	9.7	56.6	62	19 22	20 12	21 21	04 09	04 23	04 39	04 58	
	17	74 56.6	33.2	262 15.4	12.1	7 43.5	9.7	56.6	60	19 15	20 02	21 03	04 10	04 27	04 45	05 07	
	18	89 56.7	N 9 34.1	276 46.5	12.1	S 7 53.2	9.7	56.6	N 58	19 10	19 53	20 48	04 11	04 30	04 50	05 14	
	19	104 56.9	35.0	291 17.6	12.0	8 02.9	9.6	56.6	56	19 04	19 45	20 36	04 12	04 32	04 55	05 21	
	20	119 57.0	35.9	305 48.6	12.0	8 12.5	9.6	56.7	54	19 00	19 38	20 25	04 13	04 35	04 59	05 28	
	21	134 57.2	36.8	320 19.6	11.9	8 22.1	9.5	56.7	52	18 56	19 32	20 16	04 13	04 37	05 03	05 33	
	22	149 57.4	37.7	334 50.5	11.8	8 31.6	9.6	56.7	50	18 52	19 26	20 08	04 14	04 39	05 07	05 38	
	23	164 57.5	38.6	349 21.3	11.8	8 41.2	9.5	56.7	45	18 44	19 15	19 52	04 15	04 44	05 15	05 49	
	MARTES	15 00	179 57.7	N 9 39.5	3 52.1	11.7	S 8 50.7	9.4	56.8	N 40	18 37	19 05	19 39	04 16	04 48	05 21	05 58
01		194 57.8	40.4	18 22.8	11.7	9 00.1	9.4	56.8	35	18 32	18 58	19 28	04 17	04 51	05 27	06 06	
02		209 58.0	41.3	32 53.5	11.6	9 09.5	9.4	56.8	30	18 27	18 51	19 20	04 18	04 54	05 32	06 13	
03		224 58.1	42.2	47 24.1	11.6	9 18.9	9.3	56.8	20	18 18	18 40	19 07	04 20	04 59	05 41	06 25	
04		239 58.3	43.1	61 54.7	11.5	9 28.2	9.3	56.8	N 10	18 10	18 32	18 57	04 21	05 04	05 48	06 36	
05		254 58.4	44.0	76 25.2	11.5	9 37.5	9.3	56.9	0	18 04	18 25	18 49	04 22	05 08	05 56	06 46	
06		269 58.6	N 9 44.9	90 55.7	11.4	S 9 46.8	9.2	56.9	S 10	17 57	18 18	18 43	04 23	05 12	06 03	06 56	
07		284 58.7	45.8	105 26.1	11.3	9 56.0	9.2	56.9	20	17 50	18 12	18 38	04 24	05 17	06 11	07 06	
08		299 58.9	46.7	119 56.4	11.3	10 05.2	9.1	56.9	30	17 42	18 06	18 34	04 26	05 22	06 19	07 18	
09		314 59.0	47.6	134 26.7	11.2	10 14.3	9.1	57.0	35	17 37	18 03	18 32	04 27	05 25	06 24	07 25	
10		329 59.2	48.5	148 56.9	11.2	10 23.4	9.0	57.0	40	17 32	18 00	18 31	04 28	05 28	06 30	07 34	
11		344 59.3	49.4	163 27.1	11.1	10 32.4	9.0	57.0	45	17 26	17 56	18 30	04 29	05 32	06 37	07 43	
12		359 59.5	N 9 50.2	177 57.2	11.1	S 10 41.4	9.0	57.0	S 50	17 19	17 52	18 29	04 30	05 37	06 45	07 54	
13		14 59.6	51.1	192 27.3	10.9	10 50.4	8.8	57.1	52	17 16	17 50	18 29	04 30	05 39	06 49	08 00	
14		29 59.8	52.0	206 57.2	11.0	10 59.2	8.9	57.1	54	17 13	17 48	18 29	04 31	05 41	06 53	08 05	
15		44 59.9	52.9	221 27.2	10.9	11 08.1	8.8	57.1	56	17 09	17 46	18 29	04 32	05 44	06 57	08 12	
16		60 00.1	53.8	235 57.1	10.8	11 16.9	8.7	57.1	58	17 04	17 44	18 30	04 32	05 47	07 03	08 19	
17		75 00.3	54.7	250 26.9	10.7	11 25.6	8.7	57.2	S 60	16 59	17 42	18 30	04 33	05 50	07 08	08 27	
18		90 00.4	N 9 55.6	264 56.6	10.7	S 11 34.3	8.6	57.2	SOL		LUNA						
19		105 00.6	56.5	279 26.3	10.7	11 42.9	8.6	57.2	Día			Paso Mer.		Paso Mer.		Edad	Fase
20		120 00.7	57.4	293 56.0	10.5	11 51.5	8.5	57.2		00 ^h	12 ^h	Paso Mer.	Sup.		Inf.		
21		135 00.9	58.3	308 25.5	10.5	12 00.0	8.5	57.3									
22</																	

UT (HmGr)	ARIES	VENUS -4.3	MARTE -1.4	JÚPITER -2.1	SATURNO +0.2	ESTRELLAS		
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
16 00	204 03.8	221 31.1 S 7 45.9	8 14.9 S 4 19.5	99 57.2 N23 05.5	334 02.0 S15 49.1	Acamar	315 18.3 S40 15.1	
01	219 06.3	236 30.9 45.0	23 18.3 19.2	114 59.4 05.4	349 04.7 49.1	Achernar	335 27.0 S57 09.9	
02	234 08.7	251 30.8 44.1	38 21.7 18.9	130 01.5 05.4	4 07.3 49.1	Acrux	173 07.9 S63 10.9	
03	249 11.2	266 30.6 . . 43.3	53 25.0 . . 18.6	145 03.7 . . 05.4	19 09.9 . . 49.0	Adhara	255 12.2 S28 59.9	
04	264 13.7	281 30.4 42.4	68 28.4 18.4	160 05.8 05.4	34 12.5 49.0	Aldebarán	290 49.0 N16 32.1	
05	279 16.1	296 30.3 41.5	83 31.8 18.1	175 08.0 05.3	49 15.1 48.9			
06	294 18.6	311 30.1 S 7 40.7	98 35.1 S 4 17.8	190 10.1 N23 05.3	64 17.8 S15 48.9	Alioth	166 19.7 N55 52.9	
07	309 21.0	326 29.9 39.8	113 38.5 17.6	205 12.3 05.3	79 20.4 48.8	Alkaid	152 58.0 N49 14.5	
08	324 23.5	341 29.8 38.9	128 41.9 17.3	220 14.4 05.2	94 23.0 48.8	Al Na'ir	62 07.7 N 8 54.4	
09	339 26.0	356 29.6 . . 38.1	143 45.2 . . 17.0	235 16.6 . . 05.2	109 25.6 . . 48.7	Alnilam	275 46.0 S 1 11.9	
10	354 28.4	11 29.4 37.2	158 48.6 16.8	250 18.7 05.2	124 28.3 48.7	Alphard	217 55.4 S 8 43.6	
11	9 30.9	26 29.3 36.3	173 51.9 16.5	265 20.8 05.2	139 30.9 48.7			
12	24 33.4	41 29.1 S 7 35.4	188 55.3 S 4 16.2	280 23.0 N23 05.1	154 33.5 S15 48.6	Alphecca	126 10.2 N26 39.9	
13	39 35.8	56 28.9 34.6	203 58.7 15.9	295 25.1 05.1	169 36.1 48.6	Alpheratz	357 43.2 N29 10.0	
14	54 38.3	71 28.8 33.7	219 02.0 15.7	310 27.3 05.1	184 38.8 48.5	Altair	62 07.7 N 8 54.4	
15	69 40.8	86 28.6 . . 32.8	234 05.4 . . 15.4	325 29.4 . . 05.1	199 41.4 . . 48.5	Ankaa	353 15.6 S42 13.7	
16	84 43.2	101 28.4 32.0	249 08.7 15.1	340 31.6 05.0	214 44.0 48.4	Antares	112 25.3 S26 27.7	
17	99 45.7	116 28.3 31.1	264 12.1 14.9	355 33.7 05.0	229 46.6 48.4			
18	114 48.1	131 28.1 S 7 30.2	279 15.4 S 4 14.6	10 35.8 N23 05.0	244 49.2 S15 48.3	Arcturus	145 54.9 N19 06.4	
19	129 50.6	146 27.9 29.3	294 18.8 14.3	25 38.0 05.0	259 51.9 48.3	Atria	107 26.2 S69 02.8	
20	144 53.1	161 27.8 28.5	309 22.2 14.1	40 40.1 04.9	274 54.5 48.3	Avior	234 17.7 S59 33.8	
21	159 55.5	176 27.6 . . 27.6	324 25.5 . . 13.8	55 42.3 . . 04.9	289 57.1 . . 48.2	Bellatrix	278 31.6 N 6 21.5	
22	174 58.0	191 27.4 26.7	339 28.9 13.5	70 44.4 04.9	304 59.7 48.2	Betelgeuse	271 00.9 N 7 24.3	
23	190 00.5	206 27.3 25.8	354 32.2 13.3	85 46.5 04.8	320 02.4 48.1			
17 00	205 02.9	221 27.1 S 7 25.0	9 35.6 S 4 13.0	100 48.7 N23 04.8	335 05.0 S15 48.1	Canopus	263 56.1 S52 42.7	
01	220 05.4	236 26.9 24.1	24 38.9 12.7	115 50.8 04.8	350 07.6 48.0	Capella	280 33.9 N46 00.6	
02	235 07.9	251 26.8 23.2	39 42.3 12.5	130 53.0 04.8	5 10.2 48.0	Deneb	49 31.1 N45 19.7	
03	250 10.3	266 26.6 . . 22.3	54 45.6 . . 12.2	145 55.1 . . 04.7	20 12.9 . . 47.9	Denébola	182 32.8 N14 29.4	
04	265 12.8	281 26.4 21.4	69 49.0 11.9	160 57.2 04.7	35 15.5 47.9	Diphda	348 55.7 S17 54.6	
05	280 15.3	296 26.3 20.6	84 52.4 11.7	175 59.4 04.7	50 18.1 47.9			
06	295 17.7	311 26.1 S 7 19.7	99 55.7 S 4 11.4	191 01.5 N23 04.7	65 20.7 S15 47.8	Dubhe	193 50.6 N61 40.5	
07	310 20.2	326 25.9 18.8	114 59.1 11.1	206 03.7 04.6	80 23.4 47.8	Elnath	278 12.1 N28 37.0	
08	325 22.6	341 25.8 17.9	130 02.4 10.9	221 05.8 04.6	95 26.0 47.7	Eltanin	90 45.6 N51 29.1	
09	340 25.1	356 25.6 . . 17.0	145 05.8 . . 10.6	236 07.9 . . 04.6	110 28.6 . . 47.7	Enif	33 46.7 N 9 56.4	
10	355 27.6	11 25.4 16.2	160 09.1 10.3	251 10.1 04.6	125 31.2 47.6	Fomalhaut	15 23.7 S29 32.7	
11	10 30.0	26 25.3 15.3	175 12.5 10.1	266 12.2 04.5	140 33.9 47.6			
12	25 32.5	41 25.1 S 7 14.4	190 15.8 S 4 09.8	281 14.3 N23 04.5	155 36.5 S15 47.5	Gacrux	171 59.6 S57 11.8	
13	40 35.0	56 24.9 13.5	205 19.2 09.6	296 16.5 04.5	170 39.1 47.5	Gienah	175 51.4 S17 37.5	
14	55 37.4	71 24.8 12.6	220 22.5 09.3	311 18.6 04.4	185 41.7 47.5	Hadar	148 46.3 S60 26.5	
15	70 39.9	86 24.6 . . 11.7	235 25.9 . . 09.0	326 20.7 . . 04.4	200 44.4 . . 47.4	Hamal	328 00.4 N23 31.6	
16	85 42.4	101 24.4 10.8	250 29.2 08.8	341 22.9 04.4	215 47.0 47.4	Kaus Aust.	83 42.9 S34 22.4	
17	100 44.8	116 24.3 10.0	265 32.6 08.5	356 25.0 04.4	230 49.6 47.3			
18	115 47.3	131 24.1 S 7 09.1	280 35.9 S 4 08.2	11 27.2 N23 04.3	245 52.3 S15 47.3	Kochab	137 19.1 N74 05.8	
19	130 49.8	146 23.9 08.2	295 39.2 08.0	26 29.3 04.3	260 54.9 47.2	Markab	13 38.0 N15 16.8	
20	145 52.2	161 23.8 07.3	310 42.6 07.7	41 31.4 04.3	275 57.5 47.2	Menkar	314 14.8 N 4 08.5	
21	160 54.7	176 23.6 . . 06.4	325 45.9 . . 07.5	56 33.6 . . 04.2	291 00.1 . . 47.1	Menkent	148 06.5 S36 26.4	
22	175 57.1	191 23.4 05.5	340 49.3 07.2	71 35.7 04.2	306 02.8 47.1	Miaplacidus	221 39.1 S69 47.0	
23	190 59.6	206 23.3 04.6	355 52.6 06.9	86 37.8 04.2	321 05.4 47.1			
18 00	206 02.1	221 23.1 S 7 03.7	10 56.0 S 4 06.7	101 40.0 N23 04.2	336 08.0 S15 47.0	Mirfak	308 39.9 N49 54.6	
01	221 04.5	236 22.9 02.9	25 59.3 06.4	116 42.1 04.1	351 10.6 47.0	Nunki	75 57.5 S26 16.5	
02	236 07.0	251 22.8 02.0	41 02.7 06.2	131 44.2 04.1	6 13.3 46.9	Peacock	53 18.5 S56 41.0	
03	251 09.5	266 22.6 . . 01.1	56 06.0 . . 05.9	146 46.4 . . 04.1	21 15.9 . . 46.9	Póllux	243 27.1 N27 59.3	
04	266 11.9	281 22.4 7 00.2	71 09.4 05.6	161 48.5 04.1	36 18.5 46.8	Procyon	244 59.2 N 5 11.0	
05	281 14.4	296 22.3 6 59.3	86 12.7 05.4	176 50.6 04.0	51 21.1 46.8			
06	296 16.9	311 22.1 S 6 58.4	101 16.0 S 4 05.1	191 52.8 N23 04.0	66 23.8 S15 46.7	Rasalhague	96 05.7 N12 33.0	
07	311 19.3	326 21.9 57.5	116 19.4 04.9	206 54.9 04.0	81 26.4 46.7	Régulus	207 42.8 N11 53.6	
08	326 21.8	341 21.8 56.6	131 22.7 04.6	221 57.0 03.9	96 29.0 46.7	Rigel	281 11.7 S 8 11.4	
09	341 24.3	356 21.6 . . 55.7	146 26.1 . . 04.3	236 59.2 . . 03.9	111 31.7 . . 46.6	Rigel Kent.	139 50.2 S60 53.5	
10	356 26.7	11 21.4 54.8	161 29.4 04.1	252 01.3 03.9	126 34.3 46.6	Sabik	102 11.7 S15 44.4	
11	11 29.2	26 21.3 53.9	176 32.7 03.8	267 03.4 03.9	141 36.9 46.5			
12	26 31.6	41 21.1 S 6 53.0	191 36.1 S 4 03.6	282 05.5 N23 03.8	156 39.5 S15 46.5	Schedar	349 40.3 N56 36.8	
13	41 34.1	56 20.9 52.1	206 39.4 03.3	297 07.7 03.8	171 42.2 46.4	Shaula	96 20.9 S37 06.6	
14	56 36.6	71 20.7 51.2	221 42.7 03.1	312 09.8 03.8	186 44.8 46.4	Sirius	258 33.3 S16 44.5	
15	71 39.0	86 20.6 . . 50.3	236 46.1 . . 02.8	327 11.9 . . 03.7	201 47.4 . . 46.3	Spica	158 30.3 S11 14.3	
16	86 41.5	101 20.4 49.5	251 49.4 02.5	342 14.1 03.7	216 50.1 46.3	Suhail	222 51.9 S43 29.9	
17	101 44.0	116 20.2 48.6	266 52.8 02.3	357 16.2 03.7	231 52.7 46.2			
18	116 46.4	131 20.1 S 6 47.7	281 56.1 S 4 02.0	12 18.3 N23 03.7	246 55.3 S15 46.2	Vega	80 38.4 N38 47.7	
19	131 48.9	146 19.9 46.8	296 59.4 01.8	27 20.5 03.6	261 57.9 46.2	Zuben'ubi	137 04.5 S16 06.1	
20	146 51.4	161 19.7 45.9	312 02.8 01.5	42 22.6 03.6	277 00.6 46.1			
21	161 53.8	176 19.6 . . 45.0	327 06.1 . . 01.3	57 24.7 . . 03.6	292 03.2 . . 46.1			
22	176 56.3	191 19.4 44.1	342 09.4 01.0	72 26.8 03.5	307 05.8 46.0			
23	191 58.7	206 19.2 43.2	357 12.8 00.8	87 29.0 03.5	322 08.5 46.0			
Paso Mer. 10 18.1	v -0.2 d 0.9		v 3.3 d 0.3	v 2.1 d 0.0	v 2.6 d 0.0			
						AHS Paso Mer.		
						Venus	16 24.2 9 14	
						Marte	164 32.6 23 16	
						Júpiter	255 45.7 17 14	
						Saturno	130 02.1 1 39	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna												
	h	m	h	m	h	m		Naut.	Civil		16	17	18	19									
M I É R C O L E S	d	h	°	'	°	'	°	'	°	'	h	m	h	m	h	m	h	m					
	16	00	180	01.3	N10	00.9	351	53.9	10.3	S12	25.2	8.3	57.3	68	01	39	03	28					
	01		195	01.5		01.8	6	23.2	10.3	12	33.5	8.2	57.3	60	02	21	04	01					
	02		210	01.6		02.7	20	52.5	10.2	12	41.7	8.2	57.4	66	01	25	03	10					
	03		225	01.8		03.6	35	21.7	10.1	12	49.9	8.1	57.4	64	02	03	03	27					
	04		240	01.9		04.5	49	50.8	10.1	12	58.0	8.0	57.4	62	02	29	03	40					
	05		255	02.0		05.4	64	19.9	10.1	13	06.0	8.0	57.4	60	02	48	03	51					
	06		270	02.2	N10	06.3	78	49.0	9.9	S13	14.0	7.9	57.5	58	03	04	04	01					
	07		285	02.3		07.1	93	17.9	9.9	13	21.9	7.8	57.5	56	03	17	04	09					
	08		300	02.5		08.0	107	46.8	9.9	13	29.7	7.8	57.5	54	03	28	04	17					
	09		315	02.6		08.9	122	15.7	9.7	13	37.5	7.6	57.5	52	03	38	04	23					
	10		330	02.8		09.8	136	44.4	9.8	13	45.1	7.7	57.5	50	03	47	04	29					
	11		345	02.9		10.7	151	13.2	9.6	13	52.8	7.5	57.6	45	04	04	04	41					
	12		0	03.1	N10	11.6	165	41.8	9.6	S14	00.3	7.5	57.6	N	40	04	18	04					
	13		15	03.2		12.5	180	10.4	9.6	14	07.8	7.4	57.6	35	04	29	05	00					
	14		30	03.4		13.3	194	39.0	9.4	14	15.2	7.3	57.6	30	04	38	05	07					
	15		45	03.5		14.2	209	07.4	9.4	14	22.5	7.3	57.7	20	04	52	05	18					
	16		60	03.7		15.1	223	35.8	9.4	14	29.8	7.1	57.7	N	10	05	02	05					
	17		75	03.8		16.0	238	04.2	9.3	14	36.9	7.1	57.7	0	05	11	05	35					
	18		90	04.0	N10	16.9	252	32.5	9.2	S14	44.0	7.1	57.7	S	10	05	18	05					
	19		105	04.1		17.8	267	00.7	9.2	14	51.1	6.9	57.7	20	05	23	05	49					
	20		120	04.3		18.6	281	28.9	9.1	14	58.0	6.8	57.8	30	05	28	05	56					
	21		135	04.4		19.5	295	57.0	9.1	15	04.8	6.8	57.8	35	05	30	06	00					
	22		150	04.6		20.4	310	25.1	8.9	15	11.6	6.7	57.8	40	05	32	06	03					
	23		165	04.7		21.3	324	53.0	9.0	15	18.3	6.6	57.8	45	05	33	06	07					
J U E V E S	17	00	180	04.9	N10	22.2	339	21.0	8.9	S15	24.9	6.5	57.8	S	50	05	35	06					
	01		195	05.0		23.0	353	48.9	8.8	15	31.4	6.5	57.9	52	05	35	06	14					
	02		210	05.1		23.9	8	16.7	8.7	15	37.9	6.3	57.9	54	05	35	06	16					
	03		225	05.3		24.8	22	44.4	8.7	15	44.2	6.3	57.9	56	05	36	06	19					
	04		240	05.4		25.7	37	12.1	8.7	15	50.5	6.2	57.9	58	05	36	06	21					
	05		255	05.6		26.6	51	39.8	8.6	15	56.7	6.1	57.9	S	60	05	36	06					
	06		270	05.7	N10	27.4	66	07.4	8.5	S16	02.8	5.9	58.0	Ocaso Sol		Crepúsculo		Ocaso Luna					
	07		285	05.9		28.3	80	34.9	8.5	16	08.7	5.9	58.0	Lat.	Naut.	Civil	16	17	18	19			
	08		300	06.0		29.2	95	02.4	8.4	16	14.6	5.9	58.0										
	09		315	06.2		30.1	109	29.8	8.3	16	20.5	5.7	58.0	N	72	20	35	22	31	03	38		
	10		330	06.3		31.0	123	57.1	8.3	16	26.2	5.6	58.0	N	70	20	16	21	44	04	02		
	11		345	06.4		31.8	138	24.4	8.3	16	31.8	5.5	58.1	68	20	01	21	14	04	20	04	01	
	12		0	06.6	N10	32.7	152	51.7	8.2	S16	37.3	5.5	58.1	66	19	49	20	52	22	43	04	35	
	13		15	06.7		33.6	167	18.9	8.1	16	42.8	5.3	58.1	64	19	39	20	35	22	01	04	47	
	14		30	06.9		34.5	181	46.0	8.1	16	48.1	5.2	58.1	62	19	30	20	22	21	34	04	58	
	15		45	07.0		35.4	196	13.1	8.1	16	53.3	5.2	58.1	60	19	23	20	10	21	14	05	07	
	16		60	07.2		36.2	210	40.2	7.9	16	58.5	5.0	58.2	62	19	30	20	22	21	34	04	58	
	17		75	07.3		37.1	225	07.1	8.0	17	03.5	5.0	58.2	60	19	23	20	10	21	14	05	07	
	18		90	07.4	N10	38.0	239	34.1	7.9	S17	08.5	4.8	58.2	N	58	19	16	20	00	20	57	05	14
	19		105	07.6		38.9	254	01.0	7.8	17	13.3	4.7	58.2	56	19	11	19	51	20	44	05	21	
	20		120	07.7		39.7	268	27.8	7.8	17	18.0	4.7	58.2	54	19	05	19	44	20	33	05	28	
	21		135	07.9		40.6	282	54.6	7.7	17	22.7	4.5	58.2	52	19	01	19	37	20	23	05	33	
	22		150	08.0		41.5	297	21.3	7.7	17	27.2	4.4	58.3	50	18	57	19	31	20	14	05	38	
	23		165	08.2		42.4	311	48.0	7.6	17	31.6	4.4	58.3	45	18	48	19	19	19	56	05	49	
	V I E R N E S	18	00	180	08.3	N10	43.2	326	14.6	7.6	S17	36.0	4.2	58.3	N	40	18	40	19	09	19	42	05	58
01			195	08.4		44.1	340	41.2	7.6	17	40.2	4.1	58.3	35	18	34	19	00	19	31	06	06	
02			210	08.6		45.0	355	07.8	7.5	17	44.3	4.0	58.3	30	18	28	18	53	19	22	06	13	
03			225	08.7		45.9	9	34.3	7.4	17	48.3	3.9	58.3	20	18	19	18	41	19	08	06	25	
04			240	08.9		46.7	24	00.7	7.5	17	52.2	3.8	58.4	N	10	18	11	18	32	18	57		
05			255	09.0		47.6	38	27.2	7.3	17	56.0	3.7	58.4	0	18	03	18	24	18	48	06	46	
06			270	09.1	N10	48.5	52	53.5	7.4	S17	59.7	3.5	58.4	S	10	17	55	18	17	18	41	06	56
07			285	09.3		49.3	67	19.9	7.2	18	03.2	3.5	58.4	20	17	47	18	10	18	36	07	06	
08			300	09.4		50.2	81	46.1	7.3	18	06.7	3.3	58.4	30	17	39	18	03	18	31	07	18	
09			315	09.6		51.1	96	12.4	7.2	18	10.0	3.3	58.4	35	17	33	17	59	18	29	07	25	
10			330	09.7		52.0	110	38.6	7.2	18	13.3	3.1	58.5	40	17	28	17	55	18	27	07	34	
11			345	09.9		52.8	125	04.8	7.1	18	16.4	3.0	58.5	45	17	21	17	51	18	25	07	43	
12			0	10.0	N10	53.7	139	30.9	7.1	S18	19.4	2.9	58.5	S	50	17	13	17	46	18	24	07	54
13			15	10.1		54.6	153	57.0	7.0	18	22.3	2.8	58.5	52	17	10	17	44	18	23	08	00	
14			30	10.3		55.4	168	23.0	7.1	18	25.1	2.7	58.5	54	17	06	17	42	18	23	08	05	
15			45	10.4		56.3	182	49.1	7.0	18	27.8	2.5	58.5	56	17	01	17	39	18	22	08	12	
16			60	10.5		57.2	197	15.1	6.9	18	30.3	2.5	58.5	58	16	56	17	37	18	22	08	19	
17			75	10.7		58.1	211	41.0	6.9	18	32.8	2.3	58.6	S	60	16	51	17	34	18	22	08	27
18			90	10.8	N10	58.9	226	06.9	6.9	S18	35.1	2.2	58.6	SOL		LUNA							
19			105	11.0	10	59.8	240	32.8	6.9	18	37.3	2.1	58.6	Día	Ec. Tiempo	Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase			
20			120	11.1	11	00.7	254	58.7	6.8	18	39.4	1.9	58.6										
21			135	11.2		01.5	269	24.5	6.8	18	41.3	1.9	58.6	00h	12h								
22			150	11.4		02.4	283	50.3	6.8	18	43.2	1.7	58.6	d	m s	m s	h m	h m	h m	d	%		
23			165	11.5		03.3	298	16.1	6.7	S18	44.9	1.7	58.6	16	00 05	00 12	12 00	00 34	12 59	17 98			
														17	00 19	00 26	12 00	01 26	13 53				

UT (HmGr)	ARIES	VENUS -4.2	MARTE -1.4	JÚPITER -2.1	SATURNO +0.2	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
19 00	207 01.2	221 19.1 S 6 42.3	12 16.1 S 4 00.5	102 31.1 N23 03.5	337 11.1 S15 45.9	Acamar	315 18.4 S40 15.1	
01	222 03.7	236 18.9 41.4	27 19.4 00.2	117 33.2 03.5	352 13.7 45.9	Achernar	335 27.0 S57 09.9	
02	237 06.1	251 18.7 40.5	42 22.8 4 00.0	132 35.4 03.4	7 16.3 45.8	Acrux	173 07.9 S63 10.9	
03	252 08.6	266 18.6 . . 39.6	57 26.1 3 59.7	147 37.5 . . 03.4	22 19.0 . . 45.8	Adhara	255 12.2 S28 59.9	
04	267 11.1	281 18.4 38.6	72 29.4 59.5	162 39.6 03.4	37 21.6 45.7	Aldebarán	290 49.0 N16 32.1	
05	282 13.5	296 18.2 37.7	87 32.8 59.2	177 41.7 03.3	52 24.2 45.7			
06	297 16.0	311 18.0 S 6 36.8	102 36.1 S 3 59.0	192 43.9 N23 03.3	67 26.9 S15 45.7	Alioth	166 19.7 N55 52.9	
07	312 18.5	326 17.9 35.9	117 39.4 58.7	207 46.0 03.3	82 29.5 45.6	Alkaid	152 58.0 N49 14.5	
08	327 20.9	341 17.7 35.0	132 42.7 58.5	222 48.1 03.3	97 32.1 45.6	Al Na'ir	27 43.3 S46 53.2	
09	342 23.4	356 17.5 . . 34.1	147 46.1 . . 58.2	237 50.2 . . 03.2	112 34.7 . . 45.5	Alnilam	275 46.0 S 1 11.9	
10	357 25.9	11 17.4 33.2	162 49.4 58.0	252 52.4 03.2	127 37.4 45.5	Alphard	217 55.4 S 8 43.6	
11	12 28.3	26 17.2 32.3	177 52.7 57.7	267 54.5 03.2	142 40.0 45.4			
12	27 30.8	41 17.0 S 6 31.4	192 56.0 S 3 57.5	282 56.6 N23 03.1	157 42.6 S15 45.4	Alphecca	126 10.2 N26 40.0	
13	42 33.2	56 16.9 30.5	207 59.4 57.2	297 58.7 03.1	172 45.3 45.3	Alpheratz	357 43.2 N29 10.0	
14	57 35.7	71 16.7 29.6	223 02.7 57.0	313 00.9 03.1	187 47.9 45.3	Altair	62 07.6 N 8 54.4	
15	72 38.2	86 16.5 . . 28.7	238 06.0 . . 56.7	328 03.0 . . 03.1	202 50.5 . . 45.2	Ankaa	353 15.6 S42 13.7	
16	87 40.6	101 16.4 27.8	253 09.3 56.5	343 05.1 03.0	217 53.2 45.2	Antares	112 25.3 S26 27.7	
17	102 43.1	116 16.2 26.9	268 12.7 56.2	358 07.2 03.0	232 55.8 45.2			
18	117 45.6	131 16.0 S 6 26.0	283 16.0 S 3 56.0	13 09.4 N23 03.0	247 58.4 S15 45.1	Arcturus	145 54.9 N19 06.4	
19	132 48.0	146 15.8 25.0	298 19.3 55.7	28 11.5 02.9	263 01.0 45.1	Atria	107 26.1 S69 02.9	
20	147 50.5	161 15.7 24.1	313 22.6 55.5	43 13.6 02.9	278 03.7 45.0	Avior	234 17.7 S59 33.8	
21	162 53.0	176 15.5 . . 23.2	328 25.9 . . 55.2	58 15.7 . . 02.9	293 06.3 . . 45.0	Bellatrix	278 31.6 N 6 21.5	
22	177 55.4	191 15.3 22.3	343 29.3 55.0	73 17.8 02.8	308 08.9 44.9	Betelgeuse	271 00.9 N 7 24.3	
23	192 57.9	206 15.2 21.4	358 32.6 54.7	88 20.0 02.8	323 11.6 44.9			
20 00	208 00.4	221 15.0 S 6 20.5	13 35.9 S 3 54.5	103 22.1 N23 02.8	338 14.2 S15 44.8	Canopus	263 56.1 S52 42.7	
01	223 02.8	236 14.8 19.6	28 39.2 54.2	118 24.2 02.8	353 16.8 44.8	Capella	280 33.9 N46 00.6	
02	238 05.3	251 14.7 18.7	43 42.5 54.0	133 26.3 02.7	8 19.5 44.7	Deneb	49 31.1 N45 19.7	
03	253 07.7	266 14.5 . . 17.7	58 45.9 . . 53.7	148 28.5 . . 02.7	23 22.1 . . 44.7	Denébola	182 32.8 N14 29.4	
04	268 10.2	281 14.3 16.8	73 49.2 53.5	163 30.6 02.7	38 24.7 44.7	Diphda	348 55.6 S17 54.6	
05	283 12.7	296 14.1 15.9	88 52.5 53.2	178 32.7 02.6	53 27.4 44.6			
06	298 15.1	311 14.0 S 6 15.0	103 55.8 S 3 53.0	193 34.8 N23 02.6	68 30.0 S15 44.6	Dubhe	193 50.6 N61 40.5	
07	313 17.6	326 13.8 14.1	118 59.1 52.8	208 36.9 02.6	83 32.6 44.5	Elnath	278 12.1 N28 37.0	
08	328 20.1	341 13.6 13.2	134 02.4 52.5	223 39.1 02.6	98 35.3 44.5	Eltanin	90 45.6 N51 29.1	
09	343 22.5	356 13.5 . . 12.3	149 05.7 . . 52.3	238 41.2 . . 02.5	113 37.9 . . 44.4	Enif	33 46.7 N 9 56.4	
10	358 25.0	11 13.3 11.3	164 09.1 52.0	253 43.3 02.5	128 40.5 44.4	Fomalhaut	15 23.6 S29 32.7	
11	13 27.5	26 13.1 10.4	179 12.4 51.8	268 45.4 02.5	143 43.1 44.3			
12	28 29.9	41 13.0 S 6 09.5	194 15.7 S 3 51.5	283 47.5 N23 02.4	158 45.8 S15 44.3	Gacrux	171 59.6 S57 11.8	
13	43 32.4	56 12.8 08.6	209 19.0 51.3	298 49.7 02.4	173 48.4 44.2	Gienah	175 51.4 S17 37.5	
14	58 34.9	71 12.6 07.7	224 22.3 51.0	313 51.8 02.4	188 51.0 44.2	Hadar	148 46.3 S60 26.5	
15	73 37.3	86 12.4 . . 06.7	239 25.6 . . 50.8	328 53.9 . . 02.3	203 53.7 . . 44.2	Hamal	328 00.4 N23 31.6	
16	88 39.8	101 12.3 05.8	254 28.9 50.6	343 56.0 02.3	218 56.3 44.1	Kaus Aust.	83 42.9 S34 22.4	
17	103 42.2	116 12.1 04.9	269 32.2 50.3	358 58.1 02.3	233 58.9 44.1			
18	118 44.7	131 11.9 S 6 04.0	284 35.5 S 3 50.1	14 00.2 N23 02.3	249 01.6 S15 44.0	Kochab	137 19.0 N74 05.8	
19	133 47.2	146 11.8 03.1	299 38.8 49.8	29 02.4 02.2	264 04.2 44.0	Markab	13 38.0 N15 16.9	
20	148 49.6	161 11.6 02.1	314 42.1 49.6	44 04.5 02.2	279 06.8 43.9	Menkar	314 14.8 N 4 08.5	
21	163 52.1	176 11.4 . . 01.2	329 45.5 . . 49.4	59 06.6 . . 02.2	294 09.5 . . 43.9	Menkent	148 06.5 S36 26.4	
22	178 54.6	191 11.2 6 00.3	344 48.8 49.1	74 08.7 02.1	309 12.1 43.8	Miaplacidus	221 39.2 S69 47.0	
23	193 57.0	206 11.1 5 59.4	359 52.1 48.9	89 10.8 02.1	324 14.7 43.8			
21 00	208 59.5	221 10.9 S 5 58.5	14 55.4 S 3 48.6	104 12.9 N23 02.1	339 17.4 S15 43.7	Mirfak	308 39.9 N49 54.6	
01	224 02.0	236 10.7 57.5	29 58.7 48.4	119 15.1 02.0	354 20.0 43.7	Nunki	75 57.5 S26 16.5	
02	239 04.4	251 10.6 56.6	45 02.0 48.2	134 17.2 02.0	9 22.6 43.6	Peacock	53 18.4 S56 40.9	
03	254 06.9	266 10.4 . . 55.7	60 05.3 . . 47.9	149 19.3 . . 02.0	24 25.3 . . 43.6	Póllux	243 27.1 N27 59.3	
04	269 09.3	281 10.2 54.8	75 08.6 47.7	164 21.4 02.0	39 27.9 43.6	Procyon	244 59.2 N 5 11.0	
05	284 11.8	296 10.0 53.8	90 11.9 47.4	179 23.5 01.9	54 30.5 43.5			
06	299 14.3	311 09.9 S 5 52.9	105 15.2 S 3 47.2	194 25.6 N23 01.9	69 33.2 S15 43.5	Rasalhague	96 05.7 N12 33.0	
07	314 16.7	326 09.7 52.0	120 18.5 47.0	209 27.7 01.9	84 35.8 43.4	Régulus	207 42.8 N11 53.6	
08	329 19.2	341 09.5 51.1	135 21.8 46.7	224 29.9 01.8	99 38.4 43.4	Rigel	281 11.7 S 8 11.4	
09	344 21.7	356 09.4 . . 50.1	150 25.1 . . 46.5	239 32.0 . . 01.8	114 41.1 . . 43.3	Rigel Kent.	139 50.2 S60 53.6	
10	359 24.1	11 09.2 49.2	165 28.4 46.3	254 34.1 01.8	129 43.7 43.3	Sabik	102 11.6 S15 44.4	
11	14 26.6	26 09.0 48.3	180 31.7 46.0	269 36.2 01.7	144 46.3 43.2			
12	29 29.1	41 08.8 S 5 47.3	195 35.0 S 3 45.8	284 38.3 N23 01.7	159 49.0 S15 43.2	Schedar	349 40.3 N56 36.8	
13	44 31.5	56 08.7 46.4	210 38.3 45.5	299 40.4 01.7	174 51.6 43.1	Shaula	96 20.9 S37 06.6	
14	59 34.0	71 08.5 45.5	225 41.5 45.3	314 42.5 01.6	189 54.2 43.1	Sirius	258 33.3 S16 44.5	
15	74 36.5	86 08.3 . . 44.6	240 44.8 . . 45.1	329 44.6 . . 01.6	204 56.9 . . 43.0	Spica	158 30.3 S11 14.3	
16	89 38.9	101 08.2 43.6	255 48.1 44.8	344 46.8 01.6	219 59.5 43.0	Suhail	222 51.9 S43 29.9	
17	104 41.4	116 08.0 42.7	270 51.4 44.6	359 48.9 01.6	235 02.1 43.0			
18	119 43.8	131 07.8 S 5 41.8	285 54.7 S 3 44.4	14 51.0 N23 01.5	250 04.8 S15 42.9	Vega	80 38.4 N38 47.7	
19	134 46.3	146 07.6 40.8	300 58.0 44.1	29 53.1 01.5	265 07.4 42.9	Zuben'ubi	137 04.4 S16 06.1	
20	149 48.8	161 07.5 39.9	316 01.3 43.9	44 55.2 01.5	280 10.0 42.8			
21	164 51.2	176 07.3 . . 39.0	331 04.6 . . 43.7	59 57.3 . . 01.4	295 12.7 . . 42.8			
22	179 53.7	191 07.1 38.0	346 07.9 43.4	74 59.4 01.4	310 15.3 42.7			
23	194 56.2	206 07.0 37.1	1 11.2 43.2	90 01.5 01.4	325 17.9 42.7			
Paso Mer. 10 06.3	v -0.2 d 0.9		v 3.3 d 0.2	v 2.1 d 0.0	v 2.6 d 0.0			
						AHS Paso Mer.		
						Venus	13 14.6 h 9 15 m	
						Marte	165 35.6 23 01	
						Júpiter	255 21.7 17 04	
						Saturno	130 13.8 1 27	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		19	20	21	22	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
S Á B A D O	19 00	180 11.7	N11 04.1	312 41.8	6.8	S18 46.6	1.5 58.7	N 72	////	00 58	03 10	01 57	02 51	03 10	03 15	
	01	195 11.8	05.0	327 07.6	6.7	18 48.1	1.3 58.7	N 70	////	01 58	03 31	01 04	02 01	02 33	02 51	
	02	210 11.9	05.9	341 33.3	6.6	18 49.4	1.3 58.7	66	00 50	02 56	04 01	00 32	01 29	02 08	02 32	
	03	225 12.1	06.7	355 58.9	6.7	18 50.7	1.1 58.7	64	01 43	03 14	04 12	00 08	01 06	01 47	02 16	
	04	240 12.2	07.6	10 24.6	6.6	18 51.8	1.1 58.7	62	02 14	03 29	04 21	24 47	00 47	01 31	02 03	
	05	255 12.3	08.5	24 50.2	6.6	18 52.9	0.9 58.7	60	02 36	03 41	04 29	24 32	00 32	01 17	01 52	
	06	270 12.5	N11 09.3	39 15.8	6.6	S18 53.8	0.7 58.7	N 58	02 53	03 52	04 36	24 19	00 19	01 06	01 43	
	07	285 12.6	10.2	53 41.4	6.6	18 54.5	0.7 58.7	56	03 08	04 01	04 42	24 07	00 07	00 55	01 34	
	08	300 12.7	11.1	68 07.0	6.6	18 55.2	0.5 58.8	54	03 20	04 09	04 48	23 57	24 46	00 46	01 27	
	09	315 12.9	11.9	82 32.6	6.5	18 55.7	0.4 58.8	52	03 30	04 16	04 53	23 49	24 38	00 38	01 20	
	10	330 13.0	12.8	96 58.1	6.5	18 56.1	0.3 58.8	50	03 39	04 23	04 57	23 41	24 31	00 31	01 14	
	11	345 13.2	13.6	111 23.6	6.5	18 56.4	0.2 58.8	45	03 58	04 36	05 07	23 24	24 15	00 15	01 01	
	12	0 13.3	N11 14.5	125 49.1	6.5	S18 56.6	0.1 58.8	N 40	04 13	04 47	05 15	23 10	24 03	00 03	00 50	
	13	15 13.4	15.4	140 14.6	6.5	18 56.7	0.1 58.8	35	04 24	04 56	05 22	22 58	23 52	24 41	00 41	
	14	30 13.6	16.2	154 40.1	6.5	18 56.6	0.2 58.8	30	04 34	05 03	05 28	22 48	23 42	24 32	00 32	
	15	45 13.7	17.1	169 05.6	6.5	18 56.4	0.3 58.8	20	04 49	05 16	05 38	22 30	23 26	24 18	00 18	
	16	60 13.8	18.0	183 31.1	6.4	18 56.1	0.5 58.9	N 10	05 01	05 26	05 47	22 15	23 11	24 06	00 06	
	17	75 14.0	18.8	197 56.5	6.5	18 55.6	0.5 58.9	0	05 10	05 34	05 56	22 00	22 58	23 54	24 49	
	18	90 14.1	N11 19.7	212 22.0	6.4	S18 55.1	0.7 58.9	S 10	05 18	05 42	06 04	21 46	22 44	23 43	24 40	
	19	105 14.2	20.5	226 47.4	6.5	18 54.4	0.8 58.9	20	05 24	05 50	06 12	21 31	22 30	23 30	24 31	
	20	120 14.4	21.4	241 12.9	6.4	18 53.6	1.0 58.9	30	05 30	05 58	06 22	21 13	22 13	23 16	24 19	
	21	135 14.5	22.3	255 38.3	6.4	18 52.6	1.0 58.9	35	05 32	06 02	06 28	21 03	22 04	23 08	24 13	
	22	150 14.6	23.1	270 03.7	6.4	18 51.6	1.2 58.9	40	05 35	06 06	06 34	20 51	21 53	22 58	24 06	
	23	165 14.8	24.0	284 29.1	6.5	18 50.4	1.3 58.9	45	05 37	06 11	06 41	20 38	21 40	22 47	23 57	
	D O M I N G O	20 00	180 14.9	N11 24.8	298 54.6	6.4	S18 49.1	1.4 58.9	S 50	05 39	06 17	06 50	20 21	21 24	22 34	23 47
01		195 15.0	25.7	313 20.0	6.4	18 47.7	1.5 58.9	52	05 40	06 19	06 54	20 13	21 17	22 27	23 42	
02		210 15.2	26.6	327 45.4	6.5	18 46.2	1.7 59.0	54	05 40	06 22	06 58	20 04	21 09	22 20	23 37	
03		225 15.3	27.4	342 10.9	6.4	18 44.5	1.8 59.0	56	05 41	06 24	07 03	19 54	20 59	22 13	23 31	
04		240 15.4	28.3	356 36.3	6.4	18 42.7	1.9 59.0	58	05 42	06 28	07 08	19 43	20 49	22 04	23 24	
05		255 15.6	29.1	11 01.7	6.5	18 40.8	2.0 59.0	S 60	05 42	06 31	07 14	19 30	20 37	21 54	23 17	
06		270 15.7	N11 30.0	25 27.2	6.4	S18 38.8	2.2 59.0	Ocaso Sol		Crepúsculo		Ocaso Luna				
07		285 15.8	30.8	39 52.6	6.5	18 36.6	2.2 59.0	Lat.				19	20	21	22	
08		300 16.0	31.7	54 18.1	6.4	18 34.4	2.4 59.0			Civil	Náut.					
09		315 16.1	32.6	68 43.5	6.5	18 32.0	2.5 59.0					h m	h m	h m	h m	
10		330 16.2	33.4	83 09.0	6.5	18 29.5	2.7 59.0	N 72	h m	h m	h m	h m	h m	h m	h m	
11		345 16.3	34.3	97 34.5	6.5	18 26.8	2.7 59.0	N 70	20 52	23 20	////	04 35	05 40	06 17	08 40	
12		0 16.5	N11 35.1	112 00.0	6.5	S18 24.1	2.9 59.0	N 70	20 30	22 07	////	05 27	06 30	07 57	09 13	
13		15 16.6	36.0	126 25.5	6.5	18 21.2	3.0 59.1	68	20 13	21 31	////	06 00	07 02	08 22	09 55	
14		30 16.7	36.8	140 51.0	6.5	18 18.2	3.1 59.1	66	19 59	21 06	23 25	06 24	07 25	08 42	10 09	
15		45 16.9	37.7	155 16.5	6.6	18 15.1	3.2 59.1	64	19 48	20 47	22 21	06 42	07 44	08 58	10 22	
16		60 17.0	38.5	169 42.1	6.5	18 11.9	3.4 59.1	62	19 38	20 31	21 49	06 58	07 59	09 11	10 32	
17		75 17.1	39.4	184 07.6	6.6	18 08.5	3.4 59.1	60	19 30	20 18	21 25	07 11	08 12	09 23	10 41	
18		90 17.3	N11 40.3	198 33.2	6.6	S18 05.1	3.6 59.1	N 58	19 23	20 08	21 07	07 23	08 23	09 33	10 49	
19		105 17.4	41.1	212 58.8	6.6	18 01.5	3.7 59.1	56	19 17	19 58	20 52	07 33	08 33	09 41	10 56	
20		120 17.5	42.0	227 24.4	6.6	17 57.8	3.8 59.1	54	19 11	19 50	20 40	07 42	08 42	09 49	11 02	
21		135 17.6	42.8	241 50.0	6.7	17 54.0	4.0 59.1	52	19 06	19 43	20 29	07 50	08 49	09 56	11 08	
22		150 17.8	43.7	256 15.7	6.7	17 50.0	4.0 59.1	50	19 01	19 36	20 20	08 07	09 06	10 11	11 20	
23		165 17.9	44.5	270 41.4	6.7	17 46.0	4.2 59.1	45	18 52	19 23	20 01	08 21	09 20	10 23	11 30	
L U N E S		21 00	180 18.0	N11 45.4	285 07.1	6.7	S17 41.8	4.2 59.1	N 40	18 43	19 12	19 46	08 21	09 20	10 23	11 30
	01	195 18.2	46.2	299 32.8	6.7	17 37.6	4.4 59.1	35	18 36	19 03	19 34	08 32	09 31	10 34	11 39	
	02	210 18.3	47.1	313 58.5	6.8	17 33.2	4.5 59.2	30	18 30	18 55	19 24	08 43	09 41	10 43	11 46	
	03	225 18.4	47.9	328 24.3	6.7	17 28.7	4.7 59.2	20	18 20	18 42	19 09	09 01	09 59	10 59	11 59	
	04	240 18.5	48.8	342 50.0	6.9	17 24.0	4.7 59.2	N 10	18 11	18 32	18 57	09 16	10 14	11 12	12 10	
	05	255 18.7	49.6	357 15.9	6.8	17 19.3	4.8 59.2	0	18 02	18 23	18 48	09 30	10 28	11 25	12 21	
	06	270 18.8	N11 50.5	11 41.7	6.9	S17 14.5	5.0 59.2	S 10	17 54	18 15	18 40	09 45	10 42	11 38	12 31	
	07	285 18.9	51.3	26 07.6	6.8	17 09.5	5.1 59.2	20	17 45	18 08	18 34	10 00	10 57	11 51	12 42	
	08	300 19.1	52.2	40 33.4	7.0	17 04.4	5.1 59.2	30	17 35	18 00	18 28	10 18	11 14	12 06	12 55	
	09	315 19.2	53.0	54 59.4	6.9	16 59.3	5.3 59.2	35	17 30	17 56	18 25	10 28	11 24	12 15	13 02	
	10	330 19.3	53.9	69 25.3	7.0	16 54.0	5.4 59.2	40	17 23	17 51	18 23	10 40	11 35	12 25	13 10	
	11	345 19.4	54.7	83 51.3	7.0	16 48.6	5.5 59.2	45	17 16	17 46	18 20	10 54	11 48	12 37	13 20	
	12	0 19.6	N11 55.6	98 17.3	7.0	S16 43.1	5.6 59.2	S 50	17 07	17 40	18 18	11 10	12 05	12 51	13 31	
	13	15 19.7	56.4	112 43.3	7.1	16 37.5	5.7 59.2	52	17 03	17 38	18 17	11 18	12 12	12 58	13 36	
	14	30 19.8	57.3	127 09.4	7.1	16 31.8	5.8 59.2	54	16 59	17 35	18 16	11 27	12 20	13 05	13 42	
	15	45 19.9	58.1	141 35.5	7.1	16 26.0	6.0 59.2	56	16 54	17 32	18 16	11 37	12 30	13 13	13 49	
	16	60 20.1	58.9	156 01.6	7.2	16 20.0	6.0 59.2	58	16 49	17 29	18 15	11 48	12 41	13 23	13 56	
	17	75 20.2	11 59.8	170 27.8	7.2	16 14.0	6.1 59.2	S 60	16 42	17 26	18 14	12 01	12 53	13 33	14 04	
	18	90 20.3	N12 00.6	184 54.0	7.2	S16 07.9	6.3 59.2	SOL		LUNA						
	19	105 20.4	01.5	199 20.2	7.2	16 01.6	6.3 59.2	Día				Paso Mer.		Edad	Fase	
	20	120 20.6	02.3	213 46.4	7.3	15 55.3	6.4 59.2		Ec. Tiempo			Sup.	Inf.			
	21	135 20.7	03.2	228 12.7	7.4	15 48.9	6.6 59.2		00h	12h						
	22	150 20.8	04.0	242 39.1	7.3	15 42.3	6.6 59.3	d	m s	m s	h m	h m	h m	d %		
	23	165 20.9	04.9	257 05.4	7.4	S15 35.7	6.7 59.3	19	00 46	00 53						

UT (HmGr)	ARIES	VENUS -4.2	MARTE -1.3	JÚPITER -2.1	SATURNO +0.1	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
22 00	209 58.6	221 06.8 S 5 36.2	16 14.4 S 3 43.0	105 03.6 N23 01.3	340 20.6 S15 42.6	Acamar	315 18.4 S40 15.1	
01	225 01.1	236 06.6 35.2	31 17.7 42.7	120 05.8 01.3	355 23.2 42.6	Achernar	335 27.0 S57 09.9	
02	240 03.6	251 06.4 34.3	46 21.0 42.5	135 07.9 01.3	10 25.9 42.5	Acrux	173 07.9 S63 10.9	
03	255 06.0	266 06.3 . . 33.4	61 24.3 . . 42.3	150 10.0 . . 01.2	25 28.5 . . 42.5	Adhara	255 12.2 S28 59.9	
04	270 08.5	281 06.1 32.4	76 27.6 42.0	165 12.1 01.2	40 31.1 42.4	Aldebarán	290 49.0 N16 32.1	
05	285 11.0	296 05.9 31.5	91 30.9 41.8	180 14.2 01.2	55 33.8 42.4			
06	300 13.4	311 05.8 S 5 30.6	106 34.2 S 3 41.6	195 16.3 N23 01.1	70 36.4 S15 42.4	Alioth	166 19.7 N55 53.0	
07	315 15.9	326 05.6 29.6	121 37.4 41.4	210 18.4 01.1	85 39.0 42.3	Alkaid	152 58.0 N49 14.5	
08	330 18.3	341 05.4 28.7	136 40.7 41.1	225 20.5 01.1	100 41.7 42.3	Al Na'ir	27 43.3 S46 53.2	
09	345 20.8	356 05.2 . . 27.7	151 44.0 . . 40.9	240 22.6 . . 01.1	115 44.3 . . 42.2	Alnilam	275 46.0 S 1 11.9	
10	0 23.3	11 05.1 26.8	166 47.3 40.7	255 24.7 01.0	130 46.9 42.2	Alphard	217 55.4 S 8 43.6	
11	15 25.7	26 04.9 25.9	181 50.6 40.4	270 26.8 01.0	145 49.6 42.1			
12	30 28.2	41 04.7 S 5 24.9	196 53.8 S 3 40.2	285 28.9 N23 01.0	160 52.2 S15 42.1	Alphecca	126 10.2 N26 40.0	
13	45 30.7	56 04.6 24.0	211 57.1 40.0	300 31.1 00.9	175 54.8 42.0	Alpheratz	357 43.2 N29 10.0	
14	60 33.1	71 04.4 23.0	227 00.4 39.8	315 33.2 00.9	190 57.5 42.0	Altair	62 07.6 N 8 54.4	
15	75 35.6	86 04.2 . . 22.1	242 03.7 . . 39.5	330 35.3 . . 00.9	206 00.1 . . 41.9	Ankaa	353 15.6 S42 13.6	
16	90 38.1	101 04.0 21.2	257 06.9 39.3	345 37.4 00.8	221 02.7 41.9	Antares	112 25.2 S26 27.7	
17	105 40.5	116 03.9 20.2	272 10.2 39.1	0 39.5 00.8	236 05.4 41.8			
18	120 43.0	131 03.7 S 5 19.3	287 13.5 S 3 38.9	15 41.6 N23 00.8	251 08.0 S15 41.8	Arcturus	145 54.9 N19 06.4	
19	135 45.4	146 03.5 18.3	302 16.8 38.6	30 43.7 00.7	266 10.7 41.7	Atria	107 26.1 S69 02.9	
20	150 47.9	161 03.3 17.4	317 20.0 38.4	45 45.8 00.7	281 13.3 41.7	Avior	234 17.7 S59 33.8	
21	165 50.4	176 03.2 . . 16.5	332 23.3 . . 38.2	60 47.9 . . 00.7	296 15.9 . . 41.7	Bellatrix	278 31.6 N 6 21.5	
22	180 52.8	191 03.0 15.5	347 26.6 38.0	75 50.0 00.6	311 18.6 41.6	Betelgeuse	271 00.9 N 7 24.3	
23	195 55.3	206 02.8 14.6	2 29.8 37.7	90 52.1 00.6	326 21.2 41.6			
23 00	210 57.8	221 02.7 S 5 13.6	17 33.1 S 3 37.5	105 54.2 N23 00.6	341 23.8 S15 41.5	Canopus	263 56.1 S52 42.7	
01	226 00.2	236 02.5 12.7	32 36.4 37.3	120 56.3 00.5	356 26.5 41.5	Capella	280 33.9 N46 00.6	
02	241 02.7	251 02.3 11.7	47 39.6 37.1	135 58.4 00.5	11 29.1 41.4	Deneb	49 31.1 N45 19.7	
03	256 05.2	266 02.1 . . 10.8	62 42.9 . . 36.8	151 00.5 . . 00.5	26 31.7 . . 41.4	Denébola	182 32.8 N14 29.4	
04	271 07.6	281 02.0 09.8	77 46.2 36.6	166 02.6 00.4	41 34.4 41.3	Diphda	348 55.6 S17 54.5	
05	286 10.1	296 01.8 08.9	92 49.4 36.4	181 04.7 00.4	56 37.0 41.3			
06	301 12.6	311 01.6 S 5 08.0	107 52.7 S 3 36.2	196 06.8 N23 00.4	71 39.7 S15 41.2	Dubhe	193 50.7 N61 40.5	
07	316 15.0	326 01.4 07.0	122 56.0 36.0	211 08.9 00.3	86 42.3 41.2	Elnath	278 12.1 N28 37.0	
08	331 17.5	341 01.3 06.1	137 59.2 35.7	226 11.0 00.3	101 44.9 41.1	Eltanin	90 45.6 N51 29.1	
09	346 19.9	356 01.1 . . 05.1	153 02.5 . . 35.5	241 13.1 . . 00.3	116 47.6 . . 41.1	Enif	33 46.7 N 9 56.4	
10	1 22.4	11 00.9 04.2	168 05.8 35.3	256 15.2 00.3	131 50.2 41.0	Fomalhaut	15 23.6 S29 32.7	
11	16 24.9	26 00.7 03.2	183 09.0 35.1	271 17.3 00.2	146 52.8 41.0			
12	31 27.3	41 00.6 S 5 02.3	198 12.3 S 3 34.9	286 19.4 N23 00.2	161 55.5 S15 41.0	Gacrux	171 59.6 S57 11.8	
13	46 29.8	56 00.4 01.3	213 15.5 34.6	301 21.5 00.2	176 58.1 40.9	Gienah	175 51.4 S17 37.5	
14	61 32.3	71 00.2 5 00.4	228 18.8 34.4	316 23.7 00.1	192 00.8 40.9	Hadar	148 46.3 S60 26.5	
15	76 34.7	86 00.1 4 59.4	243 22.0 . . 34.2	331 25.8 . . 00.1	207 03.4 . . 40.8	Hamal	328 00.4 N23 31.6	
16	91 37.2	100 59.9 58.5	258 25.3 34.0	346 27.9 00.1	222 06.0 40.8	Kaus Aust.	83 42.9 S34 22.4	
17	106 39.7	115 59.7 57.5	273 28.6 33.8	1 30.0 00.0	237 08.7 40.7			
18	121 42.1	130 59.5 S 4 56.6	288 31.8 S 3 33.5	16 32.1 N23 00.0	252 11.3 S15 40.7	Kochab	137 19.0 N74 05.8	
19	136 44.6	145 59.4 55.6	303 35.1 33.3	31 34.2 23 00.0	267 13.9 40.6	Markab	13 38.0 N15 16.9	
20	151 47.1	160 59.2 54.7	318 38.3 33.1	46 36.3 22 59.9	282 16.6 40.6	Menkar	314 14.8 N 4 08.5	
21	166 49.5	175 59.0 . . 53.7	333 41.6 . . 32.9	61 38.4 . . 59.9	297 19.2 . . 40.5	Menkent	148 06.4 S36 26.5	
22	181 52.0	190 58.8 52.8	348 44.8 32.7	76 40.4 59.9	312 21.9 40.5	Miaplacidus	221 39.2 S69 47.0	
23	196 54.4	205 58.7 51.8	3 48.1 32.5	91 42.5 59.8	327 24.5 40.4			
24 00	211 56.9	220 58.5 S 4 50.9	18 51.3 S 3 32.3	106 44.6 N22 59.8	342 27.1 S15 40.4	Mirfak	308 39.9 N49 54.6	
01	226 59.4	235 58.3 49.9	33 54.6 32.0	121 46.7 59.8	357 29.8 40.3	Nunki	75 57.5 S26 16.5	
02	242 01.8	250 58.1 48.9	48 57.8 31.8	136 48.8 59.7	12 32.4 40.3	Peacock	53 18.4 S56 40.9	
03	257 04.3	265 58.0 . . 48.0	64 01.1 . . 31.6	151 50.9 . . 59.7	27 35.1 . . 40.2	Póllux	243 27.1 N27 59.3	
04	272 06.8	280 57.8 47.0	79 04.3 31.4	166 53.0 59.7	42 37.7 40.2	Procyon	244 59.2 N 5 11.0	
05	287 09.2	295 57.6 46.1	94 07.6 31.2	181 55.1 59.6	57 40.3 40.2			
06	302 11.7	310 57.4 S 4 45.1	109 10.8 S 3 31.0	196 57.2 N22 59.6	72 43.0 S15 40.1	Rasalhague	96 05.7 N12 33.0	
07	317 14.2	325 57.3 44.2	124 14.0 30.8	211 59.3 59.6	87 45.6 40.1	Régulus	207 42.8 N11 53.6	
08	332 16.6	340 57.1 43.2	139 17.3 30.6	227 01.4 59.5	102 48.2 40.0	Rigel	281 11.7 S 8 11.4	
09	347 19.1	355 56.9 . . 42.3	154 20.5 . . 30.3	242 03.5 . . 59.5	117 50.9 . . 40.0	Rigel Kent.	139 50.2 S60 53.6	
10	2 21.5	10 56.8 41.3	169 23.8 30.1	257 05.6 59.5	132 53.5 39.9	Sabik	102 11.6 S15 44.4	
11	17 24.0	25 56.6 40.3	184 27.0 29.9	272 07.7 59.4	147 56.2 39.9			
12	32 26.5	40 56.4 S 4 39.4	199 30.3 S 3 29.7	287 09.8 N22 59.4	162 58.8 S15 39.8	Schedar	349 40.3 N56 36.8	
13	47 28.9	55 56.2 38.4	214 33.5 29.5	302 11.9 59.4	178 01.4 39.8	Shaula	96 20.9 S37 06.6	
14	62 31.4	70 56.1 37.5	229 36.7 29.3	317 14.0 59.3	193 04.1 39.7	Sirius	258 33.3 S16 44.5	
15	77 33.9	85 55.9 . . 36.5	244 40.0 . . 29.1	332 16.1 . . 59.3	208 06.7 . . 39.7	Spica	158 30.3 S11 14.3	
16	92 36.3	100 55.7 35.5	259 43.2 28.9	347 18.2 59.3	223 09.4 39.6	Suhail	222 51.9 S43 29.9	
17	107 38.8	115 55.5 34.6	274 46.4 28.7	2 20.3 59.2	238 12.0 39.6			
18	122 41.3	130 55.4 S 4 33.6	289 49.7 S 3 28.5	17 22.4 N22 59.2	253 14.6 S15 39.5	Vega	80 38.4 N38 47.7	
19	137 43.7	145 55.2 32.7	304 52.9 28.2	32 24.5 59.2	268 17.3 39.5	Zuben'ubi	137 04.4 S16 06.1	
20	152 46.2	160 55.0 31.7	319 56.1 28.0	47 26.6 59.1	283 19.9 39.4			
21	167 48.7	175 54.8 . . 30.7	334 59.4 . . 27.8	62 28.7 . . 59.1	298 22.6 . . 39.4			
22	182 51.1	190 54.7 29.8	350 02.6 27.6	77 30.8 59.1	313 25.2 39.4			
23	197 53.6	205 54.5 28.8	5 05.8 27.4	92 32.9 59.0	328 27.8 39.3			
h m								
Paso Mer.	9 54.5	v -0.2 d 0.9	v 3.3 d 0.2	v 2.1 d 0.0	v 2.6 d 0.0			
						AHS	Paso Mer.	
						° /	h m	
						10 04.9	9 16	
						166 35.3	22 45	
						254 56.4	16 54	
						130 26.1	1 14	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	v	Dec	d	Ph		Naut.	Civil		22	23	24	25		
d h	°	'	°	'	°	'	°	'	h m	h m	h m	h m	h m	h m	h m	h m	
M A R T E S	N 72	180 21.1	N12 05.7	271 31.8	7.5	S15 29.0	6.9	59.3	///	///	02 51	03 49	03 37	03 29	03 21		
	N 70	195 21.2	06.5	285 58.3	7.4	15 22.1	6.9	59.3	///	01 31	03 16	03 15	03 17	03 17	03 16		
	68	210 21.3	07.4	300 24.7	7.5	15 15.2	7.0	59.3	///	02 13	03 34	02 51	03 01	03 07	03 12		
	66	225 21.4	08.2	314 51.2	7.6	15 08.2	7.2	59.3	01 19	03 01	04 02	02 16	02 37	02 53	03 06		
	64	240 21.5	09.1	329 17.8	7.6	15 01.0	7.2	59.3	01 57	03 18	04 12	02 03	02 28	02 47	03 03		
	62	255 21.7	09.9	343 44.4	7.6	14 53.8	7.3	59.3	02 23	03 32	04 21	01 52	02 20	02 42	03 01		
	N 58	270 21.8	N12 10.8	358 11.0	7.7	S14 46.5	7.4	59.3	02 42	03 43	04 28	01 43	02 13	02 37	02 59		
	56	285 21.9	11.6	12 37.6	7.7	14 39.1	7.5	59.3	02 58	03 53	04 35	01 34	02 06	02 33	02 57		
	54	300 22.0	12.4	27 04.3	7.8	14 31.6	7.6	59.3	03 11	04 02	04 41	01 27	02 01	02 30	02 55		
	52	315 22.2	13.3	41 31.1	7.7	14 24.0	7.7	59.3	03 22	04 10	04 47	01 20	01 56	02 26	02 54		
	50	330 22.3	14.1	55 57.8	7.8	14 16.3	7.7	59.3	03 32	04 16	04 52	01 14	01 51	02 23	02 53		
	45	345 22.4	15.0	70 24.6	7.9	14 08.6	7.9	59.3	03 52	04 31	05 02	01 01	01 41	02 17	02 50		
	N 40	0 22.5	N12 15.8	84 51.5	7.9	S14 00.7	7.9	59.3	04 08	04 42	05 11	00 50	01 33	02 11	02 47		
	35	15 22.6	16.6	99 18.4	7.9	13 52.8	8.0	59.3	04 20	04 52	05 18	00 41	01 25	02 07	02 45		
	30	30 22.8	17.5	113 45.3	8.0	13 44.8	8.2	59.3	04 31	05 00	05 25	00 32	01 19	02 02	02 43		
	20	45 22.9	18.3	128 12.3	8.0	13 36.6	8.2	59.3	04 47	05 13	05 36	00 18	01 08	01 55	02 40		
	N 10	60 23.0	19.1	142 39.3	8.0	13 28.4	8.2	59.3	04 59	05 24	05 46	00 06	00 58	01 49	02 37		
	0	75 23.1	20.0	157 06.3	8.1	13 20.2	8.4	59.3	05 09	05 34	05 55	24 49	00 49	01 43	02 35		
	S 10	90 23.2	N12 20.8	171 33.4	8.1	S13 11.8	8.4	59.3	05 18	05 42	06 04	24 40	00 40	01 37	02 32		
	20	105 23.4	21.7	186 00.5	8.1	13 03.4	8.6	59.3	05 25	05 51	06 13	24 31	00 31	01 30	02 29		
	30	120 23.5	22.5	200 27.6	8.2	12 54.8	8.6	59.3	05 31	05 59	06 24	24 19	00 19	01 23	02 26		
	35	135 23.6	23.3	214 54.8	8.3	12 46.2	8.6	59.3	05 34	06 04	06 30	24 13	00 13	01 19	02 24		
	40	150 23.7	24.2	229 22.1	8.2	12 37.6	8.8	59.3	05 37	06 09	06 37	24 06	00 06	01 14	02 22		
	45	165 23.8	25.0	243 49.3	8.4	12 28.8	8.8	59.3	05 40	06 15	06 45	23 57	25 08	01 08	02 20		
	M I É R C O L E S	S 50	180 24.0	N12 25.8	258 16.7	8.3	S12 20.0	8.9	59.3	05 43	06 21	06 54	23 47	25 02	01 02	02 17	
		52	195 24.1	26.7	272 44.0	8.4	12 11.1	9.0	59.3	05 44	06 24	06 59	23 42	24 59	00 59	02 15	
54		210 24.2	27.5	287 11.4	8.4	12 02.1	9.1	59.3	05 45	06 27	07 04	23 37	24 55	00 55	02 14		
56		225 24.3	28.3	301 38.8	8.5	11 53.0	9.1	59.3	05 46	06 30	07 09	23 31	24 51	00 51	02 12		
58		240 24.4	29.2	316 06.3	8.5	11 43.9	9.2	59.3	05 48	06 34	07 15	23 24	24 47	00 47	02 11		
S 60		255 24.6	30.0	330 33.8	8.5	11 34.7	9.3	59.3	05 49	06 38	07 22	23 17	24 42	00 42	02 08		
Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna											
				Civil		Naut.		22		23		24		25			
°		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	
N 72		21 10	///	///	08 40	10 46	12 45	14 40									
N 70		20 45	22 35	///	09 13	11 05	12 55	14 43									
68		20 25	21 49	///	09 36	11 19	13 02	14 44									
66		20 10	21 20	///	09 55	11 31	13 09	14 46									
64		19 57	20 58	22 45	10 09	11 41	13 14	14 47									
62		19 47	20 41	22 04	10 22	11 49	13 19	14 48									
60		19 38	20 27	21 38	10 32	11 57	13 23	14 49									
N 58		19 30	20 15	21 17	10 41	12 03	13 26	14 50									
56		19 23	20 05	21 01	10 49	12 09	13 29	14 50									
54		19 17	19 56	20 48	10 56	12 13	13 32	14 51									
52		19 11	19 48	20 36	11 02	12 18	13 35	14 52									
50		19 06	19 41	20 26	11 08	12 22	13 37	14 52									
45		18 55	19 27	20 05	11 20	12 31	13 42	14 53									
N 40		18 46	19 15	19 50	11 30	12 38	13 46	14 54									
35		18 39	19 05	19 37	11 39	12 44	13 50	14 55									
30		18 32	18 57	19 27	11 46	12 50	13 53	14 56									
20		18 21	18 43	19 10	11 59	12 59	13 58	14 57									
N 10	18 11	18 32	18 58	12 10	13 07	14 03	14 58										
0	18 02	18 23	18 47	12 21	13 15	14 08	14 59										
S 10	17 53	18 14	18 39	12 31	13 22	14 12	15 00										
20	17 43	18 06	18 32	12 42	13 30	14 16	15 01										
30	17 32	17 57	18 25	12 55	13 40	14 22	15 02										
35	17 26	17 52	18 22	13 02	13 45	14 25	15 03										
40	17 19	17 47	18 19	13 10	13 51	14 28	15 03										
45	17 11	17 41	18 16	13 20	13 57	14 32	15 04										
S 50	17 02	17 35	18 13	13 31	14 06	14 36	15 05										
52	16 57	17 32	18 12	13 36	14 09	14 38	15 05										
54	16 52	17 29	18 10	13 42	14 13	14 41	15 06										
56	16 47	17 26	18 09	13 49	14 18	14 43	15 06										
58	16 41	17 22	18 08	13 56	14 23	14 46	15 07										
S 60	16 34	17 18	18 07	14 04	14 29	14 49	15 08										
J U E V E S	Día		SOL		Paso Mer.		LUNA		Paso Mer. Sup.		Mer. Inf.		Edad		Fase		
	00h		12h														
	d	m s	m s	h m	h m	h m	d	%									
	22	01 24	01 30	11 59	06 08	18 35	23 48										
	23	01 36	01 41	11 58	07 02	19 29	24 37										
	24	01 47	01 52	11 58	07 55	20 21	25 26										
	S/D 15.9		d 0.8	S/D	16.2	16.2	16.1										

UT (HmGr)	ARIES	VENUS -4.2	MARTE -1.3	JÚPITER -2.0	SATURNO +0.1	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
25	212 56.0	220 54.3 S 4 27.9	20 09.1 S 3 27.2	107 34.9 N22 59.0	343 30.5 S15 39.3	Acamar 315 18.4 S40 15.0
01	227 58.5	235 54.1 26.9	35 12.3 27.0	122 37.0 59.0	358 33.1 39.2	Achernar 335 27.0 S57 09.9
02	243 01.0	250 54.0 25.9	50 15.5 26.8	137 39.1 58.9	13 35.8 39.2	Acrux 173 07.9 S63 10.9
03	258 03.4	265 53.8 . . 25.0	65 18.7 . . 26.6	152 41.2 . . 58.9	28 38.4 . . 39.1	Adhara 255 12.2 S28 59.9
04	273 05.9	280 53.6 24.0	80 22.0 26.4	167 43.3 58.9	43 41.0 39.1	Aldebarán 290 49.0 N16 32.1
05	288 08.4	295 53.4 23.0	95 25.2 26.2	182 45.4 58.8	58 43.7 39.0	
06	303 10.8	310 53.3 S 4 22.1	110 28.4 S 3 26.0	197 47.5 N22 58.8	73 46.3 S15 39.0	Alioth 166 19.7 N55 53.0
07	318 13.3	325 53.1 21.1	125 31.6 25.8	212 49.6 58.8	88 49.0 38.9	Alkaid 152 58.0 N49 14.5
08	333 15.8	340 52.9 20.1	140 34.9 25.6	227 51.7 58.7	103 51.6 38.9	Al Na'ir 27 43.3 S46 53.2
09	348 18.2	355 52.7 . . 19.2	155 38.1 . . 25.4	242 53.8 . . 58.7	118 54.2 . . 38.8	Alnilam 275 46.0 S 1 11.9
10	3 20.7	10 52.6 18.2	170 41.3 25.2	257 55.9 58.7	133 56.9 38.8	Alphard 217 55.4 S 8 43.6
11	18 23.2	25 52.4 17.2	185 44.5 25.0	272 58.0 58.6	148 59.5 38.7	
12	33 25.6	40 52.2 S 4 16.3	200 47.7 S 3 24.8	288 00.0 N22 58.6	164 02.2 S15 38.7	Alphecca 126 10.2 N26 40.0
13	48 28.1	55 52.0 15.3	215 51.0 24.6	303 02.1 58.5	179 04.8 38.6	Alpheratz 357 43.2 N29 10.0
14	63 30.5	70 51.9 14.3	230 54.2 24.4	318 04.2 58.5	194 07.4 38.6	Altair 62 07.6 N 8 54.4
15	78 33.0	85 51.7 . . 13.4	245 57.4 . . 24.2	333 06.3 . . 58.5	209 10.1 . . 38.5	Ankaa 353 15.5 S42 13.6
16	93 35.5	100 51.5 12.4	261 00.6 24.0	348 08.4 58.4	224 12.7 38.5	Antares 112 25.2 S26 27.7
17	108 37.9	115 51.3 11.4	276 03.8 23.8	3 10.5 58.4	239 15.4 38.5	
18	123 40.4	130 51.2 S 4 10.5	291 07.0 S 3 23.6	18 12.6 N22 58.4	254 18.0 S15 38.4	Arcturus 145 54.9 N19 06.4
19	138 42.9	145 51.0 09.5	306 10.2 23.4	33 14.7 58.3	269 20.6 38.4	Atria 107 26.0 S69 02.9
20	153 45.3	160 50.8 08.5	321 13.4 23.2	48 16.8 58.3	284 23.3 38.3	Avior 234 17.7 S59 33.8
21	168 47.8	175 50.6 . . 07.6	336 16.7 . . 23.0	63 18.8 . . 58.3	299 25.9 . . 38.3	Bellatrix 278 31.6 N 6 21.5
22	183 50.3	190 50.5 06.6	351 19.9 22.8	78 20.9 58.2	314 28.6 38.2	Betelgeuse 271 00.9 N 7 24.3
23	198 52.7	205 50.3 05.6	6 23.1 22.6	93 23.0 58.2	329 31.2 38.2	
26	213 55.2	220 50.1 S 4 04.6	21 26.3 S 3 22.4	108 25.1 N22 58.2	344 33.9 S15 38.1	Canopus 263 56.2 S52 42.7
01	228 57.6	235 49.9 03.7	36 29.5 22.2	123 27.2 58.1	359 36.5 38.1	Capella 280 33.9 N46 00.6
02	244 00.1	250 49.8 02.7	51 32.7 22.0	138 29.3 58.1	14 39.1 38.0	Deneb 49 31.1 N45 19.7
03	259 02.6	265 49.6 . . 01.7	66 35.9 . . 21.8	153 31.4 . . 58.1	29 41.8 . . 38.0	Denébola 182 32.8 N14 29.4
04	274 05.0	280 49.4 4 00.8	81 39.1 21.6	168 33.5 58.0	44 44.4 37.9	Diphda 348 55.6 S17 54.5
05	289 07.5	295 49.2 3 59.8	96 42.3 21.4	183 35.5 58.0	59 47.1 37.9	
06	304 10.0	310 49.1 S 3 58.8	111 45.5 S 3 21.2	198 37.6 N22 58.0	74 49.7 S15 37.8	Dubhe 193 50.7 N61 40.5
07	319 12.4	325 48.9 57.8	126 48.7 21.1	213 39.7 57.9	89 52.3 37.8	Elnath 278 12.1 N28 37.0
08	334 14.9	340 48.7 56.9	141 51.9 20.9	228 41.8 57.9	104 55.0 37.7	Eltanin 90 45.5 N51 29.1
09	349 17.4	355 48.5 . . 55.9	156 55.1 . . 20.7	243 43.9 . . 57.9	119 57.6 . . 37.7	Enif 33 46.6 N 9 56.4
10	4 19.8	10 48.3 54.9	171 58.3 20.5	258 46.0 57.8	135 00.3 37.6	Fomalhaut 15 23.6 S29 32.7
11	19 22.3	25 48.2 53.9	187 01.5 20.3	273 48.1 57.8	150 02.9 37.6	
12	34 24.8	40 48.0 S 3 53.0	202 04.7 S 3 20.1	288 50.1 N22 57.7	165 05.6 S15 37.5	Gacrux 171 59.6 S57 11.8
13	49 27.2	55 47.8 52.0	217 07.9 19.9	303 52.2 57.7	180 08.2 37.5	Gienah 175 51.4 S17 37.5
14	64 29.7	70 47.6 51.0	232 11.1 19.7	318 54.3 57.7	195 10.8 37.5	Hadar 148 46.3 S60 26.5
15	79 32.1	85 47.5 . . 50.0	247 14.3 . . 19.5	333 56.4 . . 57.6	210 13.5 . . 37.4	Hamal 328 00.4 N23 31.6
16	94 34.6	100 47.3 49.1	262 17.5 19.3	348 58.5 57.6	225 16.1 37.4	Kaus Aust. 83 42.8 S34 22.4
17	109 37.1	115 47.1 48.1	277 20.6 19.2	4 00.6 57.6	240 18.8 37.3	
18	124 39.5	130 46.9 S 3 47.1	292 23.8 S 3 19.0	19 02.6 N22 57.5	255 21.4 S15 37.3	Kochab 137 19.0 N74 05.8
19	139 42.0	145 46.8 46.1	307 27.0 18.8	34 04.7 57.5	270 24.1 37.2	Markab 13 37.9 N15 16.9
20	154 44.5	160 46.6 45.1	322 30.2 18.6	49 06.8 57.5	285 26.7 37.2	Menkar 314 14.8 N 4 08.5
21	169 46.9	175 46.4 . . 44.2	337 33.4 . . 18.4	64 08.9 . . 57.4	300 29.3 . . 37.1	Menkent 148 06.4 S36 26.5
22	184 49.4	190 46.2 43.2	352 36.6 18.2	79 11.0 57.4	315 32.0 37.1	Miaplacidus 221 39.3 S69 47.0
23	199 51.9	205 46.1 42.2	7 39.8 18.0	94 13.1 57.4	330 34.6 37.0	
27	214 54.3	220 45.9 S 3 41.2	22 43.0 S 3 17.9	109 15.1 N22 57.3	345 37.3 S15 37.0	Mirfak 308 40.0 N49 54.6
01	229 56.8	235 45.7 40.2	37 46.1 17.7	124 17.2 57.3	0 39.9 36.9	Nunki 75 57.5 S26 16.5
02	244 59.2	250 45.5 39.3	52 49.3 17.5	139 19.3 57.3	15 42.6 36.9	Peacock 53 18.4 S56 40.9
03	260 01.7	265 45.3 . . 38.3	67 52.5 . . 17.3	154 21.4 . . 57.2	30 45.2 . . 36.8	Póllux 243 27.1 N27 59.3
04	275 04.2	280 45.2 37.3	82 55.7 17.1	169 23.5 57.2	45 47.8 36.8	Procyon 244 59.2 N 5 11.0
05	290 06.6	295 45.0 36.3	97 58.9 16.9	184 25.5 57.1	60 50.5 36.7	
06	305 09.1	310 44.8 S 3 35.3	113 02.0 S 3 16.7	199 27.6 N22 57.1	75 53.1 S15 36.7	Rasalhague 96 05.7 N12 33.0
07	320 11.6	325 44.6 34.4	128 05.2 16.6	214 29.7 57.1	90 55.8 36.6	Régulus 207 42.8 N11 53.7
08	335 14.0	340 44.5 33.4	143 08.4 16.4	229 31.8 57.0	105 58.4 36.6	Rigel 281 11.7 S 8 11.4
09	350 16.5	355 44.3 . . 32.4	158 11.6 . . 16.2	244 33.9 . . 57.0	121 01.1 . . 36.5	Rigel Kent. 139 50.2 S60 53.6
10	5 19.0	10 44.1 31.4	173 14.7 16.0	259 35.9 57.0	136 03.7 36.5	Sabik 102 11.6 S15 44.4
11	20 21.4	25 43.9 30.4	188 17.9 15.8	274 38.0 56.9	151 06.3 36.5	
12	35 23.9	40 43.8 S 3 29.4	203 21.1 S 3 15.7	289 40.1 N22 56.9	166 09.0 S15 36.4	Schedar 349 40.3 N56 36.8
13	50 26.4	55 43.6 28.5	218 24.3 15.5	304 42.2 56.9	181 11.6 36.4	Shaula 96 20.8 S37 06.6
14	65 28.8	70 43.4 27.5	233 27.4 15.3	319 44.3 56.8	196 14.3 36.3	Sirius 258 33.4 S16 44.5
15	80 31.3	85 43.2 . . 26.5	248 30.6 . . 15.1	334 46.3 . . 56.8	211 16.9 . . 36.3	Spica 158 30.3 S11 14.3
16	95 33.7	100 43.0 25.5	263 33.8 14.9	349 48.4 56.7	226 19.6 36.2	Suhail 222 51.9 S43 29.9
17	110 36.2	115 42.9 24.5	278 36.9 14.8	4 50.5 56.7	241 22.2 36.2	
18	125 38.7	130 42.7 S 3 23.5	293 40.1 S 3 14.6	19 52.6 N22 56.7	256 24.9 S15 36.1	Vega 80 38.4 N38 47.7
19	140 41.1	145 42.5 22.5	308 43.3 14.4	34 54.7 56.6	271 27.5 36.1	Zuben'ubi 137 04.4 S16 06.1
20	155 43.6	160 42.3 21.6	323 46.4 14.2	49 56.7 56.6	286 30.1 36.0	
21	170 46.1	175 42.2 . . 20.6	338 49.6 . . 14.1	64 58.8 . . 56.6	301 32.8 . . 36.0	AHS Paso Mer.
22	185 48.5	190 42.0 19.6	353 52.7 13.9	80 00.9 56.5	316 35.4 35.9	Venus 6 54.9 9 17
23	200 51.0	205 41.8 18.6	8 55.9 13.7	95 03.0 56.5	331 38.1 35.9	Marte 167 31.1 22 29
						Júpiter 254 29.9 16 44
						Saturno 130 38.7 1 02
Paso Mer.	9 42.7	v -0.2 d 1.0	v 3.2 d 0.2	v 2.1 d 0.0	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	25		26	27	28	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
V I E R N E S	25 00	180 29.4	N13 05.5	232 49.0	9.9 S	4 07.6	11.2	59.1	N 72	////	////	02 31	03 21	03 14	03 07	03 00
	01	195 29.5	06.3	247 17.9	9.9	3 56.4	11.3	59.1	N 70	////	00 54	03 00	03 16	03 15	03 14	03 14
	02	210 29.6	07.1	261 46.8	9.9	3 45.1	11.2	59.1	68	////	01 52	03 21	03 12	03 16	03 20	03 26
	03	225 29.7	07.9	276 15.7	10.0	3 33.9	11.3	59.1	66	////	02 25	03 38	03 09	03 17	03 26	03 35
	04	240 29.8	08.8	290 44.7	10.0	3 22.6	11.3	59.1	64	00 47	02 48	03 51	03 06	03 18	03 30	03 43
	05	255 30.0	09.6	305 13.7	10.0	3 11.3	11.3	59.1	62	01 39	03 07	04 02	03 03	03 18	03 34	03 50
	06	270 30.1	N13 10.4	319 42.7	10.0 S	3 00.0	11.4	59.1	60	02 09	03 22	04 12	03 01	03 19	03 37	03 57
	07	285 30.2	11.2	334 11.7	10.0	2 48.6	11.3	59.1	N 58	02 31	03 34	04 21	02 59	03 19	03 40	04 02
	08	300 30.3	12.0	348 40.7	10.1	2 37.3	11.3	59.1	56	02 48	03 45	04 28	02 57	03 20	03 43	04 07
	09	315 30.4	12.8	3 09.8	10.0	2 26.0	11.4	59.0	54	03 02	03 55	04 35	02 56	03 20	03 45	04 19
	10	330 30.5	13.7	17 38.8	10.1	2 14.6	11.4	59.0	52	03 15	04 03	04 40	02 54	03 21	03 47	04 15
	11	345 30.6	14.5	32 07.9	10.1	2 03.2	11.4	59.0	50	03 25	04 10	04 46	02 53	03 21	03 49	04 19
	12	0 30.7	N13 15.3	46 37.0	10.1 S	1 51.8	11.4	59.0	45	03 47	04 26	04 57	02 50	03 22	03 53	04 26
	13	15 30.8	16.1	61 06.1	10.2	1 40.4	11.4	59.0	N 40	04 03	04 38	05 07	02 47	03 22	03 57	04 33
	14	30 30.9	16.9	75 35.3	10.1	1 29.0	11.4	59.0	35	04 16	04 48	05 15	02 45	03 23	04 00	04 39
	15	45 31.0	17.7	90 04.4	10.2	1 17.6	11.4	59.0	30	04 27	04 57	05 22	02 43	03 23	04 03	04 44
	16	60 31.1	18.5	104 33.6	10.1	1 06.2	11.4	59.0	20	04 44	05 11	05 34	02 40	03 24	04 08	04 52
	17	75 31.2	19.3	119 02.7	10.2	0 54.8	11.4	59.0	N 10	04 58	05 23	05 45	02 37	03 25	04 12	05 00
	18	90 31.3	N13 20.1	133 31.9	10.2 S	0 43.4	11.4	59.0	0	05 08	05 33	05 54	02 35	03 26	04 17	05 07
	19	105 31.4	21.0	148 01.1	10.2	0 32.0	11.4	58.9	S 10	05 18	05 43	06 04	02 32	03 27	04 21	05 15
	20	120 31.5	21.8	162 30.3	10.3	0 20.6	11.4	58.9	20	05 26	05 52	06 14	02 29	03 27	04 25	05 23
	21	135 31.6	22.6	176 59.6	10.2 S	0 09.2	11.4	58.9	30	05 33	06 01	06 26	02 26	03 28	04 30	05 32
	22	150 31.7	23.4	191 28.8	10.2 N	0 02.2	11.4	58.9	35	05 36	06 06	06 32	02 24	03 29	04 33	05 37
	23	165 31.9	24.2	205 58.0	10.3	0 13.6	11.4	58.9	40	05 40	06 12	06 40	02 22	03 30	04 37	05 43
									45	05 44	06 18	06 48	02 20	03 31	04 41	05 50
S Á B A D O	26 00	180 32.0	N13 25.0	220 27.3	10.3 N	0 25.0	11.4	58.9	S 50	05 47	06 25	06 59	02 17	03 31	04 46	05 58
	01	195 32.1	25.8	234 56.6	10.2	0 36.4	11.4	58.9	52	05 49	06 28	07 04	02 15	03 32	04 48	06 02
	02	210 32.2	26.6	249 25.8	10.3	0 47.8	11.4	58.9	54	05 50	06 32	07 09	02 14	03 32	04 50	06 06
	03	225 32.3	27.4	263 55.1	10.3	0 59.2	11.3	58.9	56	05 52	06 36	07 15	02 12	03 33	04 53	06 11
	04	240 32.4	28.2	278 24.4	10.3	1 10.5	11.4	58.8	58	05 53	06 40	07 21	02 11	03 34	04 56	06 17
	05	255 32.5	29.0	292 53.7	10.3	1 21.9	11.3	58.8	S 60	05 55	06 44	07 29	02 08	03 34	04 59	06 23
	06	270 32.6	N13 29.8	307 23.0	10.3 N	1 33.2	11.4	58.8	Ocaso Sol		Crepúsculo		Ocaso Luna			
	07	285 32.7	30.7	321 52.3	10.4	1 44.6	11.3	58.8	Lat.	Náut.	Civil	Náut.	25	26	27	28
	08	300 32.8	31.5	336 21.7	10.3	1 55.9	11.3	58.8								
	09	315 32.9	32.3	350 51.0	10.3	2 07.2	11.3	58.8	h m	h m	h m	h m	h m	h m	h m	h m
	10	330 33.0	33.1	5 20.3	10.3	2 18.5	11.2	58.8	N 72	h m	h m	h m	h m	h m	h m	h m
	11	345 33.1	33.9	19 49.6	10.4	2 29.7	11.3	58.7	////	21 30	////	14 40	16 34	18 28	20 23	
	12	0 33.2	N13 34.7	34 19.0	10.3 N	2 41.0	11.2	58.7	N 70	21 00	23 19	////	14 43	16 29	18 15	20 01
	13	15 33.3	35.5	48 48.3	10.4	2 52.2	11.2	58.7	68	20 38	22 10	////	14 44	16 25	18 05	19 44
	14	30 33.4	36.3	63 17.7	10.3	3 03.4	11.2	58.7	66	20 21	21 35	////	14 46	16 22	17 57	19 30
	15	45 33.5	37.1	77 47.0	10.4	3 14.6	11.2	58.7	64	20 07	21 10	23 24	14 47	16 19	17 50	19 19
	16	60 33.6	37.9	92 16.4	10.3	3 25.8	11.1	58.7	62	19 55	20 51	22 22	14 48	16 16	17 44	19 09
	17	75 33.7	38.7	106 45.7	10.4	3 36.9	11.1	58.7	60	19 45	20 36	21 51	14 49	16 14	17 39	19 01
	18	90 33.8	N13 39.5	121 15.1	10.3 N	3 48.0	11.1	58.6	N 58	19 37	20 23	21 28	14 50	16 12	17 34	18 54
	19	105 33.9	40.3	135 44.4	10.4	3 59.1	11.1	58.6	56	19 29	20 12	21 10	14 50	16 11	17 30	18 47
	20	120 34.0	41.1	150 13.8	10.4	4 10.2	11.0	58.6	54	19 22	20 03	20 55	14 51	16 09	17 26	18 42
	21	135 34.1	41.9	164 43.2	10.3	4 21.2	11.0	58.6	52	19 16	19 54	20 43	14 52	16 08	17 23	18 37
	22	150 34.2	42.7	179 12.5	10.4	4 32.2	11.0	58.6	50	19 11	19 47	20 32	14 52	16 07	17 20	18 32
	23	165 34.3	43.5	193 41.9	10.3	4 43.2	10.9	58.6	45	18 59	19 31	20 10	14 53	16 04	17 14	18 22
	D O M I N G O	27 00	180 34.4	N13 44.3	208 11.2	10.4 N	4 54.1	11.0	58.5	N 40	18 49	19 18	19 53	14 54	16 02	17 08	18 14
01		195 34.5	45.1	222 40.6	10.3	5 05.1	10.8	58.5	35	18 41	19 08	19 40	14 55	16 00	17 04	18 07
02		210 34.6	45.9	237 09.9	10.4	5 15.9	10.9	58.5	30	18 34	18 59	19 29	14 56	15 58	17 00	18 01
03		225 34.7	46.7	251 39.3	10.3	5 26.8	10.8	58.5	20	18 22	18 45	19 11	14 57	15 55	16 53	17 50
04		240 34.8	47.5	266 08.6	10.4	5 37.6	10.8	58.5	N 10	18 11	18 33	18 58	14 58	15 52	16 47	17 41
05		255 34.9	48.3	280 38.0	10.3	5 48.4	10.7	58.5	0	18 01	18 22	18 47	14 59	15 50	16 41	17 32
06		270 35.0	N13 49.1	295 07.3	10.4 N	5 59.1	10.7	58.4	S 10	17 51	18 13	18 38	15 00	15 48	16 35	17 23
07		285 35.0	49.9	309 36.7	10.3	6 09.8	10.6	58.4	20	17 41	18 04	18 30	15 01	15 45	16 29	17 14
08		300 35.1	50.7	324 06.0	10.3	6 20.4	10.6	58.4	30	17 30	17 54	18 22	15 02	15 42	16 22	17 03
09		315 35.2	51.5	338 35.3	10.4	6 31.0	10.6	58.4	35	17 23	17 49	18 19	15 03	15 40	16 18	16 57
10		330 35.3	52.3	353 04.7	10.3	6 41.6	10.5	58.4	40	17 15	17 43	18 15	15 03	15 38	16 13	16 50
11		345 35.4	53.1	7 34.0	10.3	6 52.1	10.5	58.3	45	17 07	17 37	18 11	15 04	15 36	16 08	16 42
12		0 35.5	N13 53.9	22 03.3	10.3 N	7 02.6	10.5	58.3	S 50	16 56	17 30	18 08	15 05	15 33	16 02	16 33
13		15 35.6	54.6	36 32.6	10.3	7 13.1	10.3	58.3	52	16 51	17 26	18 06	15 05	15 32	15 59	16 28
14		30 35.7	55.4	51 01.9	10.3	7 23.4	10.4	58.3	54	16 46	17 23	18 05	15 06	15 31	15 56	16 23
15		45 35.8	56.2	65 31.2	10.3	7 33.8	10.3	58.3	56	16 40	17 19	18 03	15 06	15 29	15 52	16 18
16		60 35.9	57.0	80 00.5	10.3	7 44.1	10.2	58.3	58	16 33	17 15	18 01	15 07	15 27	15 48	16 12
17		75 36.0	57.8	94 29.8	10.3	7 54.3	10.2	58.2	S 60	16 26	17 10	17 59	15 08	15 25	15 44	16 05
18		90 36.1	N13 58.6	108 59.1	10.3 N	8 04.5	10.2	58.2	SOL		LUNA					
19		105 36.2	13 59.4	123 28.4	10.2	8 14.7	10.1	58.2	Día	Ec. Tiempo	Paso Mer.	Paso Mer.		Edad	Fase	
20		120 36.3	14 00.2	137 57.6	10.3	8 24.8	10.0	58.2				Sup.	Inf.			
21		135 36.4	01.0	152 26.9	10.3	8 34.8										

UT (HmGr)	ARIES	VENUS -4.2	MARTE -1.2	JÚPITER -2.0	SATURNO +0.1	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
LUNES						
28 00	215 53.5	220 41.6 S 3 17.6	23 59.1 S 3 13.5	110 05.0 N22 56.5	346 40.7 S15 35.8	Acamar 315 18.4 S40 15.0
01	230 55.9	235 41.4 16.6	39 02.2 13.4	125 07.1 56.4	1 43.4 35.8	Achernar 335 27.0 S57 09.9
02	245 58.4	250 41.3 15.6	54 05.4 13.2	140 09.2 56.4	16 46.0 35.7	Acrux 173 07.9 S63 10.9
03	261 00.8	265 41.1 . . 14.7	69 08.5 . . 13.0	155 11.3 . . 56.3	31 48.6 . . 35.7	Adhara 255 12.2 S28 59.9
04	276 03.3	280 40.9 13.7	84 11.7 12.8	170 13.3 56.3	46 51.3 35.6	Aldebarán 290 49.0 N16 32.1
05	291 05.8	295 40.7 12.7	99 14.8 12.7	185 15.4 56.3	61 53.9 35.6	
06	306 08.2	310 40.6 S 3 11.7	114 18.0 S 3 12.5	200 17.5 N22 56.2	76 56.6 S15 35.5	Alioth 166 19.8 N55 53.0
07	321 10.7	325 40.4 10.7	129 21.2 12.3	215 19.6 56.2	91 59.2 35.5	Alkaid 152 58.0 N49 14.5
08	336 13.2	340 40.2 09.7	144 24.3 12.2	230 21.6 56.2	107 01.9 35.4	Al Na'ir 27 43.2 S46 53.2
09	351 15.6	355 40.0 . . 08.7	159 27.5 . . 12.0	245 23.7 . . 56.1	122 04.5 . . 35.4	Alnilam 275 46.0 S 1 11.9
10	6 18.1	10 39.8 07.7	174 30.6 11.8	260 25.8 56.1	137 07.2 35.3	Alphard 217 55.4 S 8 43.5
11	21 20.6	25 39.7 06.7	189 33.7 11.6	275 27.9 56.1	152 09.8 35.3	
12	36 23.0	40 39.5 S 3 05.7	204 36.9 S 3 11.5	290 29.9 N22 56.0	167 12.4 S15 35.3	Alphecca 126 10.2 N26 40.0
13	51 25.5	55 39.3 04.7	219 40.0 11.3	305 32.0 56.0	182 15.1 35.2	Alpheratz 357 43.1 N29 10.0
14	66 28.0	70 39.1 03.8	234 43.2 11.1	320 34.1 55.9	197 17.7 35.2	Altair 62 07.6 N 8 54.4
15	81 30.4	85 39.0 . . 02.8	249 46.3 . . 11.0	335 36.2 . . 55.9	212 20.4 . . 35.1	Ankaa 353 15.5 S42 13.6
16	96 32.9	100 38.8 01.8	264 49.5 10.8	350 38.2 55.9	227 23.0 35.1	Antares 112 25.2 S26 27.7
17	111 35.3	115 38.6 3 00.8	279 52.6 10.6	5 40.3 55.8	242 25.7 35.0	
18	126 37.8	130 38.4 S 2 59.8	294 55.8 S 3 10.5	20 42.4 N22 55.8	257 28.3 S15 35.0	Arcturus 145 54.9 N19 06.5
19	141 40.3	145 38.2 58.8	309 58.9 10.3	35 44.5 55.8	272 31.0 34.9	Atria 107 26.0 S69 02.9
20	156 42.7	160 38.1 57.8	325 02.0 10.1	50 46.5 55.7	287 33.6 34.9	Avior 234 17.8 S59 33.8
21	171 45.2	175 37.9 . . 56.8	340 05.2 . . 10.0	65 48.6 . . 55.7	302 36.3 . . 34.8	Bellatrix 278 31.6 N 6 21.5
22	186 47.7	190 37.7 55.8	355 08.3 09.8	80 50.7 55.6	317 38.9 34.8	Betelgeuse 271 00.9 N 7 24.3
23	201 50.1	205 37.5 54.8	10 11.4 09.6	95 52.7 55.6	332 41.5 34.7	
MARTES						
29 00	216 52.6	220 37.3 S 2 53.8	25 14.6 S 3 09.5	110 54.8 N22 55.6	347 44.2 S15 34.7	Canopus 263 56.2 S52 42.7
01	231 55.1	235 37.2 52.8	40 17.7 09.3	125 56.9 55.5	2 46.8 34.6	Capella 280 33.9 N46 00.6
02	246 57.5	250 37.0 51.8	55 20.8 09.2	140 59.0 55.5	17 49.5 34.6	Deneb 49 31.0 N45 19.8
03	262 00.0	265 36.8 . . 50.8	70 24.0 . . 09.0	156 01.0 . . 55.5	32 52.1 . . 34.5	Denébola 182 32.8 N14 29.4
04	277 02.5	280 36.6 49.8	85 27.1 08.8	171 03.1 55.4	47 54.8 34.5	Diphda 348 55.6 S17 54.5
05	292 04.9	295 36.4 48.8	100 30.2 08.7	186 05.2 55.4	62 57.4 34.4	
06	307 07.4	310 36.3 S 2 47.8	115 33.4 S 3 08.5	201 07.2 N22 55.3	78 00.1 S15 34.4	Dubhe 193 50.7 N61 40.5
07	322 09.8	325 36.1 46.8	130 36.5 08.3	216 09.3 55.3	93 02.7 34.3	Elnath 278 12.2 N28 37.0
08	337 12.3	340 35.9 45.8	145 39.6 08.2	231 11.4 55.3	108 05.4 34.3	Eltanin 90 45.5 N51 29.1
09	352 14.8	355 35.7 . . 44.8	160 42.7 . . 08.0	246 13.4 . . 55.2	123 08.0 . . 34.2	Enif 33 46.6 N 9 56.4
10	7 17.2	10 35.6 43.9	175 45.9 07.9	261 15.5 55.2	138 10.6 34.2	Fomalhaut 15 23.6 S29 32.6
11	22 19.7	25 35.4 42.9	190 49.0 07.7	276 17.6 55.2	153 13.3 34.1	
12	37 22.2	40 35.2 S 2 41.9	205 52.1 S 3 07.6	291 19.7 N22 55.1	168 15.9 S15 34.1	Gacrux 171 59.6 S57 11.8
13	52 24.6	55 35.0 40.9	220 55.2 07.4	306 21.7 55.1	183 18.6 34.0	Gienah 175 51.4 S17 37.5
14	67 27.1	70 34.8 39.9	235 58.3 07.2	321 23.8 55.0	198 21.2 34.0	Hadar 148 46.3 S60 26.6
15	82 29.6	85 34.7 . . 38.9	251 01.5 . . 07.1	336 25.9 . . 55.0	213 23.9 . . 34.0	Hamal 328 00.4 N23 31.6
16	97 32.0	100 34.5 37.9	266 04.6 06.9	351 27.9 55.0	228 26.5 33.9	Kaus Aust. 83 42.8 S34 22.4
17	112 34.5	115 34.3 36.9	281 07.7 06.8	6 30.0 54.9	243 29.2 33.9	
18	127 36.9	130 34.1 S 2 35.9	296 10.8 S 3 06.6	21 32.1 N22 54.9	258 31.8 S15 33.8	Kochab 137 19.0 N74 05.8
19	142 39.4	145 33.9 34.9	311 13.9 06.5	36 34.1 54.8	273 34.5 33.8	Markab 13 37.9 N15 16.9
20	157 41.9	160 33.8 33.9	326 17.0 06.3	51 36.2 54.8	288 37.1 33.7	Menkar 314 14.8 N 4 08.5
21	172 44.3	175 33.6 . . 32.9	341 20.1 . . 06.2	66 38.3 . . 54.8	303 39.8 . . 33.7	Menkent 148 06.4 S36 26.5
22	187 46.8	190 33.4 31.9	356 23.3 06.0	81 40.3 54.7	318 42.4 33.6	Miaplacidus 221 39.3 S69 47.0
23	202 49.3	205 33.2 30.9	11 26.4 05.8	96 42.4 54.7	333 45.0 33.6	
MIÉRCOLES						
30 00	217 51.7	220 33.0 S 2 29.8	26 29.5 S 3 05.7	111 44.5 N22 54.7	348 47.7 S15 33.5	Mirfak 308 40.0 N49 54.6
01	232 54.2	235 32.9 28.8	41 32.6 05.5	126 46.5 54.6	3 50.3 33.5	Nunki 75 57.4 S26 16.5
02	247 56.7	250 32.7 27.8	56 35.7 05.4	141 48.6 54.6	18 53.0 33.4	Peacock 53 18.3 S56 40.9
03	262 59.1	265 32.5 . . 26.8	71 38.8 . . 05.2	156 50.7 . . 54.5	33 55.6 . . 33.4	Póllux 243 27.1 N27 59.3
04	278 01.6	280 32.3 25.8	86 41.9 05.1	171 52.7 54.5	48 58.3 33.3	Procyon 244 59.2 N 5 11.0
05	293 04.1	295 32.1 24.8	101 45.0 04.9	186 54.8 54.5	64 00.9 33.3	
06	308 06.5	310 32.0 S 2 23.8	116 48.1 S 3 04.8	201 56.9 N22 54.4	79 03.6 S15 33.2	Rasalhague 96 05.7 N12 33.0
07	323 09.0	325 31.8 22.8	131 51.2 04.6	216 58.9 54.4	94 06.2 33.2	Régulus 207 42.8 N11 53.7
08	338 11.4	340 31.6 21.8	146 54.3 04.5	232 01.0 54.3	109 08.9 33.1	Rigel 281 11.8 S 8 11.4
09	353 13.9	355 31.4 . . 20.8	161 57.4 . . 04.3	247 03.0 . . 54.3	124 11.5 . . 33.1	Rigel Kent. 139 50.2 S60 53.6
10	8 16.4	10 31.2 19.8	177 00.5 04.2	262 05.1 54.3	139 14.2 33.0	Sabik 102 11.6 S15 44.4
11	23 18.8	25 31.0 18.8	192 03.6 04.0	277 07.2 54.2	154 16.8 33.0	
12	38 21.3	40 30.9 S 2 17.8	207 06.7 S 3 03.9	292 09.2 N22 54.2	169 19.5 S15 32.9	Schedar 349 40.3 N56 36.8
13	53 23.8	55 30.7 16.8	222 09.8 03.8	307 11.3 54.2	184 22.1 32.9	Shaula 96 20.8 S37 06.6
14	68 26.2	70 30.5 15.8	237 12.9 03.6	322 13.4 54.1	199 24.8 32.8	Sirius 258 33.4 S16 44.5
15	83 28.7	85 30.3 . . 14.8	252 16.0 . . 03.5	337 15.4 . . 54.1	214 27.4 . . 32.8	Spica 158 30.3 S11 14.3
16	98 31.2	100 30.1 13.8	267 19.0 03.3	352 17.5 54.0	229 30.0 32.7	Suhail 222 51.9 S43 29.9
17	113 33.6	115 30.0 12.8	282 22.1 03.2	7 19.6 54.0	244 32.7 32.7	
18	128 36.1	130 29.8 S 2 11.8	297 25.2 S 3 03.0	22 21.6 N22 54.0	259 35.3 S15 32.6	Vega 80 38.3 N38 47.7
19	143 38.6	145 29.6 10.8	312 28.3 02.9	37 23.7 53.9	274 38.0 32.6	Zuben'ubi 137 04.4 S16 06.1
20	158 41.0	160 29.4 09.7	327 31.4 02.7	52 25.7 53.9	289 40.6 32.5	
21	173 43.5	175 29.2 . . 08.7	342 34.5 . . 02.6	67 27.8 . . 53.8	304 43.3 . . 32.5	AHS Paso Mer.
22	188 45.9	190 29.1 07.7	357 37.6 02.5	82 29.9 53.8	319 45.9 32.5	Venus 3 44.7 9 18
23	203 48.4	205 28.9 06.7	12 40.6 02.3	97 31.9 53.8	334 48.6 32.4	Marte 168 22.0 22 14
						Júpiter 254 02.2 16 34
						Saturno 130 51.6 0 49
Paso Mer.	9 30.9	v -0.2 d 1.0	v 3.1 d 0.2	v 2.1 d 0.0	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		28	29	30	1
<i>d</i> <i>h</i>	°	°	°	°	°	°	°	°	h m	h m	h m	h m	h m	h m	h m
L U N E S	28 00	180 36.7	N14 03.4	195 54.6	10.3	N 9 04.6	9.8 58.1	N 72	////	////	02 09	03 00	02 51	02 40	02 15
	01	195 36.7	04.1	210 23.9	10.2	9 14.4	9.8 58.1	N 70	////	////	02 43	03 14	03 15	03 18	03 26
	02	210 36.8	04.9	224 53.1	10.2	9 24.2	9.7 58.0	68	////	01 28	03 07	03 26	03 33	03 44	04 03
	03	225 36.9	05.7	239 22.3	10.2	9 33.9	9.6 58.0	66	////	02 08	03 26	03 35	03 48	04 05	04 30
	04	240 37.0	06.5	253 51.5	10.2	9 43.5	9.6 58.0	64	////	02 35	03 41	03 43	04 00	04 21	04 50
	05	255 37.1	07.3	268 20.7	10.2	9 53.1	9.5 58.0	62	01 17	02 55	03 53	03 50	04 10	04 35	05 07
	06	270 37.2	N14 08.1	282 49.9	10.2	N10 02.6	9.5 58.0	60	01 54	03 12	04 04	03 57	04 19	04 47	05 21
	07	285 37.3	08.9	297 19.1	10.2	10 12.1	9.4 57.9	N 58	02 19	03 26	04 13	04 02	04 27	04 57	05 33
	08	300 37.4	09.7	311 48.3	10.1	10 21.5	9.3 57.9	56	02 38	03 37	04 21	04 07	04 34	05 06	05 43
	09	315 37.5	10.4	326 17.4	10.2	10 30.8	9.3 57.9	54	02 54	03 47	04 28	04 11	04 40	05 13	05 52
	10	330 37.6	11.2	340 46.6	10.1	10 40.1	9.2 57.9	52	03 07	03 56	04 35	04 15	04 46	05 20	06 00
	11	345 37.7	12.0	355 15.7	10.2	10 49.3	9.1 57.9	50	03 18	04 04	04 40	04 19	04 51	05 27	06 07
	12	0 37.8	N14 12.8	9 44.9	10.1	N10 58.4	9.1 57.8	45	03 41	04 21	04 53	04 26	05 02	05 41	06 23
	13	15 37.8	13.6	24 14.0	10.1	11 07.5	9.0 57.8	N 40	03 58	04 34	05 03	04 33	05 11	05 52	06 36
	14	30 37.9	14.4	38 43.1	10.1	11 16.5	9.0 57.8	35	04 12	04 45	05 12	04 39	05 19	06 02	06 47
	15	45 38.0	15.2	53 12.2	10.1	11 25.5	8.8 57.8	30	04 24	04 54	05 19	04 44	05 26	06 10	06 57
	16	60 38.1	15.9	67 41.3	10.1	11 34.3	8.8 57.7	20	04 42	05 09	05 32	04 52	05 38	06 25	07 13
	17	75 38.2	16.7	82 10.4	10.1	11 43.1	8.7 57.7	N 10	04 56	05 22	05 43	05 00	05 49	06 38	07 28
	18	90 38.3	N14 17.5	96 39.5	10.1	N11 51.8	8.7 57.7	0	05 08	05 33	05 54	05 07	05 59	06 50	07 42
	19	105 38.4	18.3	111 08.6	10.0	12 00.5	8.6 57.7	S 10	05 18	05 43	06 04	05 15	06 09	07 02	07 55
	20	120 38.5	19.1	125 37.6	10.1	12 09.1	8.5 57.6	20	05 26	05 53	06 15	05 23	06 20	07 16	08 10
	21	135 38.5	19.8	140 06.7	10.0	12 17.6	8.4 57.6	30	05 35	06 03	06 28	05 32	06 32	07 31	08 27
	22	150 38.6	20.6	154 35.7	10.1	12 26.0	8.4 57.6	35	05 39	06 09	06 35	05 37	06 39	07 39	08 37
	23	165 38.7	21.4	169 04.8	10.0	12 34.4	8.2 57.6	40	05 43	06 15	06 43	05 43	06 47	07 49	08 48
								45	05 47	06 22	06 52	05 50	06 57	08 01	09 01
	29 00	180 38.8	N14 22.2	183 33.8	10.0	N12 42.6	8.2 57.5	S 50	05 51	06 29	07 03	05 58	07 09	08 16	09 17
01	195 38.9	23.0	198 02.8	10.0	12 50.8	8.2 57.5	52	05 53	06 33	07 09	06 02	07 14	08 22	09 25	
02	210 39.0	23.7	212 31.8	10.0	12 59.0	8.0 57.5	54	05 55	06 37	07 14	06 06	07 20	08 30	09 34	
03	225 39.1	24.5	227 00.8	10.0	13 07.0	8.0 57.5	56	05 57	06 41	07 21	06 11	07 27	08 38	09 43	
04	240 39.2	25.3	241 29.8	10.0	13 15.0	7.9 57.5	58	05 59	06 46	07 28	06 17	07 34	08 48	09 54	
05	255 39.2	26.1	255 58.8	10.0	N13 22.9	7.8 57.4	S 60	06 01	06 51	07 36	06 23	07 43	08 59	10 06	
06	270 39.3	N14 26.9	Un eclipse anular de Sol se produce en esta fecha. Ver página 5.					Ocaso		Crepúsculo		Ocaso Luna			
07	285 39.4	27.6						Lat.	Sol	Civil	Náut.	28	29	30	
08	300 39.5	28.4										h m	h m	h m	
09	315 39.6	29.2										h m	h m	h m	
10	330 39.7	30.0										h m	h m	h m	
11	345 39.8	30.7										h m	h m	h m	
12	0 39.8	N14 31.5	357 21.5	10.0	N14 15.8	7.2 57.3	N 72	21 52	21 52	22 22	20 23	22 22	24 35	00 35	
13	15 39.9	32.3	11 50.5	9.9	14 23.0	7.2 57.2	N 70	21 16	21 16	21 45	20 01	21 45	23 24	24 49	
14	30 40.0	33.1	26 19.4	9.9	14 30.2	7.0 57.2	68	20 51	22 35	22 35	19 44	21 19	22 47	24 01	
15	45 40.1	33.8	40 48.3	9.9	14 37.2	7.0 57.2	66	20 32	21 51	21 51	19 30	20 59	22 21	23 30	
16	60 40.2	34.6	55 17.2	10.0	14 44.2	6.9 57.2	64	20 16	21 23	21 23	19 19	20 43	22 01	23 08	
17	75 40.3	35.4	69 46.2	9.9	14 51.1	6.8 57.1	62	20 03	21 02	22 44	19 09	20 30	21 45	22 49	
18	90 40.3	N14 36.2	84 15.1	9.9	N14 57.9	6.7 57.1	60	19 53	20 45	22 05	19 01	20 19	21 31	22 34	
19	105 40.4	36.9	98 44.0	9.9	15 04.6	6.6 57.1	N 58	19 43	20 31	21 39	18 54	20 10	21 20	22 22	
20	120 40.5	37.7	113 12.9	9.8	15 11.2	6.6 57.0	56	19 35	20 19	21 19	18 47	20 01	21 09	22 10	
21	135 40.6	38.5	127 41.7	9.9	15 17.8	6.4 57.0	54	19 28	20 09	21 03	18 42	19 54	21 01	22 01	
22	150 40.7	39.2	142 10.6	9.9	15 24.2	6.4 57.0	52	19 21	20 00	20 50	18 37	19 47	20 53	21 52	
23	165 40.8	40.0	156 39.5	9.9	15 30.6	6.2 57.0	50	19 15	19 52	20 38	18 32	19 41	20 46	21 44	
							45	19 03	19 35	20 15	18 22	19 28	20 30	21 28	
30 00	180 40.8	N14 40.8	171 08.4	9.9	N15 36.8	6.2 56.9	N 40	18 52	19 22	19 57	18 14	19 17	20 18	21 14	
01	195 40.9	41.6	185 37.3	9.9	15 43.0	6.1 56.9	35	18 44	19 11	19 43	18 07	19 08	20 07	21 03	
02	210 41.0	42.3	200 06.2	9.8	15 49.1	6.0 56.9	30	18 36	19 01	19 31	18 01	19 00	19 58	20 53	
03	225 41.1	43.1	214 35.0	9.9	15 55.1	5.9 56.9	20	18 23	18 46	19 13	17 50	18 47	19 42	20 35	
04	240 41.2	43.9	229 03.9	9.9	16 01.0	5.8 56.8	N 10	18 11	18 33	18 59	17 41	18 35	19 28	20 20	
05	255 41.2	44.6	243 32.8	9.9	16 06.8	5.7 56.8	0	18 01	18 22	18 47	17 32	18 23	19 15	20 06	
06	270 41.3	N14 45.4	258 01.7	9.8	N16 12.5	5.6 56.8	S 10	17 50	18 12	18 37	17 23	18 12	19 02	19 52	
07	285 41.4	46.2	272 30.5	9.9	16 18.1	5.6 56.8	20	17 39	18 02	18 28	17 14	18 00	18 48	19 37	
08	300 41.5	46.9	286 59.4	9.9	16 23.7	5.4 56.7	30	17 27	17 51	18 20	17 03	17 46	18 32	19 20	
09	315 41.6	47.7	301 28.3	9.9	16 29.1	5.3 56.7	35	17 20	17 46	18 16	16 57	17 39	18 23	19 10	
10	330 41.6	48.5	315 57.2	9.8	16 34.4	5.3 56.7	40	17 11	17 40	18 11	16 50	17 30	18 12	18 58	
11	345 41.7	49.2	330 26.0	9.9	16 39.7	5.1 56.7	45	17 02	17 33	18 07	16 42	17 19	18 00	18 45	
12	0 41.8	N14 50.0	344 54.9	9.9	N16 44.8	5.1 56.6	S 50	16 51	17 25	18 03	16 33	17 07	17 45	18 28	
13	15 41.9	50.8	359 23.8	9.9	16 49.9	4.9 56.6	52	16 45	17 21	18 01	16 28	17 01	17 38	18 20	
14	30 42.0	51.5	13 52.7	9.9	16 54.8	4.9 56.6	54	16 40	17 17	17 59	16 23	16 54	17 30	18 12	
15	45 42.0	52.3	28 21.6	9.9	16 59.7	4.8 56.6	56	16 33	17 13	17 57	16 18	16 47	17 21	18 02	
16	60 42.1	53.0	42 50.5	9.9	17 04.5	4.6 56.5	58	16 26	17 08	17 55	16 12	16 39	17 12	17 51	
17	75 42.2	53.8	57 19.4	9.9	17 09.1	4.6 56.5	S 60	16 18	17 03	17 52	16 05	16 30	17 00	17 38	
18	90 42.3	N14 54.6	71 48.3	9.9	N17 13.7	4.5 56.5	SOL		LUNA						
19	105 42.4	55.3	86 17.2	9.9	17 18.2	4.4 56.5	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
20	120 42.4	56.1	100 46.1	9.9	17 22.6	4.2 56.4		Sup.	Inf.						
21	135 42.5	56.9	115 15.0	9.9	17 26.8	4.2 56.4	<i>d</i>	<i>m</i> <i>s</i>	<i>m</i> <i>s</i>	<i>h</i> <i>m</i>	<i>h</i> <i>m</i>	<i>h</i> <i>m</i>	<i>d</i>	%	
22	150 42.6	57.6	129 43.9	10.0	17 31.0	4.1 56.4	28	02 26	02 31	11 57	11 20	23 45	29 1		
23	165 42.7	58.4	144 12.9	9.9	N17 35.1	4.0 56.3	29	02 35	02 39	11 57	12 11	24 37	00 0		
	S/D 15.9	<i>d</i> 0.8	S/D 15.8	15.6	15.4		30	02 43	02 47	11 57	13 02	00 37	01 2		

UT (HmGr)	ARIES	VENUS -4.1	MARTE -1.1	JÚPITER -2.0	SATURNO +0.1	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
1 00	218 50.9	220 28.7 S 2 05.7	27 43.7 S 3 02.2	112 34.0 N22 53.7	349 51.2 S15 32.4	Acamar	315 18.4 S40 15.0	
01	233 53.3	235 28.5 04.7	42 46.8 02.0	127 36.0 53.7	4 53.9 32.3	Achernar	335 27.0 S57 09.8	
02	248 55.8	250 28.3 03.7	57 49.9 01.9	142 38.1 53.6	19 56.5 32.3	Acrux	173 07.9 S63 11.0	
03	263 58.3	265 28.2 . . 02.7	72 53.0 . . 01.8	157 40.2 . . 53.6	34 59.2 . . 32.2	Adhara	255 12.2 S28 59.9	
04	279 00.7	280 28.0 01.7	87 56.0 01.6	172 42.2 53.6	50 01.8 32.2	Aldebarán	290 49.0 N16 32.1	
05	294 03.2	295 27.8 2 00.7	102 59.1 01.5	187 44.3 53.5	65 04.5 32.1			
06	309 05.7	310 27.6 S 1 59.7	118 02.2 S 3 01.3	202 46.3 N22 53.5	80 07.1 S15 32.1	Alioth	166 19.8 N55 53.0	
07	324 08.1	325 27.4 58.6	133 05.3 01.2	217 48.4 53.4	95 09.8 32.0	Alkaid	152 58.0 N49 14.6	
08	339 10.6	340 27.2 57.6	148 08.3 01.1	232 50.5 53.4	110 12.4 32.0	Al Na'ir	27 43.2 S46 53.2	
09	354 13.1	355 27.1 . . 56.6	163 11.4 . . 00.9	247 52.5 . . 53.4	125 15.1 . . 31.9	Alnilam	275 46.0 S 1 11.9	
10	9 15.5	10 26.9 55.6	178 14.5 00.8	262 54.6 53.3	140 17.7 31.9	Alphard	217 55.5 S 8 43.5	
11	24 18.0	25 26.7 54.6	193 17.5 00.7	277 56.6 53.3	155 20.4 31.8			
12	39 20.4	40 26.5 S 1 53.6	208 20.6 S 3 00.5	292 58.7 N22 53.2	170 23.0 S15 31.8	Alphecca	126 10.2 N26 40.0	
13	54 22.9	55 26.3 52.6	223 23.7 00.4	308 00.8 53.2	185 25.6 31.7	Alpheratz	357 43.1 N29 10.0	
14	69 25.4	70 26.1 51.6	238 26.7 00.3	323 02.8 53.2	200 28.3 31.7	Altair	62 07.6 N 8 54.4	
15	84 27.8	85 26.0 . . 50.6	253 29.8 . . 00.1	338 04.9 . . 53.1	215 30.9 . . 31.6	Ankaa	353 15.5 S42 13.6	
16	99 30.3	100 25.8 49.5	268 32.9 3 00.0	353 06.9 53.1	230 33.6 31.6	Antares	112 25.2 S26 27.7	
17	114 32.8	115 25.6 48.5	283 35.9 2 59.9	8 09.0 53.0	245 36.2 31.5			
18	129 35.2	130 25.4 S 1 47.5	298 39.0 S 2 59.7	23 11.0 N22 53.0	260 38.9 S15 31.5	Arcturus	145 54.9 N19 06.5	
19	144 37.7	145 25.2 46.5	313 42.0 59.6	38 13.1 53.0	275 41.5 31.4	Atria	107 26.0 S69 02.9	
20	159 40.2	160 25.1 45.5	328 45.1 59.5	53 15.2 52.9	290 44.2 31.4	Avior	234 17.8 S59 33.8	
21	174 42.6	175 24.9 . . 44.5	343 48.1 . . 59.3	68 17.2 . . 52.9	305 46.8 . . 31.3	Bellatrix	278 31.6 N 6 21.5	
22	189 45.1	190 24.7 43.5	358 51.2 59.2	83 19.3 52.8	320 49.5 31.3	Betelgeuse	271 00.9 N 7 24.3	
23	204 47.5	205 24.5 42.4	13 54.3 59.1	98 21.3 52.8	335 52.1 31.2			
2 00	219 50.0	220 24.3 S 1 41.4	28 57.3 S 2 58.9	113 23.4 N22 52.8	350 54.8 S15 31.2	Canopus	263 56.2 S52 42.6	
01	234 52.5	235 24.1 40.4	44 00.4 58.8	128 25.4 52.7	5 57.4 31.1	Capella	280 33.9 N46 00.6	
02	249 54.9	250 24.0 39.4	59 03.4 58.7	143 27.5 52.7	21 00.1 31.1	Deneb	49 31.0 N45 19.8	
03	264 57.4	265 23.8 . . 38.4	74 06.5 . . 58.6	158 29.6 . . 52.6	36 02.7 . . 31.0	Denébola	182 32.9 N14 29.4	
04	279 59.9	280 23.6 37.4	89 09.5 58.4	173 31.6 52.6	51 05.4 31.0	Diphda	348 55.6 S17 54.5	
05	295 02.3	295 23.4 36.4	104 12.6 58.3	188 33.7 52.6	66 08.0 30.9			
06	310 04.8	310 23.2 S 1 35.3	119 15.6 S 2 58.2	203 35.7 N22 52.5	81 10.7 S15 30.9	Dubhe	193 50.7 N61 40.5	
07	325 07.3	325 23.0 34.3	134 18.6 58.1	218 37.8 52.5	96 13.3 30.9	Elnath	278 12.2 N28 37.0	
08	340 09.7	340 22.9 33.3	149 21.7 57.9	233 39.8 52.4	111 16.0 30.8	Eltanin	90 45.5 N51 29.2	
09	355 12.2	355 22.7 . . 32.3	164 24.7 . . 57.8	248 41.9 . . 52.4	126 18.6 . . 30.8	Enif	33 46.6 N 9 56.4	
10	10 14.7	10 22.5 31.3	179 27.8 57.7	263 43.9 52.4	141 21.3 30.7	Fomalhaut	15 23.6 S29 32.6	
11	25 17.1	25 22.3 30.3	194 30.8 57.6	278 46.0 52.3	156 23.9 30.7			
12	40 19.6	40 22.1 S 1 29.2	209 33.8 S 2 57.4	293 48.0 N22 52.3	171 26.6 S15 30.6	Gacrux	171 59.6 S57 11.8	
13	55 22.0	55 21.9 28.2	224 36.9 57.3	308 50.1 52.2	186 29.2 30.6	Gienah	175 51.4 S17 37.5	
14	70 24.5	70 21.8 27.2	239 39.9 57.2	323 52.1 52.2	201 31.9 30.5	Hadar	148 46.3 S60 26.6	
15	85 27.0	85 21.6 . . 26.2	254 43.0 . . 57.1	338 54.2 . . 52.2	216 34.5 . . 30.5	Hamal	328 00.4 N23 31.6	
16	100 29.4	100 21.4 25.2	269 46.0 56.9	353 56.3 52.1	231 37.2 30.4	Kaus Aust.	83 42.8 S34 22.4	
17	115 31.9	115 21.2 24.1	284 49.0 56.8	8 58.3 52.1	246 39.8 30.4			
18	130 34.4	130 21.0 S 1 23.1	299 52.1 S 2 56.7	24 00.4 N22 52.0	261 42.5 S15 30.3	Kochab	137 19.0 N74 05.8	
19	145 36.8	145 20.8 22.1	314 55.1 56.6	39 02.4 52.0	276 45.1 30.3	Markab	13 37.9 N15 16.9	
20	160 39.3	160 20.6 21.1	329 58.1 56.5	54 04.5 51.9	291 47.8 30.2	Menkar	314 14.8 N 4 08.5	
21	175 41.8	175 20.5 . . 20.1	345 01.1 . . 56.3	69 06.5 . . 51.9	306 50.4 . . 30.2	Menkent	148 06.4 S36 26.5	
22	190 44.2	190 20.3 19.0	0 04.2 56.2	84 08.6 51.9	321 53.1 30.1	Miaplacidus	221 39.3 S69 47.0	
23	205 46.7	205 20.1 18.0	15 07.2 56.1	99 10.6 51.8	336 55.7 30.1			
3 00	220 49.2	220 19.9 S 1 17.0	30 10.2 S 2 56.0	114 12.7 N22 51.8	351 58.4 S15 30.0	Mirfak	308 39.9 N49 54.6	
01	235 51.6	235 19.7 16.0	45 13.2 55.9	129 14.7 51.7	7 01.0 30.0	Nunki	75 57.4 S26 16.5	
02	250 54.1	250 19.5 15.0	60 16.3 55.8	144 16.8 51.7	22 03.7 29.9	Peacock	53 18.3 S56 40.9	
03	265 56.5	265 19.4 . . 13.9	75 19.3 . . 55.6	159 18.8 . . 51.7	37 06.3 . . 29.9	Póllux	243 27.1 N27 59.3	
04	280 59.0	280 19.2 12.9	90 22.3 55.5	174 20.9 51.6	52 09.0 29.8	Procyon	244 59.2 N 5 11.0	
05	296 01.5	295 19.0 11.9	105 25.3 55.4	189 22.9 51.6	67 11.6 29.8			
06	311 03.9	310 18.8 S 1 10.9	120 28.3 S 2 55.3	204 25.0 N22 51.5	82 14.3 S15 29.7	Rasalhague	96 05.6 N12 33.0	
07	326 06.4	325 18.6 09.9	135 31.4 55.2	219 27.0 51.5	97 16.9 29.7	Régulus	207 42.8 N11 53.7	
08	341 08.9	340 18.4 08.8	150 34.4 55.1	234 29.1 51.5	112 19.5 29.6	Rigel	281 11.8 S 8 11.4	
09	356 11.3	355 18.2 . . 07.8	165 37.4 . . 55.0	249 31.1 . . 51.4	127 22.2 . . 29.6	Rigel Kent.	139 50.2 S60 53.6	
10	11 13.8	10 18.1 06.8	180 40.4 54.9	264 33.2 51.4	142 24.8 29.5	Sabik	102 11.6 S15 44.4	
11	26 16.3	25 17.9 05.8	195 43.4 54.7	279 35.2 51.3	157 27.5 29.5			
12	41 18.7	40 17.7 S 1 04.7	210 46.4 S 2 54.6	294 37.3 N22 51.3	172 30.1 S15 29.4	Schedar	349 40.2 N56 36.8	
13	56 21.2	55 17.5 03.7	225 49.4 54.5	309 39.3 51.2	187 32.8 29.4	Shaula	96 20.8 S37 06.6	
14	71 23.7	70 17.3 02.7	240 52.4 54.4	324 41.4 51.2	202 35.4 29.3	Sirius	258 33.4 S16 44.5	
15	86 26.1	85 17.1 . . 01.7	255 55.4 . . 54.3	339 43.4 . . 51.2	217 38.1 . . 29.3	Spica	158 30.3 S11 14.3	
16	101 28.6	100 16.9 1 00.6	270 58.4 54.2	354 45.5 51.1	232 40.7 29.2	Suhail	222 51.9 S43 29.9	
17	116 31.0	115 16.8 0 59.6	286 01.4 54.1	9 47.5 51.1	247 43.4 29.2			
18	131 33.5	130 16.6 S 0 58.6	301 04.4 S 2 54.0	24 49.6 N22 51.0	262 46.0 S15 29.2	Vega	80 38.3 N38 47.8	
19	146 36.0	145 16.4 57.6	316 07.4 53.9	39 51.6 51.0	277 48.7 29.1	Zuben'ubi	137 04.4 S16 06.1	
20	161 38.4	160 16.2 56.5	331 10.4 53.8	54 53.6 51.0	292 51.3 29.1			
21	176 40.9	175 16.0 . . 55.5	346 13.4 . . 53.7	69 55.7 . . 50.9	307 54.0 . . 29.0	AHS Paso Mer.		
22	191 43.4	190 15.8 54.5	1 16.4 53.5	84 57.7 50.9	322 56.6 29.0	Venus	0 34.3 9 18	
23	206 45.8	205 15.6 53.5	16 19.4 53.4	99 59.8 50.8	337 59.3 28.9	Marte	169 07.3 22 00	
	h m					Júpiter	253 33.4 16 24	
Paso Mer.	9 19.1	v -0.2 d 1.0	v 3.0 d 0.1	v 2.1 d 0.0	v 2.6 d 0.0	Saturno	131 04.8 0 36	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		1	2	3	4	
J U E V E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	1 00	180 42.7	N14 59.1	158 41.8	9.9	N17 39.1	3.9 56.3	70	///	///	01 45	02 15	□	□	04 31	
	01	195 42.8	14 59.9	173 10.7	10.0	17 43.0	3.8 56.3	68	///	00 57	02 53	03 26	03 48	04 38	05 56	
	02	210 42.9	15 00.7	187 39.7	10.0	17 46.8	3.7 56.3	66	///	01 50	03 14	04 30	05 06	05 57	07 01	
	03	225 43.0	.. 01.4	202 08.7	10.0	17 50.5	3.6 56.2	64	///	02 21	03 31	04 50	05 29	06 20	07 22	
	04	240 43.0	02.2	216 37.7	9.9	17 54.1	3.5 56.2	62	00 50	02 44	03 44	05 07	05 48	06 39	07 38	
	05	255 43.1	02.9	231 06.6	10.0	17 57.6	3.4 56.2	60	01 38	03 02	03 56	05 21	06 03	06 54	07 52	
	06	270 43.2	N15 03.7	245 35.6	10.0	N18 01.0	3.2 56.2	58	02 06	03 17	04 06	05 33	06 16	07 07	08 04	
	07	285 43.3	04.4	260 04.6	10.1	18 04.2	3.2 56.1	56	02 28	03 29	04 14	05 43	06 27	07 18	08 14	
	08	300 43.3	05.2	274 33.7	10.0	18 07.4	3.1 56.1	54	02 45	03 40	04 22	05 52	06 37	07 27	08 23	
	09	315 43.4	.. 06.0	289 02.7	10.1	18 10.5	3.0 56.1	52	02 59	03 50	04 29	06 00	06 45	07 36	08 31	
	10	330 43.5	06.7	303 31.8	10.0	18 13.5	2.9 56.1	50	03 11	03 58	04 35	06 07	06 53	07 44	08 39	
	11	345 43.6	07.5	318 00.8	10.1	18 16.4	2.8 56.0	45	03 35	04 16	04 48	06 23	07 10	08 00	08 54	
	12	0 43.6	N15 08.2	332 29.9	10.1	N18 19.2	2.7 56.0	N 40	03 54	04 30	04 59	06 36	07 24	08 14	09 07	
	13	15 43.7	09.0	346 59.0	10.1	18 21.9	2.7 56.0	35	04 09	04 41	05 08	06 47	07 35	08 26	09 18	
	14	30 43.8	09.7	1 28.1	10.1	18 24.6	2.5 56.0	30	04 21	04 51	05 16	06 57	07 45	08 36	09 27	
	15	45 43.9	.. 10.5	15 57.2	10.2	18 27.1	2.4 55.9	20	04 40	05 07	05 30	07 13	08 03	08 53	09 43	
	16	60 43.9	11.2	30 26.4	10.1	18 29.5	2.3 55.9	N 10	04 55	05 21	05 42	07 28	08 18	09 08	09 58	
	17	75 44.0	12.0	44 55.5	10.2	18 31.8	2.2 55.9	0	05 07	05 32	05 54	07 42	08 33	09 22	10 11	
	18	90 44.1	N15 12.7	59 24.7	10.2	N18 34.0	2.1 55.9	S 10	05 18	05 43	06 05	07 55	08 47	09 37	10 24	
	19	105 44.1	13.5	73 53.9	10.2	18 36.1	2.0 55.8	20	05 27	05 53	06 16	08 10	09 02	09 52	10 38	
	20	120 44.2	14.2	88 23.1	10.2	18 38.1	1.9 55.8	30	05 36	06 05	06 29	08 27	09 20	10 09	10 54	
	21	135 44.3	.. 15.0	102 52.3	10.3	18 40.0	1.8 55.8	35	05 41	06 11	06 37	08 37	09 30	10 19	11 04	
	22	150 44.4	15.7	117 21.6	10.2	18 41.8	1.7 55.8	40	05 45	06 17	06 46	08 48	09 42	10 31	11 14	
	23	165 44.4	16.5	131 50.8	10.3	18 43.5	1.6 55.7	45	05 50	06 25	06 56	09 01	09 56	10 44	11 27	
V I E R N E S	2 00	180 44.5	N15 17.2	146 20.1	10.3	N18 45.1	1.5 55.7	S 50	05 55	06 34	07 08	09 17	10 13	11 01	11 42	
	01	195 44.6	18.0	160 49.4	10.4	18 46.6	1.4 55.7	52	05 57	06 37	07 13	09 25	10 21	11 09	11 49	
	02	210 44.6	18.7	175 18.8	10.3	18 48.0	1.4 55.7	54	06 00	06 42	07 20	09 34	10 30	11 17	11 57	
	03	225 44.7	.. 19.5	189 48.1	10.4	18 49.4	1.2 55.6	56	06 02	06 46	07 27	09 43	10 40	11 27	12 06	
	04	240 44.8	20.2	204 17.5	10.4	18 50.6	1.1 55.6	58	06 05	06 51	07 34	09 54	10 51	11 38	12 16	
	05	255 44.9	21.0	218 46.9	10.4	18 51.7	1.0 55.6	S 60	06 07	06 57	07 43	10 06	11 04	11 51	12 28	
	06	270 44.9	N15 21.7	233 16.3	10.5	N18 52.7	0.9 55.6	Lat.	Ocaso Sol	Crepúsculo	Civil	Náut.	Ocaso Luna			
	07	285 45.0	22.5	247 45.8	10.4	18 53.6	0.9 55.5						1	2	3	4
	08	300 45.1	23.2	262 15.2	10.5	18 54.5	0.7 55.5	N 72	h m	h m	h m	h m	h m	h m	h m	h m
	09	315 45.1	.. 24.0	276 44.7	10.6	18 55.2	0.6 55.5									
	10	330 45.2	24.7	291 14.3	10.5	18 55.8	0.5 55.5	N 70	22 17	///	///	00 35	□	□	03 32	
	11	345 45.3	25.5	305 43.8	10.6	18 56.3	0.5 55.5	N 68	21 33	///	///	24 49	00 49	01 43	02 07	
	12	0 45.3	N15 26.2	320 13.4	10.6	N18 56.8	0.3 55.4	70	21 04	23 11	///	24 01	00 01	00 55	01 28	
	13	15 45.4	26.9	334 43.0	10.6	18 57.1	0.3 55.4	66	20 43	22 10	///	23 30	24 24	00 24	01 00	
	14	30 45.5	27.7	349 12.6	10.7	18 57.4	0.1 55.4	64	20 26	21 37	///	23 08	24 00	00 00	00 40	
	15	45 45.5	.. 28.4	3 42.3	10.7	18 57.5	0.1 55.4	62	20 12	21 13	23 16	22 49	23 42	24 23	00 23	
	16	60 45.6	29.2	18 12.0	10.7	18 57.6	0.1 55.3	60	20 00	20 54	22 21	22 34	23 27	24 09	00 09	
	17	75 45.7	29.9	32 41.7	10.8	18 57.5	0.1 55.3	N 58	19 50	20 39	21 51	22 22	23 14	23 56	24 31	
	18	90 45.7	N15 30.7	47 11.5	10.7	N18 57.4	0.3 55.3	56	19 41	20 26	21 29	22 10	23 03	23 46	24 21	
	19	105 45.8	31.4	61 41.2	10.8	18 57.1	0.3 55.3	54	19 33	20 15	21 11	22 01	22 53	23 37	24 13	
	20	120 45.9	32.1	76 11.0	10.9	18 56.8	0.4 55.3	52	19 26	20 06	20 57	21 52	22 44	23 28	24 06	
	21	135 45.9	.. 32.9	90 40.9	10.9	18 56.4	0.5 55.2	50	19 20	19 57	20 44	21 44	22 36	23 21	23 59	
	22	150 46.0	33.6	105 10.8	10.9	18 55.9	0.7 55.2	45	19 07	19 39	20 20	21 28	22 19	23 05	23 45	
	23	165 46.1	34.4	119 40.7	10.9	18 55.2	0.7 55.2	N 40	18 56	19 25	20 01	21 14	22 06	22 52	23 33	
	S Á B A D O	3 00	180 46.1	N15 35.1	134 10.6	11.0	N18 54.5	0.8 55.2	35	18 46	19 13	19 46	21 03	21 54	22 41	23 23
01		195 46.2	35.8	148 40.6	11.0	18 53.7	0.9 55.1	30	18 38	19 03	19 34	20 53	21 44	22 31	23 15	
02		210 46.3	36.6	163 10.6	11.0	18 52.8	1.0 55.1	20	18 24	18 47	19 14	20 35	21 26	22 14	22 59	
03		225 46.3	.. 37.3	177 40.6	11.1	18 51.8	1.0 55.1	N 10	18 12	18 34	18 59	20 20	21 11	22 00	22 46	
04		240 46.4	38.0	192 10.7	11.1	18 50.8	1.2 55.1	0	18 00	18 22	18 47	20 06	20 57	21 46	22 34	
05		255 46.5	38.8	206 40.8	11.1	18 49.6	1.3 55.1	S 10	17 49	18 11	18 36	19 52	20 42	21 32	22 21	
06		270 46.5	N15 39.5	221 10.9	11.2	N18 48.3	1.3 55.0	20	17 37	18 00	18 27	19 37	20 27	21 17	22 08	
07		285 46.6	40.2	235 41.1	11.2	18 47.0	1.5 55.0	30	17 24	17 49	18 17	19 20	20 09	21 00	21 52	
08		300 46.6	41.0	250 11.3	11.2	18 45.5	1.5 55.0	35	17 16	17 43	18 13	19 10	19 59	20 50	21 43	
09		315 46.7	.. 41.7	264 41.5	11.3	18 44.0	1.7 55.0	40	17 08	17 36	18 08	18 58	19 47	20 39	21 33	
10		330 46.8	42.5	279 11.8	11.3	18 42.3	1.7 55.0	45	16 58	17 28	18 03	18 45	19 33	20 26	21 21	
11		345 46.8	43.2	293 42.1	11.3	18 40.6	1.8 54.9	S 50	16 45	17 20	17 58	18 28	19 16	20 09	21 06	
12		0 46.9	N15 43.9	308 12.4	11.4	N18 38.8	1.9 54.9	52	16 40	17 16	17 56	18 20	19 08	20 02	20 59	
13		15 47.0	44.7	322 42.8	11.4	18 36.9	2.0 54.9	54	16 34	17 11	17 54	18 12	19 00	19 53	20 51	
14		30 47.0	45.4	337 13.2	11.5	18 34.9	2.1 54.9	56	16 27	17 07	17 51	18 02	18 50	19 44	20 43	
15		45 47.1	.. 46.1	351 43.7	11.5	18 32.8	2.1 54.9	58	16 19	17 02	17 48	17 51	18 38	19 33	20 33	
16		60 47.1	46.8	6 14.2	11.5	18 30.7	2.3 54.9	S 60	16 10	16 56	17 46	17 38	18 25	19 20	20 22	
17		75 47.2	47.6	20 44.7	11.5	18 28.4	2.3 54.8	Día	SOL	Paso Mer.	LUNA					
18		90 47.3	N15 48.3	35 15.2	11.7	N18 26.1	2.4 54.8				Sup.	Inf.	Edad	Fase		
19		105 47.3	49.0	49 45.9	11.6	18 23.7	2.6 54.8	00h	12h	Paso Mer.	h m	h m	h m	h m	%	
20		120 47.4	49.8	64 16.5	11.7	18 21.1	2.6 54.8									
21		135 47.4	.. 50.5	78 47.2	11.7	18 18.5	2.6 54.8	d	m s	m s	h m	h m	h m	d	%	
22		150 47.5	51.2	93 17.9	11.7	18 15.9	2.8 54.8	1	02 51	02 54	11 57	13 54	01 28	02	6	
23		165 47.6	52.0	107 48.6	11.8	N18 13.1	2.9 54.7									

UT (HmGr)	ARIES	VENUS -4.1	MARTE -1.1	JÚPITER -2.0	SATURNO +0.1	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
DOMINGO	4 00	221 48.3	220 15.5 S 0 52.4	31 22.4 S 2 53.3	115 01.8 N22 50.8	353 01.9 S15 28.9	Acamar	315 18.4 S40 15.0
	01	236 50.8	235 15.3 51.4	46 25.4 53.2	130 03.9 50.7	8 04.6 28.8	Achernar	335 27.0 S57 09.8
	02	251 53.2	250 15.1 50.4	61 28.4 53.1	145 05.9 50.7	23 07.2 28.8	Acrux	173 07.9 S63 11.0
	03	266 55.7	265 14.9 . . 49.4	76 31.4 . . 53.0	160 08.0 . . 50.7	38 09.9 . . 28.7	Adhara	255 12.2 S28 59.9
	04	281 58.1	280 14.7 48.3	91 34.4 52.9	175 10.0 50.6	53 12.5 28.7	Aldebarán	290 49.0 N16 32.1
	05	297 00.6	295 14.5 47.3	106 37.4 52.8	190 12.1 50.6	68 15.2 28.6		
	06	312 03.1	310 14.3 S 0 46.3	121 40.4 S 2 52.7	205 14.1 N22 50.5	83 17.8 S15 28.6	Alioth	166 19.8 N55 53.0
	07	327 05.5	325 14.2 45.3	136 43.4 52.6	220 16.2 50.5	98 20.5 28.5	Alkaid	152 58.0 N49 14.6
	08	342 08.0	340 14.0 44.2	151 46.4 52.5	235 18.2 50.4	113 23.1 28.5	Al Na'ir	27 43.2 S46 53.2
	09	357 10.5	355 13.8 . . 43.2	166 49.3 . . 52.4	250 20.2 . . 50.4	128 25.8 . . 28.4	Alnilam	275 46.0 S 1 11.9
	10	12 12.9	10 13.6 42.2	181 52.3 52.3	265 22.3 50.4	143 28.4 28.4	Alphard	217 55.5 S 8 43.5
	11	27 15.4	25 13.4 41.1	196 55.3 52.2	280 24.3 50.3	158 31.1 28.3		
	12	42 17.9	40 13.2 S 0 40.1	211 58.3 S 2 52.1	295 26.4 N22 50.3	173 33.7 S15 28.3	Alphecca	126 10.2 N26 40.0
	13	57 20.3	55 13.0 39.1	227 01.3 52.0	310 28.4 50.2	188 36.4 28.2	Alpheratz	357 43.1 N29 10.0
	14	72 22.8	70 12.8 38.1	242 04.2 51.9	325 30.5 50.2	203 39.1 28.2	Altair	62 07.5 N 8 54.4
	15	87 25.3	85 12.7 . . 37.0	257 07.2 . . 51.8	340 32.5 . . 50.1	218 41.7 . . 28.1	Ankaa	353 15.5 S42 13.6
	16	102 27.7	100 12.5 36.0	272 10.2 51.7	355 34.5 50.1	233 44.4 28.1	Antares	112 25.2 S26 27.7
	17	117 30.2	115 12.3 35.0	287 13.2 51.6	10 36.6 50.1	248 47.0 28.0		
	18	132 32.6	130 12.1 S 0 33.9	302 16.1 S 2 51.5	25 38.6 N22 50.0	263 49.7 S15 28.0	Arcturus	145 54.9 N19 06.5
	19	147 35.1	145 11.9 32.9	317 19.1 51.4	40 40.7 50.0	278 52.3 27.9	Atria	107 25.9 S69 02.9
	20	162 37.6	160 11.7 31.9	332 22.1 51.3	55 42.7 49.9	293 55.0 27.9	Avior	234 17.8 S59 33.8
	21	177 40.0	175 11.5 . . 30.9	347 25.0 . . 51.2	70 44.8 . . 49.9	308 57.6 . . 27.8	Bellatrix	278 31.6 N 6 21.5
	22	192 42.5	190 11.3 29.8	2 28.0 51.2	85 46.8 49.8	324 00.3 27.8	Betelgeuse	271 00.9 N 7 24.3
	23	207 45.0	205 11.1 28.8	17 31.0 51.1	100 48.8 49.8	339 02.9 27.7		
LUNES	5 00	222 47.4	220 11.0 S 0 27.8	32 33.9 S 2 51.0	115 50.9 N22 49.8	354 05.6 S15 27.7	Canopus	263 56.2 S52 42.6
	01	237 49.9	235 10.8 26.7	47 36.9 50.9	130 52.9 49.7	9 08.2 27.6	Capella	280 33.9 N46 00.6
	02	252 52.4	250 10.6 25.7	62 39.9 50.8	145 55.0 49.7	24 10.9 27.6	Deneb	49 31.0 N45 19.8
	03	267 54.8	265 10.4 . . 24.7	77 42.8 . . 50.7	160 57.0 . . 49.6	39 13.5 . . 27.5	Denébola	182 32.9 N14 29.4
	04	282 57.3	280 10.2 23.6	92 45.8 50.6	175 59.1 49.6	54 16.2 27.5	Diphda	348 55.6 S17 54.5
	05	297 59.8	295 10.0 22.6	107 48.8 50.5	191 01.1 49.5	69 18.8 27.4		
	06	313 02.2	310 09.8 S 0 21.6	122 51.7 S 2 50.4	206 03.1 N22 49.5	84 21.5 S15 27.4	Dubhe	193 50.8 N61 40.5
	07	328 04.7	325 09.6 20.5	137 54.7 50.3	221 05.2 49.5	99 24.1 27.4	Elnath	278 12.2 N28 37.0
	08	343 07.1	340 09.4 19.5	152 57.6 50.2	236 07.2 49.4	114 26.8 27.3	Eltanin	90 45.5 N51 29.2
	09	358 09.6	355 09.3 . . 18.5	168 00.6 . . 50.2	251 09.3 . . 49.4	129 29.4 . . 27.3	Enif	33 46.6 N 9 56.4
	10	13 12.1	10 09.1 17.5	183 03.5 50.1	266 11.3 49.3	144 32.1 27.2	Fomalhaut	15 23.5 S29 32.6
	11	28 14.5	25 08.9 16.4	198 06.5 50.0	281 13.3 49.3	159 34.7 27.2		
	12	43 17.0	40 08.7 S 0 15.4	213 09.4 S 2 49.9	296 15.4 N22 49.2	174 37.4 S15 27.1	Gacrux	171 59.7 S57 11.9
	13	58 19.5	55 08.5 14.4	228 12.4 49.8	311 17.4 49.2	189 40.0 27.1	Gienah	175 51.4 S17 37.5
	14	73 21.9	70 08.3 13.3	243 15.3 49.7	326 19.4 49.2	204 42.7 27.0	Hadar	148 46.3 S60 26.6
	15	88 24.4	85 08.1 . . 12.3	258 18.3 . . 49.6	341 21.5 . . 49.1	219 45.3 . . 27.0	Hamal	328 00.4 N23 31.6
	16	103 26.9	100 07.9 11.3	273 21.2 49.6	356 23.5 49.1	234 48.0 26.9	Kaus Aust.	83 42.8 S34 22.4
	17	118 29.3	115 07.7 10.2	288 24.2 49.5	11 25.6 49.0	249 50.6 26.9		
	18	133 31.8	130 07.6 S 0 09.2	303 27.1 S 2 49.4	26 27.6 N22 49.0	264 53.3 S15 26.8	Kochab	137 19.0 N74 05.9
	19	148 34.2	145 07.4 08.1	318 30.1 49.3	41 29.6 48.9	279 55.9 26.8	Markab	13 37.9 N15 16.9
	20	163 36.7	160 07.2 07.1	333 33.0 49.2	56 31.7 48.9	294 58.6 26.7	Menkar	314 14.7 N 4 08.5
	21	178 39.2	175 07.0 . . 06.1	348 35.9 . . 49.1	71 33.7 . . 48.8	310 01.2 . . 26.7	Menkent	148 06.4 S36 26.5
	22	193 41.6	190 06.8 05.0	3 38.9 49.1	86 35.8 48.8	325 03.9 26.6	Miaplacidus	221 39.4 S69 47.0
	23	208 44.1	205 06.6 04.0	18 41.8 49.0	101 37.8 48.8	340 06.5 26.6		
MARTES	6 00	223 46.6	220 06.4 S 0 03.0	33 44.7 S 2 48.9	116 39.8 N22 48.7	355 09.2 S15 26.5	Mirfak	308 39.9 N49 54.5
	01	238 49.0	235 06.2 01.9	48 47.7 48.8	131 41.9 48.7	10 11.8 26.5	Nunki	75 57.4 S26 16.5
	02	253 51.5	250 06.0 S 00.9	63 50.6 48.7	146 43.9 48.6	25 14.5 26.4	Peacock	53 18.3 S56 40.9
	03	268 54.0	265 05.8 N 00.1	78 53.5 . . 48.7	161 45.9 . . 48.6	40 17.1 . . 26.4	Póllux	243 27.2 N27 59.3
	04	283 56.4	280 05.6 01.2	93 56.5 48.6	176 48.0 48.5	55 19.8 26.3	Procyon	244 59.2 N 5 11.0
	05	298 58.9	295 05.5 02.2	108 59.4 48.5	191 50.0 48.5	70 22.4 26.3		
	06	314 01.4	310 05.3 N 0 03.2	124 02.3 S 2 48.4	206 52.0 N22 48.4	85 25.1 S15 26.2	Rasalhague	96 05.6 N12 33.0
	07	329 03.8	325 05.1 04.3	139 05.3 48.3	221 54.1 48.4	100 27.7 26.2	Régulus	207 42.8 N11 53.7
	08	344 06.3	340 04.9 05.3	154 08.2 48.3	236 56.1 48.4	115 30.4 26.1	Rigel	281 11.8 S 8 11.4
	09	359 08.7	355 04.7 . . 06.3	169 11.1 . . 48.2	251 58.2 . . 48.3	130 33.0 . . 26.1	Rigel Kent.	139 50.1 S60 53.6
	10	14 11.2	10 04.5 07.4	184 14.0 48.1	267 00.2 48.3	145 35.7 26.0	Sabik	102 11.6 S15 44.4
	11	29 13.7	25 04.3 08.4	199 16.9 48.0	282 02.2 48.2	160 38.3 26.0		
	12	44 16.1	40 04.1 N 0 09.5	214 19.9 S 2 48.0	297 04.3 N22 48.2	175 41.0 S15 25.9	Schedar	349 40.2 N56 36.8
	13	59 18.6	55 03.9 10.5	229 22.8 47.9	312 06.3 48.1	190 43.6 25.9	Shaula	96 20.8 S37 06.6
	14	74 21.1	70 03.7 11.5	244 25.7 47.8	327 08.3 48.1	205 46.3 25.8	Sirius	258 33.4 S16 44.5
	15	89 23.5	85 03.5 . . 12.6	259 28.6 . . 47.7	342 10.4 . . 48.0	220 48.9 . . 25.8	Spica	158 30.3 S11 14.3
	16	104 26.0	100 03.3 13.6	274 31.5 47.7	357 12.4 48.0	235 51.6 25.7	Suhail	222 52.0 S43 29.9
	17	119 28.5	115 03.2 14.6	289 34.4 47.6	12 14.4 48.0	250 54.3 25.7		
	18	134 30.9	130 03.0 N 0 15.7	304 37.4 S 2 47.5	27 16.5 N22 47.9	265 56.9 S15 25.6	Vega	80 38.3 N38 47.8
	19	149 33.4	145 02.8 16.7	319 40.3 47.5	42 18.5 47.9	280 59.6 25.6	Zuben'ubi	137 04.4 S16 06.1
	20	164 35.9	160 02.6 17.8	334 43.2 47.4	57 20.5 47.8	296 02.2 25.5		
	21	179 38.3	175 02.4 . . 18.8	349 46.1 . . 47.3	72 22.6 . . 47.8	311 04.9 . . 25.5	AHS Paso Mer.	
	22	194 40.8	190 02.2 19.8	4 49.0 47.3	87 24.6 47.7	326 07.5 25.5	Venus	357 23.5 9 19
	23	209 43.2	205 02.0 20.9	19 51.9 47.2	102 26.6 47.7	341 10.2 25.4	Marte	169 46.5 21 45
							Júpiter	253 03.5 16 14
							Saturno	131 18.1 0 24
h m								
Paso Mer. 9 07.3		v -0.2 d 1.0	v 2.9 d 0.1	v 2.0 d 0.0	v 2.7 d 0.0			

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	4	5	6	7		
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m		
DOMINGO	4 00	180 47.6	N15 52.7	122 19.4	11.9	N18 10.2	2.9 54.7	N 72	////	////	01 15	04 31	06 42	08 29	10 10		
	01	195 47.7	53.4	136 50.3	11.8	18 07.3	3.0 54.7	N 70	////	////	02 07	05 56	07 24	08 56	10 26		
	02	210 47.7	54.1	151 21.1	11.9	18 04.3	3.1 54.7	68	////	////	02 39	06 34	07 53	09 15	10 40		
	03	225 47.8	54.9	165 52.0	12.0	18 01.2	3.2 54.7	66	////	01 29	03 02	07 01	08 14	09 31	10 50		
	04	240 47.9	55.6	180 23.0	12.0	17 58.0	3.3 54.7	64	////	02 07	03 20	07 22	08 31	09 44	10 59		
	05	255 47.9	56.3	194 54.0	12.0	17 54.7	3.4 54.6	62	////	02 32	03 35	07 38	08 45	09 55	11 07		
	06	270 48.0	N15 57.0	209 25.0	12.1	N17 51.3	3.4 54.6	60	01 19	02 52	03 48	07 52	08 56	10 04	11 14		
	07	285 48.0	57.8	223 56.1	12.1	17 47.9	3.5 54.6	N 58	01 53	03 08	03 58	08 04	09 06	10 12	11 19		
	08	300 48.1	58.5	238 27.2	12.1	17 44.4	3.6 54.6	56	02 17	03 22	04 08	08 14	09 15	10 19	11 25		
	09	315 48.2	59.2	252 58.3	12.2	17 40.8	3.7 54.6	54	02 36	03 33	04 16	08 23	09 23	10 25	11 29		
	10	330 48.2	15 59.9	267 29.5	12.2	17 37.1	3.7 54.6	52	02 51	03 44	04 23	08 31	09 30	10 31	11 33		
	11	345 48.3	16 00.7	282 00.7	12.3	17 33.4	3.9 54.6	50	03 04	03 52	04 30	08 39	09 36	10 36	11 37		
	12	0 48.3	N16 01.4	296 32.0	12.3	N17 29.5	3.9 54.5	45	03 30	04 11	04 44	08 54	09 50	10 47	11 45		
	13	15 48.4	02.1	311 03.3	12.3	17 25.6	4.0 54.5	N 40	03 50	04 26	04 55	09 07	10 01	10 56	11 52		
	14	30 48.4	02.8	325 34.6	12.4	17 21.6	4.1 54.5	35	04 05	04 38	05 05	09 18	10 11	11 04	11 58		
	15	45 48.5	03.5	340 06.0	12.4	17 17.5	4.1 54.5	30	04 18	04 48	05 14	09 27	10 19	11 11	12 03		
	16	60 48.6	04.3	354 37.4	12.5	17 13.4	4.2 54.5	20	04 38	05 05	05 29	09 43	10 33	11 23	12 12		
	17	75 48.6	05.0	9 08.9	12.5	17 09.2	4.3 54.5	N 10	04 54	05 19	05 41	09 58	10 46	11 33	12 20		
	18	90 48.7	N16 05.7	23 40.4	12.5	N17 04.9	4.4 54.5	0	05 07	05 32	05 53	10 11	10 58	11 43	12 27		
	19	105 48.7	06.4	38 11.9	12.6	17 00.5	4.5 54.5	S 10	05 18	05 43	06 05	10 24	11 09	11 52	12 34		
	20	120 48.8	07.1	52 43.5	12.6	16 56.0	4.5 54.4	20	05 28	05 54	06 17	10 38	11 22	12 03	12 42		
	21	135 48.8	07.9	67 15.1	12.6	16 51.5	4.6 54.4	30	05 38	06 06	06 31	10 54	11 36	12 14	12 51		
	22	150 48.9	08.6	81 46.7	12.7	16 46.9	4.7 54.4	35	05 43	06 13	06 39	11 04	11 44	12 21	12 56		
	23	165 48.9	09.3	96 18.4	12.8	16 42.2	4.7 54.4	40	05 48	06 20	06 49	11 14	11 54	12 29	13 01		
								45	05 53	06 28	06 59	11 27	12 05	12 38	13 08		
LUNES	5 00	180 49.0	N16 10.0	110 50.2	12.7	N16 37.5	4.9 54.4	S 50	05 59	06 38	07 12	11 42	12 18	12 48	13 16		
	01	195 49.0	10.7	125 21.9	12.8	16 32.6	4.9 54.4	52	06 02	06 42	07 18	11 49	12 24	12 53	13 19		
	02	210 49.1	11.4	139 53.7	12.9	16 27.7	4.9 54.4	54	06 04	06 47	07 25	11 57	12 31	12 59	13 23		
	03	225 49.2	12.2	154 25.6	12.9	16 22.8	5.1 54.4	56	06 07	06 52	07 32	12 06	12 38	13 05	13 28		
	04	240 49.2	12.9	168 57.5	12.9	16 17.7	5.1 54.4	58	06 10	06 57	07 41	12 16	12 47	13 12	13 33		
	05	255 49.3	13.6	183 29.4	13.0	16 12.6	5.2 54.4	S 60	06 13	07 03	07 50	12 28	12 56	13 19	13 38		
	06	270 49.3	N16 14.3	198 01.4	13.0	N16 07.4	5.2 54.4	Ocaso Sol		Crepúsculo		Ocaso Luna					
	07	285 49.4	15.0	212 33.4	13.0	16 02.2	5.4 54.3	Lat.		Civil	Náut.	4	5	6	7		
	08	300 49.4	15.7	227 05.4	13.1	15 56.8	5.4 54.3										
	09	315 49.5	16.4	241 37.5	13.1	15 51.4	5.4 54.3										
	10	330 49.5	17.2	256 09.6	13.1	15 46.0	5.5 54.3	N 72	h m	h m	h m	h m	h m	h m	h m		
	11	345 49.6	17.9	270 41.7	13.2	15 40.5	5.6 54.3	N 70	22 49	////	////	03 32	02 58	02 46	02 38		
	12	0 49.6	N16 18.6	285 13.9	13.2	N15 34.9	5.7 54.3	N 70	21 51	////	////	02 07	02 16	02 19	02 20		
	13	15 49.7	19.3	299 46.1	13.3	15 29.2	5.7 54.3	68	21 18	////	////	01 28	01 47	01 58	02 05		
	14	30 49.7	20.0	314 18.4	13.3	15 23.5	5.8 54.3	66	20 54	22 31	////	01 00	01 25	01 42	01 53		
	15	45 49.8	20.7	328 50.7	13.3	15 17.7	5.9 54.3	64	20 35	21 51	////	00 40	01 08	01 28	01 43		
	16	60 49.8	21.4	343 23.0	13.4	15 11.8	5.9 54.3	62	20 20	21 24	////	00 23	00 53	01 17	01 35		
	17	75 49.9	22.1	357 55.4	13.4	15 05.9	6.0 54.3	60	20 07	21 04	22 40	00 09	00 41	01 07	01 28		
	18	90 49.9	N16 22.8	12 27.8	13.4	N14 59.9	6.1 54.3	N 58	19 57	20 47	22 04	24 31	00 31	00 58	01 21		
	19	105 50.0	23.5	27 00.2	13.5	14 53.8	6.1 54.3	56	19 47	20 33	21 39	24 21	00 21	00 51	01 15		
	20	120 50.0	24.2	41 32.7	13.5	14 47.7	6.2 54.3	54	19 39	20 21	21 20	24 13	00 13	00 44	01 10		
	21	135 50.1	25.0	56 05.2	13.5	14 41.5	6.2 54.3	52	19 31	20 11	21 04	24 06	00 06	00 38	01 06		
	22	150 50.1	25.7	70 37.7	13.6	14 35.3	6.4 54.3	50	19 25	20 02	20 51	23 59	24 32	00 32	01 01		
	23	165 50.2	26.4	85 10.3	13.6	14 28.9	6.3 54.3	45	19 10	19 43	20 24	23 45	24 20	00 20	00 52		
	MARTES	6 00	180 50.2	N16 27.1	99 42.9	13.6	N14 22.6	6.5 54.2	N 40	18 59	19 28	20 05	23 33	24 11	00 11	00 44	
01		195 50.3	27.8	114 15.5	13.7	14 16.1	6.5 54.2	35	18 49	19 16	19 49	23 23	24 02	00 02	00 38		
02		210 50.3	28.5	128 48.2	13.7	14 09.6	6.5 54.2	30	18 40	19 05	19 36	23 15	23 55	24 32	00 32		
03		225 50.4	29.2	143 20.9	13.7	14 03.1	6.6 54.2	20	18 25	18 48	19 16	22 59	23 42	24 22	00 22		
04		240 50.4	29.9	157 53.6	13.8	13 56.5	6.7 54.2	N 10	18 12	18 34	19 00	22 46	23 30	24 13	00 13		
05		255 50.5	30.6	172 26.4	13.8	13 49.8	6.7 54.2	0	18 00	18 22	18 47	22 34	23 20	24 04	00 04		
06		270 50.5	N16 31.3	186 59.2	13.8	N13 43.1	6.8 54.2	S 10	17 48	18 10	18 35	22 21	23 09	23 56	24 42		
07		285 50.6	32.0	201 32.0	13.9	13 36.3	6.9 54.2	20	17 36	17 59	18 25	22 08	22 57	23 46	24 35		
08		300 50.6	32.7	216 04.9	13.9	13 29.4	6.9 54.2	30	17 22	17 47	18 15	21 52	22 44	23 36	24 28		
09		315 50.6	33.4	230 37.8	13.9	13 22.5	6.9 54.2	35	17 14	17 40	18 10	21 43	22 36	23 30	24 24		
10		330 50.7	34.1	245 10.7	13.9	13 15.6	7.1 54.2	40	17 04	17 33	18 05	21 33	22 28	23 23	24 19		
11		345 50.7	34.8	259 43.6	14.0	13 08.5	7.0 54.2	45	16 53	17 25	18 00	21 21	22 17	23 15	24 13		
12		0 50.8	N16 35.5	274 16.6	14.0	N13 01.5	7.2 54.2	S 50	16 40	17 15	17 54	21 06	22 05	23 05	24 07		
13		15 50.8	36.2	288 49.6	14.1	12 54.3	7.2 54.2	52	16 34	17 11	17 51	20 59	21 59	23 01	24 04		
14		30 50.9	36.9	303 22.7	14.0	12 47.1	7.2 54.2	54	16 28	17 06	17 48	20 51	21 53	22 56	24 00		
15		45 50.9	37.6	317 55.7	14.1	12 39.9	7.3 54.2	56	16 20	17 01	17 46	20 43	21 45	22 50	23 56		
16		60 51.0	38.3	332 28.8	14.1	12 32.6	7.3 54.2	58	16 12	16 55	17 43	20 33	21 37	22 44	23 52		
17		75 51.0	39.0	347 01.9	14.1	12 25.3	7.4 54.2	S 60	16 02	16 49	17 39	20 22	21 28	22 37	23 47		
18		90 51.1	N16 39.7	1 35.0	14.2	N12 17.9	7.5 54.2	SOL		LUNA							
19		105 51.1	40.4	16 08.2	14.2	12 10.4	7.5 54.2	Día			Paso Mer.	Paso Mer.		Sup.	Inf.	Edad	Fase
20		120 51.1	41.1	30 41.4	14.2	12 02.9	7.6 54.2										
21		135 51.2	41.8	45 14.6	14.3	11 55.3	7.6 54.2		00h	12h							
22		150 51.2	42.5	59 47.9	14.2	11 47.7	7.6 54.3	d	m s	m s	h m	h m	h m	d	%		
23		165 51.3	43.2	74 21.1	14.3	N11 40.1	7.7 54.3	4									

UT (HmGr)	ARIES	VENUS -4.1	MARTE -1.0	JÚPITER -2.0	SATURNO +0.1	ESTRELLAS		
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
7 00	224 45.7	220 01.8 N 0 21.9	34 54.8 S 2 47.1	117 28.7 N22 47.6	356 12.8 S15 25.4	Acamar	315 18.3 S40 15.0	
01	239 48.2	235 01.6 23.0	49 57.7 47.0	132 30.7 47.6	11 15.5 25.3	Achernar	335 27.0 S57 09.8	
02	254 50.6	250 01.4 24.0	65 00.6 47.0	147 32.7 47.6	26 18.1 25.3	Acrux	173 07.9 S63 11.0	
03	269 53.1	265 01.2 . . 25.0	80 03.5 . . 46.9	162 34.8 . . 47.5	41 20.8 . . 25.2	Adhara	255 12.3 S28 59.9	
04	284 55.6	280 01.0 26.1	95 06.4 46.8	177 36.8 47.5	56 23.4 25.2	Aldebarán	290 49.0 N16 32.1	
05	299 58.0	295 00.8 27.1	110 09.3 46.8	192 38.8 47.4	71 26.1 25.1			
06	315 00.5	310 00.6 N 0 28.2	125 12.2 S 2 46.7	207 40.8 N22 47.4	86 28.7 S15 25.1	Alioth	166 19.8 N55 53.0	
07	330 03.0	325 00.4 29.2	140 15.1 46.7	222 42.9 47.3	101 31.4 25.0	Alkaid	152 58.0 N49 14.6	
08	345 05.4	340 00.3 30.2	155 18.0 46.6	237 44.9 47.3	116 34.0 25.0	Al Na'ir	27 43.1 S46 53.2	
09	0 07.9	355 00.1 . . 31.3	170 20.9 . . 46.5	252 46.9 . . 47.2	131 36.7 . . 24.9	Alnilam	275 46.0 S 1 11.9	
10	15 10.3	9 59.9 32.3	185 23.8 46.5	267 49.0 47.2	146 39.3 24.9	Alphard	217 55.5 S 8 43.5	
11	30 12.8	24 59.7 33.4	200 26.7 46.4	282 51.0 47.1	161 42.0 24.8			
12	45 15.3	39 59.5 N 0 34.4	215 29.6 S 2 46.3	297 53.0 N22 47.1	176 44.6 S15 24.8	Alphecca	126 10.2 N26 40.0	
13	60 17.7	54 59.3 35.4	230 32.5 46.3	312 55.1 47.1	191 47.3 24.7	Alpheratz	357 43.1 N29 10.0	
14	75 20.2	69 59.1 36.5	245 35.3 46.2	327 57.1 47.0	206 49.9 24.7	Altair	62 07.5 N 8 54.4	
15	90 22.7	84 58.9 . . 37.5	260 38.2 . . 46.2	342 59.1 . . 47.0	221 52.6 . . 24.6	Ankaa	353 15.5 S42 13.6	
16	105 25.1	99 58.7 38.6	275 41.1 46.1	358 01.1 46.9	236 55.2 24.6	Antares	112 25.2 S26 27.7	
17	120 27.6	114 58.5 39.6	290 44.0 46.0	13 03.2 46.9	251 57.9 24.5			
18	135 30.1	129 58.3 N 0 40.6	305 46.9 S 2 46.0	28 05.2 N22 46.8	267 00.5 S15 24.5	Arcturus	145 54.9 N19 06.5	
19	150 32.5	144 58.1 41.7	320 49.8 45.9	43 07.2 46.8	282 03.2 24.4	Atria	107 25.9 S69 02.9	
20	165 35.0	159 57.9 42.7	335 52.6 45.9	58 09.3 46.7	297 05.8 24.4	Avior	234 17.9 S59 33.8	
21	180 37.5	174 57.7 . . 43.8	350 55.5 . . 45.8	73 11.3 . . 46.7	312 08.5 . . 24.3	Bellatrix	278 31.6 N 6 21.5	
22	195 39.9	189 57.5 44.8	5 58.4 45.8	88 13.3 46.6	327 11.2 24.3	Betelgeuse	271 00.9 N 7 24.3	
23	210 42.4	204 57.3 45.9	21 01.3 45.7	103 15.3 46.6	342 13.8 24.2			
8 00	225 44.8	219 57.1 N 0 46.9	36 04.1 S 2 45.6	118 17.4 N22 46.6	357 16.5 S15 24.2	Canopus	263 56.2 S52 42.6	
01	240 47.3	234 56.9 47.9	51 07.0 45.6	133 19.4 46.5	12 19.1 24.1	Capella	280 34.0 N46 00.6	
02	255 49.8	249 56.7 49.0	66 09.9 45.5	148 21.4 46.5	27 21.8 24.1	Deneb	49 30.9 N45 19.8	
03	270 52.2	264 56.5 . . 50.0	81 12.8 . . 45.5	163 23.5 . . 46.4	42 24.4 . . 24.0	Denébola	182 32.9 N14 29.4	
04	285 54.7	279 56.4 51.1	96 15.6 45.4	178 25.5 46.4	57 27.1 24.0	Diphda	348 55.6 S17 54.5	
05	300 57.2	294 56.2 52.1	111 18.5 45.4	193 27.5 46.3	72 29.7 23.9			
06	315 59.6	309 56.0 N 0 53.2	126 21.4 S 2 45.3	208 29.5 N22 46.3	87 32.4 S15 23.9	Dubhe	193 50.8 N61 40.5	
07	331 02.1	324 55.8 54.2	141 24.2 45.3	223 31.6 46.2	102 35.0 23.8	Elnath	278 12.2 N28 37.0	
08	346 04.6	339 55.6 55.2	156 27.1 45.2	238 33.6 46.2	117 37.7 23.8	Eltanin	90 45.5 N51 29.2	
09	1 07.0	354 55.4 . . 56.3	171 30.0 . . 45.2	253 35.6 . . 46.1	132 40.3 . . 23.8	Enif	33 46.6 N 9 56.4	
10	16 09.5	9 55.2 57.3	186 32.8 45.1	268 37.6 46.1	147 43.0 23.7	Fomalhaut	15 23.5 S29 32.6	
11	31 12.0	24 55.0 58.4	201 35.7 45.1	283 39.7 46.0	162 45.6 23.7			
12	46 14.4	39 54.8 N 0 59.4	216 38.5 S 2 45.0	298 41.7 N22 46.0	177 48.3 S15 23.6	Gacrux	171 59.7 S57 11.9	
13	61 16.9	54 54.6 1 00.5	231 41.4 45.0	313 43.7 45.9	192 50.9 23.6	Gienah	175 51.4 S17 37.5	
14	76 19.3	69 54.4 01.5	246 44.2 44.9	328 45.7 45.9	207 53.6 23.5	Hadar	148 46.3 S60 26.6	
15	91 21.8	84 54.2 . . 02.5	261 47.1 . . 44.9	343 47.8 . . 45.9	222 56.2 . . 23.5	Hamal	328 00.4 N23 31.6	
16	106 24.3	99 54.0 03.6	276 50.0 44.8	358 49.8 45.8	237 58.9 23.4	Kaus Aust.	83 42.7 S34 22.4	
17	121 26.7	114 53.8 04.6	291 52.8 44.8	13 51.8 45.8	253 01.5 23.4			
18	136 29.2	129 53.6 N 1 05.7	306 55.7 S 2 44.7	28 53.8 N22 45.7	268 04.2 S15 23.3	Kochab	137 19.0 N74 05.9	
19	151 31.7	144 53.4 06.7	321 58.5 44.7	43 55.9 45.7	283 06.8 23.3	Markab	13 37.9 N15 16.9	
20	166 34.1	159 53.2 07.8	337 01.4 44.6	58 57.9 45.6	298 09.5 23.2	Menkar	314 14.7 N 4 08.6	
21	181 36.6	174 53.0 . . 08.8	352 04.2 . . 44.6	73 59.9 . . 45.6	313 12.1 . . 23.2	Menkent	148 06.4 S36 26.5	
22	196 39.1	189 52.8 09.9	7 07.0 44.5	89 01.9 45.5	328 14.8 23.1	Miaplacidus	221 39.4 S69 47.0	
23	211 41.5	204 52.6 10.9	22 09.9 44.5	104 04.0 45.5	343 17.5 23.1			
9 00	226 44.0	219 52.4 N 1 12.0	37 12.7 S 2 44.5	119 06.0 N22 45.4	358 20.1 S15 23.0	Mirfak	308 39.9 N49 54.5	
01	241 46.4	234 52.2 13.0	52 15.6 44.4	134 08.0 45.4	13 22.8 23.0	Nunki	75 57.4 S26 16.5	
02	256 48.9	249 52.0 14.0	67 18.4 44.4	149 10.0 45.3	28 25.4 22.9	Peacock	53 18.2 S56 40.9	
03	271 51.4	264 51.8 . . 15.1	82 21.3 . . 44.3	164 12.1 . . 45.3	43 28.1 . . 22.9	Póllux	243 27.2 N27 59.3	
04	286 53.8	279 51.6 16.1	97 24.1 44.3	179 14.1 45.2	58 30.7 22.8	Procyon	244 59.2 N 5 11.0	
05	301 56.3	294 51.4 17.2	112 26.9 44.3	194 16.1 45.2	73 33.4 22.8			
06	316 58.8	309 51.2 N 1 18.2	127 29.8 S 2 44.2	209 18.1 N22 45.2	88 36.0 S15 22.7	Rasalhague	96 05.6 N12 33.0	
07	332 01.2	324 51.0 19.3	142 32.6 44.2	224 20.2 45.1	103 38.7 22.7	Régulus	207 42.8 N11 53.7	
08	347 03.7	339 50.8 20.3	157 35.4 44.1	239 22.2 45.1	118 41.3 22.6	Rigel	281 11.8 S 8 11.4	
09	2 06.2	354 50.6 . . 21.4	172 38.3 . . 44.1	254 24.2 . . 45.0	133 44.0 . . 22.6	Rigel Kent.	139 50.1 S60 53.6	
10	17 08.6	9 50.4 22.4	187 41.1 44.1	269 26.2 45.0	148 46.6 22.5	Sabik	102 11.5 S15 44.4	
11	32 11.1	24 50.2 23.5	202 43.9 44.0	284 28.2 44.9	163 49.3 22.5			
12	47 13.6	39 50.0 N 1 24.5	217 46.8 S 2 44.0	299 30.3 N22 44.9	178 51.9 S15 22.4	Schedar	349 40.2 N56 36.7	
13	62 16.0	54 49.8 25.6	232 49.6 43.9	314 32.3 44.8	193 54.6 22.4	Shaula	96 20.7 S37 06.6	
14	77 18.5	69 49.6 26.6	247 52.4 43.9	329 34.3 44.8	208 57.2 22.3	Sirius	258 33.4 S16 44.5	
15	92 20.9	84 49.4 . . 27.6	262 55.2 . . 43.9	344 36.3 . . 44.7	223 59.9 . . 22.3	Spica	158 30.3 S11 14.3	
16	107 23.4	99 49.2 28.7	277 58.1 43.8	359 38.3 44.7	239 02.5 22.2	Suhail	222 52.0 S43 29.9	
17	122 25.9	114 49.0 29.7	293 00.9 43.8	14 40.4 44.6	254 05.2 22.2			
18	137 28.3	129 48.8 N 1 30.8	308 03.7 S 2 43.8	29 42.4 N22 44.6	269 07.8 S15 22.1	Vega	80 38.3 N38 47.8	
19	152 30.8	144 48.6 31.8	323 06.5 43.7	44 44.4 44.5	284 10.5 22.1	Zuben'ubi	137 04.4 S16 06.1	
20	167 33.3	159 48.4 32.9	338 09.3 43.7	59 46.4 44.5	299 13.1 22.1			
21	182 35.7	174 48.2 . . 33.9	353 12.1 . . 43.7	74 48.4 . . 44.4	314 15.8 . . 22.0			
22	197 38.2	189 48.0 35.0	8 15.0 43.6	89 50.5 44.4	329 18.5 22.0			
23	212 40.7	204 47.8 36.0	23 17.8 43.6	104 52.5 44.3	344 21.1 21.9			
h m								
Paso Mer.	8 55.5	v -0.2 d 1.0	v 2.9 d 0.0	v 2.0 d 0.0	v 2.7 d 0.0			
						AHS	Paso Mer.	
							h m	
						Venus	354 12.3 9 20	
						Marte	170 19.3 21 32	
						Júpiter	252 32.5 16 05	
						Saturno	131 31.6 0 11	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	7	8	9	10
d h	°	'	°	'	°	'	°	'	h m	h m	h m	h m	h m	h m	
M I E R C O L E S	N 70	180 51.3	N16 43.9	88 54.4	14.3	N11 32.4	7.8 54.3	N 72	////	////	00 28	10 10	11 47	13 24	15 03
	01	195 51.4	44.5	103 27.7	14.3	11 24.6	7.8 54.3	N 70	////	////	01 47	10 26	11 57	13 28	15 00
	02	210 51.4	45.2	118 01.0	14.4	11 16.8	7.9 54.3	68	////	////	02 24	10 40	12 04	13 30	14 58
	03	225 51.4	45.9	132 34.4	14.4	11 08.9	7.9 54.3	66	////	01 05	02 50	10 50	12 11	13 32	14 56
	04	240 51.5	46.6	147 07.8	14.3	11 01.0	7.9 54.3	64	////	01 51	03 10	10 59	12 16	13 34	14 54
	05	255 51.5	47.3	161 41.1	14.5	10 53.1	8.0 54.3	62	////	02 21	03 26	11 07	12 21	13 36	14 53
	06	270 51.6	N16 48.0	176 14.6	14.4	N10 45.1	8.1 54.3	60	00 57	02 42	03 40	11 14	12 25	13 37	14 52
	07	285 51.6	48.7	190 48.0	14.4	10 37.0	8.0 54.3	N 58	01 40	03 00	03 51	11 19	12 28	13 39	14 51
	08	300 51.6	49.4	205 21.4	14.5	10 29.0	8.2 54.3	56	02 07	03 14	04 01	11 25	12 31	13 40	14 50
	09	315 51.7	50.1	219 54.9	14.5	10 20.8	8.2 54.3	54	02 27	03 27	04 10	11 29	12 34	13 41	14 49
	10	330 51.7	50.8	234 28.4	14.5	10 12.6	8.2 54.3	52	02 44	03 37	04 18	11 33	12 37	13 42	14 48
	11	345 51.8	51.5	249 01.9	14.5	10 04.4	8.3 54.3	50	02 58	03 47	04 25	11 37	12 39	13 42	14 47
	12	0 51.8	N16 52.1	263 35.4	14.5	N 9 56.1	8.3 54.3	45	03 25	04 07	04 40	11 45	12 44	13 44	14 46
	13	15 51.8	52.8	278 08.9	14.6	9 47.8	8.3 54.3	N 40	03 45	04 22	04 52	11 52	12 48	13 46	14 44
	14	30 51.9	53.5	292 42.5	14.5	9 39.5	8.5 54.3	35	04 02	04 35	05 02	11 58	12 52	13 47	14 43
	15	45 51.9	54.2	307 16.0	14.6	9 31.0	8.4 54.4	30	04 15	04 46	05 12	12 03	12 55	13 48	14 42
	16	60 52.0	54.9	321 49.6	14.6	9 22.6	8.5 54.4	20	04 36	05 04	05 27	12 12	13 01	13 50	14 41
	17	75 52.0	55.6	336 23.2	14.6	9 14.1	8.5 54.4	N 10	04 53	05 18	05 41	12 20	13 06	13 52	14 39
	18	90 52.0	N16 56.3	350 56.8	14.6	N 9 05.6	8.6 54.4	0	05 06	05 31	05 53	12 27	13 10	13 54	14 38
	19	105 52.1	56.9	5 30.4	14.7	8 57.0	8.6 54.4	S 10	05 18	05 43	06 05	12 34	13 15	13 55	14 37
	20	120 52.1	57.6	20 04.1	14.6	8 48.4	8.6 54.4	20	05 29	05 55	06 18	12 42	13 20	13 57	14 35
	21	135 52.2	58.3	34 37.7	14.7	8 39.8	8.7 54.4	30	05 40	06 08	06 33	12 51	13 25	13 59	14 34
	22	150 52.2	59.0	49 11.4	14.6	8 31.1	8.8 54.4	35	05 45	06 15	06 42	12 56	13 28	14 00	14 33
23	165 52.2	16 59.7	63 45.0	14.7	8 22.3	8.7 54.4	40	05 50	06 23	06 52	13 01	13 32	14 02	14 32	
							45	05 56	06 32	07 03	13 08	13 36	14 03	14 31	
J U E V E S	8 00	180 52.3	N17 00.4	78 18.7	14.7	N 8 13.6	8.8 54.4	S 50	06 03	06 42	07 17	13 16	13 41	14 05	14 29
	01	195 52.3	01.0	92 52.4	14.6	8 04.8	8.9 54.5	52	06 06	06 46	07 23	13 19	13 43	14 06	14 29
	02	210 52.3	01.7	107 26.0	14.7	7 55.9	8.9 54.5	54	06 09	06 51	07 30	13 23	13 46	14 07	14 28
	03	225 52.4	02.4	121 59.7	14.7	7 47.0	8.9 54.5	56	06 12	06 57	07 38	13 28	13 48	14 08	14 27
	04	240 52.4	03.1	136 33.4	14.7	7 38.1	8.9 54.5	58	06 15	07 03	07 47	13 33	13 51	14 09	14 26
	05	255 52.4	03.8	151 07.1	14.8	7 29.2	9.0 54.5	S 60	06 19	07 10	07 57	13 38	13 55	14 10	14 25
	06	270 52.5	N17 04.4	165 40.9	14.7	N 7 20.2	9.0 54.5	Lat.		Ocaso Sol	Crepúsculo		Ocaso Luna		
	07	285 52.5	05.1	180 14.6	14.7	7 11.2	9.1 54.5			Civil	Náut.	7	8	9	10
	08	300 52.6	05.8	194 48.3	14.7	7 02.1	9.1 54.5								
	09	315 52.6	06.5	209 22.0	14.7	6 53.0	9.1 54.6								
	10	330 52.6	07.1	223 55.7	14.8	6 43.9	9.2 54.6								
	11	345 52.7	07.8	238 29.5	14.7	6 34.7	9.2 54.6								
	12	0 52.7	N17 08.5	253 03.2	14.7	N 6 25.5	9.2 54.6	N 72	h m	h m	h m	h m	h m	h m	h m
	13	15 52.7	09.2	267 36.9	14.7	6 16.3	9.3 54.6	N 70	22 12	////	////	02 38	02 30	02 24	02 17
	14	30 52.8	09.9	282 10.6	14.8	6 07.0	9.2 54.6	68	21 33	////	////	02 05	02 10	02 13	02 16
	15	45 52.8	10.5	296 44.4	14.7	5 57.8	9.4 54.6	66	21 06	22 58	////	01 53	02 02	02 10	02 16
	16	60 52.8	11.2	311 18.1	14.7	5 48.4	9.3 54.7	64	20 45	22 06	////	01 43	01 56	02 06	02 16
	17	75 52.9	11.9	325 51.8	14.7	5 39.1	9.4 54.7	62	20 29	21 36	////	01 35	01 50	02 03	02 16
	18	90 52.9	N17 12.5	340 25.5	14.8	N 5 29.7	9.4 54.7	60	20 15	21 13	23 04	01 28	01 45	02 01	02 16
	19	105 52.9	13.2	354 59.3	14.7	5 20.3	9.4 54.7	N 58	20 03	20 55	22 17	01 21	01 41	01 59	02 16
	20	120 53.0	13.9	9 33.0	14.7	5 10.9	9.5 54.7	56	19 53	20 40	21 49	01 15	01 37	01 57	02 16
	21	135 53.0	14.6	24 06.7	14.7	5 01.4	9.5 54.7	54	19 44	20 28	21 28	01 10	01 33	01 55	02 16
	22	150 53.0	15.2	38 40.4	14.7	4 51.9	9.5 54.8	52	19 36	20 17	21 11	01 06	01 30	01 53	02 16
23	165 53.1	15.9	53 14.1	14.7	4 42.4	9.5 54.8	50	19 29	20 07	20 57	01 01	01 27	01 52	02 16	
							45	19 14	19 47	20 29	00 52	01 21	01 49	02 16	
V I E R N E S	9 00	180 53.1	N17 16.6	67 47.8	14.7	N 4 32.9	9.6 54.8	N 40	19 02	19 32	20 08	00 44	01 16	01 46	02 15
	01	195 53.1	17.2	82 21.5	14.6	4 23.3	9.6 54.8	35	18 51	19 19	19 52	00 38	01 11	01 43	02 15
	02	210 53.1	17.9	96 55.1	14.7	4 13.7	9.6 54.8	30	18 42	19 08	19 38	00 32	01 07	01 41	02 15
	03	225 53.2	18.6	111 28.8	14.7	4 04.1	9.7 54.9	20	18 26	18 49	19 17	00 22	01 00	01 37	02 15
	04	240 53.2	19.3	126 02.5	14.6	3 54.4	9.6 54.9	N 10	18 13	18 35	19 00	00 13	00 54	01 34	02 15
	05	255 53.2	19.9	140 36.1	14.6	3 44.8	9.7 54.9	0	18 00	18 22	18 47	00 04	00 48	01 31	02 15
	06	270 53.3	N17 20.6	155 09.7	14.7	N 3 35.1	9.7 54.9	S 10	17 48	18 09	18 35	24 42	00 42	01 28	02 15
	07	285 53.3	21.3	169 43.4	14.6	3 25.4	9.8 54.9	20	17 34	17 57	18 24	24 35	00 35	01 25	02 14
	08	300 53.3	21.9	184 17.0	14.6	3 15.6	9.7 55.0	30	17 19	17 44	18 13	24 28	00 28	01 21	02 14
	09	315 53.4	22.6	198 50.6	14.5	3 05.9	9.8 55.0	35	17 11	17 37	18 08	24 24	00 24	01 18	02 14
	10	330 53.4	23.2	213 24.1	14.6	2 56.1	9.8 55.0	40	17 01	17 30	18 02	24 19	00 19	01 16	02 14
	11	345 53.4	23.9	227 57.7	14.5	2 46.3	9.8 55.0	45	16 50	17 21	17 56	24 13	00 13	01 13	02 14
	12	0 53.4	N17 24.6	242 31.2	14.6	N 2 36.5	9.9 55.0	S 50	16 36	17 11	17 49	24 07	00 07	01 09	02 13
	13	15 53.5	25.2	257 04.8	14.5	2 26.6	9.8 55.1	52	16 29	17 06	17 47	24 04	00 04	01 08	02 13
	14	30 53.5	25.9	271 38.3	14.5	2 16.8	9.9 55.1	54	16 22	17 01	17 44	24 00	00 00	01 06	02 13
	15	45 53.5	26.6	286 11.8	14.5	2 06.9	9.9 55.1	56	16 14	16 55	17 40	23 56	25 04	01 04	02 13
	16	60 53.6	27.2	300 45.3	14.4	1 57.0	9.9 55.1	58	16 05	16 49	17 37	23 52	25 02	01 02	02 13
	17	75 53.6	27.9	315 18.7	14.5	1 47.1	9.9 55.1	S 60	15 55	16 43	17 33	23 47	24 59	00 59	02 13
	18	90 53.6	N17 28.6	329 52.2	14.4	N 1 37.2	10.0 55.2	SOL		LUNA					
	19	105 53.6	29.2	344 25.6	14.4	1 27.2	9.9 55.2	Día		Ec. Tiempo		Paso Mer.		Paso Mer.	
	20	120 53.7	29.9	358 59.0	14.4	1 17.3	10.0 55.2			00h 12h		Sup. Inf.		Edad Fase	
	21	135 53.7	30.5	13 32.4	14.3	1 07.3	10.0 55.2								
	22	150 5													

UT (HmGr)	ARIES	VENUS -4.1	MARTE -0.9	JÚPITER -2.0	SATURNO +0.1	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° ' "	° ' "	° ' "	° ' "	° ' "		° ' "	° ' "
10 00	227 43.1	219 47.6 N 1 37.1	38 20.6 S 2 43.6	119 54.5 N22 44.3	359 23.8 S15 21.9	Acamar	315 18.3 S40 15.0	
01	242 45.6	234 47.4 38.1	53 23.4 43.6	134 56.5 44.2	14 26.4 21.8	Achernar	335 27.0 S57 09.8	
02	257 48.0	249 47.2 39.2	68 26.2 43.5	149 58.5 44.2	29 29.1 21.8	Acrux	173 08.0 S63 11.0	
03	272 50.5	264 47.0 . . 40.2	83 29.0 . . 43.5	165 00.6 . . 44.2	44 31.7 . . 21.7	Adhara	255 12.3 S28 59.9	
04	287 53.0	279 46.8 41.3	98 31.8 43.5	180 02.6 44.1	59 34.4 21.7	Aldebarán	290 49.0 N16 32.1	
05	302 55.4	294 46.6 42.3	113 34.6 43.4	195 04.6 44.1	74 37.0 21.6			
06	317 57.9	309 46.4 N 1 43.4	128 37.4 S 2 43.4	210 06.6 N22 44.0	89 39.7 S15 21.6	Alioth	166 19.8 N55 53.0	
07	333 00.4	324 46.2 44.4	143 40.2 43.4	225 08.6 44.0	104 42.3 21.5	Alkaid	152 58.0 N49 14.6	
08	348 02.8	339 46.0 45.5	158 43.0 43.4	240 10.6 43.9	119 45.0 21.5	Al Na'ir	27 43.1 S46 53.2	
09	3 05.3	354 45.8 . . 46.5	173 45.8 . . 43.3	255 12.7 . . 43.9	134 47.6 . . 21.4	Alnilam	275 46.0 S 1 11.8	
10	18 07.8	9 45.6 47.6	188 48.6 43.3	270 14.7 43.8	149 50.3 21.4	Alphard	217 55.5 S 8 43.5	
11	33 10.2	24 45.4 48.6	203 51.4 43.3	285 16.7 43.8	164 52.9 21.3			
12	48 12.7	39 45.2 N 1 49.7	218 54.2 S 2 43.3	300 18.7 N22 43.7	179 55.6 S15 21.3	Alphecca	126 10.1 N26 40.0	
13	63 15.2	54 45.0 50.7	233 57.0 43.2	315 20.7 43.7	194 58.2 21.2	Alpheratz	357 43.1 N29 10.0	
14	78 17.6	69 44.8 51.8	248 59.8 43.2	330 22.8 43.6	210 00.9 21.2	Altair	62 07.5 N 8 54.4	
15	93 20.1	84 44.6 . . 52.8	264 02.6 . . 43.2	345 24.8 . . 43.6	225 03.5 . . 21.1	Ankaa	353 15.5 S42 13.6	
16	108 22.5	99 44.3 53.9	279 05.4 43.2	0 26.8 43.5	240 06.2 21.1	Antares	112 25.1 S26 27.7	
17	123 25.0	114 44.1 54.9	294 08.2 43.1	15 28.8 43.5	255 08.8 21.0			
18	138 27.5	129 43.9 N 1 56.0	309 11.0 S 2 43.1	30 30.8 N22 43.4	270 11.5 S15 21.0	Arcturus	145 54.9 N19 06.5	
19	153 29.9	144 43.7 57.0	324 13.8 43.1	45 32.8 43.4	285 14.2 20.9	Atria	107 25.9 S69 02.9	
20	168 32.4	159 43.5 58.1	339 16.6 43.1	60 34.8 43.3	300 16.8 20.9	Avior	234 17.9 S59 33.8	
21	183 34.9	174 43.3 1 59.1	354 19.3 . . 43.1	75 36.9 . . 43.3	315 19.5 . . 20.8	Bellatrix	278 31.6 N 6 21.5	
22	198 37.3	189 43.1 2 00.2	9 22.1 43.0	90 38.9 43.2	330 22.1 20.8	Betelgeuse	271 00.9 N 7 24.3	
23	213 39.8	204 42.9 01.2	24 24.9 43.0	105 40.9 43.2	345 24.8 20.7			
11 00	228 42.3	219 42.7 N 2 02.3	39 27.7 S 2 43.0	120 42.9 N22 43.1	0 27.4 S15 20.7	Canopus	263 56.3 S52 42.6	
01	243 44.7	234 42.5 03.3	54 30.5 43.0	135 44.9 43.1	15 30.1 20.6	Capella	280 34.0 N46 00.6	
02	258 47.2	249 42.3 04.4	69 33.2 43.0	150 46.9 43.0	30 32.7 20.6	Deneb	49 30.9 N45 19.8	
03	273 49.7	264 42.1 . . 05.4	84 36.0 . . 43.0	165 49.0 . . 43.0	45 35.4 . . 20.6	Denébola	182 32.9 N14 29.4	
04	288 52.1	279 41.9 06.5	99 38.8 42.9	180 51.0 42.9	60 38.0 20.5	Diphda	348 55.6 S17 54.5	
05	303 54.6	294 41.7 07.5	114 41.6 42.9	195 53.0 42.9	75 40.7 20.5			
06	318 57.0	309 41.5 N 2 08.6	129 44.4 S 2 42.9	210 55.0 N22 42.8	90 43.3 S15 20.4	Dubhe	193 50.8 N61 40.5	
07	333 59.5	324 41.3 09.6	144 47.1 42.9	225 57.0 42.8	105 46.0 20.4	Elnath	278 12.2 N28 37.0	
08	349 02.0	339 41.1 10.7	159 49.9 42.9	240 59.0 42.7	120 48.6 20.3	Eltanin	90 45.4 N51 29.2	
09	4 04.4	354 40.9 . . 11.7	174 52.7 . . 42.9	256 01.0 . . 42.7	135 51.3 . . 20.3	Enif	33 46.5 N 9 56.5	
10	19 06.9	9 40.7 12.8	189 55.4 42.8	271 03.1 42.6	150 53.9 20.2	Fomalhaut	15 23.5 S29 32.6	
11	34 09.4	24 40.4 13.8	204 58.2 42.8	286 05.1 42.6	165 56.6 20.2			
12	49 11.8	39 40.2 N 2 14.9	220 01.0 S 2 42.8	301 07.1 N22 42.5	180 59.2 S15 20.1	Gacrux	171 59.7 S57 11.9	
13	64 14.3	54 40.0 15.9	235 03.7 42.8	316 09.1 42.5	196 01.9 20.1	Gienah	175 51.4 S17 37.5	
14	79 16.8	69 39.8 17.0	250 06.5 42.8	331 11.1 42.4	211 04.5 20.0	Hadar	148 46.3 S60 26.6	
15	94 19.2	84 39.6 . . 18.0	265 09.3 . . 42.8	346 13.1 . . 42.4	226 07.2 . . 20.0	Hamal	328 00.4 N23 31.6	
16	109 21.7	99 39.4 19.1	280 12.0 42.8	1 15.1 42.3	241 09.8 19.9	Kaus Aust.	83 42.7 S34 22.4	
17	124 24.1	114 39.2 20.1	295 14.8 42.8	16 17.1 42.3	256 12.5 19.9			
18	139 26.6	129 39.0 N 2 21.2	310 17.5 S 2 42.8	31 19.2 N22 42.2	271 15.2 S15 19.8	Kochab	137 19.0 N74 05.9	
19	154 29.1	144 38.8 22.2	325 20.3 42.8	46 21.2 42.2	286 17.8 19.8	Markab	13 37.8 N15 16.9	
20	169 31.5	159 38.6 23.3	340 23.0 42.7	61 23.2 42.1	301 20.5 19.7	Menkar	314 14.7 N 4 08.6	
21	184 34.0	174 38.4 . . 24.3	355 25.8 . . 42.7	76 25.2 . . 42.1	316 23.1 . . 19.7	Menkent	148 06.4 S36 26.5	
22	199 36.5	189 38.2 25.4	10 28.5 42.7	91 27.2 42.0	331 25.8 19.6	Miaplacidus	221 39.5 S69 47.0	
23	214 38.9	204 38.0 26.4	25 31.3 42.7	106 29.2 42.0	346 28.4 19.6			
12 00	229 41.4	219 37.7 N 2 27.5	40 34.1 S 2 42.7	121 31.2 N22 41.9	1 31.1 S15 19.5	Mirfak	308 39.9 N49 54.5	
01	244 43.9	234 37.5 28.6	55 36.8 42.7	136 33.2 41.9	16 33.7 19.5	Nunki	75 57.3 S26 16.5	
02	259 46.3	249 37.3 29.6	70 39.5 42.7	151 35.2 41.8	31 36.4 19.4	Peacock	53 18.2 S56 40.9	
03	274 48.8	264 37.1 . . 30.7	85 42.3 . . 42.7	166 37.2 . . 41.8	46 39.0 . . 19.4	Póllux	243 27.2 N27 59.3	
04	289 51.3	279 36.9 31.7	100 45.0 42.7	181 39.3 41.7	61 41.7 19.3	Procyon	244 59.3 N 5 11.0	
05	304 53.7	294 36.7 32.8	115 47.8 42.7	196 41.3 41.7	76 44.3 19.3			
06	319 56.2	309 36.5 N 2 33.8	130 50.5 S 2 42.7	211 43.3 N22 41.6	91 47.0 S15 19.2	Rasalhague	96 05.6 N12 33.0	
07	334 58.6	324 36.3 34.9	145 53.3 42.7	226 45.3 41.6	106 49.6 19.2	Régulus	207 42.8 N11 53.7	
08	350 01.1	339 36.1 35.9	160 56.0 42.7	241 47.3 41.5	121 52.3 19.2	Rigel	281 11.8 S 8 11.4	
09	5 03.6	354 35.9 . . 37.0	175 58.7 . . 42.7	256 49.3 . . 41.5	136 54.9 . . 19.1	Rigel Kent.	139 50.1 S60 53.6	
10	20 06.0	9 35.6 38.0	191 01.5 42.7	271 51.3 41.4	151 57.6 19.1	Sabik	102 11.5 S15 44.4	
11	35 08.5	24 35.4 39.1	206 04.2 42.7	286 53.3 41.4	167 00.2 19.0			
12	50 11.0	39 35.2 N 2 40.1	221 07.0 S 2 42.7	301 55.3 N22 41.3	182 02.9 S15 19.0	Schedar	349 40.2 N56 36.7	
13	65 13.4	54 35.0 41.2	236 09.7 42.7	316 57.3 41.3	197 05.5 18.9	Shaula	96 20.7 S37 06.6	
14	80 15.9	69 34.8 42.2	251 12.4 42.7	331 59.4 41.2	212 08.2 18.9	Sirius	258 33.4 S16 44.5	
15	95 18.4	84 34.6 . . 43.3	266 15.1 . . 42.7	347 01.4 . . 41.2	227 10.8 . . 18.8	Spica	158 30.3 S11 14.3	
16	110 20.8	99 34.4 44.3	281 17.9 42.7	2 03.4 41.1	242 13.5 18.8	Suhail	222 52.0 S43 29.9	
17	125 23.3	114 34.2 45.4	296 20.6 42.7	17 05.4 41.1	257 16.2 18.7			
18	140 25.8	129 34.0 N 2 46.5	311 23.3 S 2 42.7	32 07.4 N22 41.0	272 18.8 S15 18.7	Vega	80 38.2 N38 47.8	
19	155 28.2	144 33.7 47.5	326 26.1 42.7	47 09.4 41.0	287 21.5 18.6	Zuben'ubi	137 04.4 S16 06.1	
20	170 30.7	159 33.5 48.6	341 28.8 42.7	62 11.4 40.9	302 24.1 18.6			
21	185 33.1	174 33.3 . . 49.6	356 31.5 . . 42.7	77 13.4 . . 40.9	317 26.8 . . 18.5			
22	200 35.6	189 33.1 50.7	11 34.2 42.7	92 15.4 40.8	332 29.4 18.5	Venus	351 00.5 h m 9 21	
23	215 38.1	204 32.9 51.7	26 36.9 42.7	107 17.4 40.8	347 32.1 18.4	Marte	170 45.4 21 18	
						Júpiter	252 00.7 15 55	
						Saturno	131 45.2 23 54	
Paso Mer.	h m 8 43.7	v -0.2 d 1.1	v 2.8 d 0.0	v 2.0 d 0.0	v 2.7 d 0.0			

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		10	11	12	13	
S Á B A D O	d h	° /	° /		° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	10 00	180 53.8	N17 32.5	57 12.3	14.3	N 0 37.3	10.0	55.3	68	////	////	01 24	15 00	16 36	18 35	20 33
	01	195 53.8		71 45.6	14.3	0 27.3	10.0	55.3	68	////	////	02 09	14 58	16 29	18 03	19 40
	02	210 53.8		86 18.9	14.2	0 17.3	10.1	55.3	66	////	00 27	02 39	14 56	16 22	17 51	19 23
	03	225 53.8	..	100 52.1	14.2	N 0 07.2	10.0	55.4	64	////	01 35	03 00	14 54	16 17	17 42	19 09
	04	240 53.9		115 25.3	14.2	S 0 02.8	10.1	55.4	62	////	02 08	03 18	14 53	16 12	17 34	18 57
	05	255 53.9		129 58.5	14.1	0 12.9	10.1	55.4	60	00 23	02 33	03 32	14 52	16 08	17 27	18 47
	06	270 53.9	N17 36.4	144 31.6	14.1	S 0 23.0	10.1	55.4	N 58	01 25	02 51	03 45	14 51	16 05	17 21	18 39
	07	285 53.9		159 04.7	14.1	0 33.1	10.0	55.5	56	01 56	03 07	03 55	14 50	16 02	17 16	18 31
	08	300 54.0		173 37.8	14.0	0 43.1	10.1	55.5	54	02 18	03 20	04 04	14 49	15 59	17 11	18 24
	09	315 54.0	..	188 10.8	14.1	0 53.2	10.1	55.5	52	02 36	03 32	04 13	14 48	15 56	17 07	18 18
	10	330 54.0		202 43.9	13.9	1 03.3	10.2	55.5	50	02 51	03 42	04 20	14 47	15 54	17 03	18 13
	11	345 54.0		217 16.8	14.0	1 13.5	10.1	55.6	45	03 20	04 02	04 36	14 46	15 49	16 54	18 01
	12	0 54.0	N17 40.4	231 49.8	13.9	S 1 23.6	10.1	55.6	N 40	03 41	04 19	04 49	14 44	15 45	16 47	17 51
	13	15 54.1		246 22.7	13.9	1 33.7	10.1	55.6	35	03 58	04 32	05 00	14 43	15 41	16 41	17 43
	14	30 54.1		260 55.6	13.8	1 43.8	10.1	55.7	30	04 12	04 43	05 09	14 42	15 38	16 36	17 36
	15	45 54.1	..	275 28.4	13.8	1 53.9	10.2	55.7	20	04 35	05 02	05 26	14 41	15 33	16 27	17 23
	16	60 54.1		290 01.2	13.8	2 04.1	10.1	55.7	N 10	04 52	05 18	05 40	14 39	15 28	16 19	17 13
	17	75 54.2		304 34.0	13.8	2 14.2	10.1	55.7	0	05 06	05 31	05 53	14 38	15 24	16 12	17 02
	18	90 54.2	N17 44.3	319 06.8	13.6	S 2 24.3	10.1	55.8	S 10	05 18	05 44	06 06	14 37	15 19	16 04	16 52
	19	105 54.2		333 39.4	13.7	2 34.4	10.2	55.8	20	05 30	05 56	06 20	14 35	15 15	15 56	16 42
	20	120 54.2		348 12.1	13.6	2 44.6	10.1	55.8	30	05 41	06 10	06 35	14 34	15 09	15 48	16 30
	21	135 54.2	..	2 44.7	13.6	2 54.7	10.1	55.8	35	05 47	06 17	06 44	14 33	15 06	15 43	16 23
	22	150 54.3		17 17.3	13.5	3 04.8	10.1	55.9	40	05 53	06 26	06 54	14 32	15 03	15 37	16 15
	23	165 54.3		31 49.8	13.5	3 14.9	10.2	55.9	45	05 59	06 35	07 06	14 31	14 59	15 30	16 05
D O M I N G O	11 00	180 54.3	N17 48.1	46 22.3	13.5	S 3 25.1	10.1	55.9	S 50	06 07	06 46	07 21	14 29	14 55	15 22	15 54
	01	195 54.3		60 54.8	13.4	3 35.2	10.1	56.0	52	06 10	06 51	07 28	14 29	14 52	15 19	15 49
	02	210 54.3		75 27.2	13.3	3 45.3	10.1	56.0	54	06 13	06 56	07 35	14 28	14 50	15 15	15 44
	03	225 54.4	..	89 59.5	13.3	3 55.4	10.1	56.0	56	06 16	07 02	07 44	14 27	14 48	15 11	15 37
	04	240 54.4		104 31.8	13.3	4 05.5	10.1	56.0	58	06 20	07 08	07 53	14 26	14 45	15 06	15 31
	05	255 54.4		119 04.1	13.2	4 15.6	10.0	56.1	S 60	06 24	07 16	08 04	14 25	14 42	15 00	15 23
	06	270 54.4	N17 52.0	133 36.3	13.2	S 4 25.6	10.1	56.1	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	07	285 54.4		148 08.5	13.1	4 35.7	10.1	56.1				Civil	Náut.	10	11	12	13
	08	300 54.5		162 40.6	13.1	4 45.8	10.0	56.2	N 72	h m	h m	h m	h m	h m	h m	h m
	09	315 54.5	..	177 12.7	13.0	4 55.8	10.1	56.2								
	10	330 54.5		191 44.7	13.0	5 05.9	10.0	56.2	N 70	22 36	////	////	02 17	02 10	02 03	01 54
	11	345 54.5		206 16.7	12.9	5 15.9	10.0	56.2	68	21 48	////	////	02 16	02 20	02 23	02 29
	12	0 54.5	N17 55.8	220 48.6	12.9	S 5 25.9	10.0	56.3	66	21 17	////	////	02 16	02 23	02 31	02 41
	13	15 54.5		235 20.5	12.8	5 35.9	10.0	56.3	64	20 55	22 23	////	02 16	02 26	02 38	02 52
	14	30 54.6	..	249 52.3	12.8	5 45.9	9.9	56.3	62	20 37	21 48	////	02 16	02 29	02 43	03 01
	15	45 54.6		264 24.1	12.7	5 55.8	10.0	56.4	60	20 22	21 23	////	02 16	02 32	02 48	03 08
	16	60 54.6		278 55.8	12.7	6 05.8	9.9	56.4	N 58	20 10	21 03	22 33	02 16	02 34	02 53	03 15
	17	75 54.6		293 27.5	12.6	6 15.7	9.9	56.4	56	19 59	20 47	22 00	02 16	02 36	02 57	03 21
	18	90 54.6	N17 59.7	307 59.1	12.6	S 6 25.6	9.9	56.5	54	19 49	20 34	21 37	02 16	02 37	03 00	03 27
	19	105 54.6	18 00.3	322 30.7	12.5	6 35.5	9.9	56.5	52	19 41	20 22	21 18	02 16	02 39	03 04	03 32
	20	120 54.6		337 02.2	12.4	6 45.4	9.9	56.5	50	19 33	20 12	21 03	02 16	02 40	03 07	03 36
	21	135 54.7	..	351 33.6	12.4	6 55.3	9.8	56.5	45	19 18	19 51	20 34	02 16	02 43	03 13	03 46
	22	150 54.7		6 05.0	12.3	7 05.1	9.8	56.6	N 40	19 14	19 35	20 12	02 15	02 46	03 18	03 54
	23	165 54.7		20 36.3	12.3	7 14.9	9.8	56.6									35	18 53	19 21	19 55	02 15	02 48	03 23	04 01
	L U N E S	12 00	180 54.7	N18 03.5	35 07.6	12.2	S 7 24.7	9.7	56.6	30	18 44	19 10	19 41	02 15	02 50	03 27	04 07
01		195 54.7		49 38.8	12.2	7 34.4	9.8	56.7	20	18 27	18 51	19 19	02 15	02 54	03 34	04 17
02		210 54.7		64 10.0	12.1	7 44.2	9.7	56.7	N 10	18 13	18 35	19 01	02 15	02 57	03 40	04 27
03		225 54.7	..	78 41.1	12.0	7 53.9	9.6	56.7	0	18 00	18 22	18 47	02 15	03 00	03 46	04 36
04		240 54.8		93 12.1	12.0	8 03.5	9.7	56.8	S 10	17 47	18 09	18 34	02 15	03 02	03 52	04 44
05		255 54.8		107 43.1	11.9	8 13.2	9.6	56.8	20	17 33	17 56	18 23	02 14	03 05	03 58	04 54
06		270 54.8	N18 07.3	122 14.0	11.8	S 8 22.8	9.6	56.8	30	17 17	17 42	18 11	02 14	03 09	04 06	05 04
07		285 54.8		136 44.8	11.8	8 32.4	9.6	56.8	35	17 08	17 35	18 05	02 14	03 11	04 10	05 11
08		300 54.8		151 15.6	11.7	8 42.0	9.5	56.9	40	16 58	17 27	17 59	02 14	03 13	04 14	05 18
09		315 54.8	..	165 46.3	11.7	8 51.5	9.5	56.9	45	16 46	17 17	17 53	02 14	03 16	04 20	05 26
10		330 54.8		180 17.0	11.6	9 01.0	9.4	56.9	S 50	16 31	17 06	17 46	02 13	03 19	04 26	05 40
11		345 54.8		194 47.6	11.5	9 10.4	9.4	57.0	52	16 24	17 02	17 42	02 13	03 20	04 30	05 36
12		0 54.8	N18 11.0	209 18.1	11.4	S 9 19.8	9.4	57.0	54	16 17	16 56	17 39	02 13	03 22	04 33	05 46
13		15 54.9		223 48.5	11.4	9 29.2	9.4	57.0	56	16 08	16 50	17 36	02 13	03 24	04 37	05 51
14		30 54.9	..	238 18.9	11.4	9 38.6	9.3	57.1	58	15 59	16 44	17 32	02 13	03 26	04 41	05 58
15		45 54.9		252 49.3	11.2	9 47.9	9.3	57.1	S 60	15 48	16 36	17 28	02 13	03 28	04 45	06 05
16		60 54.9		267 19.5	11.2	9 57.2	9.2	57.1	Día	SOL		Paso Mer.	LUNA			
17		75 54.9		281 49.7	11.2	10 06.4	9.2	57.2		Ec. Tiempo			Paso Mer. Sup.	Mer. Inf.	Edad	Fase
18		90 54.9	N18 14.8	296 19.9	11.0	S10 15.6	9.1	57.2	d	m s	m s	h m	h m	h m	d	%
19		105 54.9		310 49.9	11.0	10 24.7	9.1	57.2	10	03 35	03 36	11 56	20 49	08 26	11 80	
20		120 54.9		325 19.9	10.9	10 33.8	9.1	57.2	11	03 37	03 38	11 56	21 35	09 12	12 88	
21		135 54.9	..	339 49.8	10.9	10 42.9	9.0	57.3	12	03 39	03 39	11 56	22 23	09 59	13 94	
22		150 54.9		354 19.7	10.8	10 51.9	8.9	57.3								
23		165 55.0		8 49.5	10.7	S11 00.8	8.9	57.3								
			S/D 15.9	<i>d</i> 0.6	S/D	15.1	15.3	15.5								

UT (HmGr)	ARIES	VENUS -4.1	MARTE -0.9	JÚPITER -1.9	SATURNO +0.1	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
13 00	230 40.5	219 32.7 N 2 52.8	41 39.7 S 2 42.7	122 19.4 N22 40.7	2 34.7 S15 18.4	Acamar	315 18.3 S40 15.0	
01	245 43.0	234 32.5 53.8	56 42.4 42.7	137 21.4 40.7	17 37.4 18.3	Achernar	335 26.9 S57 09.8	
02	260 45.5	249 32.3 54.9	71 45.1 42.8	152 23.4 40.6	32 40.0 18.3	Acrux	173 08.0 S63 11.0	
03	275 47.9	264 32.0 . . 55.9	86 47.8 . . 42.8	167 25.4 . . 40.6	47 42.7 . . 18.2	Adhara	255 12.3 S28 59.9	
04	290 50.4	279 31.8 57.0	101 50.5 42.8	182 27.5 40.5	62 45.3 18.2	Aldebarán	290 49.0 N16 32.1	
05	305 52.9	294 31.6 58.0	116 53.2 42.8	197 29.5 40.5	77 48.0 18.1			
06	320 55.3	309 31.4 N 2 59.1	131 56.0 S 2 42.8	212 31.5 N22 40.4	92 50.6 S15 18.1	Alioth	166 19.8 N55 53.0	
07	335 57.8	324 31.2 3 00.1	146 58.7 42.8	227 33.5 40.4	107 53.3 18.0	Alkaid	152 58.0 N49 14.6	
08	351 00.2	339 31.0 01.2	162 01.4 42.8	242 35.5 40.3	122 55.9 18.0	Al Na'ir	27 43.1 S46 53.2	
09	6 02.7	354 30.8 . . 02.3	177 04.1 . . 42.8	257 37.5 . . 40.3	137 58.6 . . 18.0	Alnilam	275 46.0 S 1 11.8	
10	21 05.2	9 30.5 03.3	192 06.8 42.8	272 39.5 40.2	153 01.2 17.9	Alphard	217 55.5 S 8 43.5	
11	36 07.6	24 30.3 04.4	207 09.5 42.8	287 41.5 40.2	168 03.9 17.9			
12	51 10.1	39 30.1 N 3 05.4	222 12.2 S 2 42.9	302 43.5 N22 40.1	183 06.5 S15 17.8	Alphecca	126 10.1 N26 40.0	
13	66 12.6	54 29.9 06.5	237 14.9 42.9	317 45.5 40.1	198 09.2 17.8	Alpheratz	357 43.0 N29 10.0	
14	81 15.0	69 29.7 07.5	252 17.6 42.9	332 47.5 40.0	213 11.8 17.7	Altair	62 07.5 N 8 54.4	
15	96 17.5	84 29.5 . . 08.6	267 20.3 . . 42.9	347 49.5 . . 40.0	228 14.5 . . 17.7	Ankaa	353 15.4 S42 13.5	
16	111 20.0	99 29.3 09.6	282 23.0 42.9	2 51.5 39.9	243 17.2 17.6	Antares	112 25.1 S26 27.7	
17	126 22.4	114 29.0 10.7	297 25.7 42.9	17 53.5 39.9	258 19.8 17.6			
18	141 24.9	129 28.8 N 3 11.7	312 28.4 S 2 42.9	32 55.5 N22 39.8	273 22.5 S15 17.5	Arcturus	145 54.9 N19 06.5	
19	156 27.4	144 28.6 12.8	327 31.1 43.0	47 57.5 39.8	288 25.1 17.5	Atria	107 25.8 S69 02.9	
20	171 29.8	159 28.4 13.9	342 33.8 43.0	62 59.5 39.7	303 27.8 17.4	Avior	234 17.9 S59 33.8	
21	186 32.3	174 28.2 . . 14.9	357 36.5 . . 43.0	78 01.5 . . 39.7	318 30.4 . . 17.4	Bellatrix	278 31.7 N 6 21.5	
22	201 34.7	189 28.0 16.0	12 39.2 43.0	93 03.5 39.6	333 33.1 17.3	Betelgeuse	271 00.9 N 7 24.3	
23	216 37.2	204 27.7 17.0	27 41.8 43.0	108 05.5 39.6	348 35.7 17.3			
14 00	231 39.7	219 27.5 N 3 18.1	42 44.5 S 2 43.1	123 07.5 N22 39.5	3 38.4 S15 17.2	Canopus	263 56.3 S52 42.6	
01	246 42.1	234 27.3 19.1	57 47.2 43.1	138 09.5 39.5	18 41.0 17.2	Capella	280 34.0 N46 00.6	
02	261 44.6	249 27.1 20.2	72 49.9 43.1	153 11.5 39.4	33 43.7 17.1	Deneb	49 30.9 N45 19.8	
03	276 47.1	264 26.9 . . 21.2	87 52.6 . . 43.1	168 13.5 . . 39.3	48 46.3 . . 17.1	Denébola	182 32.9 N14 29.4	
04	291 49.5	279 26.7 22.3	102 55.3 43.1	183 15.6 39.3	63 49.0 17.0	Diphda	348 55.5 S17 54.5	
05	306 52.0	294 26.4 23.3	117 58.0 43.2	198 17.6 39.2	78 51.6 17.0			
06	321 54.5	309 26.2 N 3 24.4	133 00.6 S 2 43.2	213 19.6 N22 39.2	93 54.3 S15 16.9	Dubhe	193 50.8 N61 40.6	
07	336 56.9	324 26.0 25.5	148 03.3 43.2	228 21.6 39.1	108 56.9 16.9	Elnath	278 12.2 N28 37.0	
08	351 59.4	339 25.8 26.5	163 06.0 43.2	243 23.6 39.1	123 59.6 16.9	Eltanin	90 45.4 N51 29.2	
09	7 01.9	354 25.6 . . 27.6	178 08.7 . . 43.2	258 25.6 . . 39.0	139 02.2 . . 16.8	Enif	33 46.5 N 9 56.5	
10	22 04.3	9 25.3 28.6	193 11.3 43.3	273 27.6 39.0	154 04.9 16.8	Fomalhaut	15 23.5 S29 32.6	
11	37 06.8	24 25.1 29.7	208 14.0 43.3	288 29.6 38.9	169 07.5 16.7			
12	52 09.2	39 24.9 N 3 30.7	223 16.7 S 2 43.3	303 31.6 N22 38.9	184 10.2 S15 16.7	Gacrux	171 59.7 S57 11.9	
13	67 11.7	54 24.7 31.8	238 19.4 43.3	318 33.6 38.8	199 12.8 16.6	Gienah	175 51.4 S17 37.5	
14	82 14.2	69 24.5 32.8	253 22.0 43.4	333 35.6 38.8	214 15.5 16.6	Hadar	148 46.3 S60 26.6	
15	97 16.6	84 24.2 . . 33.9	268 24.7 . . 43.4	348 37.6 . . 38.7	229 18.1 . . 16.5	Hamal	328 00.4 N23 31.6	
16	112 19.1	99 24.0 34.9	283 27.4 43.4	3 39.6 38.7	244 20.8 16.5	Kaus Aust.	83 42.7 S34 22.4	
17	127 21.6	114 23.8 36.0	298 30.0 43.5	18 41.6 38.6	259 23.4 16.4			
18	142 24.0	129 23.6 N 3 37.1	313 32.7 S 2 43.5	33 43.6 N22 38.6	274 26.1 S15 16.4	Kochab	137 19.0 N74 05.9	
19	157 26.5	144 23.4 38.1	328 35.4 43.5	48 45.6 38.5	289 28.7 16.3	Markab	13 37.8 N15 16.9	
20	172 29.0	159 23.1 39.2	343 38.0 43.5	63 47.6 38.5	304 31.4 16.3	Menkar	314 14.7 N 4 08.6	
21	187 31.4	174 22.9 . . 40.2	358 40.7 . . 43.6	78 49.6 . . 38.4	319 34.1 . . 16.2	Menkent	148 06.4 S36 26.5	
22	202 33.9	189 22.7 41.3	13 43.3 43.6	93 51.6 38.4	334 36.7 16.2	Miaplacidus	221 39.5 S69 47.0	
23	217 36.3	204 22.5 42.3	28 46.0 43.6	108 53.6 38.3	349 39.4 16.1			
15 00	232 38.8	219 22.3 N 3 43.4	43 48.7 S 2 43.7	123 55.6 N22 38.2	4 42.0 S15 16.1	Mirfak	308 39.9 N49 54.5	
01	247 41.3	234 22.0 44.4	58 51.3 43.7	138 57.6 38.2	19 44.7 16.0	Nunki	75 57.3 S26 16.5	
02	262 43.7	249 21.8 45.5	73 54.0 43.7	153 59.6 38.1	34 47.3 16.0	Peacock	53 18.2 S56 40.9	
03	277 46.2	264 21.6 . . 46.5	88 56.6 . . 43.8	169 01.6 . . 38.1	49 50.0 . . 15.9	Póllux	243 27.2 N27 59.3	
04	292 48.7	279 21.4 47.6	103 59.3 43.8	184 03.6 38.0	64 52.6 15.9	Procyon	244 59.3 N 5 11.0	
05	307 51.1	294 21.1 48.7	119 01.9 43.8	199 05.6 38.0	79 55.3 15.9			
06	322 53.6	309 20.9 N 3 49.7	134 04.6 S 2 43.9	214 07.6 N22 37.9	94 57.9 S15 15.8	Rasalhague	96 05.6 N12 33.1	
07	337 56.1	324 20.7 50.8	149 07.2 43.9	229 09.5 37.9	110 00.6 15.8	Régulus	207 42.8 N11 53.7	
08	352 58.5	339 20.5 51.8	164 09.9 43.9	244 11.5 37.8	125 03.2 15.7	Rigel	281 11.8 S 8 11.4	
09	8 01.0	354 20.3 . . 52.9	179 12.5 . . 44.0	259 13.5 . . 37.8	140 05.9 . . 15.7	Rigel Kent.	139 50.1 S60 53.7	
10	23 03.5	9 20.0 53.9	194 15.2 44.0	274 15.5 37.7	155 08.5 15.6	Sabik	102 11.5 S15 44.4	
11	38 05.9	24 19.8 55.0	209 17.8 44.0	289 17.5 37.7	170 11.2 15.6			
12	53 08.4	39 19.6 N 3 56.0	224 20.4 S 2 44.1	304 19.5 N22 37.6	185 13.8 S15 15.5	Schedar	349 40.1 N56 36.7	
13	68 10.8	54 19.4 57.1	239 23.1 44.1	319 21.5 37.6	200 16.5 15.5	Shaula	96 20.7 S37 06.6	
14	83 13.3	69 19.1 58.2	254 25.7 44.1	334 23.5 37.5	215 19.1 15.4	Sirius	258 33.4 S16 44.5	
15	98 15.8	84 18.9 3 59.2	269 28.4 . . 44.2	349 25.5 . . 37.4	230 21.8 . . 15.4	Spica	158 30.3 S11 14.3	
16	113 18.2	99 18.7 4 00.3	284 31.0 44.2	4 27.5 37.4	245 24.4 15.3	Suhail	222 52.0 S43 29.9	
17	128 20.7	114 18.5 01.3	299 33.6 44.3	19 29.5 37.3	260 27.1 15.3			
18	143 23.2	129 18.2 N 4 02.4	314 36.3 S 2 44.3	34 31.5 N22 37.3	275 29.7 S15 15.2	Vega	80 38.2 N38 47.8	
19	158 25.6	144 18.0 03.4	329 38.9 44.3	49 33.5 37.2	290 32.4 15.2	Zuben'ubi	137 04.4 S16 06.1	
20	173 28.1	159 17.8 04.5	344 41.5 44.4	64 35.5 37.2	305 35.0 15.1			
21	188 30.6	174 17.6 . . 05.5	359 44.2 . . 44.4	79 37.5 . . 37.1	320 37.7 . . 15.1			
22	203 33.0	189 17.3 06.6	14 46.8 44.5	94 39.5 37.1	335 40.3 15.0	Venus	347 47.8 9 22	
23	218 35.5	204 17.1 07.6	29 49.4 44.5	109 41.5 37.0	350 43.0 15.0	Marte	171 04.9 21 05	
						Júpiter	251 27.9 15 45	
						Saturno	131 58.7 23 41	
Paso Mer.	h m						AHS	Paso Mer.
	8 32.0	v -0.2 d 1.1	v 2.7 d 0.0	v 2.0 d 0.1	v 2.7 d 0.0		° /	h m

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	13	14	15	16	
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m	
13	00	180 55.0	N18 18.5	23 19.2	10.6	S11 09.7	8.9	57.4	N 72				20 33	22 48		
	01	195 55.0		37 48.8	10.6	11 18.6	8.8	57.4	N 70	////	////	00 55	20 02	21 52	23 37	24 52
	02	210 55.0		52 18.4	10.5	11 27.4	8.8	57.4	68	////	////	01 53	19 40	21 18	22 48	23 57
	03	225 55.0	20.4	66 47.9	10.4	11 36.2	8.7	57.5	66	////	////	02 27	19 23	20 54	22 17	23 24
	04	240 55.0	21.0	81 17.3	10.4	11 44.9	8.6	57.5	64	////	01 16	02 51	19 09	20 35	21 54	23 00
	05	255 55.0	21.6	95 46.7	10.3	11 53.5	8.6	57.5	62	////	01 56	03 10	18 57	20 19	21 36	22 41
	06	270 55.0	N18 22.2	110 16.0	10.2	S12 02.1	8.6	57.6	60	////	02 23	03 25	18 47	20 07	21 21	22 25
	07	285 55.0	22.8	124 45.2	10.1	12 10.7	8.5	57.6	N 58	01 08	02 43	03 38	18 39	19 56	21 08	22 12
	08	300 55.0	23.5	139 14.3	10.1	12 19.2	8.4	57.6	56	01 45	03 00	03 49	18 31	19 46	20 57	22 00
	09	315 55.0	24.1	153 43.4	10.0	12 27.6	8.4	57.6	54	02 10	03 14	03 59	18 24	19 37	20 47	21 50
M A R T E S	10	330 55.0	24.7	168 12.4	9.9	12 36.0	8.3	57.7	52	02 29	03 26	04 08	18 18	19 30	20 38	21 41
	11	345 55.0	25.3	182 41.3	9.9	12 44.3	8.2	57.7	50	02 45	03 37	04 16	18 13	19 23	20 31	21 33
	12	0 55.0	N18 25.9	197 10.2	9.8	S12 52.5	8.2	57.7	45	03 15	03 58	04 32	18 01	19 08	20 14	21 16
	13	15 55.0	26.5	211 39.0	9.7	13 00.7	8.1	57.8	N 40	03 38	04 15	04 46	17 51	18 56	20 01	21 02
	14	30 55.0	27.1	226 07.7	9.6	13 08.8	8.1	57.8	35	03 55	04 29	04 57	17 43	18 46	19 49	20 50
	15	45 55.1	27.7	240 36.3	9.6	13 16.9	8.0	57.8	30	04 10	04 41	05 07	17 36	18 37	19 39	20 39
	16	60 55.1	28.4	255 04.9	9.5	13 24.9	7.9	57.8	20	04 33	05 01	05 24	17 23	18 22	19 22	20 22
	17	75 55.1	29.0	269 33.4	9.4	13 32.8	7.9	57.9	N 10	04 51	05 17	05 39	17 13	18 09	19 07	20 06
	18	90 55.1	N18 29.6	284 01.8	9.3	S13 40.7	7.7	57.9	0	05 06	05 31	05 53	17 02	17 56	18 53	19 52
	19	105 55.1	30.2	298 30.1	9.3	13 48.4	7.8	57.9	S 10	05 19	05 44	06 06	16 52	17 44	18 39	19 37
M I É R C O L E S	20	120 55.1	30.8	312 58.4	9.2	13 56.2	7.6	58.0	20	05 31	05 58	06 21	16 42	17 31	18 24	19 22
	21	135 55.1	31.4	327 26.6	9.1	14 03.8	7.6	58.0	30	05 43	06 12	06 37	16 30	17 16	18 07	19 04
	22	150 55.1	32.0	341 54.7	9.1	14 11.4	7.5	58.0	35	05 49	06 20	06 47	16 23	17 07	17 58	18 54
	23	165 55.1	32.6	356 22.8	9.0	14 18.9	7.4	58.1	40	05 55	06 28	06 57	16 15	16 57	17 46	18 42
	00	180 55.1	N18 33.2	10 50.8	8.9	S14 26.3	7.3	58.1	45	06 02	06 38	07 10	16 05	16 46	17 33	18 28
	01	195 55.1	33.8	25 18.7	8.8	14 33.6	7.3	58.1	S 50	06 10	06 50	07 25	15 54	16 32	17 17	18 11
	02	210 55.1	34.4	39 46.5	8.8	14 40.9	7.2	58.1	52	06 13	06 55	07 32	15 49	16 26	17 10	18 03
	03	225 55.1	35.1	54 14.3	8.7	14 48.1	7.1	58.2	54	06 17	07 00	07 40	15 44	16 19	17 02	17 55
	04	240 55.1	35.7	68 42.0	8.6	14 55.2	7.1	58.2	56	06 21	07 07	07 49	15 37	16 11	16 52	17 45
	05	255 55.1	36.3	83 09.6	8.5	15 02.3	6.9	58.2	58	06 25	07 14	07 59	15 31	16 02	16 42	17 33
M I É R C O L E S	06	270 55.1	N18 36.9	97 37.1	8.5	S15 09.2	6.9	58.2	S 60	06 30	07 22	08 11	15 23	15 51	16 30	17 20
	07	285 55.1	37.5	112 04.6	8.4	15 16.1	6.8	58.3	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	08	300 55.1	38.1	126 32.0	8.4	15 22.9	6.6	58.3			Civil	Náut.	13	14	15	16
	09	315 55.1	38.7	140 59.4	8.2	15 29.5	6.7	58.3								
	10	330 55.1	39.3	155 26.6	8.2	15 36.2	6.5	58.4	N 72	°	h m	h m	h m	h m	h m	h m
	11	345 55.1	39.9	169 53.8	8.1	15 42.7	6.4	58.4	N 70				01 54	01 43	01 21	
	12	0 55.1	N18 40.5	184 20.9	8.1	S15 49.1	6.4	58.4	N 78	23 10	////	////	02 14	02 14	02 18	02 33
	13	15 55.1	41.1	198 48.0	8.0	15 55.5	6.2	58.4	68	22 04	////	////	02 29	02 37	02 53	03 22
	14	30 55.1	41.7	213 15.0	7.9	16 01.7	6.2	58.5	66	21 29	////	////	02 41	02 56	03 18	03 53
	15	45 55.1	42.3	227 41.9	7.8	16 07.9	6.1	58.5	64	21 04	22 43	////	02 52	03 10	03 37	04 16
J U E V E S	16	60 55.1	42.9	242 08.7	7.8	16 14.0	5.9	58.5	62	20 45	22 00	////	03 01	03 23	03 53	04 35
	17	75 55.1	43.5	256 35.5	7.7	16 19.9	5.9	58.5	60	20 29	21 32	////	03 08	03 33	04 06	04 50
	18	90 55.1	N18 44.1	271 02.2	7.7	S16 25.8	5.8	58.6	N 58	20 16	21 11	22 50	03 15	03 43	04 18	05 03
	19	105 55.1	44.7	285 28.9	7.6	16 31.6	5.7	58.6	56	20 05	20 54	22 11	03 21	03 51	04 28	05 14
	20	120 55.1	45.3	299 55.5	7.5	16 37.3	5.6	58.6	54	19 55	20 40	21 45	03 27	03 58	04 36	05 24
	21	135 55.1	45.9	314 22.0	7.4	16 42.9	5.5	58.6	52	19 46	20 28	21 26	03 32	04 05	04 44	05 33
	22	150 55.1	46.5	328 48.4	7.4	16 48.4	5.4	58.7	50	19 38	20 17	21 09	03 36	04 10	04 52	05 41
	23	165 55.1	47.1	343 14.8	7.3	16 53.8	5.3	58.7	45	19 21	19 55	20 39	03 46	04 23	05 07	05 58
	00	180 55.1	N18 47.6	357 41.1	7.3	S16 59.1	5.2	58.7	N 40	19 07	19 38	20 16	03 54	04 34	05 19	06 12
	01	195 55.1	48.2	12 07.4	7.2	17 04.3	5.0	58.7	35	18 56	19 24	19 58	04 01	04 43	05 30	06 23
02	210 55.0	48.8	26 33.6	7.1	17 09.3	5.0	58.8	30	18 46	19 12	19 43	04 07	04 51	05 39	06 34	
03	225 55.0	49.4	40 59.7	7.1	17 14.3	4.9	58.8	20	18 28	18 52	19 20	04 17	05 04	05 56	06 51	
04	240 55.0	50.0	55 25.8	7.0	17 19.2	4.8	58.8	N 10	18 14	18 36	19 02	04 27	05 16	06 10	07 06	
05	255 55.0	50.6	69 51.8	7.0	17 24.0	4.6	58.8	0	18 00	18 22	18 47	04 36	05 28	06 23	07 21	
06	270 55.0	N18 51.2	84 17.8	6.9	S17 28.6	4.6	58.8	S 10	17 46	18 08	18 34	04 44	05 39	06 36	07 35	
07	285 55.0	51.8	98 43.7	6.8	17 33.2	4.5	58.9	20	17 32	17 55	18 22	04 54	05 51	06 51	07 50	
08	300 55.0	52.4	113 09.5	6.8	17 37.7	4.3	58.9	30	17 15	17 41	18 10	05 04	06 05	07 07	08 08	
09	315 55.0	53.0	127 35.3	6.7	17 42.0	4.2	58.9	35	17 06	17 33	18 03	05 11	06 13	07 16	08 18	
10	330 55.0	53.6	142 01.0	6.7	17 46.2	4.1	58.9	40	16 55	17 24	17 57	05 18	06 22	07 27	08 30	
11	345 55.0	54.1	156 26.7	6.6	17 50.3	4.1	59.0	45	16 42	17 14	17 50	05 26	06 33	07 40	08 44	
12	0 55.0	N18 54.7	170 52.3	6.6	S17 54.4	3.8	59.0	S 50	16 27	17 03	17 42	05 36	06 46	07 55	09 00	
13	15 55.0	55.3	185 17.9	6.5	17 58.2	3.8	59.0	52	16 20	16 57	17 39	05 40	06 52	08 02	09 08	
14	30 55.0	55.9	199 43.4	6.5	18 02.0	3.7	59.0	54	16 12	16 52	17 35	05 46	06 59	08 10	09 17	
15	45 55.0	56.5	214 08.9	6.4	18 05.7	3.5	59.0	56	16 03	16 45	17 31	05 51	07 06	08 19	09 27	
16	60 55.0	57.1	228 34.3	6.4	18 09.2	3.5	59.1	58	15 53	16 38	17 27	05 58	07 15	08 30	09 38	
17	75 55.0	57.7	242 59.7	6.3	18 12.7	3.3	59.1	S 60	15 41	16 30	17 22	06 05	07 25	08 42	09 51	
18	90 54.9	N18 58.2	257 25.0	6.3	S18 16.0	3.2	59.1	SOL		LUNA						
19	105 54.9	58.8	271 50.3	6.2	18 19.2	3.1	59.1	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
20	120 54.9	18 59.4	286 15.5	6.2	18 22.3	3.0	59.1		00h	12h		Sup.	Inf.			
21	135 54.9	19 00.0	300 40.7	6.1	18 25.3	2.8	59.2	d	m s	m s	h					

UT (HmGr)	ARIES	VENUS -4.0	MARTE -0.8	JÚPITER -1.9	SATURNO +0.1	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° ' "	° ' "	° ' "	° ' "	° ' "		° ' "	° ' "
16 00	233 38.0	219 16.9 N 4 08.7	44 52.1 S 2 44.6	124 43.5 N22 37.0	5 45.6 S15 15.0	Acamar	315 18.3 S40 14.9	
01	248 40.4	234 16.7 09.8	59 54.7 44.6	139 45.5 36.9	20 48.3 14.9	Achernar	335 26.9 S57 09.8	
02	263 42.9	249 16.4 10.8	74 57.3 44.6	154 47.5 36.9	35 50.9 14.9	Acrux	173 08.0 S63 11.0	
03	278 45.3	264 16.2 . . 11.9	89 59.9 . . 44.7	169 49.5 . . 36.8	50 53.6 . . 14.8	Adhara	255 12.3 S28 59.9	
04	293 47.8	279 16.0 12.9	105 02.5 44.7	184 51.5 36.7	65 56.2 14.8	Aldebarán	290 49.0 N16 32.1	
05	308 50.3	294 15.7 14.0	120 05.2 44.8	199 53.5 36.7	80 58.9 14.7			
06	323 52.7	309 15.5 N 4 15.0	135 07.8 S 2 44.8	214 55.5 N22 36.6	96 01.5 S15 14.7	Alioth	166 19.8 N55 53.1	
07	338 55.2	324 15.3 16.1	150 10.4 44.9	229 57.4 36.6	111 04.2 14.6	Alkaid	152 58.0 N49 14.6	
08	353 57.7	339 15.1 17.1	165 13.0 44.9	244 59.4 36.5	126 06.8 14.6	Al Na'ir	27 43.1 S46 53.2	
09	9 00.1	354 14.8 . . 18.2	180 15.6 . . 45.0	260 01.4 . . 36.5	141 09.5 . . 14.5	Alnilam	275 46.0 S 1 11.8	
10	24 02.6	9 14.6 19.3	195 18.2 45.0	275 03.4 36.4	156 12.1 14.5	Alphard	217 55.5 S 8 43.5	
11	39 05.1	24 14.4 20.3	210 20.9 45.1	290 05.4 36.4	171 14.8 14.4			
12	54 07.5	39 14.1 N 4 21.4	225 23.5 S 2 45.1	305 07.4 N22 36.3	186 17.4 S15 14.4	Alphecca	126 10.1 N26 40.1	
13	69 10.0	54 13.9 22.4	240 26.1 45.2	320 09.4 36.3	201 20.1 14.3	Alpheratz	357 43.0 N29 10.0	
14	84 12.5	69 13.7 23.5	255 28.7 45.2	335 11.4 36.2	216 22.7 14.3	Altair	62 07.5 N 8 54.5	
15	99 14.9	84 13.5 . . 24.5	270 31.3 . . 45.3	350 13.4 . . 36.1	231 25.4 . . 14.2	Ankaa	353 15.4 S42 13.5	
16	114 17.4	99 13.2 25.6	285 33.9 45.3	5 15.4 36.1	246 28.1 14.2	Antares	112 25.1 S26 27.7	
17	129 19.8	114 13.0 26.6	300 36.5 45.4	20 17.4 36.0	261 30.7 14.2			
18	144 22.3	129 12.8 N 4 27.7	315 39.1 S 2 45.4	35 19.4 N22 36.0	276 33.4 S15 14.1	Arcturus	145 54.9 N19 06.5	
19	159 24.8	144 12.5 28.7	330 41.7 45.5	50 21.4 35.9	291 36.0 14.1	Atria	107 25.8 S69 03.0	
20	174 27.2	159 12.3 29.8	345 44.3 45.5	65 23.4 35.9	306 38.7 14.0	Avior	234 17.9 S59 33.8	
21	189 29.7	174 12.1 . . 30.9	0 46.9 . . 45.6	80 25.3 . . 35.8	321 41.3 . . 14.0	Bellatrix	278 31.6 N 6 21.5	
22	204 32.2	189 11.8 31.9	15 49.5 45.6	95 27.3 35.8	336 44.0 13.9	Betelgeuse	271 00.9 N 7 24.3	
23	219 34.6	204 11.6 33.0	30 52.1 45.7	110 29.3 35.7	351 46.6 13.9			
17 00	234 37.1	219 11.4 N 4 34.0	45 54.7 S 2 45.7	125 31.3 N22 35.7	6 49.3 S15 13.8	Canopus	263 56.3 S52 42.6	
01	249 39.6	234 11.2 35.1	60 57.3 45.8	140 33.3 35.6	21 51.9 13.8	Capella	280 34.0 N46 00.6	
02	264 42.0	249 10.9 36.1	75 59.9 45.9	155 35.3 35.5	36 54.6 13.7	Deneb	49 30.9 N45 19.8	
03	279 44.5	264 10.7 . . 37.2	91 02.5 . . 45.9	170 37.3 . . 35.5	51 57.2 . . 13.7	Denébola	182 32.9 N14 29.4	
04	294 46.9	279 10.5 38.2	106 05.1 46.0	185 39.3 35.4	66 59.9 13.6	Diphda	348 55.5 S17 54.5	
05	309 49.4	294 10.2 39.3	121 07.7 46.0	200 41.3 35.4	82 02.5 13.6			
06	324 51.9	309 10.0 N 4 40.3	136 10.3 S 2 46.1	215 43.3 N22 35.3	97 05.2 S15 13.5	Dubhe	193 50.9 N61 40.6	
07	339 54.3	324 09.8 41.4	151 12.8 46.1	230 45.3 35.3	112 07.8 13.5	Elnath	278 12.2 N28 37.0	
08	354 56.8	339 09.5 42.5	166 15.4 46.2	245 47.2 35.2	127 10.5 13.4	Eltanin	90 45.4 N51 29.2	
09	9 59.3	354 09.3 . . 43.5	181 18.0 . . 46.3	260 49.2 . . 35.2	142 13.1 . . 13.4	Enif	33 46.5 N 9 56.5	
10	25 01.7	9 09.1 44.6	196 20.6 46.3	275 51.2 35.1	157 15.8 13.4	Fomalhaut	15 23.4 S29 32.6	
11	40 04.2	24 08.8 45.6	211 23.2 46.4	290 53.2 35.1	172 18.4 13.3			
12	55 06.7	39 08.6 N 4 46.7	226 25.8 S 2 46.4	305 55.2 N22 35.0	187 21.1 S15 13.3	Gacrux	171 59.7 S57 11.9	
13	70 09.1	54 08.4 47.7	241 28.3 46.5	320 57.2 34.9	202 23.7 13.2	Gienah	175 51.4 S17 37.5	
14	85 11.6	69 08.1 48.8	256 30.9 46.6	335 59.2 34.9	217 26.4 13.2	Hadar	148 46.3 S60 26.6	
15	100 14.1	84 07.9 . . 49.8	271 33.5 . . 46.6	351 01.2 . . 34.8	232 29.0 . . 13.1	Hamal	328 00.3 N23 31.6	
16	115 16.5	99 07.6 50.9	286 36.1 46.7	6 03.2 34.8	247 31.7 13.1	Kaus Aust.	83 42.7 S34 22.4	
17	130 19.0	114 07.4 51.9	301 38.7 46.8	21 05.2 34.7	262 34.3 13.0			
18	145 21.4	129 07.2 N 4 53.0	316 41.2 S 2 46.8	36 07.1 N22 34.7	277 37.0 S15 13.0	Kochab	137 19.1 N74 05.9	
19	160 23.9	144 06.9 54.0	331 43.8 46.9	51 09.1 34.6	292 39.6 12.9	Markab	13 37.8 N15 16.9	
20	175 26.4	159 06.7 55.1	346 46.4 47.0	66 11.1 34.5	307 42.3 12.9	Menkar	314 14.7 N 4 08.6	
21	190 28.8	174 06.5 . . 56.2	1 48.9 . . 47.0	81 13.1 . . 34.5	322 44.9 . . 12.8	Menkent	148 06.4 S36 26.5	
22	205 31.3	189 06.2 57.2	16 51.5 47.1	96 15.1 34.4	337 47.6 12.8	Miaplacidus	221 39.6 S69 47.1	
23	220 33.8	204 06.0 58.3	31 54.1 47.2	111 17.1 34.4	352 50.2 12.7			
18 00	235 36.2	219 05.8 N 4 59.3	46 56.6 S 2 47.2	126 19.1 N22 34.3	7 52.9 S15 12.7	Mirfak	308 39.9 N49 54.5	
01	250 38.7	234 05.5 5 00.4	61 59.2 47.3	141 21.1 34.3	22 55.5 12.7	Nunki	75 57.3 S26 16.5	
02	265 41.2	249 05.3 01.4	77 01.8 47.4	156 23.0 34.2	37 58.2 12.6	Peacock	53 18.1 S56 40.9	
03	280 43.6	264 05.0 . . 02.5	92 04.3 . . 47.4	171 25.0 . . 34.2	53 00.8 . . 12.6	Póllux	243 27.2 N27 59.3	
04	295 46.1	279 04.8 03.5	107 06.9 47.5	186 27.0 34.1	68 03.5 12.5	Procyon	244 59.3 N 5 11.0	
05	310 48.6	294 04.6 04.6	122 09.4 47.6	201 29.0 34.0	83 06.1 12.5			
06	325 51.0	309 04.3 N 5 05.6	137 12.0 S 2 47.6	216 31.0 N22 34.0	98 08.8 S15 12.4	Rasalhague	96 05.6 N12 33.1	
07	340 53.5	324 04.1 06.7	152 14.6 47.7	231 33.0 33.9	113 11.4 12.4	Régulus	207 42.9 N11 53.7	
08	355 55.9	339 03.9 07.7	167 17.1 47.8	246 35.0 33.9	128 14.1 12.3	Rigel	281 11.8 S 8 11.4	
09	10 58.4	354 03.6 . . 08.8	182 19.7 . . 47.8	261 36.9 . . 33.8	143 16.7 . . 12.3	Rigel Kent.	139 50.1 S60 53.7	
10	26 00.9	9 03.4 09.9	197 22.2 47.9	276 38.9 33.8	158 19.4 12.2	Sabik	102 11.5 S15 44.4	
11	41 03.3	24 03.1 10.9	212 24.8 48.0	291 40.9 33.7	173 22.0 12.2			
12	56 05.8	39 02.9 N 5 12.0	227 27.3 S 2 48.1	306 42.9 N22 33.7	188 24.7 S15 12.1	Schedar	349 40.1 N56 36.7	
13	71 08.3	54 02.7 13.0	242 29.9 48.1	321 44.9 33.6	203 27.3 12.1	Shaula	96 20.7 S37 06.6	
14	86 10.7	69 02.4 14.1	257 32.4 48.2	336 46.9 33.5	218 30.0 12.0	Sirius	258 33.4 S16 44.5	
15	101 13.2	84 02.2 . . 15.1	272 35.0 . . 48.3	351 48.9 . . 33.5	233 32.6 . . 12.0	Spica	158 30.3 S11 14.3	
16	116 15.7	99 01.9 16.2	287 37.5 48.4	6 50.8 33.4	248 35.3 12.0	Suhail	222 52.0 S43 29.9	
17	131 18.1	114 01.7 17.2	302 40.1 48.4	21 52.8 33.4	263 37.9 11.9			
18	146 20.6	129 01.5 N 5 18.3	317 42.6 S 2 48.5	36 54.8 N22 33.3	278 40.6 S15 11.9	Vega	80 38.2 N38 47.8	
19	161 23.1	144 01.2 19.3	332 45.1 48.6	51 56.8 33.3	293 43.2 11.8	Zuben'ubi	137 04.4 S16 06.1	
20	176 25.5	159 01.0 20.4	347 47.7 48.7	66 58.8 33.2	308 45.9 11.8			
21	191 28.0	174 00.7 . . 21.4	2 50.2 . . 48.7	82 00.8 . . 33.1	323 48.5 . . 11.7			
22	206 30.4	189 00.5 22.5	17 52.8 48.8	97 02.8 33.1	338 51.2 11.7			
23	221 32.9	204 00.3 23.5	32 55.3 48.9	112 04.7 33.0	353 53.8 11.6			
h m								
Paso Mer.	8 20.2	v -0.2 d 1.1	v 2.6 d 0.1	v 2.0 d 0.1	v 2.7 d 0.0			
						AHS	Paso Mer.	
						° ' "	h m	
						Venus	344 34.3 9 23	
						Marte	171 17.6 20 53	
						Júpiter	250 54.2 15 36	
						Saturno	132 12.2 23 29	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		16	17	18	19	
<i>d</i> <i>h</i>	°	°	°	°	°	°	°	h	m	h	m	h	m	h	m	
16	00	180 54.9 N19 01.7	343 56.0	6.0	S18 33.4	2.5	59.2	N 72								
	01	195 54.9 02.3	358 21.0	6.0	18 35.9	2.4	59.2	N 70				24 52	00 52	01 20	01 28	
	02	210 54.9 02.9	12 46.0	6.0	18 38.3	2.2	59.2	66	////	////	01 36	23 57	24 39	00 39	01 00	
	03	225 54.9 . 03.5	27 11.0	5.9	18 40.5	2.1	59.3	64	////	////	02 15	23 24	24 10	00 10	00 39	
	04	240 54.9 04.1	41 35.9	5.8	18 42.6	2.0	59.3	62	////	00 53	02 41	23 00	23 48	24 22	00 22	
	05	255 54.8 04.6	56 00.7	5.9	18 44.6	1.9	59.3	60	////	01 43	03 02	22 41	23 31	24 08	00 08	
	06	270 54.8 N19 05.2	70 25.6	5.8	S18 46.5	1.7	59.3	N 58	00 48	02 35	03 32	22 12	23 04	23 45	24 17	
	07	285 54.8 05.8	84 50.4	5.8	18 48.2	1.7	59.3	56	01 33	02 53	03 44	22 00	22 53	23 36	24 10	
	08	300 54.8 06.4	99 15.2	5.7	18 49.9	1.5	59.3	54	02 01	03 08	03 54	21 50	22 44	23 28	24 04	
	09	315 54.8 . 06.9	113 39.9	5.7	18 51.4	1.3	59.4	52	02 22	03 21	04 03	21 41	22 35	23 21	23 59	
	10	330 54.8 07.5	128 04.6	5.7	18 52.7	1.3	59.4	50	02 39	03 32	04 12	21 33	22 28	23 14	23 53	
	11	345 54.8 08.1	142 29.3	5.7	18 54.0	1.1	59.4	45	03 11	03 55	04 29	21 16	22 11	23 00	23 42	
	12	0 54.8 N19 08.7	156 54.0	5.7	S18 55.1	1.0	59.4	N 40	03 34	04 12	04 43	21 02	21 58	22 48	23 33	
	13	15 54.7 09.2	171 18.7	5.6	18 56.1	0.8	59.4	35	03 53	04 27	04 55	20 50	21 47	22 38	23 25	
	14	30 54.7 09.8	185 43.3	5.6	18 56.9	0.8	59.4	30	04 08	04 39	05 06	20 39	21 37	22 30	23 18	
	15	45 54.7 . 10.4	200 07.9	5.6	18 57.7	0.6	59.4	20	04 31	05 00	05 23	20 22	21 20	22 15	23 06	
	16	60 54.7 11.0	214 32.5	5.5	18 58.3	0.4	59.5	N 10	04 50	05 16	05 39	20 06	21 05	22 01	22 55	
	17	75 54.7 11.5	228 57.0	5.6	18 58.7	0.4	59.5	0	05 05	05 31	05 53	19 52	20 51	21 49	22 46	
	18	90 54.7 N19 12.1	243 21.6	5.5	S18 59.1	0.2	59.5	S 10	05 19	05 45	06 07	19 37	20 37	21 37	22 36	
	19	105 54.7 12.7	257 46.1	5.5	18 59.3	0.1	59.5	20	05 32	05 59	06 22	19 22	20 22	21 23	22 25	
	20	120 54.6 13.2	272 10.6	5.5	18 59.4	0.0	59.5	30	05 44	06 13	06 39	19 04	20 05	21 08	22 13	
	21	135 54.6 . 13.8	286 35.1	5.5	18 59.4	0.2	59.5	35	05 51	06 22	06 49	18 54	19 55	20 59	22 06	
	22	150 54.6 14.4	300 59.6	5.5	18 59.2	0.3	59.5	40	05 58	06 31	07 00	18 42	19 44	20 49	21 57	
	23	165 54.6 14.9	315 24.1	5.5	18 58.9	0.4	59.5	45	06 05	06 41	07 13	18 28	19 30	20 38	21 48	
	17	00	180 54.6 N19 15.5	329 48.6	5.5	S18 58.5	0.6	59.5	S 50	06 14	06 53	07 29	18 11	19 14	20 23	21 37
01		195 54.6 16.1	344 13.1	5.4	18 57.9	0.6	59.6	52	06 17	06 59	07 37	18 03	19 06	20 16	21 31	
02		210 54.6 16.6	358 37.5	5.5	18 57.3	0.8	59.6	54	06 21	07 05	07 45	17 55	18 58	20 09	21 25	
03		225 54.5 . 17.2	13 02.0	5.4	18 56.5	1.0	59.6	56	06 25	07 11	07 54	17 45	18 48	20 01	21 19	
04		240 54.5 17.8	27 26.4	5.4	18 55.5	1.0	59.6	58	06 30	07 19	08 05	17 33	18 37	19 51	21 12	
05		255 54.5 18.3	41 50.9	5.4	18 54.5	1.2	59.6	S 60	06 35	07 27	08 17	17 20	18 25	19 40	21 03	
06		270 54.5 N19 18.9	56 15.3	5.5	S18 53.3	1.4	59.6	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
07		285 54.5 19.5	70 39.8	5.4	18 51.9	1.4	59.6			Civil	Náut.	16	17	18	19	
08		300 54.4 20.0	85 04.2	5.5	18 50.5	1.6	59.6									
09		315 54.4 . 20.6	99 28.7	5.5	18 48.9	1.7	59.6									
10		330 54.4 21.2	113 53.2	5.4	18 47.2	1.9	59.6									
11		345 54.4 21.7	128 17.6	5.5	18 45.3	1.9	59.6									
12		0 54.4 N19 22.3	142 42.1	5.5	S18 43.4	2.1	59.7	N 72								
13		15 54.4 22.8	157 06.6	5.5	18 41.3	2.2	59.7	N 70				02 33	03 21	04 56	06 49	
14		30 54.3 23.4	171 31.1	5.5	18 39.1	2.4	59.7	68	22 22	////	////	03 22	04 15	05 37	07 16	
15		45 54.3 . 24.0	185 55.6	5.5	18 36.7	2.5	59.7	66	21 41	////	////	03 53	04 48	06 05	07 37	
16		60 54.3 24.5	200 20.1	5.6	18 34.2	2.6	59.7	64	21 14	23 08	////	04 16	05 13	06 27	07 53	
17		75 54.3 25.1	214 44.7	5.5	18 31.6	2.7	59.7	62	20 53	22 13	////	04 35	05 32	06 44	08 07	
18		90 54.3 N19 25.6	229 09.2	5.6	S18 28.9	2.9	59.7	60	20 36	21 42	////	04 50	05 47	06 58	08 18	
19		105 54.2 26.2	243 33.8	5.6	18 26.0	2.9	59.7	N 58	20 22	21 19	23 13	05 03	06 01	07 10	08 28	
20		120 54.2 26.7	257 58.4	5.6	18 23.1	3.1	59.7	56	20 10	21 01	22 23	05 14	06 12	07 21	08 37	
21		135 54.2 . 27.3	272 23.0	5.6	18 20.0	3.3	59.7	54	20 00	20 46	21 54	05 24	06 22	07 30	08 44	
22		150 54.2 27.8	286 47.6	5.6	18 16.7	3.3	59.7	52	19 50	20 33	21 33	05 33	06 31	07 38	08 51	
23		165 54.2 28.4	301 12.2	5.7	18 13.4	3.5	59.7	50	19 42	20 22	21 16	05 41	06 39	07 46	08 57	
18		00	180 54.1 N19 29.0	315 36.9	5.7	S18 09.9	3.6	59.7	45	19 24	19 59	20 43	05 58	06 56	08 01	09 11
	01	195 54.1 29.5	330 01.6	5.7	18 06.3	3.7	59.7	N 40	19 10	19 41	20 19	06 12	07 10	08 14	09 21	
	02	210 54.1 30.1	344 26.3	5.8	18 02.6	3.9	59.7	35	18 58	19 26	20 01	06 23	07 22	08 25	09 31	
	03	225 54.1 . 30.6	358 51.1	5.7	17 58.7	3.9	59.7	30	18 48	19 14	19 46	06 34	07 32	08 35	09 39	
	04	240 54.0 31.2	13 15.8	5.8	17 54.8	4.1	59.7	20	18 30	18 53	19 22	06 51	07 50	08 51	09 53	
	05	255 54.0 31.7	27 40.6	5.9	17 50.7	4.2	59.7	N 10	18 14	18 37	19 03	07 06	08 05	09 05	10 05	
	06	270 54.0 N19 32.3	42 05.5	5.8	S17 46.5	4.4	59.7	0	18 00	18 22	18 47	07 21	08 20	09 19	10 16	
	07	285 54.0 32.8	56 30.3	5.9	17 42.1	4.4	59.7	S 10	17 46	18 08	18 34	07 35	08 34	09 32	10 27	
	08	300 54.0 33.4	70 55.2	6.0	17 37.7	4.6	59.7	20	17 31	17 54	18 21	07 50	08 49	09 46	10 39	
	09	315 53.9 . 33.9	85 20.2	5.9	17 33.1	4.6	59.7	30	17 14	17 39	18 08	08 08	09 07	10 02	10 53	
	10	330 53.9 34.5	99 45.1	6.0	17 28.5	4.8	59.7	35	17 04	17 31	18 01	08 18	09 17	10 12	11 01	
	11	345 53.9 35.0	114 10.1	6.0	17 23.7	4.9	59.7	40	16 52	17 22	17 55	08 30	09 29	10 22	11 10	
	12	0 53.9 N19 35.6	128 35.1	6.1	S17 18.8	5.1	59.7	45	16 39	17 11	17 47	08 44	09 42	10 35	11 20	
	13	15 53.8 36.1	143 00.2	6.1	17 13.7	5.1	59.7	S 50	16 23	16 59	17 39	09 00	09 59	10 50	11 32	
	14	30 53.8 36.6	157 25.3	6.1	17 08.6	5.3	59.7	52	16 16	16 53	17 35	09 08	10 07	10 57	11 38	
	15	45 53.8 . 37.2	171 50.4	6.2	17 03.3	5.3	59.7	54	16 07	16 47	17 31	09 17	10 15	11 04	11 45	
	16	60 53.8 37.7	186 15.6	6.2	16 58.0	5.5	59.7	56	15 58	16 41	17 27	09 27	10 25	11 13	11 52	
	17	75 53.7 38.3	200 40.8	6.3	16 52.5	5.6	59.7	58	15 47	16 33	17 22	09 38	10 36	11 23	11 59	
	18	90 53.7 N19 38.8	215 06.1	6.3	S16 46.9	5.7	59.7	S 60	15 35	16 25	17 17	09 51	10 49	11 34	12 08	
	19	105 53.7 39.4	229 31.4	6.3	16 41.2	5.8	59.7	SOL		LUNA						
	20	120 53.7 39.9	243 56.7	6.4	16 35.4	6.0	59.7	Día	Ec. Tiempo	Paso Mer.	Paso Mer.		Edad		Fase	
	21	135 53.6 . 40.5	258 22.1	6.5	16 29.4	6.0	59.7		00h	12h		Sup.	Inf.			
	22	150 53.6 41.0	272 47.6	6.4	16 23.4	6.1	59.7									
	23	165 53.6 41.5	287 13.0	6.5	S16 17.3	6.3	59.7									
		S/D 15.8	<i>d</i> 0.6	S/D 16.2	16.3	16.3		<i>d</i> 16	m s 03 40	m s 03 39	h m 11 56	h m 01 07	h m 13 36	d % 17 96		

UT (HmGr)	ARIES	VENUS -4.0	MARTE -0.7	JÚPITER -1.9	SATURNO +0.1	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
19 00	236 35.4	219 00.0 N 5 24.6	47 57.8 S 2 49.0	127 06.7 N22 33.0	8 56.5 S15 11.6	Acamar 315 18.3 S40 14.9
01	251 37.8	233 59.8 25.6	63 00.4 49.1	142 08.7 32.9	23 59.1 11.5	Achernar 335 26.9 S57 09.7
02	266 40.3	248 59.5 26.7	78 02.9 49.1	157 10.7 32.9	39 01.8 11.5	Acrux 173 08.0 S63 11.0
03	281 42.8	263 59.3 . . 27.7	93 05.4 . . 49.2	172 12.7 . . 32.8	54 04.4 . . 11.4	Adhara 255 12.3 S28 59.9
04	296 45.2	278 59.0 28.8	108 08.0 49.3	187 14.7 32.7	69 07.0 11.4	Aldebarán 290 49.0 N16 32.1
05	311 47.7	293 58.8 29.8	123 10.5 49.4	202 16.6 32.7	84 09.7 11.3	
06	326 50.2	308 58.5 N 5 30.9	138 13.0 S 2 49.5	217 18.6 N22 32.6	99 12.3 S15 11.3	Alioth 166 19.8 N55 53.1
07	341 52.6	323 58.3 32.0	153 15.6 49.5	232 20.6 32.6	114 15.0 11.3	Alkaid 152 58.1 N49 14.6
08	356 55.1	338 58.1 33.0	168 18.1 49.6	247 22.6 32.5	129 17.6 11.2	Al Na'ir 27 43.0 S46 53.1
09	11 57.6	353 57.8 . . 34.1	183 20.6 . . 49.7	262 24.6 . . 32.5	144 20.3 . . 11.2	Alnilam 275 46.0 S 1 11.8
10	27 00.0	8 57.6 35.1	198 23.1 49.8	277 26.6 32.4	159 22.9 11.1	Alphard 217 55.5 S 8 43.5
11	42 02.5	23 57.3 36.2	213 25.7 49.9	292 28.5 32.3	174 25.6 11.1	
12	57 04.9	38 57.1 N 5 37.2	228 28.2 S 2 50.0	307 30.5 N22 32.3	189 28.2 S15 11.0	Alphecca 126 10.1 N26 40.1
13	72 07.4	53 56.8 38.3	243 30.7 50.0	322 32.5 32.2	204 30.9 11.0	Alpheratz 357 43.0 N29 10.0
14	87 09.9	68 56.6 39.3	258 33.2 50.1	337 34.5 32.2	219 33.5 10.9	Altair 62 07.4 N 8 54.5
15	102 12.3	83 56.3 . . 40.4	273 35.7 . . 50.2	352 36.5 . . 32.1	234 36.2 . . 10.9	Ankaa 353 15.4 S42 13.5
16	117 14.8	98 56.1 41.4	288 38.2 50.3	7 38.4 32.1	249 38.8 10.8	Antares 112 25.1 S26 27.7
17	132 17.3	113 55.8 42.5	303 40.8 50.4	22 40.4 32.0	264 41.5 10.8	
18	147 19.7	128 55.6 N 5 43.5	318 43.3 S 2 50.5	37 42.4 N22 31.9	279 44.1 S15 10.7	Arcturus 145 54.9 N19 06.5
19	162 22.2	143 55.4 44.6	333 45.8 50.6	52 44.4 31.9	294 46.8 10.7	Atria 107 25.8 S69 03.0
20	177 24.7	158 55.1 45.6	348 48.3 50.7	67 46.4 31.8	309 49.4 10.7	Avior 234 18.0 S59 33.8
21	192 27.1	173 54.9 . . 46.7	3 50.8 . . 50.7	82 48.4 . . 31.8	324 52.1 . . 10.6	Bellatrix 278 31.6 N 6 21.5
22	207 29.6	188 54.6 47.7	18 53.3 50.8	97 50.3 31.7	339 54.7 10.6	Betelgeuse 271 00.9 N 7 24.3
23	222 32.0	203 54.4 48.8	33 55.8 50.9	112 52.3 31.7	354 57.4 10.5	
20 00	237 34.5	218 54.1 N 5 49.8	48 58.3 S 2 51.0	127 54.3 N22 31.6	10 00.0 S15 10.5	Canopus 263 56.3 S52 42.6
01	252 37.0	233 53.9 50.9	64 00.8 51.1	142 56.3 31.5	25 02.7 10.4	Capella 280 34.0 N46 00.6
02	267 39.4	248 53.6 51.9	79 03.3 51.2	157 58.3 31.5	40 05.3 10.4	Deneb 49 30.8 N45 19.8
03	282 41.9	263 53.4 . . 53.0	94 05.8 . . 51.3	173 00.2 . . 31.4	55 08.0 . . 10.3	Denébola 182 32.9 N14 29.5
04	297 44.4	278 53.1 54.0	109 08.3 51.4	188 02.2 31.4	70 10.6 10.3	Diphda 348 55.5 S17 54.4
05	312 46.8	293 52.9 55.1	124 10.8 51.5	203 04.2 31.3	85 13.3 10.2	
06	327 49.3	308 52.6 N 5 56.1	139 13.3 S 2 51.6	218 06.2 N22 31.2	100 15.9 S15 10.2	Dubhe 193 50.9 N61 40.6
07	342 51.8	323 52.4 57.2	154 15.8 51.7	233 08.2 31.2	115 18.6 10.1	Elnath 278 12.2 N28 37.0
08	357 54.2	338 52.1 58.2	169 18.3 51.8	248 10.1 31.1	130 21.2 10.1	Eltanin 90 45.4 N51 29.2
09	12 56.7	353 51.9 5 59.3	184 20.8 . . 51.9	263 12.1 . . 31.1	145 23.9 . . 10.1	Enif 33 46.5 N 9 56.5
10	27 59.2	8 51.6 6 00.3	199 23.3 52.0	278 14.1 31.0	160 26.5 10.0	Fomalhaut 15 23.4 S29 32.6
11	43 01.6	23 51.4 01.4	214 25.8 52.0	293 16.1 31.0	175 29.2 10.0	
12	58 04.1	38 51.1 N 6 02.4	229 28.3 S 2 52.1	308 18.1 N22 30.9	190 31.8 S15 09.9	Gacrux 171 59.7 S57 11.9
13	73 06.5	53 50.9 03.5	244 30.8 52.2	323 20.0 30.8	205 34.5 09.9	Gienah 175 51.4 S17 37.5
14	88 09.0	68 50.6 04.5	259 33.3 52.3	338 22.0 30.8	220 37.1 09.8	Hadar 148 46.3 S60 26.6
15	103 11.5	83 50.4 . . 05.6	274 35.8 . . 52.4	353 24.0 . . 30.7	235 39.7 . . 09.8	Hamal 328 00.3 N23 31.6
16	118 13.9	98 50.1 06.6	289 38.2 52.5	8 26.0 30.7	250 42.4 09.7	Kaus Aust. 83 42.7 S34 22.4
17	133 16.4	113 49.9 07.7	304 40.7 52.6	23 27.9 30.6	265 45.0 09.7	
18	148 18.9	128 49.6 N 6 08.7	319 43.2 S 2 52.7	38 29.9 N22 30.5	280 47.7 S15 09.6	Kochab 137 19.1 N74 05.9
19	163 21.3	143 49.3 09.8	334 45.7 52.8	53 31.9 30.5	295 50.3 09.6	Markab 13 37.8 N15 16.9
20	178 23.8	158 49.1 10.8	349 48.2 52.9	68 33.9 30.4	310 53.0 09.6	Menkar 314 14.7 N 4 08.6
21	193 26.3	173 48.8 . . 11.9	4 50.7 . . 53.0	83 35.9 . . 30.4	325 55.6 . . 09.5	Menkent 148 06.4 S36 26.5
22	208 28.7	188 48.6 12.9	19 53.1 53.1	98 37.8 30.3	340 58.3 09.5	Miaplacidus 221 39.6 S69 47.1
23	223 31.2	203 48.3 14.0	34 55.6 53.2	113 39.8 30.2	356 00.9 09.4	
21 00	238 33.7	218 48.1 N 6 15.0	49 58.1 S 2 53.3	128 41.8 N22 30.2	11 03.6 S15 09.4	Mirfak 308 39.9 N49 54.5
01	253 36.1	233 47.8 16.1	65 00.6 53.4	143 43.8 30.1	26 06.2 09.3	Nunki 75 57.3 S26 16.5
02	268 38.6	248 47.6 17.1	80 03.0 53.5	158 45.7 30.1	41 08.9 09.3	Peacock 53 18.1 S56 40.9
03	283 41.0	263 47.3 . . 18.1	95 05.5 . . 53.6	173 47.7 . . 30.0	56 11.5 . . 09.2	Póllux 243 27.2 N27 59.3
04	298 43.5	278 47.1 19.2	110 08.0 53.7	188 49.7 30.0	71 14.2 09.2	Procyon 244 59.3 N 5 11.0
05	313 46.0	293 46.8 20.2	125 10.5 53.9	203 51.7 29.9	86 16.8 09.1	
06	328 48.4	308 46.5 N 6 21.3	140 12.9 S 2 54.0	218 53.6 N22 29.8	101 19.5 S15 09.1	Rasalhague 96 05.6 N12 33.1
07	343 50.9	323 46.3 22.3	155 15.4 54.1	233 55.6 29.8	116 22.1 09.1	Régulus 207 42.9 N11 53.7
08	358 53.4	338 46.0 23.4	170 17.9 54.2	248 57.6 29.7	131 24.8 09.0	Rigel 281 11.8 S 8 11.4
09	13 55.8	353 45.8 . . 24.4	185 20.3 . . 54.3	263 59.6 . . 29.7	146 27.4 . . 09.0	Rigel Kent. 139 50.1 S60 53.7
10	28 58.3	8 45.5 25.5	200 22.8 54.4	279 01.5 29.6	161 30.1 08.9	Sabik 102 11.5 S15 44.4
11	44 00.8	23 45.3 26.5	215 25.2 54.5	294 03.5 29.5	176 32.7 08.9	
12	59 03.2	38 45.0 N 6 27.6	230 27.7 S 2 54.6	309 05.5 N22 29.5	191 35.3 S15 08.8	Schedar 349 40.1 N56 36.7
13	74 05.7	53 44.7 28.6	245 30.2 54.7	324 07.5 29.4	206 38.0 08.8	Shaula 96 20.7 S37 06.6
14	89 08.1	68 44.5 29.7	260 32.6 54.8	339 09.4 29.4	221 40.6 08.7	Sirius 258 33.4 S16 44.5
15	104 10.6	83 44.2 . . 30.7	275 35.1 . . 54.9	354 11.4 . . 29.3	236 43.3 . . 08.7	Spica 158 30.3 S11 14.3
16	119 13.1	98 44.0 31.8	290 37.5 55.0	9 13.4 29.2	251 45.9 08.6	Suhail 222 52.0 S43 29.9
17	134 15.5	113 43.7 32.8	305 40.0 55.1	24 15.4 29.2	266 48.6 08.6	
18	149 18.0	128 43.5 N 6 33.8	320 42.5 S 2 55.3	39 17.3 N22 29.1	281 51.2 S15 08.6	Vega 80 38.2 N38 47.8
19	164 20.5	143 43.2 34.9	335 44.9 55.4	54 19.3 29.1	296 53.9 08.5	Zuben'ubi 137 04.4 S16 06.1
20	179 22.9	158 42.9 35.9	350 47.4 55.5	69 21.3 29.0	311 56.5 08.5	
21	194 25.4	173 42.7 . . 37.0	5 49.8 . . 55.6	84 23.3 . . 28.9	326 59.2 . . 08.4	AHS Paso Mer.
22	209 27.9	188 42.4 38.0	20 52.3 55.7	99 25.2 28.9	342 01.8 08.4	Venus 341 19.6 h 9 25
23	224 30.3	203 42.2 39.1	35 54.7 55.8	114 27.2 28.8	357 04.5 08.3	Marte 171 23.8 h 20 41
						Júpiter 250 19.8 h 15 26
						Saturno 132 25.5 h 23 16
Paso Mer. 8 08.4	v -0.3 d 1.0		v 2.5 d 0.1	v 2.0 d 0.1	v 2.6 d 0.0	

UT (HmGr)	ARIES	VENUS -4.0	MARTE -0.7	JÚPITER -1.9	SATURNO +0.1	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
22 00	239 32.8	218 41.9 N 6 40.1	50 57.2 S 2 55.9	129 29.2 N22 28.8	12 07.1 S15 08.3	Acamar 315 18.3 S40 14.9
01	254 35.3	233 41.6 41.2	65 59.6 56.0	144 31.2 28.7	27 09.8 08.2	Achernar 335 26.9 S57 09.7
02	269 37.7	248 41.4 42.2	81 02.0 56.2	159 33.1 28.6	42 12.4 08.2	Acrux 173 08.0 S63 11.0
03	284 40.2	263 41.1 . . 43.3	96 04.5 . . 56.3	174 35.1 . . 28.6	57 15.1 . . 08.1	Adhara 255 12.3 S28 59.9
04	299 42.6	278 40.8 44.3	111 06.9 56.4	189 37.1 28.5	72 17.7 08.1	Aldebarán 290 49.0 N16 32.1
05	314 45.1	293 40.6 45.3	126 09.4 56.5	204 39.1 28.5	87 20.3 08.1	
06	329 47.6	308 40.3 N 6 46.4	141 11.8 S 2 56.6	219 41.0 N22 28.4	102 23.0 S15 08.0	Alioth 166 19.9 N55 53.1
07	344 50.0	323 40.1 47.4	156 14.2 56.7	234 43.0 28.3	117 25.6 08.0	Alkaid 152 58.1 N49 14.6
08	359 52.5	338 39.8 48.5	171 16.7 56.9	249 45.0 28.3	132 28.3 07.9	Al Na'ir 62 07.4 N 8 54.5
09	14 55.0	353 39.5 . . 49.5	186 19.1 . . 57.0	264 46.9 . . 28.2	147 30.9 . . 07.9	Alnilam 275 46.0 S 1 11.8
10	29 57.4	8 39.3 50.6	201 21.6 57.1	279 48.9 28.2	162 33.6 07.8	Alphard 217 55.5 S 8 43.5
11	44 59.9	23 39.0 51.6	216 24.0 57.2	294 50.9 28.1	177 36.2 07.8	
12	60 02.4	38 38.7 N 6 52.7	231 26.4 S 2 57.3	309 52.9 N22 28.0	192 38.9 S15 07.7	Alphecca 126 10.1 N26 40.1
13	75 04.8	53 38.5 53.7	246 28.8 57.4	324 54.8 28.0	207 41.5 07.7	Alpheratz 357 43.0 N29 10.0
14	90 07.3	68 38.2 54.7	261 31.3 57.6	339 56.8 27.9	222 44.2 07.6	Altair 27 43.0 S46 53.1
15	105 09.8	83 37.9 . . 55.8	276 33.7 . . 57.7	354 58.8 . . 27.9	237 46.8 . . 07.6	Ankaa 353 15.4 S42 13.5
16	120 12.2	98 37.7 56.8	291 36.1 57.8	10 00.7 27.8	252 49.5 07.6	Antares 112 25.1 S26 27.7
17	135 14.7	113 37.4 57.9	306 38.6 57.9	25 02.7 27.7	267 52.1 07.5	
18	150 17.1	128 37.1 N 6 58.9	321 41.0 S 2 58.0	40 04.7 N22 27.7	282 54.7 S15 07.5	Arcturus 145 54.9 N19 06.5
19	165 19.6	143 36.9 7 00.0	336 43.4 58.2	55 06.7 27.6	297 57.4 07.4	Atria 107 25.7 S69 03.0
20	180 22.1	158 36.6 01.0	351 45.8 58.3	70 08.6 27.6	313 00.0 07.4	Avior 234 18.0 S59 33.8
21	195 24.5	173 36.3 . . 02.0	6 48.2 . . 58.4	85 10.6 . . 27.5	328 02.7 . . 07.3	Bellatrix 278 31.6 N 6 21.5
22	210 27.0	188 36.1 03.1	21 50.7 58.5	100 12.6 27.4	343 05.3 07.3	Betelgeuse 271 00.9 N 7 24.3
23	225 29.5	203 35.8 04.1	36 53.1 58.7	115 14.5 27.4	358 08.0 07.2	
23 00	240 31.9	218 35.5 N 7 05.2	51 55.5 S 2 58.8	130 16.5 N22 27.3	13 10.6 S15 07.2	Canopus 263 56.3 S52 42.6
01	255 34.4	233 35.3 06.2	66 57.9 58.9	145 18.5 27.2	28 13.3 07.2	Capella 280 34.0 N46 00.6
02	270 36.9	248 35.0 07.3	82 00.3 59.0	160 20.4 27.2	43 15.9 07.1	Deneb 49 30.8 N45 19.8
03	285 39.3	263 34.7 . . 08.3	97 02.7 . . 59.2	175 22.4 . . 27.1	58 18.6 . . 07.1	Denébola 182 32.9 N14 29.5
04	300 41.8	278 34.5 09.3	112 05.2 59.3	190 24.4 27.1	73 21.2 07.0	Diphda 348 55.5 S17 54.4
05	315 44.2	293 34.2 10.4	127 07.6 59.4	205 26.4 27.0	88 23.8 07.0	
06	330 46.7	308 33.9 N 7 11.4	142 10.0 S 2 59.5	220 28.3 N22 26.9	103 26.5 S15 06.9	Dubhe 193 50.9 N61 40.6
07	345 49.2	323 33.7 12.5	157 12.4 59.7	235 30.3 26.9	118 29.1 06.9	Elnath 278 12.2 N28 37.0
08	0 51.6	338 33.4 13.5	172 14.8 59.8	250 32.3 26.8	133 31.8 06.8	Eltanin 90 45.4 N51 29.3
09	15 54.1	353 33.1 . . 14.5	187 17.2 2 59.9	265 34.2 . . 26.8	148 34.4 . . 06.8	Enif 33 46.4 N 9 56.5
10	30 56.6	8 32.9 15.6	202 19.6 3 00.1	280 36.2 26.7	163 37.1 06.8	Fomalhaut 15 23.4 S29 32.6
11	45 59.0	23 32.6 16.6	217 22.0 00.2	295 38.2 26.6	178 39.7 06.7	
12	61 01.5	38 32.3 N 7 17.7	232 24.4 S 3 00.3	310 40.1 N22 26.6	193 42.4 S15 06.7	Gacrux 171 59.7 S57 11.9
13	76 04.0	53 32.0 18.7	247 26.8 00.5	325 42.1 26.5	208 45.0 06.6	Gienah 175 51.4 S17 37.5
14	91 06.4	68 31.8 19.7	262 29.2 00.6	340 44.1 26.5	223 47.7 06.6	Hadar 148 46.3 S60 26.7
15	106 08.9	83 31.5 . . 20.8	277 31.6 . . 00.7	355 46.0 . . 26.4	238 50.3 . . 06.5	Hamal 328 00.3 N23 31.6
16	121 11.4	98 31.2 21.8	292 34.0 00.8	10 48.0 26.3	253 52.9 06.5	Kaus Aust. 83 42.6 S34 22.4
17	136 13.8	113 31.0 22.9	307 36.4 01.0	25 50.0 26.3	268 55.6 06.4	
18	151 16.3	128 30.7 N 7 23.9	322 38.8 S 3 01.1	40 51.9 N22 26.2	283 58.2 S15 06.4	Kochab 137 19.1 N74 06.0
19	166 18.7	143 30.4 24.9	337 41.2 01.2	55 53.9 26.1	299 00.9 06.3	Markab 13 37.8 N15 16.9
20	181 21.2	158 30.1 26.0	352 43.6 01.4	70 55.9 26.1	314 03.5 06.3	Menkar 314 14.7 N 4 08.6
21	196 23.7	173 29.9 . . 27.0	7 46.0 . . 01.5	85 57.8 . . 26.0	329 06.2 . . 06.3	Menkent 148 06.4 S36 26.5
22	211 26.1	188 29.6 28.1	22 48.4 01.7	100 59.8 26.0	344 08.8 06.2	Miaplacidus 221 39.7 S69 47.0
23	226 28.6	203 29.3 29.1	37 50.8 01.8	116 01.8 25.9	359 11.5 06.2	
24 00	241 31.1	218 29.0 N 7 30.1	52 53.2 S 3 01.9	131 03.7 N22 25.8	14 14.1 S15 06.1	Mirfak 308 39.9 N49 54.5
01	256 33.5	233 28.8 31.2	67 55.5 02.1	146 05.7 25.8	29 16.7 06.1	Nunki 75 57.3 S26 16.5
02	271 36.0	248 28.5 32.2	82 57.9 02.2	161 07.7 25.7	44 19.4 06.0	Peacock 53 18.0 S56 40.9
03	286 38.5	263 28.2 . . 33.2	98 00.3 . . 02.3	176 09.6 . . 25.6	59 22.0 . . 06.0	Póllux 243 27.2 N27 59.3
04	301 40.9	278 27.9 34.3	113 02.7 02.5	191 11.6 25.6	74 24.7 05.9	Procyon 244 59.3 N 5 11.0
05	316 43.4	293 27.7 35.3	128 05.1 02.6	206 13.6 25.5	89 27.3 05.9	
06	331 45.9	308 27.4 N 7 36.4	143 07.5 S 3 02.7	221 15.5 N22 25.5	104 30.0 S15 05.9	Rasalhague 96 05.5 N12 33.1
07	346 48.3	323 27.1 37.4	158 09.8 02.9	236 17.5 25.4	119 32.6 05.8	Régulus 207 42.9 N11 53.7
08	1 50.8	338 26.8 38.4	173 12.2 03.0	251 19.5 25.3	134 35.3 05.8	Rigel 281 11.8 S 8 11.4
09	16 53.2	353 26.6 . . 39.5	188 14.6 . . 03.2	266 21.4 . . 25.3	149 37.9 . . 05.7	Rigel Kent. 139 50.1 S60 53.7
10	31 55.7	8 26.3 40.5	203 17.0 03.3	281 23.4 25.2	164 40.5 05.7	Sabik 102 11.5 S15 44.4
11	46 58.2	23 26.0 41.5	218 19.4 03.4	296 25.4 25.1	179 43.2 05.6	
12	62 00.6	38 25.7 N 7 42.6	233 21.7 S 3 03.6	311 27.3 N22 25.1	194 45.8 S15 05.6	Schedar 349 40.0 N56 36.7
13	77 03.1	53 25.4 43.6	248 24.1 03.7	326 29.3 25.0	209 48.5 05.6	Shaula 96 20.7 S37 06.6
14	92 05.6	68 25.2 44.7	263 26.5 03.9	341 31.3 25.0	224 51.1 05.5	Sirius 258 33.4 S16 44.5
15	107 08.0	83 24.9 . . 45.7	278 28.8 . . 04.0	356 33.2 . . 24.9	239 53.8 . . 05.5	Spica 158 30.3 S11 14.3
16	122 10.5	98 24.6 46.7	293 31.2 04.2	11 35.2 24.8	254 56.4 05.4	Suhail 222 52.1 S43 29.9
17	137 13.0	113 24.3 47.8	308 33.6 04.3	26 37.2 24.8	269 59.0 05.4	
18	152 15.4	128 24.1 N 7 48.8	323 35.9 S 3 04.4	41 39.1 N22 24.7	285 01.7 S15 05.3	Vega 80 38.2 N38 47.8
19	167 17.9	143 23.8 49.8	338 38.3 04.6	56 41.1 24.6	300 04.3 05.3	Zuben'ubi 137 04.4 S16 06.1
20	182 20.3	158 23.5 50.9	353 40.7 04.7	71 43.1 24.6	315 07.0 05.2	
21	197 22.8	173 23.2 . . 51.9	8 43.0 . . 04.9	86 45.0 . . 24.5	330 09.6 . . 05.2	AHS Paso Mer.
22	212 25.3	188 22.9 52.9	23 45.4 05.0	101 47.0 24.5	345 12.3 05.2	Venus 338 03.6 9 26
23	227 27.7	203 22.7 54.0	38 47.8 05.2	116 48.9 24.4	0 14.9 05.1	Marte 171 23.6 20 29
						Júpiter 249 44.6 15 17
						Saturno 132 38.7 23 03
Paso Mer. 7 56.6	v -0.3 d 1.0		v 2.4 d 0.1	v 2.0 d 0.1	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	22	23	24	25		
d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m		
J U E V E S	22 00	180 50.9	N20 19.4	262 27.7	10.0	S	5 12.9	11.0	59.0	N 72				01 37	01 30	01 23	01 15
	01	195 50.9		276 56.7	10.1		5 01.9	11.0	59.0	N 70				01 30	01 29	01 28	01 27
	02	210 50.8	20.4	291 25.8	10.1		4 50.9	11.1	59.0	66	////	////	00 55	01 24	01 28	01 32	01 37
	03	225 50.8	20.9	305 54.9	10.1		4 39.8	11.1	58.9	64	////	////	01 50	01 19	01 28	01 36	01 44
	04	240 50.7	21.4	320 24.0	10.2		4 28.7	11.1	58.9	62	////		02 23	01 15	01 27	01 39	01 51
	05	255 50.7	21.9	334 53.2	10.2		4 17.6	11.1	58.9	60	////	01 15	02 47	01 12	01 27	01 41	01 57
	06	270 50.6	N20 22.4	349 22.4	10.3	S	4 06.5	11.1	58.9	N 58	////	02 20	03 05	01 09	01 26	01 44	02 02
	07	285 50.6	22.9	3 51.7	10.3		3 55.4	11.2	58.9	56	01 08	02 41	03 34	01 03	01 26	01 48	02 11
	08	300 50.5	23.3	18 21.0	10.3		3 44.2	11.1	58.9	54	01 44	02 57	03 45	01 01	01 26	01 50	02 19
	09	315 50.5	23.8	32 50.3	10.3		3 33.1	11.2	58.9	52	02 08	03 11	03 55	00 59	01 25	01 51	02 18
	10	330 50.5	24.3	47 19.6	10.4		3 21.9	11.2	58.8	50	02 27	03 23	04 04	00 57	01 25	01 53	02 21
	11	345 50.4	24.8	61 49.0	10.4		3 10.7	11.2	58.8	45	03 03	03 48	04 23	00 53	01 25	01 56	02 27
	12	0 50.4	N20 25.3	76 18.4	10.4	S	2 59.5	11.2	58.8	N 40	03 28	04 07	04 38	00 50	01 24	01 58	02 33
	13	15 50.3	25.8	90 47.8	10.4		2 48.3	11.2	58.8	35	03 48	04 23	04 51	00 47	01 24	02 01	02 38
	14	30 50.3	26.3	105 17.2	10.5		2 37.1	11.3	58.8	30	04 04	04 36	05 02	00 44	01 24	02 03	02 42
	15	45 50.2	26.8	119 46.7	10.5		2 25.8	11.2	58.8	20	04 29	04 58	05 21	00 40	01 23	02 06	02 49
	16	60 50.2	27.3	134 16.2	10.6		2 14.6	11.2	58.7	N 10	04 49	05 15	05 38	00 36	01 23	02 09	02 56
	17	75 50.1	27.7	148 45.8	10.5		2 03.4	11.3	58.7	0	05 05	05 31	05 53	00 32	01 22	02 12	03 02
	18	90 50.1	N20 28.2	163 15.3	10.6	S	1 52.1	11.2	58.7	S 10	05 20	05 46	06 08	00 28	01 22	02 15	03 08
	19	105 50.0	28.7	177 44.9	10.6		1 40.9	11.3	58.7	20	05 34	06 01	06 24	00 24	01 22	02 19	03 15
	20	120 50.0	29.2	192 14.5	10.6		1 29.6	11.3	58.7	30	05 48	06 17	06 43	00 20	01 21	02 22	03 22
	21	135 49.9	29.7	206 44.1	10.7		1 18.3	11.2	58.7	35	05 55	06 26	06 53	00 17	01 21	02 24	03 27
	22	150 49.9	30.2	221 13.8	10.7		1 07.1	11.3	58.6	40	06 02	06 36	07 05	00 14	01 21	02 27	03 32
23	165 49.8	30.7	235 43.5	10.7		0 55.8	11.2	58.6	45	06 11	06 47	07 20	00 11	01 21	02 30	03 38	
V I E R N E S	23 00	180 49.8	N20 31.1	250 13.2	10.7	S	0 44.6	11.3	58.6	S 50	06 20	07 00	07 37	00 06	01 20	02 33	03 45
	01	195 49.7	31.6	264 42.9	10.7		0 33.3	11.3	58.6	52	06 24	07 06	07 45	00 05	01 20	02 35	03 48
	02	210 49.7	32.1	279 12.6	10.8		0 22.0	11.2	58.6	54	06 29	07 13	07 54	00 02	01 20	02 37	03 52
	03	225 49.6	32.6	293 42.4	10.7	S	0 10.8	11.3	58.6	56	06 33	07 20	08 04	00 00	01 20	02 39	03 56
	04	240 49.6	33.1	308 12.1	10.8	N	0 00.5	11.2	58.5	58	06 39	07 29	08 16	25 20	01 20	02 41	04 00
	05	255 49.5	33.5	322 41.9	10.8		0 11.7	11.2	58.5	S 60	06 44	07 38	08 30	25 20	01 20	02 43	04 05
	06	270 49.5	N20 34.0	337 11.7	10.8	N	0 22.9	11.3	58.5								
	07	285 49.4	34.5	351 41.5	10.9		0 34.2	11.2	58.5	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	08	300 49.4	35.0	6 11.4	10.8		0 45.4	11.2	58.5			Civil	Náut.	22	23	24	25
	09	315 49.3	35.5	20 41.2	10.9		0 56.6	11.2	58.4								
	10	330 49.2	35.9	35 11.1	10.9		1 07.8	11.2	58.4	N 72				h m	h m	h m	h m
	11	345 49.2	36.4	49 41.0	10.9		1 19.0	11.1	58.4	N 70				12 17	14 09	16 00	17 52
	12	0 49.1	N20 36.9	64 10.9	10.9	N	1 30.1	11.2	58.4	N 70				12 21	14 07	15 51	17 34
	13	15 49.1	37.4	78 40.8	10.9		1 41.3	11.1	58.4	68	23 07	////	////	12 25	14 05	15 43	17 20
	14	30 49.0	37.8	93 10.7	10.9		1 52.4	11.2	58.4	66	22 07	////	////	12 28	14 03	15 36	17 08
	15	45 49.0	38.3	107 40.6	11.0		2 03.6	11.1	58.3	64	21 33	////	////	12 31	14 01	15 31	16 59
	16	60 48.9	38.8	122 10.6	10.9		2 14.7	11.1	58.3	62	21 09	22 43	////	12 33	14 00	15 26	16 50
	17	75 48.9	39.3	136 40.5	11.0		2 25.8	11.0	58.3	60	20 50	22 02	////	12 35	13 59	15 22	16 43
	18	90 48.8	N20 39.7	151 10.5	11.0	N	2 36.8	11.1	58.3	N 58	20 34	21 35	////	12 36	13 58	15 18	16 37
	19	105 48.8	40.2	165 40.5	10.9		2 47.9	11.0	58.3	56	20 21	21 14	22 50	12 38	13 57	15 15	16 32
	20	120 48.7	40.7	180 10.4	11.0		2 58.9	11.0	58.2	54	20 09	20 58	22 12	12 39	13 56	15 12	16 27
	21	135 48.6	41.1	194 40.4	11.0		3 09.9	11.0	58.2	52	19 59	20 43	21 47	12 41	13 56	15 10	16 22
	22	150 48.6	41.6	209 10.4	11.0		3 20.9	11.0	58.2	50	19 50	20 31	21 28	12 42	13 55	15 07	16 18
23	165 48.5	42.1	223 40.4	11.0		3 31.9	10.9	58.2	45	19 31	20 06	20 52	12 44	13 54	15 02	16 10	
S Á B A D O	24 00	180 48.5	N20 42.5	238 10.4	11.0	N	3 42.8	10.9	58.2	N 40	19 15	19 47	20 26	12 46	13 53	14 58	16 03
	01	195 48.4	43.0	252 40.4	11.0		3 53.7	10.9	58.2	35	19 03	19 31	20 06	12 48	13 51	14 54	15 56
	02	210 48.4	43.5	267 10.4	11.1		4 04.6	10.8	58.1	30	18 51	19 18	19 50	12 49	13 51	14 51	15 51
	03	225 48.3	43.9	281 40.5	11.0		4 15.4	10.9	58.1	20	18 32	18 56	19 25	12 52	13 49	14 45	15 42
	04	240 48.3	44.4	296 10.5	11.0		4 26.3	10.8	58.1	N 10	18 16	18 38	19 05	12 54	13 48	14 41	15 33
	05	255 48.2	44.9	310 40.5	11.0		4 37.1	10.7	58.1	0	18 00	18 22	18 48	12 56	13 46	14 36	15 26
	06	270 48.1	N20 45.3	325 10.5	11.1	N	4 47.8	10.8	58.1	S 10	17 45	18 08	18 33	12 58	13 45	14 31	15 18
	07	285 48.1	45.8	339 40.6	11.0		4 58.6	10.7	58.0	20	17 29	17 53	18 20	13 00	13 43	14 26	15 10
	08	300 48.0	46.3	354 10.6	11.0		5 09.3	10.6	58.0	30	17 11	17 36	18 06	13 03	13 42	14 21	15 01
	09	315 48.0	46.7	8 40.6	11.1		5 19.9	10.7	58.0	35	17 00	17 27	17 58	13 04	13 41	14 18	14 55
	10	330 47.9	47.2	23 10.7	11.0		5 30.6	10.6	58.0	40	16 48	17 17	17 51	13 06	13 40	14 14	14 49
	11	345 47.8	47.6	37 40.7	11.0		5 41.2	10.5	58.0	45	16 34	17 06	17 42	13 07	13 39	14 10	14 42
	12	0 47.8	N20 48.1	52 10.7	11.1	N	5 51.7	10.6	57.9	S 50	16 16	16 53	17 33	13 09	13 37	14 05	14 34
	13	15 47.7	48.6	66 40.8	11.0		6 02.3	10.4	57.9	52	16 08	16 47	17 29	13 10	13 36	14 02	14 30
	14	30 47.7	49.0	81 10.8	11.0		6 12.7	10.5	57.9	54	15 59	16 40	17 24	13 11	13 36	14 00	14 26
	15	45 47.6	49.5	95 40.8	11.0		6 23.2	10.4	57.9	56	15 49	16 33	17 20	13 13	13 35	13 57	14 21
	16	60 47.6	49.9	110 10.8	11.0		6 33.6	10.4	57.9	58	15 37	16 24	17 14	13 14	13 34	13 54	14 16
	17	75 47.5	50.4	124 40.8	11.1		6 44.0	10.3	57.9	S 60	15 23	16 15	17 09	13 15	13 33	13 51	14 10
	18	90 47.4	N20 50.9	139 10.9	11.0	N	6 54.3	10.3	57.8								
	19	105 47.4	51.3	153 40.9	11.0		7 04.6	10.2	57.8								
	20	120 47.3	51.8	168 10.9	11.0		7 14.8	10.2	57.8								
	21	135 47.2	52.2	182 40.9	11.0		7 25.0	10.2	57.8								
	22	150 47.2	52.7	197 10.9	11.0		7 35.2	10.1	57.8								
23	165 47.1	53.1	211 40.9	10.9	N	7 45.3	10.0	57.7									
	S/D 15.8	<i>d</i> 0.5	S/D 16.0	15.9	15.8												

UT (HmGr)	ARIES	VENUS -4.0	MARTE -0.6	JÚPITER -1.9	SATURNO +0.1	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
DOMINGO								
25 00	242 30.2	218 22.4 N 7 55.0	53 50.1 S 3 05.3	131 50.9 N22 24.3	15 17.5 S15 05.1	Acamar	315 18.3 S40 14.9	
01	257 32.7	233 22.1 56.0	68 52.5 05.5	146 52.9 24.3	30 20.2 05.0	Achernar	335 26.9 S57 09.7	
02	272 35.1	248 21.8 57.1	83 54.8 05.6	161 54.8 24.2	45 22.8 05.0	Acrux	173 08.0 S63 11.0	
03	287 37.6	263 21.5 . . 58.1	98 57.2 . . 05.8	176 56.8 . . 24.1	60 25.5 . . 04.9	Adhara	255 12.3 S28 59.8	
04	302 40.1	278 21.2 7 59.1	113 59.6 05.9	191 58.8 24.1	75 28.1 04.9	Aldebarán	290 49.0 N16 32.1	
05	317 42.5	293 21.0 8 00.2	129 01.9 06.1	207 00.7 24.0	90 30.8 04.8			
06	332 45.0	308 20.7 N 8 01.2	144 04.3 S 3 06.2	222 02.7 N22 23.9	105 33.4 S15 04.8	Alioth	166 19.9 N55 53.1	
07	347 47.5	323 20.4 02.2	159 06.6 06.4	237 04.7 23.9	120 36.0 04.8	Alkaid	152 58.1 N49 14.7	
08	2 49.9	338 20.1 03.3	174 09.0 06.5	252 06.6 23.8	135 38.7 04.7	Al Na'ir	62 07.4 N 8 54.5	
09	17 52.4	353 19.8 . . 04.3	189 11.3 . . 06.7	267 08.6 . . 23.8	150 41.3 . . 04.7	Alnilam	275 46.0 S 1 11.8	
10	32 54.8	8 19.5 05.3	204 13.7 06.8	282 10.5 23.7	165 44.0 04.6	Alphard	217 55.5 S 8 43.5	
11	47 57.3	23 19.3 06.4	219 16.0 07.0	297 12.5 23.6	180 46.6 04.6			
12	62 59.8	38 19.0 N 8 07.4	234 18.3 S 3 07.1	312 14.5 N22 23.6	195 49.3 S15 04.5	Alphecca	126 10.1 N26 40.1	
13	78 02.2	53 18.7 08.4	249 20.7 07.3	327 16.4 23.5	210 51.9 04.5	Alpheratz	357 43.0 N29 10.0	
14	93 04.7	68 18.4 09.5	264 23.0 07.4	342 18.4 23.4	225 54.5 04.5	Altair	62 07.4 N 8 54.5	
15	108 07.2	83 18.1 . . 10.5	279 25.4 . . 07.6	357 20.3 . . 23.4	240 57.2 . . 04.4	Ankaa	353 15.4 S42 13.5	
16	123 09.6	98 17.8 11.5	294 27.7 07.7	12 22.3 23.3	255 59.8 04.4	Antares	112 25.1 S26 27.7	
17	138 12.1	113 17.5 12.6	309 30.1 07.9	27 24.3 23.2	271 02.5 04.3			
18	153 14.6	128 17.3 N 8 13.6	324 32.4 S 3 08.0	42 26.2 N22 23.2	286 05.1 S15 04.3	Arcturus	145 54.9 N19 06.5	
19	168 17.0	143 17.0 14.6	339 34.7 08.2	57 28.2 23.1	301 07.8 04.2	Atria	107 25.7 S69 03.0	
20	183 19.5	158 16.7 15.6	354 37.1 08.4	72 30.2 23.1	316 10.4 04.2	Avior	234 18.0 S59 33.8	
21	198 21.9	173 16.4 . . 16.7	9 39.4 . . 08.5	87 32.1 . . 23.0	331 13.0 . . 04.1	Bellatrix	278 31.6 N 6 21.5	
22	213 24.4	188 16.1 17.7	24 41.7 08.7	102 34.1 22.9	346 15.7 04.1	Betelgeuse	271 00.9 N 7 24.3	
23	228 26.9	203 15.8 18.7	39 44.1 08.8	117 36.0 22.9	1 18.3 04.1			
LUNES								
26 00	243 29.3	218 15.5 N 8 19.8	54 46.4 S 3 09.0	132 38.0 N22 22.8	16 21.0 S15 04.0	Canopus	263 56.3 S52 42.6	
01	258 31.8	233 15.2 20.8	69 48.7 09.1	147 40.0 22.7	31 23.6 04.0	Capella	280 34.0 N46 00.5	
02	273 34.3	248 14.9 21.8	84 51.1 09.3	162 41.9 22.7	46 26.3 03.9	Deneb	49 30.8 N45 19.8	
03	288 36.7	263 14.7 . . 22.8	99 53.4 . . 09.5	177 43.9 . . 22.6	61 28.9 . . 03.9	Denébola	182 32.9 N14 29.5	
04	303 39.2	278 14.4 23.9	114 55.7 09.6	192 45.8 22.5	76 31.5 03.8	Diphda	348 55.5 S17 54.4	
05	318 41.7	293 14.1 24.9	129 58.0 09.8	207 47.8 22.5	91 34.2 03.8			
06	333 44.1	308 13.8 N 8 25.9	145 00.4 S 3 09.9	222 49.8 N22 22.4	106 36.8 S15 03.8	Dubhe	193 50.9 N61 40.6	
07	348 46.6	323 13.5 27.0	160 02.7 10.1	237 51.7 22.3	121 39.5 03.7	Elnath	278 12.2 N28 37.0	
08	3 49.1	338 13.2 28.0	175 05.0 10.3	252 53.7 22.3	136 42.1 03.7	Eltanin	90 45.3 N51 29.3	
09	18 51.5	353 12.9 . . 29.0	190 07.3 . . 10.4	267 55.6 . . 22.2	151 44.7 . . 03.6	Enif	33 46.4 N 9 56.5	
10	33 54.0	8 12.6 30.0	205 09.7 10.6	282 57.6 22.2	166 47.4 03.6	Fomalhaut	15 23.4 S29 32.5	
11	48 56.4	23 12.3 31.1	220 12.0 10.7	297 59.6 22.1	181 50.0 03.5			
12	63 58.9	38 12.0 N 8 32.1	235 14.3 S 3 10.9	313 01.5 N22 22.0	196 52.7 S15 03.5	Gacrux	171 59.8 S57 11.9	
13	79 01.4	53 11.7 33.1	250 16.6 11.1	328 03.5 22.0	211 55.3 03.5	Gienah	175 51.5 S17 37.5	
14	94 03.8	68 11.4 34.2	265 18.9 11.2	343 05.4 21.9	226 57.9 03.4	Hadar	148 46.3 S60 26.7	
15	109 06.3	83 11.2 . . 35.2	280 21.2 . . 11.4	358 07.4 . . 21.8	242 00.6 . . 03.4	Hamal	328 00.3 N23 31.6	
16	124 08.8	98 10.9 36.2	295 23.5 11.6	13 09.3 21.8	257 03.2 03.3	Kaus Aust.	83 42.6 S34 22.4	
17	139 11.2	113 10.6 37.2	310 25.9 11.7	28 11.3 21.7	272 05.9 03.3			
18	154 13.7	128 10.3 N 8 38.3	325 28.2 S 3 11.9	43 13.3 N22 21.6	287 08.5 S15 03.2	Kochab	137 19.1 N74 06.0	
19	169 16.2	143 10.0 39.3	340 30.5 12.1	58 15.2 21.6	302 11.2 03.2	Markab	13 37.7 N15 16.9	
20	184 18.6	158 09.7 40.3	355 32.8 12.2	73 17.2 21.5	317 13.8 03.2	Menkar	314 14.7 N 4 08.6	
21	199 21.1	173 09.4 . . 41.3	10 35.1 . . 12.4	88 19.1 . . 21.4	332 16.4 . . 03.1	Menkent	148 06.4 S36 26.5	
22	214 23.6	188 09.1 42.4	25 37.4 12.6	103 21.1 21.4	347 19.1 03.1	Miaplacidus	221 39.7 S69 47.0	
23	229 26.0	203 08.8 43.4	40 39.7 12.7	118 23.1 21.3	2 21.7 03.0			
MARTES								
27 00	244 28.5	218 08.5 N 8 44.4	55 42.0 S 3 12.9	133 25.0 N22 21.2	17 24.4 S15 03.0	Mirfak	308 39.9 N49 54.5	
01	259 30.9	233 08.2 45.4	70 44.3 13.1	148 27.0 21.2	32 27.0 02.9	Nunki	75 57.2 S26 16.5	
02	274 33.4	248 07.9 46.5	85 46.6 13.2	163 28.9 21.1	47 29.6 02.9	Peacock	53 18.0 S56 40.9	
03	289 35.9	263 07.6 . . 47.5	100 48.9 . . 13.4	178 30.9 . . 21.0	62 32.3 . . 02.9	Póllux	243 27.2 N27 59.3	
04	304 38.3	278 07.3 48.5	115 51.2 13.6	193 32.8 21.0	77 34.9 02.8	Procyon	244 59.3 N 5 11.0	
05	319 40.8	293 07.0 49.5	130 53.5 13.7	208 34.8 20.9	92 37.6 02.8			
06	334 43.3	308 06.7 N 8 50.5	145 55.8 S 3 13.9	223 36.7 N22 20.9	107 40.2 S15 02.7	Rasalhague	96 05.5 N12 33.1	
07	349 45.7	323 06.4 51.6	160 58.1 14.1	238 38.7 20.8	122 42.8 02.7	Régulus	207 42.9 N11 53.7	
08	4 48.2	338 06.1 52.6	176 00.4 14.3	253 40.7 20.7	137 45.5 02.6	Rigel	281 11.8 S 8 11.4	
09	19 50.7	353 05.8 . . 53.6	191 02.7 . . 14.4	268 42.6 . . 20.7	152 48.1 . . 02.6	Rigel Kent.	139 50.1 S60 53.7	
10	34 53.1	8 05.5 54.6	206 05.0 14.6	283 44.6 20.6	167 50.8 02.6	Sabik	102 11.5 S15 44.4	
11	49 55.6	23 05.2 55.7	221 07.3 14.8	298 46.5 20.5	182 53.4 02.5			
12	64 58.1	38 04.9 N 8 56.7	236 09.5 S 3 15.0	313 48.5 N22 20.5	197 56.0 S15 02.5	Schedar	349 40.0 N56 36.7	
13	80 00.5	53 04.6 57.7	251 11.8 15.1	328 50.4 20.4	212 58.7 02.4	Shaula	96 20.6 S37 06.6	
14	95 03.0	68 04.3 58.7	266 14.1 15.3	343 52.4 20.3	228 01.3 02.4	Sirius	258 33.4 S16 44.5	
15	110 05.4	83 04.0 8 59.7	281 16.4 . . 15.5	358 54.4 . . 20.3	243 04.0 . . 02.3	Spica	158 30.3 S11 14.3	
16	125 07.9	98 03.7 9 00.8	296 18.7 15.7	13 56.3 20.2	258 06.6 02.3	Suhail	222 52.1 S43 29.9	
17	140 10.4	113 03.4 01.8	311 21.0 15.8	28 58.3 20.1	273 09.2 02.3			
18	155 12.8	128 03.1 N 9 02.8	326 23.3 S 3 16.0	44 00.2 N22 20.1	288 11.9 S15 02.2	Vega	80 38.2 N38 47.9	
19	170 15.3	143 02.8 03.8	341 25.5 16.2	59 02.2 20.0	303 14.5 02.2	Zuben'ubi	137 04.4 S16 06.1	
20	185 17.8	158 02.5 04.8	356 27.8 16.4	74 04.1 19.9	318 17.1 02.1			
21	200 20.2	173 02.2 . . 05.9	11 30.1 . . 16.5	89 06.1 . . 19.9	333 19.8 . . 02.1	AHS Paso Mer.		
22	215 22.7	188 01.9 06.9	26 32.4 16.7	104 08.0 19.8	348 22.4 02.0	Venus	334 46.2 9 27	
23	230 25.2	203 01.6 07.9	41 34.7 16.9	119 10.0 19.7	3 25.1 02.0	Marte	171 17.1 20 18	
						Júpiter	249 08.7 15 07	
						Saturno	132 51.6 22 51	
Paso Mer.	h m 7 44.8	v -0.3 d 1.0	v 2.3 d 0.2	v 2.0 d 0.1	v 2.6 d 0.0			

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	25		26	27	28	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
DOMINGO	25 00	180 47.1	N20 53.6	226 10.8	11.0	N 7 55.3	10.0	57.7	N 72				01 15	01 07	00 57	00 40
	01	195 47.0	54.0	240 40.8	11.0	8 05.3	10.0	57.7	N 70				01 27	01 27	01 29	01 34
	02	210 46.9	54.5	255 10.8	11.0	8 15.3	9.9	57.7	68	////	////	00 19	01 37	01 43	01 52	02 06
	03	225 46.9	54.9	269 40.8	10.9	8 25.2	9.9	57.7	66	////	////	01 38	01 44	01 55	02 10	02 31
	04	240 46.8	55.4	284 10.7	11.0	8 35.1	9.8	57.6	64	////	////	02 14	01 51	02 06	02 25	02 50
	05	255 46.8	55.8	298 40.7	10.9	8 44.9	9.7	57.6	62	////	00 59	02 40	01 57	02 15	02 37	03 05
	06	270 46.7	N20 56.3	313 10.6	10.9	N 8 54.6	9.7	57.6	60	////	01 45	03 00	02 02	02 23	02 48	03 18
	07	285 46.6	56.7	327 40.5	10.9	9 04.3	9.7	57.6	N 58	00 53	02 35	03 30	02 11	02 36	03 05	03 39
	08	300 46.6	57.2	342 10.4	11.0	9 14.0	9.6	57.6	54	01 35	02 52	03 41	02 14	02 41	03 12	03 48
	09	315 46.5	57.6	356 40.4	10.9	9 23.6	9.5	57.5	52	02 02	03 07	03 52	02 18	02 46	03 19	03 56
	10	330 46.4	58.1	11 10.3	10.9	9 33.1	9.5	57.5	50	02 22	03 20	04 01	02 21	02 51	03 25	04 03
	11	345 46.4	58.5	25 40.2	10.8	9 42.6	9.4	57.5	45	02 59	03 45	04 21	02 27	03 01	03 37	04 18
	12	0 46.3	N20 59.0	40 10.0	10.9	N 9 52.0	9.4	57.5	N 40	03 25	04 05	04 36	02 33	03 09	03 48	04 30
	13	15 46.2	59.4	54 39.9	10.9	10 01.4	9.3	57.5	35	03 46	04 21	04 50	02 38	03 16	03 57	04 41
	14	30 46.2	20 59.9	69 09.8	10.8	10 10.7	9.3	57.4	30	04 02	04 34	05 01	02 42	03 22	04 05	04 50
	15	45 46.1	21 00.3	83 39.6	10.8	10 20.0	9.2	57.4	20	04 28	04 57	05 21	02 49	03 33	04 19	05 06
	16	60 46.0	00.7	98 09.4	10.9	10 29.2	9.1	57.4	N 10	04 49	05 15	05 38	02 56	03 43	04 31	05 20
	17	75 46.0	01.2	112 39.3	10.8	10 38.3	9.1	57.4	0	05 05	05 31	05 53	03 02	03 52	04 42	05 33
	18	90 45.9	N21 01.6	127 09.1	10.8	N10 47.4	9.0	57.4	S 10	05 21	05 47	06 09	03 08	04 01	04 54	05 46
	19	105 45.9	02.1	141 38.9	10.8	10 56.4	8.9	57.3	20	05 35	06 02	06 25	03 15	04 11	05 06	06 01
	20	120 45.8	02.5	156 08.7	10.8	11 05.3	8.9	57.3	30	05 49	06 18	06 44	03 22	04 22	05 20	06 17
	21	135 45.7	02.9	170 38.5	10.7	11 14.2	8.8	57.3	35	05 57	06 28	06 55	03 27	04 28	05 28	06 26
	22	150 45.7	03.4	185 08.2	10.8	11 23.0	8.7	57.3	40	06 05	06 38	07 08	03 32	04 36	05 38	06 37
	23	165 45.6	03.8	199 38.0	10.7	11 31.7	8.7	57.3	45	06 13	06 50	07 22	03 38	04 44	05 49	06 50
	LUNES	26 00	180 45.5	N21 04.3	214 07.7	10.8	N11 40.4	8.6	57.2	S 50	06 23	07 03	07 40	03 45	04 55	06 02	07 06
01		195 45.5	04.7	228 37.5	10.7	11 49.0	8.6	57.2	52	06 27	07 10	07 49	03 48	05 00	06 08	07 13
02		210 45.4	05.1	243 07.2	10.7	11 57.6	8.5	57.2	54	06 32	07 17	07 58	03 52	05 05	06 15	07 21
03		225 45.3	05.6	257 36.9	10.7	12 06.1	8.4	57.2	56	06 37	07 24	08 09	03 56	05 11	06 23	07 30
04		240 45.2	06.0	272 06.6	10.6	12 14.5	8.3	57.1	58	06 43	07 33	08 21	04 00	05 18	06 32	07 41
05		255 45.2	06.4	286 36.2	10.7	12 22.8	8.3	57.1	S 60	06 49	07 43	08 36	04 05	05 25	06 42	07 53
06		270 45.1	N21 06.9	301 05.9	10.7	N12 31.1	8.2	57.1	Ocaso Sol		Crepúsculo		Ocaso Luna			
07		285 45.0	07.3	315 35.6	10.6	12 39.3	8.1	57.1	Lat.		Civil	Náut.	25	26	27	28
08		300 45.0	07.7	330 05.2	10.6	12 47.4	8.1	57.1		h m	h m	h m	h m	h m	h m	h m
09		315 44.9	08.2	344 34.8	10.6	12 55.5	7.9	57.0	N 72				17 52	19 47	21 51	
10		330 44.8	08.6	359 04.4	10.6	13 03.4	7.9	57.0	N 70				17 34	19 17	20 58	22 30
11		345 44.8	09.0	13 34.0	10.6	13 11.3	7.9	57.0	68				17 20	18 55	20 26	21 46
12		0 44.7	N21 09.5	28 03.6	10.6	N13 19.2	7.7	57.0	66	22 20	////	////	17 08	18 38	20 02	21 17
13		15 44.6	09.9	42 33.2	10.5	13 26.9	7.7	57.0	64	21 42	////	////	16 59	18 24	19 44	20 55
14		30 44.6	10.3	57 02.7	10.6	13 34.6	7.6	56.9	62	21 16	23 01	////	16 50	18 12	19 28	20 37
15		45 44.5	10.8	71 32.3	10.5	13 42.2	7.5	56.9	60	20 56	22 12	////	16 43	18 02	19 16	20 22
16		60 44.4	11.2	86 01.8	10.5	13 49.7	7.5	56.9	N 58	20 39	21 43	////	16 37	17 53	19 05	20 10
17		75 44.3	11.6	100 31.3	10.5	13 57.2	7.3	56.9	56	20 26	21 21	23 06	16 32	17 46	18 55	19 59
18		90 44.3	N21 12.0	115 00.8	10.5	N14 04.5	7.3	56.9	54	20 14	21 03	22 21	16 27	17 39	18 47	19 50
19		105 44.2	12.5	129 30.3	10.5	14 11.8	7.2	56.8	52	20 03	20 48	21 54	16 22	17 33	18 40	19 41
20		120 44.1	12.9	143 59.8	10.5	14 19.0	7.2	56.8	50	19 54	20 35	21 33	16 18	17 27	18 33	19 34
21		135 44.1	13.3	158 29.3	10.4	14 26.2	7.0	56.8	45	19 34	20 10	20 56	16 10	17 15	18 18	19 18
22		150 44.0	13.7	172 58.7	10.5	14 33.2	7.0	56.8	N 40	19 18	19 50	20 29	16 03	17 06	18 07	19 04
23		165 43.9	14.2	187 28.2	10.4	14 40.2	6.8	56.8	35	19 05	19 34	20 09	15 56	16 57	17 56	18 53
MARTES		00	180 43.8	N21 14.6	201 57.6	10.4	N14 47.0	6.8	56.7	30	18 53	19 20	19 52	15 51	16 50	17 48	18 43
	01	195 43.8	15.0	216 27.0	10.5	14 53.8	6.8	56.7	20	18 33	18 57	19 26	15 42	16 37	17 32	18 26
	02	210 43.7	15.4	230 56.5	10.3	15 00.6	6.6	56.7	N 10	18 16	18 39	19 06	15 33	16 26	17 19	18 11
	03	225 43.6	15.8	245 25.8	10.4	15 07.2	6.5	56.7	0	18 01	18 23	18 49	15 26	16 16	17 07	17 58
	04	240 43.6	16.3	259 55.2	10.4	15 13.7	6.5	56.6	S 10	17 45	18 07	18 33	15 18	16 06	16 54	17 44
	05	255 43.5	16.7	274 24.6	10.4	15 20.2	6.4	56.6	20	17 28	17 52	18 19	15 10	15 55	16 41	17 29
	06	270 43.4	N21 17.1	288 54.0	10.3	N15 26.6	6.3	56.6	30	17 10	17 35	18 05	15 01	15 42	16 26	17 12
	07	285 43.3	17.5	303 23.3	10.4	15 32.9	6.2	56.6	35	16 59	17 26	17 57	14 55	15 35	16 17	17 02
	08	300 43.3	17.9	317 52.7	10.3	15 39.1	6.1	56.6	40	16 46	17 16	17 49	14 49	15 27	16 07	16 51
	09	315 43.2	18.4	332 22.0	10.3	15 45.2	6.0	56.5	45	16 31	17 04	17 40	14 42	15 17	15 55	16 38
	10	330 43.1	18.8	346 51.3	10.4	15 51.2	6.0	56.5	S 50	16 13	16 50	17 31	14 34	15 06	15 41	16 22
	11	345 43.0	19.2	1 20.7	10.3	15 57.2	5.8	56.5	52	16 05	16 44	17 26	14 30	15 00	15 35	16 14
	12	0 43.0	N21 19.6	15 50.0	10.3	N16 03.0	5.8	56.5	54	15 55	16 37	17 22	14 26	14 54	15 27	16 06
	13	15 42.9	20.0	30 19.3	10.3	16 08.8	5.6	56.5	56	15 44	16 29	17 16	14 21	14 48	15 19	15 57
	14	30 42.8	20.4	44 48.6	10.2	16 14.4	5.6	56.4	58	15 32	16 21	17 11	14 16	14 41	15 10	15 46
	15	45 42.7	20.8	59 17.8	10.3	16 20.0	5.5	56.4	S 60	15 18	16 11	17 05	14 10	14 32	15 00	15 34
	16	60 42.7	21.3	73 47.1	10.3	16 25.5	5.4	56.4	SOL		LUNA					
	17	75 42.6	21.7	88 16.4	10.2	16 30.9	5.3	56.4	Día	Ec. Tiempo	Paso Mer.	Paso Mer. Sup.	Edad	Fase		
	18	90 42.5	N21 22.1	102 45.6	10.3	N16 36.2	5.3	56.3	00h	12h						
	19	105 42.4	22.5	117 14.9	10.3	16 41.5	5.1	56.3								
	20	120 42.4	22.9	131 44.2	10.2	16 46.6	5.0	56.3	d	m s	m s	h m	h m	h m	d	%
	21	135 42.3	23.3	146 13.4	10.2	16 51.6	5.0									

UT (HmGr)	ARIES	VENUS -4.0	MARTE -0.6	JÚPITER -1.9	SATURNO +0.2	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
28 00	245 27.6	218 01.3 N 9 08.9	56 36.9 S 3 17.1	134 11.9 N22 19.7	18 27.7 S15 02.0	Acamar 315 18.3 S40 14.9
01	260 30.1	233 01.0 09.9	71 39.2 17.3	149 13.9 19.6	33 30.3 01.9	Achernar 335 26.8 S57 09.7
02	275 32.5	248 00.7 11.0	86 41.5 17.4	164 15.9 19.5	48 33.0 01.9	Acrux 173 08.1 S63 11.1
03	290 35.0	263 00.4 . . 12.0	101 43.7 . . 17.6	179 17.8 . . 19.5	63 35.6 . . 01.8	Adhara 255 12.3 S28 59.8
04	305 37.5	278 00.1 13.0	116 46.0 17.8	194 19.8 19.4	78 38.3 01.8	Aldebarán 290 49.0 N16 32.1
05	320 39.9	292 59.8 14.0	131 48.3 18.0	209 21.7 19.3	93 40.9 01.7	
06	335 42.4	307 59.5 N 9 15.0	146 50.6 S 3 18.2	224 23.7 N22 19.3	108 43.5 S15 01.7	Alioth 166 19.9 N55 53.1
07	350 44.9	322 59.2 16.0	161 52.8 18.3	239 25.6 19.2	123 46.2 01.7	Alkaid 152 58.1 N49 14.7
08	5 47.3	337 58.8 17.1	176 55.1 18.5	254 27.6 19.1	138 48.8 01.6	Al Na'ir 62 07.4 N 8 54.5
09	20 49.8	352 58.5 . . 18.1	191 57.4 . . 18.7	269 29.5 . . 19.1	153 51.5 . . 01.6	Alnilam 275 46.0 S 1 11.8
10	35 52.3	7 58.2 19.1	206 59.6 18.9	284 31.5 19.0	168 54.1 01.5	Alphard 217 55.6 S 8 43.5
11	50 54.7	22 57.9 20.1	222 01.9 19.1	299 33.4 18.9	183 56.7 01.5	
12	65 57.2	37 57.6 N 9 21.1	237 04.1 S 3 19.3	314 35.4 N22 18.9	198 59.4 S15 01.4	Alphecca 126 10.1 N26 40.1
13	80 59.7	52 57.3 22.1	252 06.4 19.4	329 37.3 18.8	214 02.0 01.4	Alpheratz 357 42.9 N29 10.0
14	96 02.1	67 57.0 23.2	267 08.7 19.6	344 39.3 18.7	229 04.6 01.4	Altair 62 07.4 N 8 54.5
15	111 04.6	82 56.7 . . 24.2	282 10.9 . . 19.8	359 41.2 . . 18.7	244 07.3 . . 01.3	Ankaa 353 15.3 S42 13.5
16	126 07.0	97 56.4 25.2	297 13.2 20.0	14 43.2 18.6	259 09.9 01.3	Antares 112 25.1 S26 27.7
17	141 09.5	112 56.1 26.2	312 15.4 20.2	29 45.1 18.5	274 12.6 01.2	
18	156 12.0	127 55.8 N 9 27.2	327 17.7 S 3 20.4	44 47.1 N22 18.5	289 15.2 S15 01.2	Arcturus 145 54.9 N19 06.5
19	171 14.4	142 55.4 28.2	342 19.9 20.6	59 49.1 18.4	304 17.8 01.2	Atria 107 25.7 S69 03.0
20	186 16.9	157 55.1 29.2	357 22.2 20.7	74 51.0 18.3	319 20.5 01.1	Avior 234 18.0 S59 33.8
21	201 19.4	172 54.8 . . 30.2	12 24.4 . . 20.9	89 53.0 . . 18.3	334 23.1 . . 01.1	Bellatrix 278 31.6 N 6 21.5
22	216 21.8	187 54.5 31.3	27 26.7 21.1	104 54.9 18.2	349 25.7 01.0	Betelgeuse 271 00.9 N 7 24.3
23	231 24.3	202 54.2 32.3	42 28.9 21.3	119 56.9 18.1	4 28.4 01.0	
29 00	246 26.8	217 53.9 N 9 33.3	57 31.2 S 3 21.5	134 58.8 N22 18.1	19 31.0 S15 00.9	Canopus 263 56.3 S52 42.5
01	261 29.2	232 53.6 34.3	72 33.4 21.7	150 00.8 18.0	34 33.7 00.9	Capella 280 34.0 N46 00.5
02	276 31.7	247 53.3 35.3	87 35.7 21.9	165 02.7 17.9	49 36.3 00.9	Deneb 49 30.8 N45 19.8
03	291 34.2	262 53.0 . . 36.3	102 37.9 . . 22.1	180 04.7 . . 17.9	64 38.9 . . 00.8	Denébola 182 32.9 N14 29.5
04	306 36.6	277 52.6 37.3	117 40.2 22.3	195 06.6 17.8	79 41.6 00.8	Diphda 348 55.4 S17 54.4
05	321 39.1	292 52.3 38.3	132 42.4 22.5	210 08.6 17.7	94 44.2 00.7	
06	336 41.5	307 52.0 N 9 39.4	147 44.7 S 3 22.6	225 10.5 N22 17.7	109 46.8 S15 00.7	Dubhe 193 51.0 N61 40.6
07	351 44.0	322 51.7 40.4	162 46.9 22.8	240 12.5 17.6	124 49.5 00.7	Elnath 278 12.2 N28 37.0
08	6 46.5	337 51.4 41.4	177 49.1 23.0	255 14.4 17.5	139 52.1 00.6	Eltanin 90 45.3 N51 29.3
09	21 48.9	352 51.1 . . 42.4	192 51.4 . . 23.2	270 16.4 . . 17.5	154 54.7 . . 00.6	Enif 33 46.4 N 9 56.5
10	36 51.4	7 50.8 43.4	207 53.6 23.4	285 18.3 17.4	169 57.4 00.5	Fomalhaut 15 23.3 S29 32.5
11	51 53.9	22 50.4 44.4	222 55.8 23.6	300 20.3 17.3	185 00.0 00.5	
12	66 56.3	37 50.1 N 9 45.4	237 58.1 S 3 23.8	315 22.2 N22 17.3	200 02.7 S15 00.4	Gacrux 171 59.8 S57 11.9
13	81 58.8	52 49.8 46.4	253 00.3 24.0	330 24.2 17.2	215 05.3 00.4	Gienah 175 51.5 S17 37.5
14	97 01.3	67 49.5 47.4	268 02.5 24.2	345 26.1 17.1	230 07.9 00.4	Hadar 148 46.3 S60 26.7
15	112 03.7	82 49.2 . . 48.4	283 04.8 . . 24.4	0 28.1 . . 17.0	245 10.6 . . 00.3	Hamal 328 00.3 N23 31.6
16	127 06.2	97 48.9 49.5	298 07.0 24.6	15 30.0 17.0	260 13.2 00.3	Kaus Aust. 83 42.6 S34 22.4
17	142 08.7	112 48.5 50.5	313 09.2 24.8	30 32.0 16.9	275 15.8 00.2	
18	157 11.1	127 48.2 N 9 51.5	328 11.5 S 3 25.0	45 33.9 N22 16.8	290 18.5 S15 00.2	Kochab 137 19.1 N74 06.0
19	172 13.6	142 47.9 52.5	343 13.7 25.2	60 35.9 16.8	305 21.1 00.2	Markab 13 37.7 N15 16.9
20	187 16.0	157 47.6 53.5	358 15.9 25.4	75 37.8 16.7	320 23.7 00.1	Menkar 314 14.7 N 4 08.6
21	202 18.5	172 47.3 . . 54.5	13 18.1 . . 25.6	90 39.8 . . 16.6	335 26.4 . . 00.1	Menkent 148 06.4 S36 26.5
22	217 21.0	187 46.9 55.5	28 20.4 25.8	105 41.7 16.6	350 29.0 00.0	Miaplacidus 221 39.7 S69 47.0
23	232 23.4	202 46.6 56.5	43 22.6 26.0	120 43.7 16.5	5 31.7 00.0	
30 00	247 25.9	217 46.3 N 9 57.5	58 24.8 S 3 26.2	135 45.6 N22 16.4	20 34.3 S15 00.0	Mirfak 308 39.9 N49 54.5
01	262 28.4	232 46.0 58.5	73 27.0 26.4	150 47.6 16.4	35 36.9 14 59.9	Nunki 75 57.2 S26 16.5
02	277 30.8	247 45.7 9 59.5	88 29.2 26.6	165 49.5 16.3	50 39.6 59.9	Peacock 53 18.0 S56 40.9
03	292 33.3	262 45.3 10 00.5	103 31.5 . . 26.8	180 51.5 . . 16.2	65 42.2 . . 59.8	Póllux 243 27.2 N27 59.3
04	307 35.8	277 45.0 01.5	118 33.7 27.0	195 53.4 16.2	80 44.8 59.8	Procyon 244 59.3 N 5 11.0
05	322 38.2	292 44.7 02.5	133 35.9 27.2	210 55.3 16.1	95 47.5 59.7	
06	337 40.7	307 44.4 N10 03.5	148 38.1 S 3 27.4	225 57.3 N22 16.0	110 50.1 S14 59.7	Rasalhague 96 05.5 N12 33.1
07	352 43.1	322 44.0 04.5	163 40.3 27.6	240 59.2 16.0	125 52.7 59.7	Régulus 207 42.9 N11 53.7
08	7 45.6	337 43.7 05.5	178 42.5 27.8	256 01.2 15.9	140 55.4 59.6	Rigel 281 11.8 S 8 11.4
09	22 48.1	352 43.4 . . 06.5	193 44.7 . . 28.0	271 03.1 . . 15.8	155 58.0 . . 59.6	Rigel Kent. 139 50.1 S60 53.7
10	37 50.5	7 43.1 07.5	208 47.0 28.2	286 05.1 15.7	171 00.6 59.5	Sabik 102 11.4 S15 44.4
11	52 53.0	22 42.8 08.6	223 49.2 28.4	301 07.0 15.7	186 03.3 59.5	
12	67 55.5	37 42.4 N10 09.6	238 51.4 S 3 28.6	316 09.0 N22 15.6	201 05.9 S14 59.5	Schedar 349 40.0 N56 36.7
13	82 57.9	52 42.1 10.6	253 53.6 28.8	331 10.9 15.5	216 08.5 59.4	Shaula 96 20.6 S37 06.6
14	98 00.4	67 41.8 11.6	268 55.8 29.0	346 12.9 15.5	231 11.2 59.4	Sirius 258 33.4 S16 44.5
15	113 02.9	82 41.5 . . 12.6	283 58.0 . . 29.2	1 14.8 . . 15.4	246 13.8 . . 59.3	Spica 158 30.3 S11 14.3
16	128 05.3	97 41.1 13.6	299 00.2 29.4	16 16.8 15.3	261 16.4 59.3	Suhail 222 52.1 S43 29.9
17	143 07.8	112 40.8 14.6	314 02.4 29.6	31 18.7 15.3	276 19.1 59.3	
18	158 10.3	127 40.5 N10 15.6	329 04.6 S 3 29.8	46 20.7 N22 15.2	291 21.7 S14 59.2	Vega 80 38.1 N38 47.9
19	173 12.7	142 40.1 16.6	344 06.8 30.0	61 22.6 15.1	306 24.4 59.2	Zuben'ubi 137 04.4 S16 06.1
20	188 15.2	157 39.8 17.6	359 09.0 30.2	76 24.6 15.1	321 27.0 59.1	
21	203 17.6	172 39.5 . . 18.6	14 11.2 . . 30.5	91 26.5 . . 15.0	336 29.6 . . 59.1	AHS Paso Mer.
22	218 20.1	187 39.2 19.6	29 13.4 30.7	106 28.4 14.9	351 32.3 59.1	Venus 331 27.1 9 29
23	233 22.6	202 38.8 20.6	44 15.6 30.9	121 30.4 14.8	6 34.9 59.0	Marte 171 04.4 20 07
						Júpiter 248 32.1 14 58
						Saturno 133 04.3 22 38
Paso Mer.	7 33.0	v -0.3 d 1.0	v 2.2 d 0.2	v 1.9 d 0.1	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	28	29	30	31
M I É R C O L E S	d h	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	
	180 42.1	N21 24.5	189 41.1	10.2	N17 06.2	4.7	56.2	N 72	00 40	00 40	00 40	00 40	00 40	00 40	
	01 195 42.0	24.9	204 10.3	10.3	17 10.9	4.5	56.2	N 70	01 34	01 47	02 23	03 31	04 15	04 15	
	02 210 41.9	25.3	218 39.6	10.2	17 15.4	4.5	56.2	68	02 06	02 32	03 14	04 15	04 45	04 45	
	03 225 41.8	25.8	233 08.8	10.2	17 19.9	4.4	56.2	66	02 31	03 01	03 46	04 45	05 07	05 07	
	04 240 41.7	26.2	247 38.0	10.2	17 24.3	4.3	56.1	64	02 50	03 24	04 09	05 07	05 24	05 24	
	05 255 41.7	26.6	262 07.2	10.2	17 28.6	4.2	56.1	62	03 05	03 42	04 28	05 24	05 39	05 39	
	06 270 41.6	N21 27.0	276 36.4	10.2	N17 32.8	4.1	56.1	60	03 18	03 56	04 43	05 39	05 51	05 51	
	07 285 41.5	27.4	291 05.6	10.3	17 36.9	4.0	56.1	N 58	03 29	04 09	04 57	05 51	06 02	06 02	
	08 300 41.4	27.8	305 34.9	10.2	17 40.9	3.9	56.1	56	03 39	04 20	05 08	06 02	06 12	06 12	
	09 315 41.4	28.2	320 04.1	10.2	17 44.8	3.8	56.0	54	03 48	04 30	05 18	06 12	06 20	06 20	
	10 330 41.3	28.6	334 33.3	10.2	17 48.6	3.7	56.0	52	03 49	04 38	05 27	06 20	06 28	06 28	
	11 345 41.2	29.0	349 02.5	10.2	17 52.3	3.6	56.0	50	03 58	04 03	04 46	05 34	06 28	06 28	
	12 0 41.1	N21 29.4	3 31.7	10.2	N17 55.9	3.6	56.0	45	04 19	04 18	05 02	05 51	06 44	06 44	
	13 15 41.0	29.8	18 00.9	10.3	17 59.5	3.4	55.9	N 40	04 35	04 30	05 16	06 05	06 57	06 57	
	14 30 41.0	30.2	32 30.2	10.2	18 02.9	3.3	55.9	35	04 48	04 41	05 27	06 17	07 08	07 08	
	15 45 40.9	30.6	46 59.4	10.2	18 06.2	3.3	55.9	30	05 00	04 50	05 37	06 27	07 18	07 18	
	16 60 40.8	31.0	61 28.6	10.3	18 09.5	3.1	55.9	20	05 15	05 06	05 55	06 45	07 35	07 35	
	17 75 40.7	31.4	75 57.9	10.2	18 12.6	3.0	55.9	N 10	05 32	05 20	06 10	07 00	07 50	07 50	
	18 90 40.6	N21 31.8	90 27.1	10.2	N18 15.6	3.0	55.8	0	05 47	05 33	06 24	07 14	08 04	08 04	
	19 105 40.6	32.2	104 56.3	10.3	18 18.6	2.8	55.8	S 10	06 03	06 10	06 38	07 29	08 17	08 17	
	20 120 40.5	32.5	119 25.6	10.3	18 21.4	2.8	55.8	20	06 20	06 27	06 51	07 44	08 32	08 32	
	21 135 40.4	32.9	133 54.9	10.2	18 24.2	2.6	55.8	30	06 30	06 37	07 06	07 53	08 41	08 41	
	22 150 40.3	33.3	148 24.1	10.3	18 26.8	2.6	55.8	35	06 40	06 46	07 11	08 02	08 49	08 49	
	23 165 40.2	33.7	162 53.4	10.3	18 29.4	2.4	55.7	40	06 52	06 57	07 21	08 12	08 59	08 59	
J U E V E S	29 180 40.2	N21 34.1	177 22.7	10.3	N18 31.8	2.4	55.7	45	07 25	07 44	08 38	09 23	09 23		
	01 195 40.1	34.5	191 52.0	10.3	18 34.2	2.2	55.7	S 50	07 44	07 53	08 03	08 55	09 39	09 39	
	02 210 40.0	34.9	206 21.3	10.3	18 36.4	2.2	55.7	52	07 53	07 13	08 11	09 03	09 47	09 47	
	03 225 39.9	35.3	220 50.6	10.3	18 38.6	2.0	55.7	54	08 02	07 21	08 20	09 12	09 55	09 55	
	04 240 39.8	35.7	235 19.9	10.3	18 40.6	2.0	55.6	56	08 13	07 30	08 30	09 22	10 04	10 04	
	05 255 39.7	36.1	249 49.2	10.4	18 42.6	1.9	55.6	58	08 26	07 41	08 41	09 33	10 15	10 15	
	06 270 39.7	N21 36.5	264 18.6	10.4	N18 44.5	1.7	55.6	S 60	08 41	07 53	08 55	09 46	10 27	10 27	
	07 285 39.6	36.8	278 48.0	10.3	18 46.2	1.7	55.6	Ocaso Sol		Crepúsculo		Ocaso Luna			
	08 300 39.5	37.2	293 17.3	10.4	18 47.9	1.6	55.6	Lat.	Ocaso Sol	Civil	Náut.	28	29	30	31
	09 315 39.4	37.6	307 46.7	10.4	18 49.5	1.4	55.5	N 72	h m	h m	h m	h m	h m	h m	h m
	10 330 39.3	38.0	322 16.1	10.4	18 50.9	1.4	55.5	N 70	22 30	23 40	24 15	00 15	00 15	00 15	
	11 345 39.2	38.4	336 45.5	10.5	18 52.3	1.3	55.5	N 70	21 46	22 49	23 30	23 54	23 54	23 54	
	12 0 39.2	N21 38.8	351 15.0	10.4	N18 53.6	1.2	55.5	68	21 17	22 17	23 01	23 30	23 30	23 30	
	13 15 39.1	39.2	5 44.4	10.5	18 54.8	1.0	55.5	66	20 55	21 54	22 38	23 11	23 11	23 11	
	14 30 39.0	39.5	20 13.9	10.5	18 55.8	1.0	55.4	64	20 37	21 35	22 21	22 55	22 55	22 55	
	15 45 38.9	39.9	34 43.4	10.5	18 56.8	0.9	55.4	62	20 22	21 19	22 06	22 42	22 42	22 42	
	16 60 38.8	40.3	49 12.9	10.5	18 57.7	0.8	55.4	60	20 10	21 06	21 53	22 31	22 31	22 31	
	17 75 38.7	40.7	63 42.4	10.5	18 58.5	0.7	55.4	N 58	20 30	21 27	22 14	22 49	22 49	22 49	
	18 90 38.6	N21 41.1	78 11.9	10.6	N18 59.2	0.6	55.4	56	20 18	21 08	22 30	23 05	23 33	23 33	
	19 105 38.6	41.4	92 41.5	10.6	18 59.8	0.5	55.3	54	20 07	20 53	22 01	22 42	23 05	23 05	
	20 120 38.5	41.8	107 11.1	10.6	19 00.3	0.4	55.3	52	20 19	21 09	22 19	23 05	23 33	23 33	
	21 135 38.4	42.2	121 40.7	10.6	19 00.7	0.3	55.3	50	20 32	21 22	22 07	22 42	23 05	23 05	
	22 150 38.3	42.6	136 10.3	10.6	19 01.0	0.2	55.3	45	20 45	21 39	22 18	23 05	23 33	23 33	
	23 165 38.2	43.0	150 39.9	10.7	19 01.2	0.1	55.3	N 40	21 00	21 52	22 31	23 05	23 33	23 33	
	V I E R N E S	30 180 38.1	N21 43.3	165 09.6	10.7	N19 01.3	0.0	55.2	35	21 11	21 54	22 31	23 05	23 33	23 33
01 195 38.0		43.7	179 39.3	10.7	19 01.3	0.1	55.2	30	21 22	22 07	22 42	23 05	23 33	23 33	
02 210 38.0		44.1	194 09.0	10.7	19 01.2	0.2	55.2	20	21 35	22 18	22 54	23 33	23 33	23 33	
03 225 37.9		44.5	208 38.7	10.8	19 01.0	0.2	55.2	N 10	21 48	22 31	23 05	23 33	23 33	23 33	
04 240 37.8		44.8	223 08.5	10.8	19 00.8	0.4	55.2	0	21 59	22 42	23 18	23 44	23 44	23 44	
05 255 37.7		45.2	237 38.3	10.8	19 00.4	0.5	55.2	S 10	22 07	22 50	23 24	23 50	23 50	23 50	
06 270 37.6		N21 45.6	252 08.1	10.8	N18 59.9	0.5	55.1	20	22 18	23 01	23 35	24 01	24 01	24 01	
07 285 37.5		45.9	266 37.9	10.9	18 59.4	0.7	55.1	30	22 29	23 12	23 46	24 12	24 12	24 12	
08 300 37.4		46.3	281 07.8	10.9	18 58.7	0.7	55.1	35	22 40	23 23	23 57	24 23	24 23	24 23	
09 315 37.3		46.7	295 37.7	10.9	18 58.0	0.9	55.1	40	22 51	23 34	24 08	24 34	24 34	24 34	
10 330 37.3		47.1	310 07.6	11.0	18 57.1	0.9	55.1	45	23 02	23 45	24 19	24 45	24 45	24 45	
11 345 37.2		47.4	324 37.6	10.9	18 56.2	1.0	55.0	S 50	23 13	23 56	24 30	25 00	25 00	25 00	
12 0 37.1		N21 47.8	339 07.5	11.1	N18 55.2	1.1	55.0	52	23 24	24 07	24 41	25 11	25 11	25 11	
13 15 37.0		48.2	353 37.6	11.0	18 54.1	1.3	55.0	54	23 35	24 18	24 52	25 22	25 22	25 22	
14 30 36.9		48.5	8 07.6	11.1	18 52.8	1.3	55.0	56	23 46	24 29	25 03	25 33	25 33	25 33	
15 45 36.8		48.9	22 37.7	11.1	18 51.5	1.4	55.0	58	23 57	24 40	25 14	25 44	25 44	25 44	
16 60 36.7		49.3	37 07.8	11.1	18 50.1	1.5	55.0	S 60	24 08	24 51	25 25	25 55	25 55	25 55	
17 75 36.6		49.6	51 37.9	11.2	18 48.6	1.5	54.9	SOL		LUNA					
18 90 36.5		N21 50.0	66 08.1	11.2	N18 47.1	1.7	54.9	Día	Ec. Tiempo	Paso Mer.	Paso Mer.	Sup.	Inf.	Edad	Fase
19 105 36.5		50.3	80 38.3	11.2	18 45.4	1.8	54.9	00h	12h						
20 120 36.4		50.7	95 08.5	11.2	18 43.6	1.8	54.9	d	m s	m s	h m	h m	h m	d	%
21 135 36.3		51.1	109 38.7	11.3	18 41.8	2.0	54.9	28	02 48	02 45	11 57	11 45	24 11	29 0	
22 150 36.2		51.4	124 09.0	11.4	18 39.8	2.0	54.9	29	02 41	02 37	11 57	12 36	00 11	01 1	
23 165 36.1		51.8	138 39.4	11.3	N18 37.8	2.1	54.8	30	02 33	02 29	11 58	13 26	01 01	02 3	
		S/D 15.8	<i>d</i> 0.4	S/D	15.2	15.1	15.0								

UT (HmGr)	ARIES	VENUS -4.0	MARTE -0.5	JÚPITER -1.9	SATURNO +0.2	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
31 00	248 25.0	217 38.5 N10 21.6	59 17.8 S 3 31.1	136 32.3 N22 14.8	21 37.5 S14 59.0	Acamar	315 18.3 S40 14.9	
01	263 27.5	232 38.2 22.6	74 20.0 31.3	151 34.3 14.7	36 40.2 58.9	Achernar	335 26.8 S57 09.7	
02	278 30.0	247 37.8 23.6	89 22.2 31.5	166 36.2 14.6	51 42.8 58.9	Acrux	173 08.1 S63 11.1	
03	293 32.4	262 37.5 . . 24.6	104 24.3 . . 31.7	181 38.2 . . 14.6	66 45.4 . . 58.8	Adhara	255 12.3 S28 59.8	
04	308 34.9	277 37.2 25.6	119 26.5 31.9	196 40.1 14.5	81 48.1 58.8	Aldebarán	290 49.0 N16 32.1	
05	323 37.4	292 36.9 26.5	134 28.7 32.1	211 42.1 14.4	96 50.7 58.8			
06	338 39.8	307 36.5 N10 27.5	149 30.9 S 3 32.3	226 44.0 N22 14.4	111 53.3 S14 58.7	Alioth	166 19.9 N55 53.1	
07	353 42.3	322 36.2 28.5	164 33.1 32.6	241 46.0 14.3	126 56.0 58.7	Alkaid	152 58.1 N49 14.7	
08	8 44.8	337 35.9 29.5	179 35.3 32.8	256 47.9 14.2	141 58.6 58.6	Al Na'ir	62 07.4 N 8 54.5	
09	23 47.2	352 35.5 . . 30.5	194 37.5 . . 33.0	271 49.8 . . 14.2	157 01.2 . . 58.6	Alnilam	275 46.0 S 1 11.8	
10	38 49.7	7 35.2 31.5	209 39.7 33.2	286 51.8 14.1	172 03.9 58.6	Alphard	217 55.6 S 8 43.5	
11	53 52.1	22 34.9 32.5	224 41.8 33.4	301 53.7 14.0	187 06.5 58.5			
12	68 54.6	37 34.5 N10 33.5	239 44.0 S 3 33.6	316 55.7 N22 13.9	202 09.1 S14 58.5	Alphecca	126 10.1 N26 40.1	
13	83 57.1	52 34.2 34.5	254 46.2 33.8	331 57.6 13.9	217 11.8 58.4	Alpheratz	357 42.9 N29 10.0	
14	98 59.5	67 33.9 35.5	269 48.4 34.1	346 59.6 13.8	232 14.4 58.4	Altair	62 07.4 N 8 54.5	
15	114 02.0	82 33.5 . . 36.5	284 50.6 . . 34.3	2 01.5 . . 13.7	247 17.0 . . 58.4	Ankaa	353 15.3 S42 13.5	
16	129 04.5	97 33.2 37.5	299 52.7 34.5	17 03.5 13.7	262 19.6 58.3	Antares	112 25.1 S26 27.7	
17	144 06.9	112 32.9 38.5	314 54.9 34.7	32 05.4 13.6	277 22.3 58.3			
18	159 09.4	127 32.5 N10 39.5	329 57.1 S 3 34.9	47 07.3 N22 13.5	292 24.9 S14 58.2	Arcturus	145 54.9 N19 06.5	
19	174 11.9	142 32.2 40.5	344 59.3 35.1	62 09.3 13.5	307 27.5 58.2	Atria	107 25.7 S69 03.0	
20	189 14.3	157 31.9 41.5	0 01.4 35.4	77 11.2 13.4	322 30.2 58.2	Avior	234 18.1 S59 33.8	
21	204 16.8	172 31.5 . . 42.5	15 03.6 . . 35.6	92 13.2 . . 13.3	337 32.8 . . 58.1	Bellatrix	278 31.6 N 6 21.5	
22	219 19.3	187 31.2 43.5	30 05.8 35.8	107 15.1 13.2	352 35.4 58.1	Betelgeuse	271 00.9 N 7 24.3	
23	234 21.7	202 30.8 44.4	45 07.9 36.0	122 17.1 13.2	7 38.1 58.0			
1 00	249 24.2	217 30.5 N10 45.4	60 10.1 S 3 36.2	137 19.0 N22 13.1	22 40.7 S14 58.0	Canopus	263 56.4 S52 42.5	
01	264 26.6	232 30.2 46.4	75 12.3 36.5	152 20.9 13.0	37 43.3 58.0	Capella	280 33.9 N46 00.5	
02	279 29.1	247 29.8 47.4	90 14.4 36.7	167 22.9 13.0	52 46.0 57.9	Deneb	49 30.7 N45 19.9	
03	294 31.6	262 29.5 . . 48.4	105 16.6 . . 36.9	182 24.8 . . 12.9	67 48.6 . . 57.9	Denébola	182 32.9 N14 29.5	
04	309 34.0	277 29.1 49.4	120 18.8 37.1	197 26.8 12.8	82 51.2 57.8	Diphda	348 55.4 S17 54.4	
05	324 36.5	292 28.8 50.4	135 20.9 37.3	212 28.7 12.7	97 53.9 57.8			
06	339 39.0	307 28.5 N10 51.4	150 23.1 S 3 37.6	227 30.7 N22 12.7	112 56.5 S14 57.8	Dubhe	193 51.0 N61 40.6	
07	354 41.4	322 28.1 52.4	165 25.2 37.8	242 32.6 12.6	127 59.1 57.7	Elnath	278 12.2 N28 37.0	
08	9 43.9	337 27.8 53.4	180 27.4 38.0	257 34.5 12.5	143 01.8 57.7	Eltanin	90 45.3 N51 29.3	
09	24 46.4	352 27.4 . . 54.3	195 29.6 . . 38.2	272 36.5 . . 12.5	158 04.4 . . 57.6	Enif	33 46.4 N 9 56.5	
10	39 48.8	7 27.1 55.3	210 31.7 38.4	287 38.4 12.4	173 07.0 57.6	Fomalhaut	15 23.3 S29 32.5	
11	54 51.3	22 26.8 56.3	225 33.9 38.7	302 40.4 12.3	188 09.7 57.6			
12	69 53.7	37 26.4 N10 57.3	240 36.0 S 3 38.9	317 42.3 N22 12.3	203 12.3 S14 57.5	Gacrux	171 59.8 S57 11.9	
13	84 56.2	52 26.1 58.3	255 38.2 39.1	332 44.2 12.2	218 14.9 57.5	Gienah	175 51.5 S17 37.5	
14	99 58.7	67 25.7 10 59.3	270 40.3 39.3	347 46.2 12.1	233 17.5 57.4	Hadar	148 46.3 S60 26.7	
15	115 01.1	82 25.4 11 00.3	285 42.5 . . 39.6	2 48.1 . . 12.0	248 20.2 . . 57.4	Hamal	328 00.3 N23 31.6	
16	130 03.6	97 25.1 01.3	300 44.6 39.8	17 50.1 12.0	263 22.8 57.4	Kaus Aust.	83 42.6 S34 22.4	
17	145 06.1	112 24.7 02.2	315 46.8 40.0	32 52.0 11.9	278 25.4 57.3			
18	160 08.5	127 24.4 N11 03.2	330 48.9 S 3 40.2	47 54.0 N22 11.8	293 28.1 S14 57.3	Kochab	137 19.2 N74 06.0	
19	175 11.0	142 24.0 04.2	345 51.1 40.5	62 55.9 11.8	308 30.7 57.3	Markab	13 37.7 N15 16.9	
20	190 13.5	157 23.7 05.2	0 53.2 40.7	77 57.8 11.7	323 33.3 57.2	Menkar	314 14.7 N 4 08.6	
21	205 15.9	172 23.3 . . 06.2	15 55.4 . . 40.9	92 59.8 . . 11.6	338 36.0 . . 57.2	Menkent	148 06.4 S36 26.5	
22	220 18.4	187 23.0 07.2	30 57.5 41.2	108 01.7 11.5	353 38.6 57.1	Miaplacidus	221 39.8 S69 47.0	
23	235 20.9	202 22.6 08.1	45 59.7 41.4	123 03.7 11.5	8 41.2 57.1			
2 00	250 23.3	217 22.3 N11 09.1	61 01.8 S 3 41.6	138 05.6 N22 11.4	23 43.8 S14 57.1	Mirfak	308 39.8 N49 54.5	
01	265 25.8	232 21.9 10.1	76 03.9 41.8	153 07.5 11.3	38 46.5 57.0	Nunki	75 57.2 S26 16.5	
02	280 28.2	247 21.6 11.1	91 06.1 42.1	168 09.5 11.3	53 49.1 57.0	Peacock	53 17.9 S56 40.9	
03	295 30.7	262 21.2 . . 12.1	106 08.2 . . 42.3	183 11.4 . . 11.2	68 51.7 . . 56.9	Póllux	243 27.2 N27 59.3	
04	310 33.2	277 20.9 13.1	121 10.4 42.5	198 13.4 11.1	83 54.4 56.9	Procyon	244 59.3 N 5 11.0	
05	325 35.6	292 20.6 14.0	136 12.5 42.8	213 15.3 11.0	98 57.0 56.9			
06	340 38.1	307 20.2 N11 15.0	151 14.6 S 3 43.0	228 17.2 N22 11.0	113 59.6 S14 56.8	Rasalhague	96 05.5 N12 33.1	
07	355 40.6	322 19.9 16.0	166 16.8 43.2	243 19.2 10.9	129 02.3 56.8	Régulus	207 42.9 N11 53.7	
08	10 43.0	337 19.5 17.0	181 18.9 43.5	258 21.1 10.8	144 04.9 56.7	Rigel	281 11.8 S 8 11.3	
09	25 45.5	352 19.2 . . 18.0	196 21.0 . . 43.7	273 23.1 . . 10.8	159 07.5 . . 56.7	Rigel Kent.	139 50.1 S60 53.7	
10	40 48.0	7 18.8 18.9	211 23.2 43.9	288 25.0 10.7	174 10.1 56.7	Sabik	102 11.4 S15 44.4	
11	55 50.4	22 18.5 19.9	226 25.3 44.2	303 26.9 10.6	189 12.8 56.6			
12	70 52.9	37 18.1 N11 20.9	241 27.4 S 3 44.4	318 28.9 N22 10.5	204 15.4 S14 56.6	Schedar	349 39.9 N56 36.7	
13	85 55.4	52 17.8 21.9	256 29.6 44.6	333 30.8 10.5	219 18.0 56.5	Shaula	96 20.6 S37 06.6	
14	100 57.8	67 17.4 22.9	271 31.7 44.9	348 32.8 10.4	234 20.7 56.5	Sirius	258 33.4 S16 44.4	
15	116 00.3	82 17.0 . . 23.8	286 33.8 . . 45.1	3 34.7 . . 10.3	249 23.3 . . 56.5	Spica	158 30.3 S11 14.3	
16	131 02.7	97 16.7 24.8	301 35.9 45.3	18 36.6 10.2	264 25.9 56.4	Suhail	222 52.1 S43 29.9	
17	146 05.2	112 16.3 25.8	316 38.1 45.6	33 38.6 10.2	279 28.5 56.4			
18	161 07.7	127 16.0 N11 26.8	331 40.2 S 3 45.8	48 40.5 N22 10.1	294 31.2 S14 56.4	Vega	80 38.1 N38 47.9	
19	176 10.1	142 15.6 27.7	346 42.3 46.0	63 42.4 10.0	309 33.8 56.3	Zuben'ubi	137 04.4 S16 06.1	
20	191 12.6	157 15.3 28.7	1 44.4 46.3	78 44.4 10.0	324 36.4 56.3			
21	206 15.1	172 14.9 . . 29.7	16 46.5 . . 46.5	93 46.3 . . 09.9	339 39.1 . . 56.2			
22	221 17.5	187 14.6 30.7	31 48.7 46.8	108 48.3 09.8	354 41.7 56.2			
23	236 20.0	202 14.2 31.6	46 50.8 47.0	123 50.2 09.7	9 44.3 56.2			
h m								
Paso Mer.	7 21.2	v -0.3 d 1.0	v 2.2 d 0.2	v 1.9 d 0.1	v 2.6 d 0.0			
						AHS	Paso Mer.	
						° /	h m	
						Venus	328 06.3 9 30	
						Marte	170 45.9 19 56	
						Júpiter	247 54.8 14 49	
						Saturno	133 16.5 22 25	

UT (HmGr)	SOL				LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec			AHGr	v	Dec	d		Ph	Náut.		Civil	31	1	2	3
d h	°	°	°	°	°	°	°	°	°	h m	h m	h m	h m	h m	h m	h m	
31	00	180 36.0	N21 52.2		153 09.7	11.4	N18 35.7	2.2	54.8	N 72	□	□	□	□	04 04	05 57	07 40
	01	195 35.9		52.5	167 40.1	11.5	18 33.5	2.3	54.8	N 70	□	□	□	03 31	04 58	06 29	08 01
	02	210 35.8		52.9	182 10.6	11.4	18 31.2	2.4	54.8	68	□	□	□	04 15	05 31	06 53	08 17
	03	225 35.7	.	53.2	196 41.0	11.5	18 28.8	2.5	54.8	66	////	////	01 13	04 45	05 55	07 11	08 29
	04	240 35.6		53.6	211 11.5	11.6	18 26.3	2.6	54.8	64	////	////	01 58	05 07	06 13	07 25	08 40
	05	255 35.6		54.0	225 42.1	11.5	18 23.7	2.6	54.7	62	////	////	02 27	05 24	06 29	07 38	08 49
S A B A D O	06	270 35.5	N21 54.3		240 12.6	11.7	N18 21.1	2.7	54.7	60	////	01 27	02 50	05 39	06 41	07 48	08 57
	07	285 35.4		54.7	254 43.3	11.6	18 18.4	2.9	54.7	N 58	////	02 00	03 07	05 51	06 52	07 57	09 04
	08	300 35.3		55.0	269 13.9	11.7	18 15.5	2.9	54.7	56	////	02 25	03 22	06 02	07 02	08 05	09 10
	09	315 35.2	.	55.4	283 44.6	11.7	18 12.6	3.0	54.7	54	01 19	02 44	03 35	06 12	07 10	08 12	09 11
	10	330 35.1		55.7	298 15.3	11.8	18 09.6	3.0	54.7	52	01 50	03 00	03 46	06 20	07 18	08 18	09 20
	11	345 35.0		56.1	312 46.1	11.8	18 06.6	3.2	54.7	50	02 13	03 13	03 56	06 28	07 25	08 24	09 24
	12	0 34.9	N21 56.4		327 16.9	11.8	N18 03.4	3.2	54.6	45	02 53	03 40	04 17	06 44	07 39	08 36	09 34
	13	15 34.8		56.8	341 47.7	11.9	18 00.2	3.4	54.6	N 40	03 21	04 01	04 33	06 57	07 51	08 46	09 42
	14	30 34.7		57.1	356 18.6	11.9	17 56.8	3.4	54.6	35	03 42	04 18	04 47	07 08	08 01	08 55	09 48
	15	45 34.6	.	57.5	10 49.5	11.9	17 53.4	3.5	54.6	30	04 00	04 32	04 59	07 18	08 10	09 02	09 54
	16	60 34.5		57.8	25 20.4	12.0	17 49.9	3.5	54.6	20	04 27	04 56	05 20	07 35	08 25	09 15	10 04
	17	75 34.4		58.2	39 51.4	12.0	17 46.4	3.7	54.6	N 10	04 48	05 15	05 38	07 50	08 39	09 27	10 13
	18	90 34.3	N21 58.5		54 22.4	12.1	N17 42.7	3.7	54.6	0	05 06	05 32	05 54	08 04	08 51	09 37	10 22
	19	105 34.3		58.9	68 53.5	12.1	17 39.0	3.9	54.5	S 10	05 22	05 48	06 11	08 17	09 04	09 48	10 30
	20	120 34.2		59.2	83 24.6	12.2	17 35.1	3.9	54.5	20	05 37	06 04	06 28	08 32	09 17	09 59	10 39
	21	135 34.1	.	59.6	97 55.8	12.1	17 31.2	3.9	54.5	30	05 52	06 22	06 48	08 49	09 32	10 12	10 49
	22	150 34.0	21 59.9		112 26.9	12.3	17 27.3	4.1	54.5	35	06 00	06 31	06 59	08 59	09 41	10 20	10 55
	23	165 33.9	22 00.3		126 58.2	12.2	17 23.2	4.1	54.5	40	06 09	06 42	07 12	09 10	09 51	10 28	11 01
1	00	180 33.8	N22 00.6		141 29.4	12.3	N17 19.1	4.2	54.5	S 50	06 29	07 09	07 47	09 39	10 17	10 50	11 18
	01	195 33.7		01.0	156 00.7	12.4	17 14.9	4.3	54.5	52	06 33	07 16	07 56	09 47	10 24	10 55	11 23
	02	210 33.6		01.3	170 32.1	12.4	17 10.6	4.4	54.5	54	06 38	07 24	08 06	09 55	10 31	11 01	11 27
	03	225 33.5	.	01.6	185 03.5	12.4	17 06.2	4.4	54.4	56	06 44	07 32	08 18	10 04	10 39	11 08	11 32
	04	240 33.4		02.0	199 34.9	12.5	17 01.8	4.5	54.4	58	06 50	07 41	08 31	10 15	10 49	11 16	11 38
	05	255 33.3		02.3	214 06.4	12.5	16 57.3	4.6	54.4	S 60	06 56	07 52	08 46	10 27	10 59	11 24	11 45
D O M I N G O	06	270 33.2	N22 02.7		228 37.9	12.5	N16 52.7	4.7	54.4	Lat.		Ocaso Sol	Crepúsculo		Ocaso Luna		
	07	285 33.1		03.0	243 09.4	12.6	16 48.0	4.8	54.4			Civil	Náut.	31	1	2	3
	08	300 33.0		03.3	257 41.0	12.6	16 43.2	4.8	54.4								
	09	315 32.9	.	03.7	272 12.6	12.7	16 38.4	4.9	54.4								
	10	330 32.8		04.0	286 44.3	12.7	16 33.5	4.9	54.4								
	11	345 32.7		04.4	301 16.0	12.8	16 28.6	5.1	54.4								
	12	0 32.6	N22 04.7		315 47.8	12.7	N16 23.5	5.1	54.4	N 72	□	□	□	□	01 23	01 06	00 56
	13	15 32.5		05.0	330 19.5	12.9	16 18.4	5.1	54.3	N 70	□	□	□	00 15	00 28	00 32	00 34
	14	30 32.4		05.4	344 51.4	12.8	16 13.3	5.3	54.3	68	□	□	□	23 54	24 08	00 08	00 17
	15	45 32.3	.	05.7	359 23.2	12.9	16 08.0	5.3	54.3	66	22 47	////	////	23 30	23 50	24 03	00 03
	16	60 32.2		06.0	13 55.1	13.0	16 02.7	5.4	54.3	64	22 00	////	////	23 11	23 34	23 51	24 05
	17	75 32.1		06.4	28 27.1	13.0	15 57.3	5.5	54.3	62	21 30	////	////	22 55	23 21	23 42	23 58
	18	90 32.0	N22 06.7		42 59.1	13.0	N15 51.8	5.5	54.3	60	21 07	22 32	////	22 42	23 11	23 33	23 52
	19	105 31.9		07.0	57 31.1	13.1	15 46.3	5.6	54.3	N 58	20 49	21 57	////	22 31	23 01	23 26	23 47
	20	120 31.9		07.4	72 03.2	13.1	15 40.7	5.6	54.3	56	20 34	21 32	////	22 21	22 53	23 19	23 42
	21	135 31.8	.	07.7	86 35.3	13.1	15 35.1	5.8	54.3	54	20 21	21 13	22 39	22 12	22 45	23 13	23 38
	22	150 31.7		08.0	101 07.4	13.2	15 29.3	5.8	54.3	52	20 10	20 57	22 07	22 05	22 39	23 08	23 34
	23	165 31.6		08.3	115 39.6	13.2	15 23.5	5.8	54.3	50	20 00	20 43	21 44	21 58	22 33	23 03	23 30
2	00	180 31.5	N22 08.7		130 11.8	13.3	N15 17.7	5.9	54.3	45	19 39	20 16	21 03	21 42	22 20	22 53	23 23
	01	195 31.4		09.0	144 44.1	13.3	15 11.8	6.0	54.2	N 40	19 23	19 55	20 35	21 30	22 09	22 44	23 16
	02	210 31.3		09.3	159 16.4	13.3	15 05.8	6.1	54.2	35	19 09	19 38	20 14	21 19	22 00	22 37	23 11
	03	225 31.2	.	09.7	173 48.7	13.4	14 59.7	6.1	54.2	30	18 56	19 23	19 56	21 10	21 52	22 30	23 06
	04	240 31.1		10.0	188 21.1	13.4	14 53.6	6.2	54.2	20	18 36	19 00	19 29	20 54	21 38	22 19	22 57
	05	255 31.0		10.3	202 53.5	13.5	14 47.4	6.2	54.2	N 10	18 18	18 41	19 08	20 40	21 25	22 08	22 50
L U N E S	06	270 30.9	N22 10.6		217 26.0	13.5	N14 41.2	6.3	54.2	0	18 01	18 24	18 50	20 27	21 14	21 59	22 43
	07	285 30.8		11.0	231 58.5	13.5	14 34.9	6.4	54.2	S 10	17 45	18 08	18 34	20 14	21 02	21 49	22 36
	08	300 30.7		11.3	246 31.0	13.6	14 28.5	6.4	54.2	20	17 28	17 51	18 19	19 59	20 50	21 39	22 28
	09	315 30.6	.	11.6	261 03.6	13.6	14 22.1	6.5	54.2	30	17 08	17 34	18 03	19 43	20 35	21 27	22 19
	10	330 30.5		11.9	275 36.2	13.6	14 15.6	6.6	54.2	35	16 56	17 24	17 55	19 34	20 27	21 21	22 14
	11	345 30.4		12.2	290 08.8	13.7	14 09.0	6.6	54.2	40	16 43	17 13	17 47	19 23	20 17	21 13	22 09
	12	0 30.3	N22 12.6		304 41.5	13.7	N14 02.4	6.7	54.2	45	16 28	17 01	17 37	19 10	20 06	21 04	22 02
	13	15 30.2		12.9	319 14.2	13.7	13 55.7	6.7	54.2	S 50	16 08	16 46	17 27	18 54	19 53	20 53	21 54
	14	30 30.1		13.2	333 46.9	13.8	13 49.0	6.8	54.2	52	15 59	16 39	17 22	18 47	19 46	20 48	21 50
	15	45 30.0	.	13.5	348 19.7	13.8	13 42.2	6.8	54.2	54	15 49	16 32	17 17	18 39	19 39	20 42	21 46
	16	60 29.9		13.8	2 52.5	13.9	13 35.4	6.9	54.2	56	15 38	16 23	17 11	18 30	19 31	20 36	21 41
	17	75 29.8		14.2	17 25.4												

UT (HmGr)	ARIES	VENUS -3.9	MARTE -0.4	JÚPITER -1.9	SATURNO +0.2	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
3 00	251 22.5	217 13.9 N11 32.6	61 52.9 S 3 47.2	138 52.1 N22 09.7	24 46.9 S14 56.1	Acamar	315 18.3 S40 14.8	
01	266 24.9	232 13.5 33.6	76 55.0 47.5	153 54.1 09.6	39 49.6 56.1	Achernar	335 26.8 S57 09.7	
02	281 27.4	247 13.1 34.6	91 57.1 47.7	168 56.0 09.5	54 52.2 56.0	Acrux	173 08.1 S63 11.1	
03	296 29.9	262 12.8 . . 35.5	106 59.2 . . 47.9	183 57.9 . . 09.5	69 54.8 . . 56.0	Adhara	255 12.3 S28 59.8	
04	311 32.3	277 12.4 36.5	122 01.4 48.2	198 59.9 09.4	84 57.4 56.0	Aldebarán	290 49.0 N16 32.1	
05	326 34.8	292 12.1 37.5	137 03.5 48.4	214 01.8 09.3	100 00.1 55.9			
06	341 37.2	307 11.7 N11 38.5	152 05.6 S 3 48.7	229 03.8 N22 09.2	115 02.7 S14 55.9	Alioth	166 19.9 N55 53.1	
07	356 39.7	322 11.4 39.4	167 07.7 48.9	244 05.7 09.2	130 05.3 55.9	Alkaid	152 58.1 N49 14.7	
08	11 42.2	337 11.0 40.4	182 09.8 49.1	259 07.6 09.1	145 08.0 55.8	Al Na'ir	62 07.3 N 8 54.5	
09	26 44.6	352 10.6 . . 41.4	197 11.9 . . 49.4	274 09.6 . . 09.0	160 10.6 . . 55.8	Alnilam	275 46.0 S 1 11.8	
10	41 47.1	7 10.3 42.3	212 14.0 49.6	289 11.5 08.9	175 13.2 55.7	Alphard	217 55.6 S 8 43.5	
11	56 49.6	22 09.9 43.3	227 16.1 49.9	304 13.4 08.9	190 15.8 55.7			
12	71 52.0	37 09.6 N11 44.3	242 18.2 S 3 50.1	319 15.4 N22 08.8	205 18.5 S14 55.7	Alphecca	126 10.1 N26 40.1	
13	86 54.5	52 09.2 45.3	257 20.3 50.4	334 17.3 08.7	220 21.1 55.6	Alpheratz	357 42.9 N29 10.1	
14	101 57.0	67 08.8 46.2	272 22.4 50.6	349 19.3 08.7	235 23.7 55.6	Altair	62 07.3 N 8 54.5	
15	116 59.4	82 08.5 . . 47.2	287 24.5 . . 50.8	4 21.2 . . 08.6	250 26.3 . . 55.5	Ankaa	353 15.3 S42 13.4	
16	132 01.9	97 08.1 48.2	302 26.6 51.1	19 23.1 08.5	265 29.0 55.5	Antares	112 25.1 S26 27.7	
17	147 04.3	112 07.8 49.1	317 28.7 51.3	34 25.1 08.4	280 31.6 55.5			
18	162 06.8	127 07.4 N11 50.1	332 30.8 S 3 51.6	49 27.0 N22 08.4	295 34.2 S14 55.4	Arcturus	145 54.9 N19 06.5	
19	177 09.3	142 07.0 51.1	347 32.9 51.8	64 28.9 08.3	310 36.8 55.4	Atria	107 25.7 S69 03.0	
20	192 11.7	157 06.7 52.0	2 35.0 52.1	79 30.9 08.2	325 39.5 55.4	Avior	234 18.1 S59 33.8	
21	207 14.2	172 06.3 . . 53.0	17 37.1 . . 52.3	94 32.8 . . 08.1	340 42.1 . . 55.3	Bellatrix	278 31.6 N 6 21.5	
22	222 16.7	187 05.9 54.0	32 39.2 52.6	109 34.7 08.1	355 44.7 55.3	Betelgeuse	271 00.9 N 7 24.3	
23	237 19.1	202 05.6 54.9	47 41.3 52.8	124 36.7 08.0	10 47.4 55.2			
4 00	252 21.6	217 05.2 N11 55.9	62 43.4 S 3 53.1	139 38.6 N22 07.9	25 50.0 S14 55.2	Canopus	263 56.4 S52 42.5	
01	267 24.1	232 04.8 56.9	77 45.5 53.3	154 40.5 07.8	40 52.6 55.2	Capella	280 33.9 N46 00.5	
02	282 26.5	247 04.5 57.8	92 47.6 53.6	169 42.5 07.8	55 55.2 55.1	Deneb	49 30.7 N45 19.9	
03	297 29.0	262 04.1 . . 58.8	107 49.7 . . 53.8	184 44.4 . . 07.7	70 57.9 . . 55.1	Denébola	182 32.9 N14 29.5	
04	312 31.5	277 03.7 11 59.8	122 51.7 54.1	199 46.4 07.6	86 00.5 55.1	Diphda	348 55.4 S17 54.4	
05	327 33.9	292 03.4 12 00.7	137 53.8 54.3	214 48.3 07.5	101 03.1 55.0			
06	342 36.4	307 03.0 N12 01.7	152 55.9 S 3 54.6	229 50.2 N22 07.5	116 05.7 S14 55.0	Dubhe	193 51.0 N61 40.6	
07	357 38.8	322 02.6 02.7	167 58.0 54.8	244 52.2 07.4	131 08.4 54.9	Elnath	278 12.2 N28 37.0	
08	12 41.3	337 02.3 03.6	183 00.1 55.1	259 54.1 07.3	146 11.0 54.9	Eltanin	90 45.3 N51 29.3	
09	27 43.8	352 01.9 . . 04.6	198 02.2 . . 55.3	274 56.0 . . 07.3	161 13.6 . . 54.9	Enif	33 46.4 N 9 56.5	
10	42 46.2	7 01.5 05.5	213 04.2 55.6	289 58.0 07.2	176 16.2 54.8	Fomalhaut	15 23.3 S29 32.5	
11	57 48.7	22 01.2 06.5	228 06.3 55.8	304 59.9 07.1	191 18.9 54.8			
12	72 51.2	37 00.8 N12 07.5	243 08.4 S 3 56.1	320 01.8 N22 07.0	206 21.5 S14 54.8	Gacrux	171 59.8 S57 11.9	
13	87 53.6	52 00.4 08.4	258 10.5 56.3	335 03.8 07.0	221 24.1 54.7	Gienah	175 51.5 S17 37.5	
14	102 56.1	67 00.1 09.4	273 12.6 56.6	350 05.7 06.9	236 26.7 54.7	Hadar	148 46.3 S60 26.7	
15	117 58.6	81 59.7 . . 10.3	288 14.6 . . 56.8	5 07.6 . . 06.8	251 29.4 . . 54.6	Hamal	328 00.2 N23 31.6	
16	133 01.0	96 59.3 11.3	303 16.7 57.1	20 09.6 06.7	266 32.0 54.6	Kaus Aust.	83 42.6 S34 22.4	
17	148 03.5	111 58.9 12.3	318 18.8 57.3	35 11.5 06.7	281 34.6 54.6			
18	163 06.0	126 58.6 N12 13.2	333 20.9 S 3 57.6	50 13.4 N22 06.6	296 37.2 S14 54.5	Kochab	137 19.2 N74 06.0	
19	178 08.4	141 58.2 14.2	348 22.9 57.8	65 15.4 06.5	311 39.8 54.5	Markab	13 37.7 N15 16.9	
20	193 10.9	156 57.8 15.1	3 25.0 58.1	80 17.3 06.4	326 42.5 54.5	Menkar	314 14.6 N 4 08.6	
21	208 13.3	171 57.4 . . 16.1	18 27.1 . . 58.3	95 19.2 . . 06.4	341 45.1 . . 54.4	Menkent	148 06.4 S36 26.5	
22	223 15.8	186 57.1 17.0	33 29.1 58.6	110 21.2 06.3	356 47.7 54.4	Miaplacidus	221 39.8 S69 47.0	
23	238 18.3	201 56.7 18.0	48 31.2 58.9	125 23.1 06.2	11 50.3 54.3			
5 00	253 20.7	216 56.3 N12 19.0	63 33.3 S 3 59.1	140 25.0 N22 06.1	26 53.0 S14 54.3	Mirfak	308 39.8 N49 54.5	
01	268 23.2	231 56.0 19.9	78 35.3 59.4	155 27.0 06.1	41 55.6 54.3	Nunki	75 57.2 S26 16.5	
02	283 25.7	246 55.6 20.9	93 37.4 59.6	170 28.9 06.0	56 58.2 54.2	Peacock	53 17.9 S56 40.9	
03	298 28.1	261 55.2 . . 21.8	108 39.5 3 59.9	185 30.8 . . 05.9	72 00.8 . . 54.2	Póllux	243 27.2 N27 59.3	
04	313 30.6	276 54.8 22.8	123 41.5 4 00.1	200 32.8 05.8	87 03.5 54.2	Procyon	244 59.3 N 5 11.1	
05	328 33.1	291 54.4 23.7	138 43.6 00.4	215 34.7 05.8	102 06.1 54.1			
06	343 35.5	306 54.1 N12 24.7	153 45.7 S 4 00.7	230 36.6 N22 05.7	117 08.7 S14 54.1	Rasalhague	96 05.5 N12 33.1	
07	358 38.0	321 53.7 25.6	168 47.7 00.9	245 38.6 05.6	132 11.3 54.0	Régulus	207 42.9 N11 53.7	
08	13 40.4	336 53.3 26.6	183 49.8 01.2	260 40.5 05.5	147 13.9 54.0	Rigel	281 11.8 S 8 11.3	
09	28 42.9	351 52.9 . . 27.5	198 51.8 . . 01.4	275 42.4 . . 05.5	162 16.6 . . 54.0	Rigel Kent.	139 50.2 S60 53.7	
10	43 45.4	6 52.6 28.5	213 53.9 01.7	290 44.4 05.4	177 19.2 53.9	Sabik	102 11.4 S15 44.4	
11	58 47.8	21 52.2 29.5	228 55.9 02.0	305 46.3 05.3	192 21.8 53.9			
12	73 50.3	36 51.8 N12 30.4	243 58.0 S 4 02.2	320 48.2 N22 05.2	207 24.4 S14 53.9	Schedar	349 39.9 N56 36.7	
13	88 52.8	51 51.4 31.4	259 00.1 02.5	335 50.1 05.2	222 27.1 53.8	Shaula	96 20.6 S37 06.6	
14	103 55.2	66 51.0 32.3	274 02.1 02.7	350 52.1 05.1	237 29.7 53.8	Sirius	258 33.4 S16 44.4	
15	118 57.7	81 50.7 . . 33.3	289 04.2 . . 03.0	5 54.0 . . 05.0	252 32.3 . . 53.7	Spica	158 30.3 S11 14.3	
16	134 00.2	96 50.3 34.2	304 06.2 03.3	20 55.9 04.9	267 34.9 53.7	Suhail	222 52.1 S43 29.8	
17	149 02.6	111 49.9 35.2	319 08.3 03.5	35 57.9 04.9	282 37.5 53.7			
18	164 05.1	126 49.5 N12 36.1	334 10.3 S 4 03.8	50 59.8 N22 04.8	297 40.2 S14 53.6	Vega	80 38.1 N38 47.9	
19	179 07.6	141 49.1 37.1	349 12.4 04.1	66 01.7 04.7	312 42.8 53.6	Zuben'ubi	137 04.4 S16 06.1	
20	194 10.0	156 48.7 38.0	4 14.4 04.3	81 03.7 04.6	327 45.4 53.6			
21	209 12.5	171 48.4 . . 38.9	19 16.4 . . 04.6	96 05.6 . . 04.6	342 48.0 . . 53.5			
22	224 14.9	186 48.0 39.9	34 18.5 04.9	111 07.5 04.5	357 50.7 53.5	Venus	324 43.6 9 32	
23	239 17.4	201 47.6 40.8	49 20.5 05.1	126 09.5 04.4	12 53.3 53.5	Marte	170 21.8 19 46	
						Júpiter	247 17.0 14 40	
						Saturno	133 28.4 22 13	
Paso Mer.	h m 7 09.4	v -0.4 d 1.0	v 2.1 d 0.3	v 1.9 d 0.1	v 2.6 d 0.0			

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna							
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	3	4	5	6			
^d ^h	°	°	°	°	°	°	°	h	m	h	m	h	m	h	m	h	m	
M A R T E S	3 00	180 29.0	N22 16.4	119 16.3	14.1	N12 38.7	7.4	54.2	N 70				07 40	09 18	10 55	12 31		
	01	195 28.9	16.7	133 49.4	14.1	12 31.3	7.4	54.1	N 72				08 01	09 31	11 01	12 31		
	02	210 28.8	17.0	148 22.5	14.2	12 23.9	7.4	54.1	66	////	////	01 00	08 29	09 49	11 10	12 31		
	03	225 28.7	17.3	162 55.7	14.2	12 16.5	7.5	54.1	64	////	////	01 51	08 40	09 56	11 13	12 31		
	04	240 28.6	17.6	177 28.9	14.2	12 09.0	7.5	54.1	62	////	////	02 22	08 49	10 02	11 16	12 31		
	05	255 28.5	17.9	192 02.1	14.3	12 01.5	7.6	54.1	60	////	01 18	02 45	08 57	10 07	11 19	12 31		
	06	270 28.4	N22 18.2	206 35.4	14.3	N11 53.9	7.7	54.1	N 58	////	01 55	03 04	09 04	10 12	11 21	12 31		
	07	285 28.3	18.5	221 08.7	14.3	11 46.2	7.6	54.1	56	////	02 21	03 19	09 10	10 16	11 23	12 31		
	08	300 28.2	18.8	235 42.0	14.4	11 38.6	7.8	54.1	54	01 11	02 40	03 32	09 15	10 19	11 25	12 31		
	09	315 28.1	19.1	250 15.4	14.3	11 30.8	7.8	54.2	52	01 45	02 57	03 44	09 20	10 23	11 26	12 31		
M I R C O L E S	10	330 28.0	19.4	264 48.7	14.4	11 23.0	7.8	54.2	50	02 09	03 11	03 54	09 24	10 26	11 28	12 31		
	11	345 27.9	19.7	279 22.1	14.5	11 15.2	7.9	54.2	45	02 51	03 39	04 15	09 34	10 32	11 31	12 31		
	12	0 27.8	N22 20.1	293 55.6	14.4	N11 07.3	7.9	54.2	N 40	03 19	04 00	04 32	09 42	10 38	11 34	12 31		
	13	15 27.7	20.4	308 29.0	14.5	10 59.4	8.0	54.2	35	03 41	04 17	04 46	09 48	10 42	11 36	12 31		
	14	30 27.6	20.7	323 02.5	14.5	10 51.4	8.0	54.2	30	03 59	04 32	04 59	09 54	10 46	11 38	12 31		
	15	45 27.5	21.0	337 36.0	14.5	10 43.4	8.0	54.2	20	04 27	04 55	05 20	10 04	10 53	11 42	12 31		
	16	60 27.4	21.3	352 09.5	14.6	10 35.4	8.1	54.2	N 10	04 48	05 15	05 38	10 13	10 59	11 45	12 31		
	17	75 27.3	21.6	6 43.1	14.6	10 27.3	8.2	54.2	0	05 06	05 32	05 55	10 22	11 05	11 48	12 31		
	18	90 27.2	N22 21.9	21 16.7	14.6	N10 19.1	8.2	54.2	S 10	05 22	05 49	06 11	10 30	11 11	11 51	12 31		
	19	105 27.1	22.2	35 50.3	14.6	10 10.9	8.2	54.2	20	05 38	06 05	06 29	10 39	11 17	11 54	12 31		
J U E V E S	20	120 27.0	22.5	50 23.9	14.6	10 02.7	8.3	54.2	30	05 53	06 23	06 49	10 49	11 24	11 58	12 31		
	21	135 26.9	22.8	64 57.5	14.7	9 54.4	8.3	54.2	35	06 02	06 33	07 01	10 55	11 28	12 00	12 31		
	22	150 26.7	23.1	79 31.2	14.7	9 46.1	8.4	54.2	40	06 10	06 44	07 14	11 01	11 33	12 02	12 32		
	23	165 26.6	23.4	94 04.9	14.7	9 37.7	8.4	54.2	45	06 20	06 57	07 30	11 09	11 38	12 05	12 32		
	4 00	180 26.5	N22 23.6	108 38.6	14.7	N 9 29.3	8.4	54.2	S 50	06 31	07 12	07 50	11 18	11 44	12 08	12 32		
	01	195 26.4	23.9	123 12.3	14.8	9 20.9	8.5	54.2	52	06 36	07 19	07 59	11 23	11 47	12 10	12 32		
	02	210 26.3	24.2	137 46.1	14.7	9 12.4	8.5	54.2	54	06 41	07 27	08 09	11 27	11 50	12 11	12 32		
	03	225 26.2	24.5	152 19.8	14.8	9 03.9	8.6	54.2	56	06 47	07 35	08 21	11 32	11 54	12 13	12 32		
	04	240 26.1	24.8	166 53.6	14.8	8 55.3	8.6	54.2	58	06 53	07 45	08 35	11 38	11 57	12 15	12 32		
	05	255 26.0	25.1	181 27.4	14.8	8 46.7	8.6	54.2	S 60	07 00	07 55	08 51	11 45	12 02	12 17	12 32		
M I R C O L E S	06	270 25.9	N22 25.4	196 01.2	14.8	N 8 38.1	8.7	54.2		Ocaso Sol	Crepúsculo		Ocaso Luna					
	07	285 25.8	25.7	210 35.0	14.8	8 29.4	8.7	54.2	Lat.				3	4	5	6		
	08	300 25.7	26.0	225 08.9	14.8	8 20.7	8.7	54.3			Civil	Náut.						
	09	315 25.6	26.3	239 42.7	14.9	8 12.0	8.8	54.3										
	10	330 25.5	26.6	254 16.6	14.9	8 03.2	8.8	54.3										
	11	345 25.4	26.9	268 50.5	14.9	7 54.4	8.9	54.3										
	12	0 25.3	N22 27.1	283 24.4	14.9	N 7 45.5	8.8	54.3	N 72				00 56	00 48	00 41	00 34		
	13	15 25.1	27.4	297 58.3	14.9	7 36.7	9.0	54.3	N 70				00 34	00 34	00 33	00 31		
	14	30 25.0	27.7	312 32.2	14.9	7 27.7	8.9	54.3	66				00 17	00 22	00 26	00 29		
	15	45 24.9	28.0	327 06.1	15.0	7 18.8	9.0	54.3	64	23 01	////	////	00 03	00 13	00 20	00 27		
J U E V E S	16	60 24.8	28.3	341 40.1	14.9	7 09.8	9.0	54.3	62	22 07	////	////	24 05	00 05	00 16	00 26		
	17	75 24.7	28.6	356 14.0	15.0	7 00.8	9.1	54.3	60	21 36	////	////	23 58	24 12	00 12	00 24		
	18	90 24.6	N22 28.9	10 48.0	15.0	N 6 51.7	9.0	54.3	N 58	20 54	22 03	////	23 47	24 05	00 05	00 22		
	19	105 24.5	29.1	25 22.0	14.9	6 42.7	9.1	54.4	56	20 38	21 37	////	23 42	24 02	00 02	00 21		
	20	120 24.4	29.4	39 55.9	15.0	6 33.6	9.2	54.4	54	20 25	21 17	22 48	23 38	24 00	00 00	00 20		
	21	135 24.3	29.7	54 29.9	15.0	6 24.4	9.1	54.4	52	20 13	21 01	22 13	23 34	23 57	24 19	00 19		
	22	150 24.2	30.0	69 03.9	15.0	6 15.3	9.2	54.4	50	20 03	20 46	21 49	23 30	23 55	24 19	00 19		
	23	165 24.1	30.3	83 37.9	15.0	6 06.1	9.3	54.4	45	19 42	20 19	21 07	23 23	23 50	24 17	00 17		
	5 00	180 23.9	N22 30.5	98 11.9	15.0	N 5 56.8	9.2	54.4	N 40	19 25	19 57	20 38	23 16	23 47	24 16	00 16		
	01	195 23.8	30.8	112 45.9	15.0	5 47.6	9.3	54.4	35	19 10	19 40	20 16	23 11	23 43	24 15	00 15		
02	210 23.7	31.1	127 19.9	15.0	5 38.3	9.3	54.4	30	18 58	19 25	19 58	23 06	23 40	24 14	00 14			
03	225 23.6	31.4	141 53.9	15.0	5 29.0	9.4	54.5	20	18 37	19 01	19 30	22 57	23 35	24 12	00 12			
04	240 23.5	31.7	156 27.9	15.0	5 19.6	9.3	54.5	N 10	18 19	18 42	19 09	22 50	23 30	24 10	00 10			
05	255 23.4	31.9	171 01.9	15.0	5 10.3	9.4	54.5	0	18 02	18 24	18 50	22 43	23 26	24 09	00 09			
J U E V E S	06	270 23.3	N22 32.2	185 35.9	15.0	N 5 00.9	9.4	54.5	S 10	17 45	18 08	18 34	22 36	23 21	24 07	00 07		
	07	285 23.2	32.5	200 09.9	15.0	4 51.5	9.5	54.5	20	17 28	17 51	18 19	22 28	23 17	24 06	00 06		
	08	300 23.1	32.8	214 43.9	15.0	4 42.0	9.4	54.5	30	17 07	17 33	18 03	22 19	23 11	24 04	00 04		
	09	315 23.0	33.0	229 17.9	15.0	4 32.6	9.5	54.5	35	16 56	17 23	17 55	22 14	23 08	24 02	00 02		
	10	330 22.8	33.3	243 51.9	15.0	4 23.1	9.5	54.6	40	16 42	17 12	17 46	22 09	23 05	24 01	00 01		
	11	345 22.7	33.6	258 25.9	15.0	4 13.6	9.5	54.6	45	16 26	17 00	17 36	22 02	23 00	24 00	00 00		
	12	0 22.6	N22 33.9	272 59.9	15.0	N 4 04.1	9.6	54.6	S 50	16 07	16 44	17 25	21 54	22 55	23 58	25 02		
	13	15 22.5	34.1	287 33.9	15.0	3 54.5	9.6	54.6	52	15 57	16 37	17 21	21 50	22 53	23 57	25 02		
	14	30 22.4	34.4	302 07.9	14.9	3 44.9	9.6	54.6	54	15 47	16 30	17 15	21 46	22 51	23 56	25 03		
	15	45 22.3	34.7	316 41.8	15.0	3 35.3	9.6	54.6	56	15 35	16 21	17 10	21 41	22 48	23 55	25 04		
J U E V E S	16	60 22.2	34.9	331 15.8	15.0	3 25.7	9.6	54.7	58	15 22	16 12	17 03	21 36	22 45	23 54	25 05		
	17	75 22.1	35.2	345 49.8	14.9	3 16.1	9.7	54.7	S 60	15 05	16 01	16 57	21 30	22 41	23 53	25 06		
	18	90 22.0	N22 35.5	0 23.7	15.0	N 3 06.4	9.7	54.7					LUNA					
	19	105 21.8	35.7	14 57.7	14.9	2 56.7	9.7	54.7	Día	SOL		Paso Mer.		Paso Mer.		Edad	Fase	
	20	120 21.7	36.0	29 31.6	14.9	2 47.0	9.7	54.7		00 ^h	12 ^h		Sup.	Inf.				
	21	135 21.6	36.3	44 05.5	14.9	2 37.3	9.7	54.7										
	22	150 21.5	36.5	58 39.4	14.9	2 27.6	9.7	54.8										
	23	165 21.4	36.8	73 13.3	14.9	N 2 17.9	9.8	54.8										
		S/D 15.8	<i>d</i> 0.3	S/D 14.8		14.8		14.9		^d 3	^m 01 56	^s 01 51	^h 11 58	^h 16 32	^h 04 10	^d 06 28	[%] 07 37	
										4	01 46	01 41	11 58	17 16	04 54	07 37		
									5	01 36	01 31	11 58	17 58	05 37	08 47			

UT (HmGr)	ARIES	VENUS -3.9	MARTE -0.4	JÚPITER -1.9	SATURNO +0.2	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
6 00	254 19.9	216 47.2 N12 41.8	64 22.6 S 4 05.4	141 11.4 N22 04.3	27 55.9 S14 53.4	Acamar	315 18.3 S40 14.8	
01	269 22.3	231 46.8 42.7	79 24.6 05.7	156 13.3 04.3	42 58.5 53.4	Achernar	335 26.8 S57 09.6	
02	284 24.8	246 46.4 43.7	94 26.7 05.9	171 15.2 04.2	58 01.1 53.3	Acrux	173 08.1 S63 11.1	
03	299 27.3	261 46.1 . . 44.6	109 28.7 . . 06.2	186 17.2 . . 04.1	73 03.8 . . 53.3	Adhara	255 12.3 S28 59.8	
04	314 29.7	276 45.7 45.6	124 30.7 06.4	201 19.1 04.0	88 06.4 53.3	Aldebarán	290 49.0 N16 32.1	
05	329 32.2	291 45.3 46.5	139 32.8 06.7	216 21.0 04.0	103 09.0 53.2			
06	344 34.7	306 44.9 N12 47.5	154 34.8 S 4 07.0	231 23.0 N22 03.9	118 11.6 S14 53.2	Alioth	166 19.9 N55 53.1	
07	359 37.1	321 44.5 48.4	169 36.9 07.3	246 24.9 03.8	133 14.2 53.2	Alkaid	152 58.1 N49 14.7	
08	14 39.6	336 44.1 49.3	184 38.9 07.5	261 26.8 03.7	148 16.9 53.1	Al Na'ir	62 07.3 N 8 54.5	
09	29 42.1	351 43.7 . . 50.3	199 40.9 . . 07.8	276 28.8 . . 03.7	163 19.5 . . 53.1	Alnilam	275 46.0 S 1 11.8	
10	44 44.5	6 43.3 51.2	214 43.0 08.1	291 30.7 03.6	178 22.1 53.1	Alphard	217 55.6 S 8 43.5	
11	59 47.0	21 43.0 52.2	229 45.0 08.3	306 32.6 03.5	193 24.7 53.0			
12	74 49.4	36 42.6 N12 53.1	244 47.0 S 4 08.6	321 34.5 N22 03.4	208 27.3 S14 53.0	Alphecca	126 10.1 N26 40.1	
13	89 51.9	51 42.2 54.0	259 49.0 08.9	336 36.5 03.4	223 30.0 52.9	Alpheratz	357 42.9 N29 10.1	
14	104 54.4	66 41.8 55.0	274 51.1 09.1	351 38.4 03.3	238 32.6 52.9	Altair	62 07.3 N 8 54.5	
15	119 56.8	81 41.4 . . 55.9	289 53.1 . . 09.4	6 40.3 . . 03.2	253 35.2 . . 52.9	Ankaa	353 15.3 S42 13.4	
16	134 59.3	96 41.0 56.9	304 55.1 09.7	21 42.3 03.1	268 37.8 52.8	Antares	112 25.1 S26 27.7	
17	150 01.8	111 40.6 57.8	319 57.2 10.0	36 44.2 03.0	283 40.4 52.8			
18	165 04.2	126 40.2 N12 58.7	334 59.2 S 4 10.2	51 46.1 N22 03.0	298 43.1 S14 52.8	Arcturus	145 54.9 N19 06.6	
19	180 06.7	141 39.8 12 59.7	350 01.2 10.5	66 48.0 02.9	313 45.7 52.7	Atria	107 25.7 S69 03.0	
20	195 09.2	156 39.4 13 00.6	5 03.2 10.8	81 50.0 02.8	328 48.3 52.7	Avior	234 18.1 S59 33.8	
21	210 11.6	171 39.0 . . 01.6	20 05.3 . . 11.0	96 51.9 . . 02.7	343 50.9 . . 52.7	Bellatrix	278 31.6 N 6 21.5	
22	225 14.1	186 38.6 02.5	35 07.3 11.3	111 53.8 02.7	358 53.5 52.6	Betelgeuse	271 00.9 N 7 24.4	
23	240 16.5	201 38.2 03.4	50 09.3 11.6	126 55.8 02.6	13 56.2 52.6			
7 00	255 19.0	216 37.9 N13 04.4	65 11.3 S 4 11.9	141 57.7 N22 02.5	28 58.8 S14 52.6	Canopus	263 56.4 S52 42.5	
01	270 21.5	231 37.5 05.3	80 13.3 12.1	156 59.6 02.4	44 01.4 52.5	Capella	280 33.9 N46 00.5	
02	285 23.9	246 37.1 06.2	95 15.3 12.4	172 01.5 02.4	59 04.0 52.5	Deneb	49 30.7 N45 19.9	
03	300 26.4	261 36.7 . . 07.2	110 17.4 . . 12.7	187 03.5 . . 02.3	74 06.6 . . 52.4	Denébola	182 32.9 N14 29.5	
04	315 28.9	276 36.3 08.1	125 19.4 13.0	202 05.4 02.2	89 09.3 52.4	Diphda	348 55.4 S17 54.4	
05	330 31.3	291 35.9 09.0	140 21.4 13.2	217 07.3 02.1	104 11.9 52.4			
06	345 33.8	306 35.5 N13 10.0	155 23.4 S 4 13.5	232 09.3 N22 02.0	119 14.5 S14 52.3	Dubhe	193 51.0 N61 40.6	
07	0 36.3	321 35.1 10.9	170 25.4 13.8	247 11.2 02.0	134 17.1 52.3	Elnath	278 12.2 N28 36.9	
08	15 38.7	336 34.7 11.8	185 27.4 14.1	262 13.1 01.9	149 19.7 52.3	Eltanin	90 45.3 N51 29.3	
09	30 41.2	351 34.3 . . 12.8	200 29.4 . . 14.3	277 15.0 . . 01.8	164 22.3 . . 52.2	Enif	33 46.3 N 9 56.5	
10	45 43.7	6 33.9 13.7	215 31.5 14.6	292 17.0 01.7	179 25.0 52.2	Fomalhaut	15 23.3 S29 32.5	
11	60 46.1	21 33.5 14.6	230 33.5 14.9	307 18.9 01.7	194 27.6 52.2			
12	75 48.6	36 33.1 N13 15.6	245 35.5 S 4 15.2	322 20.8 N22 01.6	209 30.2 S14 52.1	Gacrux	171 59.8 S57 11.9	
13	90 51.0	51 32.7 16.5	260 37.5 15.5	337 22.8 01.5	224 32.8 52.1	Gienah	175 51.5 S17 37.5	
14	105 53.5	66 32.3 17.4	275 39.5 15.7	352 24.7 01.4	239 35.4 52.1	Hadar	148 46.3 S60 26.7	
15	120 56.0	81 31.9 . . 18.4	290 41.5 . . 16.0	7 26.6 . . 01.4	254 38.0 . . 52.0	Hamal	328 00.2 N23 31.6	
16	135 58.4	96 31.5 19.3	305 43.5 16.3	22 28.5 01.3	269 40.7 52.0	Kaus Aust.	83 42.5 S34 22.4	
17	151 00.9	111 31.1 20.2	320 45.5 16.6	37 30.5 01.2	284 43.3 52.0			
18	166 03.4	126 30.7 N13 21.1	335 47.5 S 4 16.9	52 32.4 N22 01.1	299 45.9 S14 51.9	Kochab	137 19.2 N74 06.0	
19	181 05.8	141 30.3 22.1	350 49.5 17.1	67 34.3 01.0	314 48.5 51.9	Markab	13 37.6 N15 16.9	
20	196 08.3	156 29.9 23.0	5 51.5 17.4	82 36.2 01.0	329 51.1 51.8	Menkar	314 14.6 N 4 08.6	
21	211 10.8	171 29.5 . . 23.9	20 53.5 . . 17.7	97 38.2 . . 00.9	344 53.8 . . 51.8	Menkent	148 06.4 S36 26.5	
22	226 13.2	186 29.1 24.8	35 55.5 18.0	112 40.1 00.8	359 56.4 51.8	Miaplacidus	221 39.9 S69 47.0	
23	241 15.7	201 28.7 25.8	50 57.5 18.3	127 42.0 00.7	14 59.0 51.7			
8 00	256 18.1	216 28.3 N13 26.7	65 59.5 S 4 18.5	142 43.9 N22 00.7	30 01.6 S14 51.7	Mirfak	308 39.8 N49 54.5	
01	271 20.6	231 27.8 27.6	81 01.5 18.8	157 45.9 00.6	45 04.2 51.7	Nunki	75 57.2 S26 16.5	
02	286 23.1	246 27.4 28.5	96 03.5 19.1	172 47.8 00.5	60 06.8 51.6	Peacock	53 17.9 S56 40.9	
03	301 25.5	261 27.0 . . 29.5	111 05.5 . . 19.4	187 49.7 . . 00.4	75 09.4 . . 51.6	Póllux	243 27.2 N27 59.3	
04	316 28.0	276 26.6 30.4	126 07.5 19.7	202 51.6 00.3	90 12.1 51.6	Procyon	244 59.3 N 5 11.1	
05	331 30.5	291 26.2 31.3	141 09.5 20.0	217 53.6 00.3	105 14.7 51.5			
06	346 32.9	306 25.8 N13 32.2	156 11.4 S 4 20.2	232 55.5 N22 00.2	120 17.3 S14 51.5	Rasalhague	96 05.5 N12 33.1	
07	1 35.4	321 25.4 33.2	171 13.4 20.5	247 57.4 00.1	135 19.9 51.5	Régulus	207 42.9 N11 53.7	
08	16 37.9	336 25.0 34.1	186 15.4 20.8	262 59.3 00.0	150 22.5 51.4	Rigel	281 11.8 S 8 11.3	
09	31 40.3	351 24.6 . . 35.0	201 17.4 . . 21.1	278 01.3 22 00.0	165 25.1 . . 51.4	Rigel Kent.	139 50.2 S60 53.8	
10	46 42.8	6 24.2 35.9	216 19.4 21.4	293 03.2 21 59.9	180 27.8 51.4	Sabik	102 11.4 S15 44.4	
11	61 45.3	21 23.8 36.8	231 21.4 21.7	308 05.1 59.8	195 30.4 51.3			
12	76 47.7	36 23.4 N13 37.8	246 23.4 S 4 22.0	323 07.0 N21 59.7	210 33.0 S14 51.3	Schedar	349 39.9 N56 36.7	
13	91 50.2	51 23.0 38.7	261 25.3 22.2	338 09.0 59.6	225 35.6 51.3	Shaula	96 20.6 S37 06.6	
14	106 52.6	66 22.5 39.6	276 27.3 22.5	353 10.9 59.6	240 38.2 51.2	Sirius	258 33.5 S16 44.4	
15	121 55.1	81 22.1 . . 40.5	291 29.3 . . 22.8	8 12.8 . . 59.5	255 40.8 . . 51.2	Spica	158 30.3 S11 14.2	
16	136 57.6	96 21.7 41.4	306 31.3 23.1	23 14.7 59.4	270 43.4 51.2	Suhail	222 52.1 S43 29.8	
17	152 00.0	111 21.3 42.3	321 33.3 23.4	38 16.7 59.3	285 46.1 51.1			
18	167 02.5	126 20.9 N13 43.3	336 35.3 S 4 23.7	53 18.6 N21 59.3	300 48.7 S14 51.1	Vega	80 38.1 N38 47.9	
19	182 05.0	141 20.5 44.2	351 37.2 24.0	68 20.5 59.2	315 51.3 51.1	Zuben'ubi	137 04.4 S16 06.1	
20	197 07.4	156 20.1 45.1	6 39.2 24.3	83 22.4 59.1	330 53.9 51.0			
21	212 09.9	171 19.7 . . 46.0	21 41.2 . . 24.6	98 24.4 . . 59.0	345 56.5 . . 51.0			
22	227 12.4	186 19.2 46.9	36 43.2 24.8	113 26.3 58.9	0 59.1 51.0	Venus	321 18.8 h 9 34	
23	242 14.8	201 18.8 47.8	51 45.1 25.1	128 28.2 58.9	16 01.7 50.9	Marte	169 52.3 19 37	
						Júpiter	246 38.7 14 30	
						Saturno	133 39.8 22 00	
h m								
Paso Mer. 6 57.6	v -0.4	d 0.9	v 2.0	d 0.3	v 1.9	d 0.1	v 2.6	d 0.0

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	6	7	8	9
V I E R N E S	d h	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	
	6 00	180 21.3	N22 37.1	87 47.2	14.9	N 2 08.1	9.8 54.8	□	□	□	12 31	14 10	15 54	17 46	
	01	195 21.2	37.3	102 21.1	14.8	1 58.3	9.8 54.8	□	□	□	12 31	14 04	15 41	17 23	
	02	210 21.1	37.6	116 54.9	14.8	1 48.5	9.8 54.8	66	////	00 45	12 31	13 55	15 21	16 51	
	03	225 20.9	37.8	131 28.7	14.9	1 38.7	9.8 54.9	64	////	01 45	12 31	13 51	15 14	16 39	
	04	240 20.8	38.1	146 02.6	14.8	1 28.9	9.8 54.9	62	////	02 18	12 31	13 48	15 07	16 29	
	05	255 20.7	38.4	160 36.4	14.7	1 19.1	9.9 54.9	60	////	01 10	12 31	13 45	15 02	16 21	
	06	270 20.6	N22 38.6	175 10.1	14.8	N 1 09.2	9.9 54.9	N 58	////	01 50	03 01	12 31	13 43	14 57	16 13
	07	285 20.5	38.9	189 43.9	14.7	0 59.3	9.8 54.9	56	////	02 17	03 17	12 31	13 41	14 53	16 07
	08	300 20.4	39.1	204 17.6	14.8	0 49.5	9.9 55.0	54	01 04	02 38	03 30	12 31	13 39	14 49	16 01
	09	315 20.3	39.4	218 51.4	14.7	0 39.6	9.9 55.0	52	01 41	02 54	03 42	12 31	13 37	14 46	15 56
	10	330 20.1	39.6	233 25.1	14.6	0 29.7	9.9 55.0	50	02 06	03 09	03 52	12 31	13 36	14 42	15 51
	11	345 20.0	39.9	247 58.7	14.7	0 19.8	9.9 55.0	45	02 49	03 37	04 14	12 31	13 32	14 36	15 41
	12	0 19.9	N22 40.2	262 32.4	14.6	N 0 09.9	10.0 55.1	N 40	03 18	03 59	04 31	12 31	13 30	14 30	15 33
	13	15 19.8	40.4	277 06.0	14.6	S 0 00.1	9.9 55.1	35	03 40	04 16	04 46	12 31	13 27	14 25	15 25
	14	30 19.7	40.7	291 39.6	14.6	0 10.0	9.9 55.1	30	03 58	04 31	04 58	12 31	13 25	14 21	15 19
	15	45 19.6	40.9	306 13.2	14.6	0 19.9	10.0 55.1	20	04 26	04 55	05 20	12 31	13 21	14 14	15 08
	16	60 19.5	41.2	320 46.8	14.5	0 29.9	10.0 55.1	N 10	04 48	05 15	05 38	12 31	13 18	14 07	14 59
	17	75 19.3	41.4	335 20.3	14.5	0 39.9	9.9 55.2	0	05 07	05 33	05 55	12 31	13 15	14 01	14 50
	18	90 19.2	N22 41.7	349 53.8	14.5	S 0 49.8	10.0 55.2	S 10	05 23	05 49	06 12	12 31	13 12	13 55	14 41
	19	105 19.1	41.9	4 27.3	14.4	0 59.8	10.0 55.2	20	05 39	06 06	06 30	12 31	13 09	13 49	14 32
	20	120 19.0	42.2	19 00.7	14.4	1 09.8	9.9 55.2	30	05 55	06 24	06 51	12 31	13 06	13 42	14 22
	21	135 18.9	42.4	33 34.1	14.4	1 19.7	10.0 55.3	35	06 03	06 35	07 03	12 31	13 04	13 38	14 15
	22	150 18.8	42.7	48 07.5	14.3	1 29.7	10.0 55.3	40	06 12	06 46	07 16	12 32	13 02	13 34	14 09
	23	165 18.7	42.9	62 40.8	14.4	1 39.7	10.0 55.3	45	06 22	06 59	07 32	12 32	12 59	13 28	14 01
S Á B A D O	7 00	180 18.5	N22 43.2	77 14.2	14.2	S 1 49.7	10.0 55.3	S 50	06 33	07 14	07 52	12 32	12 56	13 22	13 51
	01	195 18.4	43.4	91 47.4	14.3	1 59.7	10.0 55.4	52	06 38	07 21	08 02	12 32	12 55	13 19	13 47
	02	210 18.3	43.7	106 20.7	14.2	2 09.7	10.0 55.4	54	06 43	07 29	08 12	12 32	12 53	13 16	13 42
	03	225 18.2	43.9	120 53.9	14.2	2 19.7	10.0 55.4	56	06 49	07 38	08 24	12 32	12 51	13 12	13 37
	04	240 18.1	44.1	135 27.1	14.1	2 29.7	9.9 55.5	58	06 56	07 48	08 38	12 32	12 49	13 09	13 31
	05	255 18.0	44.4	150 00.2	14.1	2 39.6	10.0 55.5	S 60	07 03	07 59	08 55	12 32	12 47	13 04	13 24
	06	270 17.8	N22 44.6	164 33.3	14.1	S 2 49.6	10.0 55.5	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	07	285 17.7	44.9	179 06.4	14.0	2 59.6	10.0 55.5				6	7	8	9	
	08	300 17.6	45.1	193 39.4	14.0	3 09.6	10.0 55.6								
	09	315 17.5	45.3	208 12.4	13.9	3 19.6	10.0 55.6								
	10	330 17.4	45.6	222 45.3	13.9	3 29.6	9.9 55.6								
	11	345 17.3	45.8	237 18.2	13.8	3 39.5	10.0 55.6								
	12	0 17.1	N22 46.1	251 51.0	13.9	S 3 49.5	10.0 55.7	N 72	□	□	□	00 34	00 27	00 20	00 12
	13	15 17.0	46.3	266 23.9	13.7	3 59.5	9.9 55.7	N 70	□	□	□	00 31	00 30	00 28	00 27
	14	30 16.9	46.5	280 56.6	13.7	4 09.4	10.0 55.7	68	□	□	□	00 29	00 32	00 35	00 39
	15	45 16.8	46.8	295 29.3	13.7	4 19.4	9.9 55.8	66	23 17	////	////	00 27	00 34	00 41	00 49
	16	60 16.7	47.0	310 02.0	13.6	4 29.3	9.9 55.8	64	22 15	////	////	00 26	00 35	00 46	00 58
	17	75 16.6	47.2	324 34.6	13.6	4 39.2	10.0 55.8	62	21 41	////	////	00 24	00 37	00 50	01 05
	18	90 16.4	N22 47.5	339 07.2	13.6	S 4 49.2	9.9 55.9	60	21 17	22 50	////	00 23	00 38	00 54	01 12
	19	105 16.3	47.7	353 39.8	13.4	4 59.1	9.9 55.9	N 58	20 57	22 09	////	00 22	00 39	00 57	01 17
	20	120 16.2	47.9	8 12.2	13.5	5 09.0	9.8 55.9	56	20 42	21 42	////	00 21	00 40	01 00	01 22
	21	135 16.1	48.2	22 44.7	13.3	5 18.8	9.9 55.9	54	20 28	21 21	22 56	00 20	00 41	01 03	01 27
	22	150 16.0	48.4	37 17.0	13.4	5 28.7	9.9 56.0	52	20 16	21 04	22 18	00 19	00 42	01 05	01 31
	23	165 15.9	48.6	51 49.4	13.3	5 38.6	9.8 56.0	50	20 06	20 49	21 53	00 19	00 42	01 07	01 34
	D O M I N G O	45	19 44	20 21	21 10	00 17	00 44	01 12	01 42						
8 00		180 15.7	N22 48.9	66 21.7	13.2	S 5 48.4	9.9 56.0	N 40	19 27	19 59	20 40	00 16	00 45	01 16	01 49
01		195 15.6	49.1	80 53.9	13.1	5 58.3	9.8 56.1	35	19 12	19 41	20 18	00 15	00 46	01 19	01 55
02		210 15.5	49.3	95 26.0	13.2	6 08.1	9.8 56.1	30	18 59	19 27	20 00	00 14	00 47	01 23	02 00
03		225 15.4	49.6	109 58.2	13.0	6 17.9	9.8 56.1	20	18 38	19 02	19 31	00 12	00 49	01 28	02 09
04		240 15.3	49.8	124 30.2	13.0	6 27.7	9.7 56.2	N 10	18 20	18 43	19 09	00 10	00 51	01 33	02 17
05		255 15.1	50.0	139 02.2	13.0	6 37.4	9.8 56.2	0	18 03	18 25	18 51	00 09	00 52	01 37	02 24
06		270 15.0	N22 50.2	153 34.2	12.9	S 6 47.2	9.7 56.2	S 10	17 46	18 08	18 35	00 07	00 54	01 42	02 32
07		285 14.9	50.5	168 06.1	12.8	6 56.9	9.7 56.3	20	17 28	17 52	18 19	00 06	00 55	01 46	02 40
08		300 14.8	50.7	182 37.9	12.8	7 06.6	9.7 56.3	30	17 07	17 33	18 03	00 04	00 57	01 52	02 49
09		315 14.7	50.9	197 09.7	12.7	7 16.3	9.6 56.3	35	16 55	17 23	17 55	00 02	00 58	01 55	02 54
10		330 14.5	51.1	211 41.4	12.6	7 25.9	9.7 56.4	40	16 41	17 12	17 46	00 01	00 59	01 58	03 00
11		345 14.4	51.4	226 13.0	12.6	7 35.6	9.6 56.4	45	16 25	16 59	17 36	00 00	01 00	02 02	03 07
12		0 14.3	N22 51.6	240 44.6	12.5	S 7 45.2	9.6 56.4	S 50	16 05	16 43	17 24	25 02	01 02	02 07	03 15
13		15 14.2	51.8	255 16.1	12.5	7 54.8	9.5 56.5	52	15 56	16 36	17 19	25 02	01 02	02 10	03 19
14		30 14.1	52.0	269 47.6	12.4	8 04.3	9.6 56.5	54	15 45	16 28	17 14	25 03	01 03	02 12	03 23
15		45 13.9	52.2	284 19.0	12.3	8 13.9	9.5 56.5	56	15 33	16 20	17 08	25 04	01 04	02 15	03 28
16		60 13.8	52.5	298 50.3	12.3	8 23.4	9.5 56.6	58	15 19	16 10	17 02	25 05	01 05	02 18	03 33
17		75 13.7	52.7	313 21.6	12.2	8 32.9	9.4 56.6	S 60	15 03	15 59	16 55	25 06	01 06	02 21	03 39
18		90 13.6	N22 52.9	327 52.8	12.1	S 8 42.3	9.4 56.6	SOL		LUNA					
19		105 13.5	53.1	342 23.9	12.1	8 51.7	9.4 56.7	Día	Ec. Tiempo	Paso Mer.	Paso Mer.		Edad		Fase
20		120 13.3	53.3	356 55.0	12.0	9 01.1	9.4 56.7				Sup.	Inf.			
21		135 13.2	53.5	11 26.0	11.9	9 10.5	9.3 56.7		00h	12h					
22		150 13.1	53.8	25 56.9	11.9	9 19.8	9.3 56.8	d	m s	m s	h m	h m	h m	d	%
23		165 13.0	54.0	40 27.8	11.8	S 9 29.1	9.2 56.8	6	01 25	01 20	11 59	18 42	06 20	09 56	
		S/D 15.8	<i>d</i> 0.2	S/D 15.0	15.2	15.4	7	01 14	01 09	11 59	19 26	07 04	10 66		
							8	01 03	00 57	11 59	20 13	07 49	11 75		



UT (HmGr)	ARIES	VENUS -3.9	MARTE -0.3	JÚPITER -1.9	SATURNO +0.2	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
9 00	257 17.3	216 18.4 N13 48.7	66 47.1 S 4 25.4	143 30.1 N21 58.8	31 04.4 S14 50.9	Acamar	315 18.2 S40 14.8	
01	272 19.8	231 18.0 49.7	81 49.1 25.7	158 32.1 58.7	46 07.0 50.8	Achernar	335 26.7 S57 09.6	
02	287 22.2	246 17.6 50.6	96 51.1 26.0	173 34.0 58.6	61 09.6 50.8	Acrux	173 08.2 S63 11.1	
03	302 24.7	261 17.2 . . 51.5	111 53.0 . . 26.3	188 35.9 . . 58.5	76 12.2 . . 50.8	Adhara	255 12.3 S28 59.8	
04	317 27.1	276 16.7 52.4	126 55.0 26.6	203 37.8 58.5	91 14.8 50.7	Aldebarán	290 48.9 N16 32.1	
05	332 29.6	291 16.3 53.3	141 57.0 26.9	218 39.8 58.4	106 17.4 50.7			
06	347 32.1	306 15.9 N13 54.2	156 58.9 S 4 27.2	233 41.7 N21 58.3	121 20.0 S14 50.7	Alioth	166 20.0 N55 53.1	
07	2 34.5	321 15.5 55.1	172 00.9 27.5	248 43.6 58.2	136 22.7 50.6	Alkaid	152 58.1 N49 14.7	
08	17 37.0	336 15.1 56.0	187 02.9 27.8	263 45.5 58.1	151 25.3 50.6	Al Na'ir	62 07.3 N 8 54.5	
09	32 39.5	351 14.6 . . 56.9	202 04.8 . . 28.1	278 47.5 . . 58.1	166 27.9 . . 50.6	Alnilam	275 46.0 S 1 11.8	
10	47 41.9	6 14.2 57.9	217 06.8 28.3	293 49.4 58.0	181 30.5 50.5	Alphard	217 55.6 S 8 43.5	
11	62 44.4	21 13.8 58.8	232 08.8 28.6	308 51.3 57.9	196 33.1 50.5			
12	77 46.9	36 13.4 N13 59.7	247 10.7 S 4 28.9	323 53.2 N21 57.8	211 35.7 S14 50.5	Alphecca	126 10.1 N26 40.1	
13	92 49.3	51 13.0 14 00.6	262 12.7 29.2	338 55.1 57.8	226 38.3 50.4	Alpheratz	357 42.8 N29 10.1	
14	107 51.8	66 12.5 01.5	277 14.6 29.5	353 57.1 57.7	241 40.9 50.4	Altair	62 07.3 N 8 54.5	
15	122 54.2	81 12.1 . . 02.4	292 16.6 . . 29.8	8 59.0 . . 57.6	256 43.6 . . 50.4	Ankaa	353 15.2 S42 13.4	
16	137 56.7	96 11.7 03.3	307 18.6 30.1	24 00.9 57.5	271 46.2 50.3	Antares	112 25.0 S26 27.7	
17	152 59.2	111 11.3 04.2	322 20.5 30.4	39 02.8 57.4	286 48.8 50.3			
18	168 01.6	126 10.9 N14 05.1	337 22.5 S 4 30.7	54 04.8 N21 57.4	301 51.4 S14 50.3	Arcturus	145 54.9 N19 06.6	
19	183 04.1	141 10.4 06.0	352 24.4 31.0	69 06.7 57.3	316 54.0 50.2	Atria	107 25.6 S69 03.1	
20	198 06.6	156 10.0 06.9	7 26.4 31.3	84 08.6 57.2	331 56.6 50.2	Avior	234 18.1 S59 33.7	
21	213 09.0	171 09.6 . . 07.8	22 28.3 . . 31.6	99 10.5 . . 57.1	346 59.2 . . 50.2	Bellatrix	278 31.6 N 6 21.5	
22	228 11.5	186 09.2 08.7	37 30.3 31.9	114 12.4 57.0	2 01.8 50.1	Betelgeuse	271 00.9 N 7 24.4	
23	243 14.0	201 08.7 09.6	52 32.2 32.2	129 14.4 57.0	17 04.5 50.1			
10 00	258 16.4	216 08.3 N14 10.5	67 34.2 S 4 32.5	144 16.3 N21 56.9	32 07.1 S14 50.1	Canopus	263 56.4 S52 42.5	
01	273 18.9	231 07.9 11.4	82 36.1 32.8	159 18.2 56.8	47 09.7 50.0	Capella	280 33.9 N46 00.5	
02	288 21.4	246 07.4 12.3	97 38.1 33.1	174 20.1 56.7	62 12.3 50.0	Deneb	49 30.7 N45 19.9	
03	303 23.8	261 07.0 . . 13.2	112 40.0 . . 33.4	189 22.1 . . 56.6	77 14.9 . . 50.0	Denébola	182 33.0 N14 29.5	
04	318 26.3	276 06.6 14.1	127 42.0 33.7	204 24.0 56.6	92 17.5 49.9	Diphda	348 55.4 S17 54.4	
05	333 28.7	291 06.2 15.0	142 43.9 34.0	219 25.9 56.5	107 20.1 49.9			
06	348 31.2	306 05.7 N14 15.9	157 45.9 S 4 34.3	234 27.8 N21 56.4	122 22.7 S14 49.9	Dubhe	193 51.1 N61 40.6	
07	3 33.7	321 05.3 16.8	172 47.8 34.6	249 29.7 56.3	137 25.3 49.8	Elnath	278 12.2 N28 36.9	
08	18 36.1	336 04.9 17.7	187 49.8 34.9	264 31.7 56.2	152 28.0 49.8	Eltanin	90 45.3 N51 29.4	
09	33 38.6	351 04.4 . . 18.6	202 51.7 . . 35.2	279 33.6 . . 56.2	167 30.6 . . 49.8	Enif	33 46.3 N 9 56.5	
10	48 41.1	6 04.0 19.5	217 53.6 35.5	294 35.5 56.1	182 33.2 49.7	Fomalhaut	15 23.2 S29 32.5	
11	63 43.5	21 03.6 20.4	232 55.6 35.8	309 37.4 56.0	197 35.8 49.7			
12	78 46.0	36 03.2 N14 21.3	247 57.5 S 4 36.1	324 39.3 N21 55.9	212 38.4 S14 49.7	Gacrux	171 59.8 S57 11.9	
13	93 48.5	51 02.7 22.2	262 59.5 36.4	339 41.3 55.8	227 41.0 49.6	Gienah	175 51.5 S17 37.5	
14	108 50.9	66 02.3 23.1	278 01.4 36.7	354 43.2 55.8	242 43.6 49.6	Hadar	148 46.4 S60 26.7	
15	123 53.4	81 01.9 . . 24.0	293 03.3 . . 37.0	9 45.1 . . 55.7	257 46.2 . . 49.6	Hamal	328 00.2 N23 31.6	
16	138 55.9	96 01.4 24.9	308 05.3 37.3	24 47.0 55.6	272 48.8 49.5	Kaus Aust.	83 42.5 S34 22.4	
17	153 58.3	111 01.0 25.8	323 07.2 37.6	39 49.0 55.5	287 51.4 49.5			
18	169 00.8	126 00.6 N14 26.7	338 09.1 S 4 37.9	54 50.9 N21 55.4	302 54.0 S14 49.5	Kochab	137 19.3 N74 06.0	
19	184 03.2	141 00.1 27.6	353 11.1 38.2	69 52.8 55.4	317 56.7 49.5	Markab	13 37.6 N15 17.0	
20	199 05.7	155 59.7 28.5	8 13.0 38.5	84 54.7 55.3	332 59.3 49.4	Menkar	314 14.6 N 4 08.6	
21	214 08.2	170 59.2 . . 29.3	23 14.9 . . 38.8	99 56.6 . . 55.2	348 01.9 . . 49.4	Menkent	148 06.5 S36 26.6	
22	229 10.6	185 58.8 30.2	38 16.9 39.2	114 58.6 55.1	3 04.5 49.4	Miaplacidus	221 39.9 S69 47.0	
23	244 13.1	200 58.4 31.1	53 18.8 39.5	130 00.5 55.0	18 07.1 49.3			
11 00	259 15.6	215 57.9 N14 32.0	68 20.7 S 4 39.8	145 02.4 N21 54.9	33 09.7 S14 49.3	Mirfak	308 39.8 N49 54.5	
01	274 18.0	230 57.5 32.9	83 22.7 40.1	160 04.3 54.9	48 12.3 49.3	Nunki	75 57.1 S26 16.5	
02	289 20.5	245 57.1 33.8	98 24.6 40.4	175 06.2 54.8	63 14.9 49.2	Peacock	53 17.8 S56 40.9	
03	304 23.0	260 56.6 . . 34.7	113 26.5 . . 40.7	190 08.2 . . 54.7	78 17.5 . . 49.2	Póllux	243 27.2 N27 59.3	
04	319 25.4	275 56.2 35.6	128 28.4 41.0	205 10.1 54.6	93 20.1 49.2	Procyon	244 59.3 N 5 11.1	
05	334 27.9	290 55.7 36.5	143 30.4 41.3	220 12.0 54.5	108 22.7 49.1			
06	349 30.4	305 55.3 N14 37.3	158 32.3 S 4 41.6	235 13.9 N21 54.5	123 25.4 S14 49.1	Rasalhague	96 05.5 N12 33.1	
07	4 32.8	320 54.9 38.2	173 34.2 41.9	250 15.8 54.4	138 28.0 49.1	Régulus	207 42.9 N11 53.7	
08	19 35.3	335 54.4 39.1	188 36.1 42.2	265 17.7 54.3	153 30.6 49.0	Rigel	281 11.8 S 8 11.3	
09	34 37.7	350 54.0 . . 40.0	203 38.1 . . 42.5	280 19.7 . . 54.2	168 33.2 . . 49.0	Rigel Kent.	139 50.2 S60 53.8	
10	49 40.2	5 53.5 40.9	218 40.0 42.8	295 21.6 54.1	183 35.8 49.0	Sabik	102 11.4 S15 44.4	
11	64 42.7	20 53.1 41.8	233 41.9 43.2	310 23.5 54.1	198 38.4 48.9			
12	79 45.1	35 52.7 N14 42.6	248 43.8 S 4 43.5	325 25.4 N21 54.0	213 41.0 S14 48.9	Schedar	349 39.8 N56 36.7	
13	94 47.6	50 52.2 43.5	263 45.7 43.8	340 27.3 53.9	228 43.6 48.9	Shaula	96 20.6 S37 06.6	
14	109 50.1	65 51.8 44.4	278 47.7 44.1	355 29.3 53.8	243 46.2 48.8	Sirius	258 33.5 S16 44.4	
15	124 52.5	80 51.3 . . 45.3	293 49.6 . . 44.1	10 31.2 . . 53.7	258 48.8 . . 48.8	Spica	158 30.4 S11 14.2	
16	139 55.0	95 50.9 46.2	308 51.5 44.7	25 33.1 53.6	273 51.4 48.8	Suhail	222 52.2 S43 29.8	
17	154 57.5	110 50.4 47.1	323 53.4 45.0	40 35.0 53.6	288 54.0 48.7			
18	169 59.9	125 50.0 N14 47.9	338 55.3 S 4 45.3	55 36.9 N21 53.5	303 56.6 S14 48.7	Vega	80 38.1 N38 47.9	
19	185 02.4	140 49.5 48.8	353 57.2 45.6	70 38.9 53.4	318 59.2 48.7	Zuben'ubi	137 04.4 S16 06.1	
20	200 04.8	155 49.1 49.7	8 59.1 46.0	85 40.8 53.3	334 01.9 48.6			
21	215 07.3	170 48.7 . . 50.6	24 01.0 . . 46.3	100 42.7 . . 53.2	349 04.5 . . 48.6			
22	230 09.8	185 48.2 51.4	39 03.0 46.6	115 44.6 53.2	4 07.1 48.6			
23	245 12.2	200 47.8 52.3	54 04.9 46.9	130 46.5 53.1	19 09.7 48.6			
h m								
Paso Mer.	6 45.8	v -0.4 d 0.9	v 1.9 d 0.3	v 1.9 d 0.1	v 2.6 d 0.0			
						AHS Paso Mer.		
						Venus	317 51.9 h 36	
						Marte	169 17.8 19 27	
						Júpiter	245 59.9 14 21	
						Saturno	133 50.6 21 48	

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	9		10	11	12	
L U N E S	d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
	9 00	180 12.9	N22 54.2	54 58.6	11.7	S 9 38.3	9.3	56.8	N 72				17 46	19 50		
	01	195 12.7	54.4	69 29.3	11.7	9 47.6	9.1	56.9	N 70				17 23	19 10	21 00	22 37
	02	210 12.6	54.6	84 00.0	11.6	9 56.7	9.2	56.9	68				17 05	18 43	20 19	21 42
	03	225 12.5	54.8	98 30.6	11.5	10 05.9	9.1	56.9	66			00 29	16 51	18 22	19 51	21 08
	04	240 12.4	55.0	113 01.1	11.4	10 15.0	9.1	57.0	64			01 40	16 39	18 06	19 30	20 44
	05	255 12.3	55.2	127 31.5	11.4	10 24.1	9.0	57.0	62			02 14	16 29	17 52	19 12	20 25
	06	270 12.1	N22 55.4	142 01.9	11.2	S10 33.1	9.0	57.1	60		01 03	02 39	16 21	17 40	18 58	20 09
	07	285 12.0	55.6	156 32.1	11.3	10 42.1	8.9	57.1	N 58		01 46	02 59	16 13	17 31	18 46	19 56
	08	300 11.9	55.9	171 02.4	11.1	10 51.0	8.9	57.1	56		02 14	03 15	16 07	17 22	18 36	19 44
	09	315 11.8	56.1	185 32.5	11.1	10 59.9	8.8	57.2	54	00 57	02 35	03 29	16 01	17 14	18 26	19 34
	10	330 11.7	56.3	200 02.6	11.0	11 08.7	8.9	57.2	52	01 37	02 53	03 41	15 56	17 07	18 18	19 25
	11	345 11.5	56.5	214 32.6	10.9	11 17.6	8.7	57.2	50	02 03	03 07	03 51	15 51	17 01	18 11	19 17
	12	0 11.4	N22 56.7	229 02.5	10.8	S11 26.3	8.7	57.3	45	02 47	03 36	04 13	15 41	16 48	17 55	19 00
	13	15 11.3	56.9	243 32.3	10.8	11 35.0	8.7	57.3	N 40	03 17	03 58	04 31	15 33	16 37	17 42	18 46
	14	30 11.2	57.1	258 02.1	10.6	11 43.7	8.6	57.3	35	03 40	04 16	04 46	15 25	16 28	17 31	18 34
	15	45 11.0	57.3	272 31.7	10.6	11 52.3	8.5	57.4	30	03 58	04 31	04 58	15 19	16 20	17 22	18 24
	16	60 10.9	57.5	287 01.3	10.6	12 00.8	8.6	57.4	20	04 26	04 55	05 20	15 08	16 06	17 05	18 06
	17	75 10.8	57.7	301 30.9	10.4	12 09.4	8.4	57.4	N 10	04 49	05 16	05 39	14 59	15 53	16 51	17 51
	18	90 10.7	N22 57.9	316 00.3	10.4	S12 17.8	8.4	57.5	0	05 07	05 33	05 56	14 50	15 42	16 38	17 36
	19	105 10.5	58.1	330 29.7	10.2	12 26.2	8.3	57.5	S 10	05 24	05 50	06 13	14 41	15 31	16 24	17 22
	20	120 10.4	58.3	344 58.9	10.2	12 34.5	8.3	57.6	20	05 40	06 07	06 31	14 32	15 19	16 10	17 07
	21	135 10.3	58.5	359 28.1	10.2	12 42.8	8.3	57.6	30	05 56	06 26	06 52	14 22	15 05	15 54	16 49
	22	150 10.2	58.7	13 57.3	10.0	12 51.1	8.1	57.6	35	06 04	06 36	07 04	14 15	14 57	15 45	16 39
	23	165 10.1	58.9	28 26.3	10.0	12 59.2	8.1	57.7	40	06 13	06 47	07 18	14 09	14 48	15 34	16 27
M A R T E S	10 00	180 09.9	N22 59.1	42 55.3	9.8	S13 07.3	8.1	57.7	45	06 24	07 01	07 34	14 01	14 38	15 22	16 14
	01	195 09.8	59.3	57 24.1	9.8	13 15.4	8.0	57.7	S 50	06 35	07 16	07 55	13 51	14 26	15 07	15 57
	02	210 09.7	59.5	71 52.9	9.8	13 23.4	7.9	57.8	52	06 40	07 24	08 04	13 47	14 20	15 00	15 49
	03	225 09.6	59.7	86 21.7	9.6	13 31.3	7.8	57.8	54	06 46	07 32	08 15	13 42	14 13	14 52	15 40
	04	240 09.4	22 59.9	100 50.3	9.5	13 39.1	7.8	57.8	56	06 52	07 40	08 27	13 37	14 06	14 43	15 31
	05	255 09.3	23 00.1	115 18.8	9.5	13 46.9	7.7	57.9	58	06 58	07 50	08 42	13 31	13 58	14 34	15 20
	06	270 09.2	N23 00.2	129 47.3	9.4	S13 54.6	7.7	57.9	S 60	07 05	08 02	08 58	13 24	13 49	14 22	15 07
	07	285 09.1	00.4	144 15.7	9.3	14 02.3	7.6	58.0	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	08	300 08.9	00.6	158 44.0	9.2	14 09.9	7.5	58.0			Civil	Náut.	9	10	11	12
	09	315 08.8	00.8	173 12.2	9.1	14 17.4	7.4	58.0								
	10	330 08.7	01.0	187 40.3	9.1	14 24.8	7.4	58.1								
	11	345 08.6	01.2	202 08.4	9.0	14 32.2	7.3	58.1								
	12	0 08.4	N23 01.4	216 36.4	8.8	S14 39.5	7.2	58.1	N 72				00 12	(23 47)		
	13	15 08.3	01.6	231 04.2	8.8	14 46.7	7.2	58.2	N 70				00 27	00 27	00 29	00 36
	14	30 08.2	01.8	245 32.0	8.8	14 53.9	7.0	58.2	68				00 39	00 46	00 57	01 17
	15	45 08.1	01.9	259 59.8	8.6	15 00.9	7.0	58.2	66	23 37			00 49	01 01	01 18	01 46
	16	60 08.0	02.1	274 27.4	8.5	15 07.9	6.9	58.3	64	22 21			00 58	01 14	01 35	02 08
	17	75 07.8	02.3	288 54.9	8.5	15 14.8	6.9	58.3	62	21 46			01 05	01 24	01 50	02 25
	18	90 07.7	N23 02.5	303 22.4	8.4	S15 21.7	6.7	58.4	60	21 20	22 58		01 12	01 33	02 02	02 40
	19	105 07.6	02.7	317 49.8	8.3	15 28.4	6.7	58.4	N 58	21 01	22 14		01 17	01 41	02 12	02 52
	20	120 07.5	02.9	332 17.1	8.2	15 35.1	6.6	58.4	56	20 44	21 46		01 22	01 49	02 21	03 03
	21	135 07.3	03.0	346 44.3	8.2	15 41.7	6.4	58.5	54	20 31	21 24	23 04	01 27	01 55	02 29	03 12
	22	150 07.2	03.2	1 11.5	8.0	15 48.1	6.5	58.5	52	20 19	21 07	22 23	01 31	02 01	02 37	03 21
	23	165 07.1	03.4	15 38.5	8.0	15 54.6	6.3	58.5	50	20 08	20 52	21 56	01 34	02 06	02 43	03 28
M I É R C O L E S	10 00	180 07.0	N23 03.6	30 05.5	7.9	S16 00.9	6.2	58.6	45	19 46	20 23	21 12	01 42	02 17	02 57	03 45
	01	195 06.8	03.8	44 32.4	7.8	16 07.1	6.1	58.6	N 40	19 28	20 01	20 42	01 49	02 26	03 09	03 58
	02	210 06.7	03.9	58 59.2	7.7	16 13.2	6.1	58.6	35	19 13	19 43	20 20	01 55	02 34	03 19	04 09
	03	225 06.6	04.1	73 25.9	7.7	16 19.3	5.9	58.7	30	19 01	19 28	20 01	02 00	02 41	03 28	04 19
	04	240 06.4	04.3	87 52.6	7.5	16 25.2	5.9	58.7	20	18 39	19 04	19 33	02 09	02 54	03 43	04 36
	05	255 06.3	04.5	102 19.1	7.5	16 31.1	5.8	58.7	N 10	18 20	18 43	19 10	02 17	03 04	03 56	04 51
	06	270 06.2	N23 04.6	116 45.6	7.4	S16 36.9	5.6	58.8	0	18 03	18 26	18 52	02 24	03 15	04 08	05 05
	07	285 06.1	04.8	131 12.0	7.4	16 42.5	5.6	58.8	S 10	17 46	18 09	18 35	02 32	03 25	04 21	05 19
	08	300 05.9	05.0	145 38.4	7.2	16 48.1	5.5	58.8	20	17 28	17 52	18 19	02 40	03 35	04 34	05 34
	09	315 05.8	05.2	160 04.6	7.2	16 53.6	5.3	58.9	30	17 07	17 33	18 03	02 49	03 48	04 49	05 51
	10	330 05.7	05.3	174 30.8	7.1	16 58.9	5.3	58.9	35	16 55	17 23	17 54	02 54	03 55	04 58	06 01
	11	345 05.6	05.5	188 56.9	7.0	17 04.2	5.2	58.9	40	16 41	17 11	17 45	03 00	04 03	05 08	06 13
	12	0 05.4	N23 05.7	203 22.9	7.0	S17 09.4	5.0	59.0	45	16 24	16 58	17 35	03 07	04 13	05 20	06 26
	13	15 05.3	05.8	217 48.9	6.8	17 14.4	4.9	59.0	S 50	16 04	16 42	17 24	03 15	04 24	05 34	06 42
	14	30 05.2	06.0	232 14.7	6.8	17 19.4	4.9	59.0	52	15 55	16 35	17 19	03 19	04 30	05 41	06 50
	15	45 05.1	06.2	246 40.5	6.8	17 24.3	4.7	59.1	54	15 44	16 27	17 13	03 23	04 35	05 48	06 58
	16	60 04.9	06.4	261 06.3	6.6	17 29.0	4.7	59.1	56	15 31	16 18	17 07	03 28	04 42	05 57	07 08
	17	75 04.8	06.5	275 31.9	6.6	17 33.7	4.5	59.1	58	15 17	16 08	17 01	03 33	04 50	06 06	07 19
	18	90 04.7	N23 06.7	289 57.5	6.5	S17 38.2	4.4	59.2	S 60	15 00	15 57	16 53	03 39	04 58	06 17	07 31
	19	105 04.6	06.9	304 23.0	6.4	17 42.6	4.4	59.2	SOL		LUNA					
	20	120 04.4	07.0	318 48.4	6.4	17 47.0	4.2	59.2	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase
	21	135 04.3	07.2	333 13.8	6.3	17 51.2	4.1	59.3	00h							

UT (HmGr)	ARIES	VENUS -3.9	MARTE -0.3	JÚPITER -1.8	SATURNO +0.3	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° ' "	° ' "	° ' "	° ' "	° ' "		° ' "	° ' "
12 00	260 14.7	215 47.3 N14 53.2	69 06.8 S 4 47.2	145 48.4 N21 53.0	34 12.3 S14 48.5	Acamar	315 18.2 S40 14.8	
01	275 17.2	230 46.9 54.1	84 08.7 47.5	160 50.4 52.9	49 14.9 48.5	Achernar	335 26.7 S57 09.6	
02	290 19.6	245 46.4 55.0	99 10.6 47.8	175 52.3 52.8	64 17.5 48.5	Acrux	173 08.2 S63 11.1	
03	305 22.1	260 46.0 . . 55.8	114 12.5 . . 48.2	190 54.2 . . 52.7	79 20.1 . . 48.4	Adhara	255 12.3 S28 59.8	
04	320 24.6	275 45.5 56.7	129 14.4 48.5	205 56.1 52.7	94 22.7 48.4	Aldebarán	290 48.9 N16 32.1	
05	335 27.0	290 45.1 57.6	144 16.3 48.8	220 58.0 52.6	109 25.3 48.4			
06	350 29.5	305 44.6 N14 58.4	159 18.2 S 4 49.1	235 59.9 N21 52.5	124 27.9 S14 48.3	Alioth	166 20.0 N55 53.1	
07	5 32.0	320 44.2 14 59.3	174 20.1 49.4	251 01.9 52.4	139 30.5 48.3	Alkaid	152 58.2 N49 14.7	
08	20 34.4	335 43.7 15 00.2	189 22.0 49.7	266 03.8 52.3	154 33.1 48.3	Al Na'ir	62 07.3 N 8 54.6	
09	35 36.9	350 43.3 . . 01.1	204 23.9 . . 50.1	281 05.7 . . 52.3	169 35.7 . . 48.2	Alnilam	275 46.0 S 1 11.8	
10	50 39.3	5 42.8 01.9	219 25.8 50.4	296 07.6 52.2	184 38.3 48.2	Alphard	217 55.6 S 8 43.5	
11	65 41.8	20 42.4 02.8	234 27.7 50.7	311 09.5 52.1	199 40.9 48.2			
12	80 44.3	35 41.9 N15 03.7	249 29.6 S 4 51.0	326 11.5 N21 52.0	214 43.5 S14 48.1	Alphecca	126 10.1 N26 40.2	
13	95 46.7	50 41.4 04.5	264 31.5 51.3	341 13.4 51.9	229 46.1 48.1	Alpheratz	357 42.8 N29 10.1	
14	110 49.2	65 41.0 05.4	279 33.4 51.6	356 15.3 51.8	244 48.8 48.1	Altair	27 42.8 N 8 54.6	
15	125 51.7	80 40.5 . . 06.3	294 35.3 . . 52.0	11 17.2 . . 51.8	259 51.4 . . 48.1	Ankaa	353 15.2 S42 13.4	
16	140 54.1	95 40.1 07.2	309 37.2 52.3	26 19.1 51.7	274 54.0 48.0	Antares	112 25.0 S26 27.7	
17	155 56.6	110 39.6 08.0	324 39.1 52.6	41 21.0 51.6	289 56.6 48.0			
18	170 59.1	125 39.2 N15 08.9	339 41.0 S 4 52.9	56 23.0 N21 51.5	304 59.2 S14 48.0	Arcturus	145 54.9 N19 06.6	
19	186 01.5	140 38.7 09.8	354 42.8 53.2	71 24.9 51.4	320 01.8 47.9	Atria	107 25.6 S69 03.1	
20	201 04.0	155 38.3 10.6	9 44.7 53.6	86 26.8 51.3	335 04.4 47.9	Avior	234 18.2 S59 33.7	
21	216 06.5	170 37.8 . . 11.5	24 46.6 . . 53.9	101 28.7 . . 51.3	350 07.0 . . 47.9	Bellatrix	278 31.6 N 6 21.5	
22	231 08.9	185 37.3 12.3	39 48.5 54.2	116 30.6 51.2	5 09.6 47.8	Betelgeuse	271 00.9 N 7 24.4	
23	246 11.4	200 36.9 13.2	54 50.4 54.5	131 32.5 51.1	20 12.2 47.8			
13 00	261 13.8	215 36.4 N15 14.1	69 52.3 S 4 54.8	146 34.4 N21 51.0	35 14.8 S14 47.8	Canopus	263 56.4 S52 42.5	
01	276 16.3	230 36.0 14.9	84 54.2 55.2	161 36.4 50.9	50 17.4 47.7	Capella	280 33.9 N46 00.5	
02	291 18.8	245 35.5 15.8	99 56.1 55.5	176 38.3 50.9	65 20.0 47.7	Deneb	49 30.6 N45 19.9	
03	306 21.2	260 35.0 . . 16.7	114 57.9 . . 55.8	191 40.2 . . 50.8	80 22.6 . . 47.7	Denébola	182 33.0 N14 29.5	
04	321 23.7	275 34.6 17.5	129 59.8 56.1	206 42.1 50.7	95 25.2 47.7	Diphda	348 55.3 S17 54.4	
05	336 26.2	290 34.1 18.4	145 01.7 56.5	221 44.0 50.6	110 27.8 47.6			
06	351 28.6	305 33.7 N15 19.2	160 03.6 S 4 56.8	236 45.9 N21 50.5	125 30.4 S14 47.6	Dubhe	193 51.1 N61 40.6	
07	6 31.1	320 33.2 20.1	175 05.5 57.1	251 47.9 50.4	140 33.0 47.6	Elnath	278 12.1 N28 36.9	
08	21 33.6	335 32.7 21.0	190 07.4 57.4	266 49.8 50.4	155 35.6 47.5	Eltanin	90 45.3 N51 29.4	
09	36 36.0	350 32.3 . . 21.8	205 09.2 . . 57.8	281 51.7 . . 50.3	170 38.2 . . 47.5	Enif	33 46.3 N 9 56.6	
10	51 38.5	5 31.8 22.7	220 11.1 58.1	296 53.6 50.2	185 40.8 47.5	Fomalhaut	15 23.2 S29 32.5	
11	66 41.0	20 31.3 23.5	235 13.0 58.4	311 55.5 50.1	200 43.4 47.4			
12	81 43.4	35 30.9 N15 24.4	250 14.9 S 4 58.7	326 57.4 N21 50.0	215 46.0 S14 47.4	Gacrux	171 59.9 S57 11.9	
13	96 45.9	50 30.4 25.2	265 16.7 59.1	341 59.4 49.9	230 48.6 47.4	Gienah	175 51.5 S17 37.5	
14	111 48.3	65 29.9 26.1	280 18.6 59.4	357 01.3 49.9	245 51.2 47.4	Hadar	148 46.4 S60 26.7	
15	126 50.8	80 29.5 . . 27.0	295 20.5 4 59.7	12 03.2 . . 49.8	260 53.8 . . 47.3	Hamal	328 00.2 N23 31.6	
16	141 53.3	95 29.0 27.8	310 22.4 5 00.0	27 05.1 49.7	275 56.4 47.3	Kaus Aust.	83 42.5 S34 22.4	
17	156 55.7	110 28.5 28.7	325 24.2 00.4	42 07.0 49.6	290 59.0 47.3			
18	171 58.2	125 28.1 N15 29.5	340 26.1 S 5 00.7	57 08.9 N21 49.5	306 01.6 S14 47.2	Kochab	137 19.3 N74 06.1	
19	187 00.7	140 27.6 30.4	355 28.0 01.0	72 10.8 49.4	321 04.2 47.2	Markab	13 37.6 N15 17.0	
20	202 03.1	155 27.1 31.2	10 29.8 01.3	87 12.8 49.4	336 06.8 47.2	Menkar	314 14.6 N 4 08.6	
21	217 05.6	170 26.7 . . 32.1	25 31.7 . . 01.7	102 14.7 . . 49.3	351 09.4 . . 47.1	Menkent	148 06.5 S36 26.6	
22	232 08.1	185 26.2 32.9	40 33.6 02.0	117 16.6 49.2	6 12.0 47.1	Miaplacidus	221 39.9 S69 47.0	
23	247 10.5	200 25.7 33.8	55 35.4 02.3	132 18.5 49.1	21 14.6 47.1			
14 00	262 13.0	215 25.3 N15 34.6	70 37.3 S 5 02.7	147 20.4 N21 49.0	36 17.2 S14 47.1	Mirfak	308 39.8 N49 54.5	
01	277 15.5	230 24.8 35.5	85 39.2 03.0	162 22.3 48.9	51 19.8 47.0	Nunki	75 57.1 S26 16.5	
02	292 17.9	245 24.3 36.3	100 41.0 03.3	177 24.2 48.8	66 22.4 47.0	Peacock	53 17.8 S56 40.9	
03	307 20.4	260 23.8 . . 37.2	115 42.9 . . 03.6	192 26.2 . . 48.8	81 25.0 . . 47.0	Póllux	243 27.2 N27 59.3	
04	322 22.8	275 23.4 38.0	130 44.8 04.0	207 28.1 48.7	96 27.6 46.9	Procyon	244 59.3 N 5 11.1	
05	337 25.3	290 22.9 38.9	145 46.6 04.3	222 30.0 48.6	111 30.2 46.9			
06	352 27.8	305 22.4 N15 39.7	160 48.5 S 5 04.6	237 31.9 N21 48.5	126 32.8 S14 46.9	Rasalhague	96 05.5 N12 33.2	
07	7 30.2	320 21.9 40.6	175 50.4 05.0	252 33.8 48.4	141 35.4 46.8	Régulus	207 42.9 N11 53.7	
08	22 32.7	335 21.5 41.4	190 52.2 05.3	267 35.7 48.3	156 38.0 46.8	Rigel	281 11.7 S 8 11.3	
09	37 35.2	350 21.0 . . 42.2	205 54.1 . . 05.6	282 37.6 . . 48.3	171 40.6 . . 46.8	Rigel Kent.	139 50.2 S60 53.8	
10	52 37.6	5 20.5 43.1	220 55.9 06.0	297 39.5 48.2	186 43.2 46.8	Sabik	102 11.4 S15 44.4	
11	67 40.1	20 20.0 43.9	235 57.8 06.3	312 41.5 48.1	201 45.8 46.7			
12	82 42.6	35 19.6 N15 44.8	250 59.6 S 5 06.6	327 43.4 N21 48.0	216 48.4 S14 46.7	Schedar	349 39.8 N56 36.7	
13	97 45.0	50 19.1 45.6	266 01.5 07.0	342 45.3 47.9	231 51.0 46.7	Shaula	96 20.6 S37 06.6	
14	112 47.5	65 18.6 46.5	281 03.4 07.3	357 47.2 47.8	246 53.6 46.6	Sirius	258 33.5 S16 44.4	
15	127 50.0	80 18.1 . . 47.3	296 05.2 . . 07.6	12 49.1 . . 47.8	261 56.2 . . 46.6	Spica	158 30.4 S11 14.2	
16	142 52.4	95 17.7 48.1	311 07.1 08.0	27 51.0 47.7	276 58.8 46.6	Suhail	222 52.2 S43 29.8	
17	157 54.9	110 17.2 49.0	326 08.9 08.3	42 52.9 47.6	292 01.4 46.6			
18	172 57.3	125 16.7 N15 49.8	341 10.8 S 5 08.6	57 54.9 N21 47.5	307 04.0 S14 46.5	Vega	80 38.1 N38 48.0	
19	187 59.8	140 16.2 50.7	356 12.6 09.0	72 56.8 47.4	322 06.6 46.5	Zuben'ubi	137 04.4 S16 06.1	
20	203 02.3	155 15.7 51.5	11 14.5 09.3	87 57.7 47.3	337 09.2 46.5			
21	218 04.7	170 15.3 . . 52.3	26 16.3 . . 09.6	103 00.6 . . 47.2	352 11.8 . . 46.4			
22	233 07.2	185 14.8 53.2	41 18.2 10.0	118 02.5 47.2	7 14.4 46.4			
23	248 09.7	200 14.3 54.0	56 20.0 10.3	133 04.4 47.1	22 17.0 46.4			
h m								
Paso Mer.	6 34.0	v -0.5 d 0.9	v 1.9 d 0.3	v 1.9 d 0.1	v 2.6 d 0.0			
						AHS	Paso Mer.	
						° ' "	h m	
						Venus	314 22.6 9 38	
						Marte	168 38.4 19 18	
						Júpiter	245 20.6 14 12	
						Saturno	134 00.9 21 35	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		12	13	14	15	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
1200	180 03.9	N23 07.7	16 29.5	6.1	S18 03.1	3.8	59.3	N 72								
	195 03.8	07.8	30 54.6	6.0	18 06.9	3.6	59.4	N 70								
	210 03.7	08.0	45 19.6	6.0	18 10.5	3.5	59.4	66								
	225 03.5	08.2	59 44.6	5.9	18 14.0	3.4	59.4	64								
	240 03.4	08.3	74 09.5	5.8	18 17.4	3.3	59.5	62								
	255 03.3	08.5	88 34.3	5.8	18 20.7	3.2	59.5	60								
	270 03.2	N23 08.6	102 59.1	5.7	S18 23.9	3.0	59.5	N 58								
	285 03.0	08.8	117 23.8	5.7	18 26.9	2.9	59.6	56								
	300 02.9	08.9	131 48.5	5.6	18 29.8	2.8	59.6	54								
	315 02.8	09.1	146 13.1	5.6	18 32.6	2.7	59.6	52								
JUEVES	330 02.6	09.3	160 37.7	5.4	18 35.3	2.5	59.6	50								
	345 02.5	09.4	175 02.1	5.5	18 37.8	2.5	59.7	45								
	0 02.4	N23 09.6	189 26.6	5.4	S18 40.3	2.3	59.7	N 40								
	15 02.3	09.7	203 51.0	5.3	18 42.6	2.1	59.7	35								
	30 02.1	09.9	218 15.3	5.3	18 44.7	2.1	59.7	30								
	45 02.0	10.0	232 39.6	5.3	18 46.8	1.9	59.8	20								
	60 01.9	10.2	247 03.9	5.2	18 48.7	1.8	59.8	N 10								
	75 01.7	10.3	261 28.1	5.1	18 50.5	1.7	59.8	0								
	90 01.6	N23 10.5	275 52.2	5.1	S18 52.2	1.5	59.8	S 10								
	105 01.5	10.6	290 16.3	5.1	18 53.7	1.4	59.9	20								
1300	120 01.4	10.8	304 40.4	5.0	18 55.1	1.3	59.9	30								
	135 01.2	10.9	319 04.4	5.0	18 56.4	1.1	59.9	35								
	150 01.1	11.1	333 28.4	4.9	18 57.5	1.1	59.9	40								
	165 01.0	11.2	347 52.3	4.9	18 58.6	0.8	60.0	45								
	180 00.8	N23 11.4	2 16.2	4.9	S18 59.4	0.8	60.0	S 50								
	195 00.7	11.5	16 40.1	4.9	19 00.2	0.6	60.0	52								
	210 00.6	11.7	31 04.0	4.8	19 00.8	0.5	60.0	54								
	225 00.5	11.8	45 27.8	4.7	19 01.3	0.3	60.0	56								
	240 00.3	11.9	59 51.5	4.8	19 01.6	0.3	60.1	58								
	255 00.2	12.1	74 15.3	4.7	19 01.9	0.0	60.1	S 60								
VIERNES	270 00.1	N23 12.2	88 39.0	4.7	S19 01.9	0.0	60.1	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
	284 59.9	12.4	103 02.7	4.7	19 01.9	0.2	60.1			Civil	Náut.	12	13	14	15	
	299 59.8	12.5	117 26.4	4.6	19 01.7	0.3	60.1									
	314 59.7	12.6	131 50.0	4.7	19 01.4	0.5	60.2									
	329 59.5	12.8	146 13.7	4.6	19 00.9	0.6	60.2									
	344 59.4	12.9	160 37.3	4.6	19 00.3	0.7	60.2	N 72								
	359 59.3	N23 13.1	175 00.9	4.5	S18 59.6	0.8	60.2	N 70								
	14 59.2	13.2	189 24.4	4.6	18 58.8	1.0	60.2	68								
	29 59.0	13.3	203 48.0	4.6	18 57.8	1.2	60.3	66								
	44 58.9	13.5	218 11.6	4.5	18 56.6	1.2	60.3	64								
SÁBADO	59 58.8	13.6	232 35.1	4.5	18 55.4	1.4	60.3	62								
	74 58.6	13.7	246 58.6	4.6	18 54.0	1.6	60.3	60								
	89 58.5	N23 13.9	261 22.2	4.5	S18 52.4	1.6	60.3	N 58								
	104 58.4	14.0	275 45.7	4.5	18 50.8	1.9	60.3	56								
	119 58.2	14.1	290 09.2	4.5	18 48.9	1.9	60.3	54								
	134 58.1	14.3	304 32.7	4.5	18 47.0	2.1	60.4	52								
	149 58.0	14.4	318 56.2	4.5	18 44.9	2.2	60.4	50								
	164 57.8	14.5	333 19.7	4.5	18 42.7	2.3	60.4	45								
	179 57.7	N23 14.6	347 43.2	4.5	S18 40.4	2.5	60.4	N 40								
	194 57.6	14.8	2 06.7	4.6	18 37.9	2.6	60.4	35								
SÁBADO	209 57.5	14.9	16 30.3	4.5	18 35.3	2.8	60.4	30								
	224 57.3	15.0	30 53.8	4.5	18 32.5	2.9	60.4	20								
	239 57.2	15.1	45 17.3	4.6	18 29.6	3.0	60.4	N 10								
	254 57.1	15.3	59 40.9	4.5	18 26.6	3.1	60.5	0								
	269 56.9	N23 15.4	74 04.4	4.6	S18 23.5	3.3	60.5	S 10								
	284 56.8	15.5	88 28.0	4.6	18 20.2	3.4	60.5	20								
	299 56.7	15.6	102 51.6	4.6	18 16.8	3.6	60.5	30								
	314 56.5	15.8	117 15.2	4.6	18 13.2	3.7	60.5	35								
	329 56.4	15.9	131 38.8	4.7	18 09.5	3.8	60.5	40								
	344 56.3	16.0	146 02.5	4.6	18 05.7	3.9	60.5	45								
SÁBADO	359 56.1	N23 16.1	160 26.1	4.7	S18 01.8	4.1	60.5	S 50								
	14 56.0	16.2	174 49.8	4.7	17 57.7	4.2	60.5	52								
	29 55.9	16.4	189 13.5	4.7	17 53.5	4.3	60.5	54								
	44 55.8	16.5	203 37.2	4.8	17 49.2	4.4	60.5	56								

UT (h mGr)		ARIES			VENUS -3.9			MARTE -0.2			JÚPITER -1.8			SATURNO+0.3			ESTRELLAS		
		AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre	AHS	Dec				
DOMINGO	1500	263 12.1	215 13.8	N15 54.8	71 21.8	S 5 10.6	148 06.3	N21 47.0	37 19.6	S14 46.3	Acamar	315 18.2	S40 14.8						
	01	278 14.6	230 13.3	55.7	86 23.7	11.0	163 08.2	46.9	52 22.2	46.3	Achernar	335 26.7	S57 09.6						
	02	293 17.1	245 12.8	56.5	101 25.5	11.3	178 10.2	46.8	67 24.8	46.3	Acruz	173 08.2	S63 11.1						
	03	308 19.5	260 12.4	57.3	116 27.4	11.6	178 12.1	46.7	82 27.4	46.3	Adhara	255 12.3	S28 59.8						
	04	323 22.0	275 11.9	58.2	131 29.2	12.0	208 14.0	46.6	97 30.0	46.2	Aldebarán	290 48.9	N16 32.1						
	05	338 24.4	290 11.4	59.0	146 31.1	12.3	223 15.9	46.6	112 32.6	46.2									
	06	353 26.9	305 10.9	N15 59.8	161 32.9	S 5 12.7	238 17.8	N21 46.5	127 35.2	S14 46.2	Alioth	166 20.0	N55 53.1						
	07	8 29.4	320 10.4	16 00.7	176 34.7	13.0	253 19.7	46.4	142 37.8	46.1	Alkaid	152 58.2	N49 14.7						
	08	23 31.8	335 09.9	01.5	191 36.6	13.3	268 21.6	46.3	157 40.4	46.1	Al Na'ir	27 42.7	S46 53.3						
	09	38 34.3	350 09.4	02.3	206 38.4	13.7	283 23.5	46.2	172 43.0	46.1	Anilam	275 46.0	S 1 11.8						
LUNES	10	53 36.8	5 09.0	03.2	221 40.3	14.0	298 25.4	46.1	187 45.6	46.1	Alphard	217 55.6	S 8 43.5						
	11	68 39.2	20 08.5	04.0	236 42.1	14.4	313 27.4	46.1	202 48.2	46.0									
	12	83 41.7	35 08.0	N16 04.8	251 43.9	S 5 14.7	328 29.3	N21 46.0	217 50.8	S14 46.0	Alphecca	126 10.1	N26 40.2						
	13	98 44.2	50 07.5	05.6	266 45.8	15.0	343 31.2	45.9	232 53.4	46.0	Alpheratz	357 42.8	N29 10.1						
	14	113 46.6	65 07.0	06.5	281 47.6	15.4	358 33.1	45.8	247 56.0	46.0	Altair	62 07.3	N 8 54.6						
	15	128 49.1	80 06.5	07.3	296 49.4	15.7	13 35.0	45.7	262 58.6	45.9	Ankaa	353 15.2	S42 13.4						
	16	143 51.6	95 06.0	08.1	311 51.3	16.1	28 36.9	45.6	278 01.2	45.9	Antares	112 25.0	S26 27.7						
	17	158 54.0	110 05.5	08.9	326 53.1	16.4	43 38.8	45.5	293 03.7	45.9									
	18	173 56.5	125 05.0	N16 09.8	341 54.9	S 5 16.7	58 40.7	N21 45.5	308 06.3	S14 45.8	Arcturus	145 54.9	N19 06.6						
	19	188 58.9	140 04.6	10.6	356 56.8	17.1	73 42.6	45.4	323 08.9	45.8	Atria	107 25.6	S69 03.1						
MARTES	20	204 01.4	155 04.1	11.4	11 58.6	17.4	88 44.6	45.3	338 11.5	45.8	Avior	234 18.2	S59 33.7						
	21	219 03.9	170 03.6	12.2	27 00.4	17.8	103 46.5	45.2	353 14.1	45.8	Bellatrix	278 31.6	N 6 21.5						
	22	234 06.3	185 03.1	13.1	42 02.2	18.1	118 48.4	45.1	8 16.7	45.7	Betelgeuse	271 00.9	N 7 24.4						
	23	249 08.8	200 02.6	13.9	57 04.1	18.4	133 50.3	45.0	23 19.3	45.7									
	1600	264 11.3	215 02.1	N16 14.7	72 05.9	S 5 18.8	148 52.2	N21 44.9	38 21.9	S14 45.7	Canopus	263 56.4	S52 42.5						
	01	279 13.7	230 01.6	15.5	87 07.7	19.1	163 54.1	44.9	53 24.5	45.6	Capella	280 33.9	N46 00.5						
	02	294 16.2	245 01.1	16.3	102 09.5	19.5	178 56.0	44.8	68 27.1	45.6	Deneb	49 30.6	N45 19.9						
	03	309 18.7	260 00.6	17.2	117 11.4	19.8	193 57.9	44.7	83 29.7	45.6	Denebola	182 33.0	N14 29.5						
	04	324 21.1	275 00.1	18.0	132 13.2	20.2	208 59.8	44.6	98 32.3	45.6	Diphda	348 55.3	S17 54.3						
	05	339 23.6	289 59.6	18.8	147 15.0	20.5	224 01.8	44.5	113 34.9	45.5									
VIERNES	06	354 26.1	304 59.1	N16 19.6	162 16.8	S 5 20.9	239 03.7	N21 44.4	128 37.5	S14 45.5	Dubhe	193 51.1	N61 40.6						
	07	9 28.5	319 58.6	20.4	177 18.7	21.2	254 05.6	44.3	143 40.1	45.5	Elnath	278 12.1	N28 36.9						
	08	24 31.0	334 58.1	21.2	192 20.5	21.5	269 07.5	44.2	158 42.7	45.4	Eltanin	90 45.3	N51 29.4						
	09	39 33.4	349 57.6	22.1	207 22.3	21.9	284 09.4	44.2	173 45.3	45.4	Enif	33 46.3	N 9 56.6						
	10	54 35.9	4 57.1	22.9	222 24.1	22.2	299 11.3	44.1	188 47.9	45.4	Fomalhaut	15 23.2	S29 32.5						
	11	69 38.4	19 56.6	23.7	237 25.9	22.6	314 13.2	44.0	203 50.4	45.4									
	12	84 40.8	34 56.1	N16 24.5	252 27.7	S 5 22.9	329 15.1	N21 43.9	218 53.0	S14 45.3	Gacrux	171 59.9	S57 11.9						
	13	99 43.3	49 55.6	25.3	267 29.6	23.3	344 17.0	43.8	233 55.6	45.3	Gienah	175 51.5	S17 37.5						
	14	114 45.8	64 55.1	26.1	282 31.4	23.6	359 18.9	43.7	248 58.2	45.3	Hadar	148 46.4	S60 26.7						
	15	129 48.2	79 54.6	26.9	297 33.2	24.0	14 20.9	43.6	264 00.8	45.3	Hamal	328 00.2	N23 31.7						
SÁBADO	16	144 50.7	94 54.1	27.7	312 35.0	24.3	29 22.8	43.6	279 03.4	45.2	Kaus Aust.	83 42.5	S34 22.4						
	17	159 53.2	109 53.6	28.6	327 36.8	24.7	44 24.7	43.5	294 06.0	45.2									
	18	174 55.6	124 53.1	N16 29.4	342 38.6	S 5 25.0	59 26.6	N21 43.4	309 08.6	S14 45.2	Kochab	137 19.3	N74 06.1						
	19	189 58.1	139 52.6	30.2	357 40.4	25.4	74 28.5	43.3	324 11.2	45.1	Markab	13 37.6	N15 17.0						
	20	205 00.6	154 52.1	31.0	12 42.2	25.7	89 30.4	43.2	339 13.8	45.1	Menkar	314 14.6	N 4 08.6						
	21	220 03.0	169 51.6	31.8	27 44.1	26.1	104 32.3	43.1	354 16.4	45.1	Menkent	148 06.5	S 34 26.6						
	22	235 05.5	184 51.1	32.6	42 45.9	26.4	119 34.2	43.0	9 19.0	45.1	Miaplacidus	221 40.0	S69 47.0						
	23	250 07.9	199 50.6	33.4	57 47.7	26.7	134 36.1	42.9	24 21.6	45.0									
	1700	265 10.4	214 50.1	N16 34.2	72 49.5	S 5 27.1	149 38.0	N21 42.9	39 24.2	S14 45.0	Mirfak	308 39.7	N49 54.5						
	01	280 12.9	229 49.6	35.0	87 51.3	27.4	164 39.9	42.8	54 26.7	45.0	Nunki	75 57.1	S26 16.5						
02	295 15.3	244 49.1	35.8	102 53.1	27.9	179 41.9	42.7	69 29.3	45.0	Peacock	53 17.8	S56 40.9							
03	310 17.8	259 48.6	36.6	117 54.9	28.1	194 43.8	42.6	84 31.9	44.9	Póllux	243 27.2	N27 59.3							
04	325 20.3	274 48.1	37.4	132 56.7	28.5	209 45.7	42.5	99 34.5	44.9	Procyon	244 59.3	N 5 11.1							
05	340 22.7	289 47.6	38.2	147 58.5	28.9	224 47.6	42.4	114 37.1	44.9										
DOMINGO	06	355 25.2	304 47.0	N16 39.0	163 00.3	S 5 29.2	239 49.5	N21 42.3	129 39.7	S14 44.9	Rasalhague	96 05.5	N12 33.2						
	07	10 27.7	319 46.5	39.8	178 02.1	29.6	254 51.4	42.3	144 42.3	44.8	Régulus	207 42.9	N11 53.7						
	08	25 30.1	334 46.0	40.6	193 03.9	29.9	269 53.3	42.2	159 44.9	44.8	Rigel	281 11.7	S 8 11.3						
	09	40 32.6	349 45.5	41.4	208 05.7	30.3	284 55.2	42.1	174 47.5	44.8	Rigel Kent.	139 50.2	S60 53.8						
	10	55 35.0	4 45.0	42.2	223 07.5	30.6	299 57.1	42.0	189 50.1	44.7	Sabik	102 11.4	S15 44.4						
	11	70 37.5	19 44.5	43.0	238 09.3	31.0	314 59.0	41.9	204 52.7	44.7									
	12	85 40.0	34 44.0	N16 43.8	253 11.1	S 5 31.3	330 00.9	N21 41.8	219 55.2	S14 44.7	Schedar	349 39.8	N56 36.7						
	13	100 42.4	49 43.5	44.6	268 12.9	31.7	345 02.8	41.7	234 57.8	44.7	Shaula	96 20.5	S37 06.7						
	14	115 44.9	64 43.0	45.4	283 14.7	32.0	0 04.8	41.6	250 00.4	44.6	Sirius	258 33.4	S16 44.4						
	15	130 47.4	79 42.4	46.2	298 16.5	32.4	15 06.7	41.6	265 03.0	44.6	Spica	158 30.4	N11 14.2						
LUNES	16	145 49.8	94 41.9	47.0	313 18.3	32.7	30 08.6	41.5	280 05.6	44.6	Suhail	222 52.2	S43 29.8						
	17	160 52.3	109 41.4	47.8	328 20.1	33.1	45 10.5	41.4	295 08.2	44.6									
	18	175 54.8	124 40.9	N16 48.6	343 21.9	S 5 33.4	60 12.4	N21 41.3	310 10.8	S14 44.5	Vega	80 38.1	N38 48.0						
	19	190 57.2	139 40.4	49.4	358 23.6	33.8	75 14.3	41.2	325 13.4	44.5	Zuben'ubi	137 04.4	S16 06.1						
	20	205 59.7	154 39.9	50.2	13 25.4	34.1	90 16.2	41.1	340 16.0	44.5									
	21	221 02.2	169 39.4	51.0	28 27.2	34.5	105 18.1	41.0	355 18.6	44.5									
	22	236 04.6	184 38.8	51.8	43 29.0	34.9	120 20.0	40.9	10 21.1	44.4	Venus	310 50.8	h 9 40						
	23	251 07.1	199 38.3	52.6	58 30.8	35.2	135 21.9	40.9	25 23.7	44.4	Marte	167 54.6	19 09						
	Paso Mer. 6 22.2		<i>v</i> -0.5	<i>d</i> 0.8	<i>v</i> 1.8	<i>d</i> 0.3	<i>v</i> 1.9	<i>d</i> 0.1	<i>v</i> 2.6	<i>d</i> 0.0	Saturno	244 40.9	14 03						

UT (HmGr)	SOL				LUNA				Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec			AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	15	16	17	18
d h	°	°	°	°	°	°	°	°	°	h m	h m	h m	h m	h m	h m	h m
DOMINGO	15 00	179 54.6	N23 17.5	333 12.1	5.1	S17 04.7	5.6	60.6	N 72	00 37	00 15	00 23	00 15	00 23	00 15	00 23
	01	194 54.4	17.6	347 36.2	5.1	16 59.1	5.7	60.6	N 70	23 45	23 46	23 45	23 46	23 45	23 46	23 45
	02	209 54.3	17.7	2 00.3	5.1	16 53.4	5.8	60.6	68	23 23	23 32	23 32	23 38	23 38	23 42	23 42
	03	224 54.2	17.8	16 24.4	5.2	16 47.6	5.9	60.6	66	23 05	23 20	23 31	23 40	23 40	23 44	23 44
	04	239 54.0	17.9	30 48.6	5.2	16 41.7	6.0	60.6	64	22 51	23 11	23 26	23 38	23 38	23 42	23 42
	05	254 53.9	18.1	45 12.8	5.3	16 35.7	6.2	60.6	62	22 39	23 02	23 21	23 37	23 37	23 41	23 41
	06	269 53.8	N23 18.2	59 37.1	5.3	S16 29.5	6.3	60.6	60	22 29	22 55	23 17	23 35	23 35	23 39	23 39
	07	284 53.6	18.3	74 01.4	5.3	16 23.2	6.3	60.6	N 58	02 36	02 52	03 10	03 28	03 28	03 32	03 32
	08	299 53.5	18.4	88 25.7	5.4	16 16.9	6.5	60.6	56	02 11	02 27	02 45	03 03	03 03	03 07	03 07
	09	314 53.4	18.5	102 50.1	5.4	16 10.4	6.6	60.6	54	01 48	02 03	02 21	02 39	02 39	02 43	02 43
	10	329 53.2	18.6	117 14.6	5.4	16 03.8	6.7	60.6	52	01 33	02 51	03 39	04 27	04 27	04 31	04 31
	11	344 53.1	18.7	131 39.0	5.6	15 57.1	6.9	60.6	50	02 00	03 06	04 03	05 00	05 00	05 04	05 04
	12	359 53.0	N23 18.8	146 03.6	5.6	S15 50.2	6.9	60.5	45	02 46	03 35	04 13	05 10	05 10	05 14	05 14
	13	14 52.8	18.9	160 28.2	5.6	15 43.3	7.0	60.5	N 40	03 16	03 58	04 31	05 28	05 28	05 32	05 32
	14	29 52.7	19.0	174 52.8	5.7	15 36.3	7.2	60.5	35	03 39	04 16	04 46	05 43	05 43	05 47	05 47
	15	44 52.6	19.1	189 17.5	5.7	15 29.1	7.2	60.5	30	03 58	04 31	04 59	05 56	05 56	06 00	06 00
	16	59 52.4	19.2	203 42.2	5.8	15 21.9	7.4	60.5	20	04 27	04 56	05 21	06 18	06 18	06 22	06 22
	17	74 52.3	19.3	218 07.0	5.9	15 14.5	7.4	60.5	N 10	04 49	05 16	05 39	06 36	06 36	06 40	06 40
	18	89 52.2	N23 19.4	232 31.9	5.9	S15 07.1	7.6	60.5	0	05 08	05 34	05 57	06 54	06 54	06 58	06 58
	19	104 52.0	19.5	246 56.8	5.9	14 59.5	7.6	60.5	S 10	05 25	05 52	06 14	07 11	07 11	07 15	07 15
	20	119 51.9	19.6	261 21.7	6.1	14 51.9	7.8	60.5	20	05 41	06 09	06 33	07 30	07 30	07 34	07 34
	21	134 51.8	19.7	275 46.8	6.0	14 44.1	7.8	60.5	30	05 58	06 28	06 54	07 51	07 51	07 55	07 55
	22	149 51.6	19.8	290 11.8	6.2	14 36.3	8.0	60.5	35	06 07	06 38	07 06	08 03	08 03	08 07	08 07
23	164 51.5	19.9	304 37.0	6.1	14 28.3	8.0	60.5	40	06 16	06 50	07 20	08 17	08 17	08 21	08 21	
								45	06 26	07 03	07 37	08 34	08 34	08 38	08 38	
LUNES	16 00	179 51.4	N23 20.0	319 02.1	6.3	S14 20.3	8.1	60.5	S 50	06 38	07 19	07 58	08 55	08 55	09 00	09 00
	01	194 51.2	20.1	333 27.4	6.3	14 12.2	8.3	60.5	52	06 43	07 27	08 08	09 14	09 14	09 18	09 18
	02	209 51.1	20.2	347 52.7	6.3	14 03.9	8.3	60.5	54	06 49	07 35	08 19	09 27	09 27	09 31	09 31
	03	224 51.0	20.2	2 18.0	6.5	13 55.6	8.4	60.4	56	06 55	07 44	08 31	09 40	09 40	09 44	09 44
	04	239 50.8	20.3	16 43.5	6.4	13 47.2	8.5	60.4	58	07 02	07 54	08 46	09 54	09 54	09 58	09 58
	05	254 50.7	20.4	31 08.9	6.6	13 38.7	8.6	60.4	S 60	07 09	08 06	09 04	10 12	10 12	10 16	10 16
	06	269 50.6	N23 20.5	45 34.5	6.6	S13 30.1	8.7	60.4								
	07	284 50.4	20.6	60 00.1	6.6	13 21.4	8.7	60.4	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	08	299 50.3	20.7	74 25.7	6.7	13 12.7	8.9	60.4			Civil	Náut.	15	16	17	18
	09	314 50.2	20.8	88 51.4	6.8	13 03.8	8.9	60.4								
	10	329 50.0	20.9	103 17.2	6.9	12 54.9	9.0	60.4								
	11	344 49.9	21.0	117 43.1	6.9	12 45.9	9.1	60.4								
	12	359 49.8	N23 21.0	132 09.0	6.9	S12 36.8	9.1	60.3	N 72	03 17	03 59	04 42	05 39	05 39	05 43	05 43
	13	14 49.6	21.1	146 34.9	7.0	12 27.7	9.2	60.3	N 70	04 12	04 54	05 37	06 34	06 34	06 38	06 38
	14	29 49.5	21.2	161 00.9	7.1	12 18.5	9.4	60.3	68	04 45	05 27	06 10	07 07	07 07	07 11	07 11
	15	44 49.4	21.3	175 27.0	7.2	12 09.1	9.3	60.3	66	05 09	05 48	06 31	07 28	07 28	07 32	07 32
	16	59 49.2	21.4	189 53.2	7.2	11 59.8	9.5	60.3	64	05 28	06 07	06 50	07 47	07 47	07 51	07 51
	17	74 49.1	21.5	204 19.4	7.3	11 50.3	9.5	60.3	62	05 43	06 22	07 05	07 52	07 52	07 56	07 56
	18	89 49.0	N23 21.5	218 45.7	7.3	S11 40.8	9.6	60.3	60	05 56	06 35	07 18	08 15	08 15	08 19	08 19
	19	104 48.8	21.6	233 12.0	7.4	11 31.2	9.7	60.2	N 58	06 07	06 46	07 29	08 26	08 26	08 30	08 30
	20	119 48.7	21.7	247 38.4	7.4	11 21.5	9.7	60.2	56	06 17	06 56	07 39	08 36	08 36	08 40	08 40
	21	134 48.6	21.8	262 04.8	7.6	11 11.8	9.8	60.2	54	06 20	07 00	07 43	08 40	08 40	08 44	08 44
	22	149 48.4	21.9	276 31.4	7.5	11 02.0	9.9	60.2	52	06 22	07 11	07 54	08 51	08 51	08 55	08 55
23	164 48.3	21.9	290 57.9	7.7	10 52.1	9.9	60.2	50	06 20	07 09	07 52	08 49	08 49	08 53	08 53	
								45	06 26	07 05	07 48	08 45	08 45	08 49	08 49	
MARTES	17 00	179 48.2	N23 22.0	305 24.6	7.7	S10 42.2	10.0	60.2	N 40	19 31	20 04	20 45	07 06	08 17	09 27	10 37
	01	194 48.0	22.1	319 51.3	7.8	10 32.2	10.1	60.1	35	19 16	19 46	20 22	07 16	08 25	09 33	10 40
	02	209 47.9	22.2	334 18.1	7.8	10 22.1	10.1	60.1	30	19 03	19 30	20 04	07 25	08 32	09 38	10 42
	03	224 47.8	22.2	348 44.9	7.9	10 12.0	10.1	60.1	20	18 41	19 05	19 35	07 40	08 44	09 46	10 46
	04	239 47.6	22.3	3 11.8	7.9	10 01.9	10.2	60.1	N 10	18 22	18 45	19 12	07 54	08 54	09 53	10 50
	05	254 47.5	22.4	17 38.7	8.0	9 51.7	10.3	60.1	0	18 04	18 27	18 53	08 06	09 04	10 00	10 53
	06	269 47.3	N23 22.5	32 05.7	8.1	S 9 41.4	10.3	60.1	S 10	17 47	18 10	18 36	08 18	09 14	10 06	10 56
	07	284 47.2	22.5	46 32.8	8.1	9 31.1	10.4	60.0	20	17 28	17 52	18 20	08 31	09 24	10 13	11 00
	08	299 47.1	22.6	60 59.9	8.2	9 20.7	10.5	60.0	30	17 07	17 34	18 04	08 46	09 36	10 21	11 03
	09	314 46.9	22.7	75 27.1	8.2	9 10.2	10.4	60.0	35	16 55	17 23	17 55	08 54	09 42	10 26	11 06
	10	329 46.8	22.7	89 54.3	8.3	8 59.8	10.6	60.0	40	16 41	17 11	17 45	09 04	09 50	10 31	11 08
	11	344 46.7	22.8	104 21.6	8.4	8 49.2	10.5	60.0	45	16 24	16 58	17 35	09 16	09 59	10 37	11 11
	12	359 46.5	N23 22.9	118 49.0	8.4	S 8 38.7	10.7	59.9	S 50	16 03	16 42	17 23	09 29	10 09	10 44	11 14
	13	14 46.4	22.9	133 16.4	8.5	8 28.0	10.6	59.9	52	15 54	16 34	17 18	09 36	10 14	10 47	11 16
	14	29 46.3	23.0	147 43.9	8.6	8 17.4	10.7	59.9	54	15 42	16 26	17 12	09 43	10 20	10 51	11 17
	15	44 46.1	23.1	162 11.5	8.5	8 06.7	10.8	59.9	56	15 30	16 17	17 06	09 50	10 26	10 54	11 19
	16	59 46.0	23.1	176 39.0	8.7	7 55.9	10.8	59.9	58	15 15	16 07	17 00	09 59	10 32	10 59	11 21
	17	74 45.9	23.2	191 06.7	8.7	7 45.1	10.8	59.8	S 60	14 58	15 55	16 52	10 09	10 40	11 04	11 24
	18	89 45.7	N23 23.3	205 34.4	8.8	S 7 34.3	10.9	59.8								
	19	104 45.6	23.3	220 02.2	8.8	7 23.4	10.9	59.8								
	20	119 45.5	23.4	234 30.0	8.9	7 12.5	10.9	59.8	Día	SOL	Paso Mer.	LUNA				
	21	134 45.3	23.5	248 57.9	8.9	7 01.6	11.0	59.8		Ec. Tiempo			Paso Mer. Sup.	Mer. Inf.	Edad	Fase
	22	149 45.2	23.5	263 25.8	9.0	6 50.6	11.0	59.7		00 ^h	12 ^h					
23	164 45.1	23.6	277 53.8	9.0	S 6 39.6	11.0	59.7	d	m s	m s	h m	h m	h m	d	%	
								15	00 21	00 28	12 00	01 52	14 21	18 92		
								16	00 34	00 41	12 01	02 50	15 19	19 85		
								17	00 47	00 54	12 01	03 47	16 14	20 75		
	S/D 15.8	<i>d</i> 0.1	S/D	16.5	16.4	16.3										

UT (HmGr)	ARIES	VENUS -3.9	MARTE -0.2	JÚPITER -1.8	SATURNO +0.3	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
1800	266 09.5	214 37.8 N16 53.3	73 32.6 S 5 35.6	150 23.8 N21 40.8	40 26.3 S14 44.4	Acamar	315 18.2 S40 14.8	
01	281 12.0	229 37.3 54.1	88 34.4 35.9	165 25.7 40.7	55 28.9 44.3	Achernar	335 26.6 S57 09.6	
02	296 14.5	244 36.8 54.9	103 36.2 36.3	180 27.6 40.6	70 31.5 44.3	Acrux	173 08.2 S63 11.1	
03	311 16.9	259 36.2 . . 55.7	118 37.9 . . 36.6	195 29.6 . . 40.5	85 34.1 . . 44.3	Adhara	255 12.3 S28 59.8	
04	326 19.4	274 35.7 56.5	133 39.7 37.0	210 31.5 40.4	100 36.7 44.3	Aldebarán	290 48.9 N16 32.1	
05	341 21.9	289 35.2 57.3	148 41.5 37.4	225 33.4 40.3	115 39.3 44.2			
06	356 24.3	304 34.7 N16 58.1	163 43.3 S 5 37.7	240 35.3 N21 40.2	130 41.8 S14 44.2	Alioth	166 20.0 N55 53.1	
07	11 26.8	319 34.2 58.9	178 45.1 38.1	255 37.2 40.1	145 44.4 44.2	Alkaid	152 58.2 N49 14.7	
08	26 29.3	334 33.6 16 59.6	193 46.9 38.4	270 39.1 40.1	160 47.0 44.2	Al Na'ir	27 42.7 S46 53.1	
09	41 31.7	349 33.1 17 00.4	208 48.6 . . 38.8	285 41.0 . . 40.0	175 49.6 . . 44.1	Alnilam	275 46.0 S 1 11.8	
10	56 34.2	4 32.6 01.2	223 50.4 39.1	300 42.9 39.9	190 52.2 44.1	Alphard	217 55.6 S 8 43.5	
11	71 36.7	19 32.1 02.0	238 52.2 39.5	315 44.8 39.8	205 54.8 44.1			
12	86 39.1	34 31.6 N17 02.8	253 54.0 S 5 39.9	330 46.7 N21 39.7	220 57.4 S14 44.1	Alphecca	126 10.1 N26 40.2	
13	101 41.6	49 31.0 03.6	268 55.8 40.2	345 48.6 39.6	236 00.0 44.0	Alpheratz	357 42.8 N29 10.1	
14	116 44.0	64 30.5 04.3	283 57.5 40.6	0 50.5 39.5	251 02.5 44.0	Altair	62 07.3 N 8 54.6	
15	131 46.5	79 30.0 . . 05.1	298 59.3 . . 40.9	15 52.4 . . 39.4	266 05.1 . . 44.0	Ankaa	353 15.1 S42 13.4	
16	146 49.0	94 29.5 05.9	314 01.1 41.3	30 54.3 39.3	281 07.7 44.0	Antares	112 25.0 S26 27.7	
17	161 51.4	109 28.9 06.7	329 02.9 41.7	45 56.2 39.3	296 10.3 43.9			
18	176 53.9	124 28.4 N17 07.4	344 04.6 S 5 42.0	60 58.2 N21 39.2	311 12.9 S14 43.9	Arcturus	145 54.9 N19 06.6	
19	191 56.4	139 27.9 08.2	359 06.4 42.4	76 00.1 39.1	326 15.5 43.9	Atria	107 25.6 S69 03.1	
20	206 58.8	154 27.3 09.0	14 08.2 42.7	91 02.0 39.0	341 18.1 43.9	Avior	234 18.2 S59 33.7	
21	222 01.3	169 26.8 . . 09.8	29 09.9 . . 43.1	106 03.9 . . 38.9	356 20.7 . . 43.8	Bellatrix	278 31.6 N 6 21.6	
22	237 03.8	184 26.3 10.6	44 11.7 43.5	121 05.8 38.8	11 23.2 43.8	Betelgeuse	271 00.9 N 7 24.4	
23	252 06.2	199 25.8 11.3	59 13.5 43.8	136 07.7 38.7	26 25.8 43.8			
1900	267 08.7	214 25.2 N17 12.1	74 15.2 S 5 44.2	151 09.6 N21 38.6	41 28.4 S14 43.8	Canopus	263 56.4 S52 42.4	
01	282 11.1	229 24.7 12.9	89 17.0 44.6	166 11.5 38.5	56 31.0 43.7	Capella	280 33.9 N46 00.5	
02	297 13.6	244 24.2 13.6	104 18.8 44.9	181 13.4 38.5	71 33.6 43.7	Deneb	49 30.6 N45 19.9	
03	312 16.1	259 23.6 . . 14.4	119 20.5 . . 45.3	196 15.3 . . 38.4	86 36.2 . . 43.7	Denébola	182 33.0 N14 29.5	
04	327 18.5	274 23.1 15.2	134 22.3 45.6	211 17.2 38.3	101 38.7 43.7	Diphda	348 55.3 S17 54.3	
05	342 21.0	289 22.6 16.0	149 24.1 46.0	226 19.1 38.2	116 41.3 43.6			
06	357 23.5	304 22.0 N17 16.7	164 25.8 S 5 46.4	241 21.0 N21 38.1	131 43.9 S14 43.6	Dubhe	193 51.1 N61 40.6	
07	12 25.9	319 21.5 17.5	179 27.6 46.7	256 22.9 38.0	146 46.5 43.6	Elnath	278 12.1 N28 36.9	
08	27 28.4	334 21.0 18.3	194 29.4 47.1	271 24.8 37.9	161 49.1 43.6	Eltanin	90 45.3 N51 29.4	
09	42 30.9	349 20.4 . . 19.0	209 31.1 . . 47.5	286 26.7 . . 37.8	176 51.7 . . 43.5	Enif	33 46.2 N 9 56.6	
10	57 33.3	4 19.9 19.8	224 32.9 47.8	301 28.6 37.7	191 54.3 43.5	Fomalhaut	15 23.2 S29 32.5	
11	72 35.8	19 19.4 20.6	239 34.6 48.2	316 30.5 37.7	206 56.8 43.5			
12	87 38.3	34 18.8 N17 21.3	254 36.4 S 5 48.6	331 32.4 N21 37.6	221 59.4 S14 43.5	Gacrux	171 59.9 S57 12.0	
13	102 40.7	49 18.3 22.1	269 38.2 48.9	346 34.4 37.5	237 02.0 43.4	Gienah	175 51.5 S17 37.5	
14	117 43.2	64 17.8 22.9	284 39.9 49.3	1 36.3 37.4	252 04.6 43.4	Hadar	148 46.4 S60 26.7	
15	132 45.6	79 17.2 . . 23.6	299 41.7 . . 49.7	16 38.2 . . 37.3	267 07.2 . . 43.4	Hamal	328 00.1 N23 31.7	
16	147 48.1	94 16.7 24.4	314 43.4 50.0	31 40.1 37.2	282 09.8 43.4	Kaus Aust.	83 42.5 S34 22.4	
17	162 50.6	109 16.2 25.1	329 45.2 50.4	46 42.0 37.1	297 12.3 43.3			
18	177 53.0	124 15.6 N17 25.9	344 46.9 S 5 50.8	61 43.9 N21 37.0	312 14.9 S14 43.3	Kochab	137 19.4 N74 06.1	
19	192 55.5	139 15.1 26.7	359 48.7 51.1	76 45.8 36.9	327 17.5 43.3	Markab	13 37.5 N15 17.0	
20	207 58.0	154 14.5 27.4	14 50.4 51.5	91 47.7 36.8	342 20.1 43.3	Menkar	314 14.6 N 4 08.6	
21	223 00.4	169 14.0 . . 28.2	29 52.2 . . 51.9	106 49.6 . . 36.8	357 22.7 . . 43.2	Menkent	148 06.5 S36 26.6	
22	238 02.9	184 13.5 28.9	44 53.9 52.2	121 51.5 36.7	12 25.3 43.2	Miaplacidus	221 40.0 S69 47.0	
23	253 05.4	199 12.9 29.7	59 55.7 52.6	136 53.4 36.6	27 27.8 43.2			
2000	268 07.8	214 12.4 N17 30.5	74 57.4 S 5 53.0	151 55.3 N21 36.5	42 30.4 S14 43.2	Mirfak	308 39.7 N49 54.4	
01	283 10.3	229 11.8 31.2	89 59.2 53.3	166 57.2 36.4	57 33.0 43.1	Nunki	75 57.1 S26 16.5	
02	298 12.8	244 11.3 32.0	105 00.9 53.7	181 59.1 36.3	72 35.6 43.1	Peacock	53 17.7 S56 40.9	
03	313 15.2	259 10.8 . . 32.7	120 02.7 . . 54.1	197 01.0 . . 36.2	87 38.2 . . 43.1	Póllux	243 27.2 N27 59.3	
04	328 17.7	274 10.2 33.5	135 04.4 54.5	212 02.9 36.1	102 40.8 43.1	Procyon	244 59.3 N 5 11.1	
05	343 20.1	289 09.7 34.2	150 06.2 54.8	227 04.8 36.0	117 43.3 43.1			
06	358 22.6	304 09.1 N17 35.0	165 07.9 S 5 55.2	242 06.7 N21 35.9	132 45.9 S14 43.0	Rasalhague	96 05.5 N12 33.2	
07	13 25.1	319 08.6 35.7	180 09.7 55.6	257 08.6 35.9	147 48.5 43.0	Régulus	207 42.9 N11 53.7	
08	28 27.5	334 08.0 36.5	195 11.4 55.9	272 10.5 35.8	162 51.1 43.0	Rigel	281 11.7 S 8 11.3	
09	43 30.0	349 07.5 . . 37.2	210 13.2 . . 56.3	287 12.4 . . 35.7	177 53.7 . . 43.0	Rigel Kent.	139 50.2 S60 53.8	
10	58 32.5	4 06.9 38.0	225 14.9 56.7	302 14.3 35.6	192 56.2 42.9	Sabik	102 11.4 S15 44.4	
11	73 34.9	19 06.4 38.7	240 16.6 57.0	317 16.2 35.5	207 58.8 42.9			
12	88 37.4	34 05.8 N17 39.5	255 18.4 S 5 57.4	332 18.1 N21 35.4	223 01.4 S14 42.9	Schedar	349 39.7 N56 36.7	
13	103 39.9	49 05.3 40.2	270 20.1 57.8	347 20.1 35.3	238 04.0 42.9	Shaula	96 20.5 S37 06.7	
14	118 42.3	64 04.8 41.0	285 21.9 58.2	2 22.0 35.2	253 06.6 42.8	Sirius	258 33.4 S16 44.4	
15	133 44.8	79 04.2 . . 41.7	300 23.6 . . 58.5	17 23.9 . . 35.1	268 09.1 . . 42.8	Spica	158 30.4 S11 14.2	
16	148 47.2	94 03.7 42.5	315 25.3 58.9	32 25.8 35.0	283 11.7 42.8	Suhail	222 52.2 S43 29.8	
17	163 49.7	109 03.1 43.2	330 27.1 59.3	47 27.7 35.0	298 14.3 42.8			
18	178 52.2	124 02.6 N17 44.0	345 28.8 S 5 59.7	62 29.6 N21 34.9	313 16.9 S14 42.7	Vega	80 38.0 N38 48.0	
19	193 54.6	139 02.0 44.7	0 30.5 6 00.0	77 31.5 34.8	328 19.5 42.7	Zuben'ubi	137 04.4 S16 06.1	
20	208 57.1	154 01.5 45.4	15 32.3 00.4	92 33.4 34.7	343 22.0 42.7			
21	223 59.6	169 00.9 . . 46.2	30 34.0 . . 00.8	107 35.3 . . 34.6	358 24.6 . . 42.7			
22	239 02.0	184 00.3 46.9	45 35.7 01.2	122 37.2 34.5	13 27.2 42.7			
23	254 04.5	198 59.8 47.7	60 37.5 01.5	137 39.1 34.4	28 29.8 42.6			
	h m							
Paso Mer.	6 10.4	v -0.5 d 0.8	v 1.8 d 0.4	v 1.9 d 0.1	v 2.6 d 0.0			
							AHS	Paso Mer.
								h m
							Venus	307 16.5 9 43
							Marte	167 06.6 19 01
							Júpiter	244 00.9 13 54
							Saturno	134 19.7 21 10

UT (HmGr)	SOL				LUNA				Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	18		19	20	21	
M I É R C O L E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	18 00	179 44.9	N23 23.6	292 21.8	9.1 S	6 28.6	11.1	59.7	0	0	0	23 47	23 40	23 33	23 25	
	01	194 44.8	23.7	306 49.9	9.1	6 17.5	11.0	59.7	0	0	0	23 44	23 43	23 42	23 42	
	02	209 44.6	23.8	321 18.0	9.2	6 06.5	11.2	59.6	66	0	0	23 42	23 46	23 50	23 55	
	03	224 44.5	23.8	335 46.2	9.3	5 55.3	11.1	59.6	64	0	0	23 40	23 48	23 56	24 06	
	04	239 44.4	23.9	350 14.5	9.3	5 44.2	11.2	59.6	62	0	0	01 31	23 38	23 50	24 02	
	05	254 44.2	23.9	4 42.8	9.3	5 33.0	11.2	59.6	60	0	00 50	02 09	23 37	23 51	24 06	
	06	269 44.1	N23 24.0	19 11.1	9.4 S	5 21.8	11.2	59.5	58	0	01 40	02 36	23 35	23 53	24 11	
	07	284 44.0	24.0	33 39.5	9.5	5 10.6	11.2	59.5	56	0	02 10	03 13	23 33	23 55	24 18	
	08	299 43.8	24.1	48 08.0	9.4	4 59.4	11.3	59.5	54	00 45	02 33	03 27	23 32	23 56	24 21	
	09	314 43.7	24.1	62 36.4	9.6	4 48.1	11.2	59.5	52	01 32	02 51	03 39	23 31	23 57	24 23	
	10	329 43.6	24.2	77 05.0	9.6	4 36.9	11.3	59.5	50	02 00	03 06	03 50	23 30	23 58	24 26	
	11	344 43.4	24.3	91 33.6	9.6	4 25.6	11.3	59.4	45	02 46	03 35	04 13	23 29	24 00	00 00	
	12	359 43.3	N23 24.3	106 02.2	9.7 S	4 14.3	11.3	59.4	N 40	03 16	03 58	04 31	23 27	24 02	00 02	
	13	14 43.2	24.4	120 30.9	9.7	4 03.0	11.4	59.4	35	03 39	04 16	04 46	23 26	24 03	00 03	
	14	29 43.0	24.4	134 59.6	9.8	3 51.6	11.3	59.4	30	03 58	04 32	04 59	23 25	24 04	00 04	
	15	44 42.9	24.5	149 28.4	9.8	3 40.3	11.4	59.3	20	04 27	04 56	05 21	23 23	24 07	00 07	
	16	59 42.7	24.5	163 57.2	9.8	3 28.9	11.3	59.3	N 10	04 50	05 17	05 40	23 21	24 09	00 09	
	17	74 42.6	24.5	178 26.0	9.9	3 17.6	11.4	59.3	0	05 09	05 35	05 58	23 20	24 10	00 10	
	18	89 42.5	N23 24.6	192 54.9	10.0 S	3 06.2	11.4	59.3	S 10	05 26	05 52	06 15	23 18	24 12	00 12	
	19	104 42.3	24.6	207 23.9	9.9	2 54.8	11.4	59.2	20	05 42	06 10	06 34	23 17	24 14	00 14	
	20	119 42.2	24.7	221 52.8	10.1	2 43.4	11.4	59.2	30	05 59	06 29	06 55	23 15	24 17	00 17	
	21	134 42.1	24.7	236 21.9	10.0	2 32.0	11.3	59.2	35	06 07	06 39	07 07	23 14	24 18	00 18	
	22	149 41.9	24.8	250 50.9	10.1	2 20.7	11.4	59.2	40	06 17	06 51	07 21	23 13	24 20	00 20	
	23	164 41.8	24.8	265 20.0	10.1	2 09.3	11.4	59.1	45	06 27	07 04	07 38	23 11	24 21	00 21	
J U E V E S	19 00	179 41.7	N23 24.9	279 49.1	10.2 S	1 57.9	11.4	59.1	S 50	06 39	07 21	07 59	23 10	24 24	00 24	
	01	194 41.5	24.9	294 18.3	10.2	1 46.5	11.5	59.1	52	06 44	07 28	08 09	23 09	24 25	00 25	
	02	209 41.4	24.9	308 47.5	10.3	1 35.0	11.3	59.0	54	06 50	07 36	08 20	23 08	24 26	00 26	
	03	224 41.3	25.0	323 16.8	10.3	1 23.7	11.4	59.0	56	06 56	07 45	08 33	23 07	24 27	00 27	
	04	239 41.1	25.0	337 46.1	10.3	1 12.3	11.4	59.0	S 58	07 03	07 56	08 48	23 06	24 28	00 28	
	05	254 41.0	25.1	352 15.4	10.3	1 00.9	11.4	59.0	S 60	07 10	08 07	09 05	23 05	24 30	00 30	
	06	269 40.8	N23 25.1	6 44.7	10.4 S	0 49.5	11.4	58.9	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	07	284 40.7	25.1	21 14.1	10.4	0 38.1	11.4	58.9				18	19	20	21	
	08	299 40.6	25.2	35 43.5	10.5	0 26.7	11.4	58.9	N 72	h m	h m	h m	h m	h m	h m	
	09	314 40.4	25.2	50 13.0	10.5	0 15.3	11.3	58.9								
	10	329 40.3	25.2	64 42.5	10.5 S	0 04.0	11.4	58.8	N 70	h m	h m	h m	h m	h m	h m	
	11	344 40.2	25.3	79 12.0	10.5 N	0 07.4	11.3	58.8	68	0	0	09 51	11 46	13 38	15 29	
	12	359 40.0	N23 25.3	93 41.5	10.6 N	0 18.7	11.3	58.8	66	0	0	09 58	11 46	13 31	15 14	
	13	14 39.9	25.3	108 11.1	10.6	0 30.0	11.3	58.8	64	0	0	10 04	11 46	13 25	15 02	
	14	29 39.8	25.4	122 40.7	10.6	0 41.3	11.3	58.7	62	0	0	10 09	11 46	13 20	14 52	
	15	44 39.6	25.4	137 10.3	10.7	0 52.6	11.3	58.7	60	22 32	0	10 13	11 46	13 16	14 44	
	16	59 39.5	25.4	151 40.0	10.6	1 03.9	11.3	58.7	64	21 54	0	10 16	11 45	13 12	14 37	
	17	74 39.3	25.5	166 09.6	10.7	1 15.2	11.2	58.7	60	21 27	23 14	10 19	11 45	13 09	14 31	
	18	89 39.2	N23 25.5	180 39.3	10.8 N	1 26.4	11.3	58.6	N 58	21 07	22 23	10 22	11 45	13 06	14 25	
	19	104 39.1	25.5	195 09.1	10.7	1 37.7	11.2	58.6	56	20 50	21 53	10 24	11 45	13 04	14 21	
	20	119 38.9	25.6	209 38.8	10.8	1 48.9	11.2	58.6	54	20 36	21 30	10 26	11 45	13 02	14 16	
	21	134 38.8	25.6	224 08.6	10.8	2 00.1	11.1	58.5	52	20 23	21 12	10 28	11 45	13 00	14 13	
	22	149 38.7	25.6	238 38.4	10.8	2 11.2	11.2	58.5	50	20 12	20 57	10 30	11 45	12 58	14 09	
	23	164 38.5	25.6	253 08.2	10.9	2 22.4	11.1	58.5	45	19 50	20 27	10 34	11 45	12 54	14 02	
	V I E R N E S	20 00	179 38.4	N23 25.7	267 38.1	10.8 N	2 33.5	11.1	58.5	N 40	19 32	20 05	20 46	10 37	11 45	12 51
01		194 38.3	25.7	282 07.9	10.9	2 44.6	11.1	58.4	35	19 17	19 46	20 23	10 40	11 45	12 48	
02		209 38.1	25.7	296 37.8	10.9	2 55.7	11.0	58.4	30	19 04	19 31	20 05	10 42	11 45	12 46	
03		224 38.0	25.7	311 07.7	10.9	3 06.7	11.1	58.4	20	18 42	19 06	19 35	10 46	11 44	12 41	
04		239 37.8	25.8	325 37.6	11.0	3 17.8	11.0	58.4	N 10	18 23	18 46	19 13	10 50	11 44	12 38	
05		254 37.7	25.8	340 07.6	10.9	3 28.8	10.9	58.3	0	18 05	18 28	18 54	10 53	11 44	12 34	
06		269 37.6	N23 25.8	354 37.5	11.0 N	3 39.7	11.0	58.3	S 10	17 48	18 10	18 37	10 56	11 44	12 31	
07		284 37.4	25.8	9 07.5	11.0	3 50.7	10.9	58.3	20	17 29	17 53	18 21	11 00	11 44	12 27	
08		299 37.3	25.8	23 37.5	11.0	4 01.6	10.8	58.2	30	17 08	17 34	18 04	11 03	11 43	12 22	
09		314 37.2	25.9	38 07.5	11.0	4 12.4	10.9	58.2	35	16 55	17 24	17 55	11 06	11 43	12 20	
10		329 37.0	25.9	52 37.5	11.0	4 23.3	10.8	58.2	40	16 41	17 12	17 46	11 08	11 43	12 17	
11		344 36.9	25.9	67 07.5	11.1	4 34.1	10.8	58.2	45	16 24	16 58	17 35	11 11	11 43	12 14	
12		359 36.8	N23 25.9	81 37.6	11.0 N	4 44.9	10.7	58.1	S 50	16 04	16 42	17 24	11 14	11 43	12 10	
13		14 36.6	25.9	96 07.6	11.1	4 55.6	10.7	58.1	52	15 54	16 35	17 18	11 16	11 42	12 08	
14		29 36.5	25.9	110 37.7	11.1	5 06.3	10.7	58.1	54	15 43	16 26	17 13	11 17	11 42	12 06	
15		44 36.3	26.0	125 07.8	11.1	5 17.0	10.6	58.1	56	15 30	16 17	17 07	11 19	11 42	12 04	
16		59 36.2	26.0	139 37.9	11.1	5 27.6	10.6	58.0	58	15 15	16 07	17 00	11 21	11 42	12 02	
17		74 36.1	26.0	154 08.0	11.1	5 38.2	10.6	58.0	S 60	14 58	15 55	16 52	11 24	11 42	11 59	
18		89 35.9	N23 26.0	168 38.1	11.1 N	5 48.8	10.5	58.0	SOL		LUNA					
19		104 35.8	26.0	183 08.2	11.1	5 59.3	10.4	57.9	Día	Ec. Tiempo	Paso Mer.	Paso Mer.		Edad	Fase	
20		119 35.7	26.0	197 38.3	11.2	6 09.7	10.5	57.9				Sup.	Inf.			
21		134 35.5	26.0	212 08.5	11.1	6 20.2	10.4	57.9	d	m s	m s	h m	h m	h m	d	%
22		149 35.4	26.0	226 38.6	11.2	6 30.6	10.3	57.9								
23		164 35.3	26.0	241 08.8	11.1 N	6 40.9	10.3	57.8	18	01 00	01 07	12 01	04 40	17 06	21 64	
									19	01 13	01 20	12 01	05 32	17 57	22 53	
								20	01 26	01 33	12 02	06 22	18 47	23 42		
	S/D	15.8	d 0.0	S/D	16.2	16.0	15.8									

UT (HmGr)	ARIES	VENUS -3.9	MARTE -0.1	JÚPITER -1.8	SATURNO +0.3	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
21 00	269 07.0	213 59.2 N17 48.4	75 39.2 S 6 01.9	152 41.0 N21 34.3	43 32.4 S14 42.6	Acamar 315 18.2 S40 14.7
01	284 09.4	228 58.7 49.2	90 40.9 02.3	167 42.9 34.2	58 34.9 42.6	Achernar 335 26.6 S57 09.6
02	299 11.9	243 58.1 49.9	105 42.7 02.7	182 44.8 34.1	73 37.5 42.6	Acrux 173 08.3 S63 11.1
03	314 14.4	258 57.6 . . 50.6	120 44.4 . . 03.0	197 46.7 . . 34.0	88 40.1 . . 42.5	Adhara 255 12.3 S28 59.7
04	329 16.8	273 57.0 51.4	135 46.1 03.4	212 48.6 34.0	103 42.7 42.5	Aldebarán 290 48.9 N16 32.1
05	344 19.3	288 56.5 52.1	150 47.8 03.8	227 50.5 33.9	118 45.3 42.5	
06	359 21.7	303 55.9 N17 52.8	165 49.6 S 6 04.2	242 52.4 N21 33.8	133 47.8 S14 42.5	Alioth 166 20.1 N55 53.1
07	14 24.2	318 55.4 53.6	180 51.3 04.5	257 54.3 33.7	148 50.4 42.4	Alkaid 152 58.2 N49 14.7
08	29 26.7	333 54.8 54.3	195 53.0 04.9	272 56.2 33.6	163 53.0 42.4	Al Na'ir 27 42.7 S46 53.1
09	44 29.1	348 54.2 . . 55.0	210 54.7 . . 05.3	287 58.1 . . 33.5	178 55.6 . . 42.4	Alnilam 275 46.0 S 1 11.8
10	59 31.6	3 53.7 55.8	225 56.5 05.7	303 00.0 33.4	193 58.2 42.4	Alphard 217 55.6 S 8 43.5
11	74 34.1	18 53.1 56.5	240 58.2 06.0	318 01.9 33.3	209 00.7 42.4	
12	89 36.5	33 52.6 N17 57.2	255 59.9 S 6 06.4	333 03.8 N21 33.2	224 03.3 S14 42.3	Alphecca 126 10.1 N26 40.2
13	104 39.0	48 52.0 58.0	271 01.6 06.8	348 05.7 33.1	239 05.9 42.3	Alpheratz 357 42.7 N29 10.1
14	119 41.5	63 51.4 58.7	286 03.4 07.2	3 07.6 33.0	254 08.5 42.3	Altair 62 07.2 N 8 54.6
15	134 43.9	78 50.9 17 59.4	301 05.1 . . 07.6	18 09.5 . . 32.9	269 11.0 . . 42.3	Ankaa 353 15.1 S42 13.4
16	149 46.4	93 50.3 18 00.2	316 06.8 07.9	33 11.4 32.9	284 13.6 42.2	Antares 112 25.0 S26 27.7
17	164 48.9	108 49.8 00.9	331 08.5 08.3	48 13.3 32.8	299 16.2 42.2	
18	179 51.3	123 49.2 N18 01.6	346 10.2 S 6 08.7	63 15.2 N21 32.7	314 18.8 S14 42.2	Arcturus 145 54.9 N19 06.6
19	194 53.8	138 48.6 02.3	1 11.9 09.1	78 17.1 32.6	329 21.3 42.2	Atria 107 25.6 S69 03.1
20	209 56.2	153 48.1 03.1	16 13.7 09.5	93 19.0 32.5	344 23.9 42.2	Avior 234 18.2 S59 33.7
21	224 58.7	168 47.5 . . 03.8	31 15.4 . . 09.8	108 20.9 . . 32.4	359 26.5 . . 42.1	Bellatrix 278 31.6 N 6 21.6
22	240 01.2	183 47.0 04.5	46 17.1 10.2	123 22.8 32.3	14 29.1 42.1	Betelgeuse 271 00.9 N 7 24.4
23	255 03.6	198 46.4 05.2	61 18.8 10.6	138 24.7 32.2	29 31.7 42.1	
22 00	270 06.1	213 45.8 N18 06.0	76 20.5 S 6 11.0	153 26.6 N21 32.1	44 34.2 S14 42.1	Canopus 263 56.4 S52 42.4
01	285 08.6	228 45.3 06.7	91 22.2 11.4	168 28.5 32.0	59 36.8 42.0	Capella 280 33.9 N46 00.5
02	300 11.0	243 44.7 07.4	106 23.9 11.7	183 30.4 31.9	74 39.4 42.0	Deneb 49 30.6 N45 19.9
03	315 13.5	258 44.1 . . 08.1	121 25.6 . . 12.1	198 32.3 . . 31.8	89 42.0 . . 42.0	Denébola 182 33.0 N14 29.5
04	330 16.0	273 43.6 08.8	136 27.4 12.5	213 34.2 31.7	104 44.5 42.0	Diphda 348 55.3 S17 54.3
05	345 18.4	288 43.0 09.6	151 29.1 12.9	228 36.1 31.7	119 47.1 42.0	
06	0 20.9	303 42.4 N18 10.3	166 30.8 S 6 13.3	243 38.0 N21 31.6	134 49.7 S14 41.9	Dubhe 193 51.2 N61 40.6
07	15 23.3	318 41.9 11.0	181 32.5 13.7	258 39.9 31.5	149 52.3 41.9	Elnath 278 12.1 N28 36.9
08	30 25.8	333 41.3 11.7	196 34.2 14.0	273 41.8 31.4	164 54.8 41.9	Eltanin 90 45.3 N51 29.4
09	45 28.3	348 40.7 . . 12.4	211 35.9 . . 14.4	288 43.7 . . 31.3	179 57.4 . . 41.9	Enif 33 46.2 N 9 56.6
10	60 30.7	3 40.1 13.1	226 37.6 14.8	303 45.6 31.2	195 00.0 41.8	Fomalhaut 15 23.1 S29 32.5
11	75 33.2	18 39.6 13.8	241 39.3 15.2	318 47.5 31.1	210 02.6 41.8	
12	90 35.7	33 39.0 N18 14.6	256 41.0 S 6 15.6	333 49.4 N21 31.0	225 05.1 S14 41.8	Gacrux 171 59.9 S57 12.0
13	105 38.1	48 38.4 15.3	271 42.7 16.0	348 51.3 30.9	240 07.7 41.8	Gienah 175 51.5 S17 37.5
14	120 40.6	63 37.9 16.0	286 44.4 16.3	3 53.2 30.8	255 10.3 41.8	Hadar 148 46.4 S60 26.7
15	135 43.1	78 37.3 . . 16.7	301 46.1 . . 16.7	18 55.1 . . 30.7	270 12.9 . . 41.7	Hamal 328 00.1 N23 31.7
16	150 45.5	93 36.7 17.4	316 47.8 17.1	33 57.0 30.6	285 15.4 41.7	Kaus Aust. 83 42.5 S34 22.4
17	165 48.0	108 36.1 18.1	331 49.5 17.5	48 58.9 30.5	300 18.0 41.7	
18	180 50.5	123 35.6 N18 18.8	346 51.2 S 6 17.9	64 00.8 N21 30.5	315 20.6 S14 41.7	Kochab 137 19.4 N74 06.1
19	195 52.9	138 35.0 19.5	1 52.9 18.3	79 02.7 30.4	330 23.1 41.7	Markab 13 37.5 N15 17.0
20	210 55.4	153 34.4 20.2	16 54.6 18.6	94 04.6 30.3	345 25.7 41.6	Menkar 314 14.6 N 4 08.7
21	225 57.8	168 33.8 . . 20.9	31 56.3 . . 19.0	109 06.5 . . 30.2	0 28.3 . . 41.6	Menkent 148 06.5 S36 26.6
22	241 00.3	183 33.3 21.7	46 58.0 19.4	124 08.4 30.1	15 30.9 41.6	Miaplacidus 221 40.0 S69 47.0
23	256 02.8	198 32.7 22.4	61 59.7 19.8	139 10.3 30.0	30 33.4 41.6	
23 00	271 05.2	213 32.1 N18 23.1	77 01.4 S 6 20.2	154 12.2 N21 29.9	45 36.0 S14 41.5	Mirfak 308 39.7 N49 54.4
01	286 07.7	228 31.5 23.8	92 03.1 20.6	169 14.1 29.8	60 38.6 41.5	Nunki 75 57.1 S26 16.5
02	301 10.2	243 31.0 24.5	107 04.8 21.0	184 16.0 29.7	75 41.2 41.5	Peacock 53 17.7 S56 40.9
03	316 12.6	258 30.4 . . 25.2	122 06.5 . . 21.4	199 17.9 . . 29.6	90 43.7 . . 41.5	Póllux 243 27.2 N27 59.3
04	331 15.1	273 29.8 25.9	137 08.2 21.7	214 19.8 29.5	105 46.3 41.5	Procyon 244 59.3 N 5 11.1
05	346 17.6	288 29.2 26.6	152 09.9 22.1	229 21.7 29.4	120 48.9 41.4	
06	1 20.0	303 28.6 N18 27.3	167 11.6 S 6 22.5	244 23.6 N21 29.3	135 51.4 S14 41.4	Rasalhague 96 05.5 N12 33.2
07	16 22.5	318 28.1 28.0	182 13.2 22.9	259 25.5 29.2	150 54.0 41.4	Régulus 207 43.0 N11 53.7
08	31 25.0	333 27.5 28.7	197 14.9 23.3	274 27.4 29.1	165 56.6 41.4	Rigel 281 11.7 S 8 11.3
09	46 27.4	348 26.9 . . 29.4	212 16.6 . . 23.7	289 29.3 . . 29.1	180 59.2 . . 41.4	Rigel Kent. 139 50.2 S60 53.8
10	61 29.9	3 26.3 30.1	227 18.3 24.1	304 31.2 29.0	196 01.7 41.3	Sabik 102 11.4 S15 44.4
11	76 32.3	18 25.7 30.8	242 20.0 24.5	319 33.1 28.9	211 04.3 41.3	
12	91 34.8	33 25.2 N18 31.5	257 21.7 S 6 24.9	334 35.0 N21 28.8	226 06.9 S14 41.3	Schedar 349 39.7 N56 36.7
13	106 37.3	48 24.6 32.1	272 23.4 25.2	349 36.9 28.7	241 09.4 41.3	Shaula 96 20.5 S37 06.7
14	121 39.7	63 24.0 32.8	287 25.0 25.6	4 38.8 28.6	256 12.0 41.3	Sirius 258 33.4 S16 44.4
15	136 42.2	78 23.4 . . 33.5	302 26.7 . . 26.0	19 40.7 . . 28.5	271 14.6 . . 41.2	Spica 158 30.4 S11 14.2
16	151 44.7	93 22.8 34.2	317 28.4 26.4	34 42.6 28.4	286 17.2 41.2	Suhail 222 52.2 S43 29.8
17	166 47.1	108 22.2 34.9	332 30.1 26.8	49 44.5 28.3	301 19.7 41.2	
18	181 49.6	123 21.7 N18 35.6	347 31.8 S 6 27.2	64 46.4 N21 28.2	316 22.3 S14 41.2	Vega 80 38.0 N38 48.0
19	196 52.1	138 21.1 36.3	2 33.5 27.6	79 48.3 28.1	331 24.9 41.2	Zuben'ubi 137 04.4 S16 06.1
20	211 54.5	153 20.5 37.0	17 35.1 28.0	94 50.2 28.0	346 27.4 41.1	
21	226 57.0	168 19.9 . . 37.7	32 36.8 . . 28.4	109 52.1 . . 27.9	1 30.0 . . 41.1	AHS Paso Mer.
22	241 59.4	183 19.3 38.4	47 38.5 28.8	124 54.0 27.8	16 32.6 41.1	Venus 303 39.7 9 45
23	257 01.9	198 18.7 39.0	62 40.2 29.2	139 55.9 27.7	31 35.1 41.1	Marte 166 14.4 18 52
						Júpiter 243 20.5 13 44
						Saturno 134 28.1 20 58
Paso Mer.	h m 5 58.6	v -0.6 d 0.7	v 1.7 d 0.4	v 1.9 d 0.1	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	v	Dec	d		Ph	Náut.		Civil	21	22	23	24		
d h	° / °	° / °	° / °	° / °	° / °	° / °	° / °	h m	h m	h m	h m	h m	h m	h m	h m		
S Á B A D O	21 00	179 35.1	N23 26.1	255 38.9	11.2	N 6	51.2	10.3	57.8	N 72	□	□	□	23 25	23 16	23 02	22 13
	01	194 35.0	26.1	270 09.1	11.2	7	01.5	10.2	57.8	N 70	□	□	□	23 42	23 42	23 45	23 54
	02	209 34.8	26.1	284 39.3	11.1	7	11.7	10.1	57.8	68	□	□	□	23 55	24 02	00 02	00 14
	03	224 34.7	26.1	299 09.4	11.2	7	21.8	10.2	57.7	66	□	□	□	24 06	00 06	00 19	00 36
	04	239 34.6	26.1	313 39.6	11.2	7	32.0	10.0	57.7	64	////	////	01 31	00 02	00 15	00 32	00 54
	05	254 34.4	26.1	328 09.8	11.2	7	42.0	10.0	57.7	62	////	////	02 10	00 06	00 23	00 43	01 08
	06	269 34.3	N23 26.1	342 40.0	11.2	N 7	52.0	10.0	57.7	60	////	00 49	02 36	00 11	00 30	00 53	01 20
	07	284 34.2	26.1	357 10.2	11.1	8	02.0	9.9	57.6	N 58	////	01 41	02 57	00 14	00 36	01 01	01 31
	08	299 34.0	26.1	11 40.3	11.2	8	11.9	9.9	57.6	56	////	02 11	03 13	00 18	00 42	01 09	01 40
	09	314 33.9	26.1	26 10.5	11.2	8	21.8	9.8	57.6	54	00 45	02 33	03 28	00 21	00 46	01 15	01 48
	10	329 33.8	26.1	40 40.7	11.2	8	31.6	9.8	57.5	52	01 33	02 51	03 40	00 23	00 51	01 21	01 56
	11	344 33.6	26.1	55 10.9	11.2	8	41.4	9.7	57.5	50	02 00	03 06	03 51	00 26	00 55	01 27	02 02
	12	359 33.5	N23 26.1	69 41.1	11.2	N 8	51.1	9.6	57.5	45	02 46	03 36	04 13	00 31	01 04	01 38	02 17
	13	14 33.3	26.1	84 11.3	11.2	9	00.7	9.6	57.5	N 40	03 17	03 59	04 31	00 36	01 11	01 48	02 28
	14	29 33.2	26.1	98 41.5	11.1	9	10.3	9.6	57.4	35	03 40	04 17	04 47	00 40	01 17	01 57	02 39
	15	44 33.1	26.1	113 11.6	11.2	9	19.9	9.5	57.4	30	03 59	04 32	05 00	00 43	01 23	02 04	02 47
	16	59 32.9	26.1	127 41.8	11.2	9	29.4	9.4	57.4	20	04 28	04 57	05 22	00 49	01 33	02 17	03 03
	17	74 32.8	26.1	142 12.0	11.2	9	38.8	9.4	57.4	N 10	04 51	05 18	05 41	00 55	01 41	02 28	03 16
	18	89 32.7	N23 26.1	156 42.2	11.2	N 9	48.2	9.3	57.3	0	05 10	05 36	05 58	01 00	01 49	02 39	03 29
	19	104 32.5	26.1	171 12.4	11.1	9	57.5	9.2	57.3	S 10	05 27	05 53	06 16	01 05	01 57	02 49	03 41
	20	119 32.4	26.1	185 42.5	11.2	10	06.7	9.2	57.3	20	05 43	06 10	06 34	01 11	02 06	03 01	03 55
	21	134 32.3	26.1	200 12.7	11.2	10	15.9	9.2	57.3	30	05 59	06 29	06 56	01 17	02 16	03 14	04 11
	22	149 32.1	26.1	214 42.9	11.1	10	25.1	9.0	57.2	35	06 08	06 40	07 08	01 21	02 22	03 22	04 20
	23	164 32.0	26.0	229 13.0	11.2	10	34.1	9.1	57.2	40	06 17	06 52	07 22	01 25	02 29	03 30	04 30
	D O M I N G O	22 00	179 31.8	N23 26.0	243 43.2	11.1	N10	43.2	8.9	57.2	S 50	06 40	07 21	08 00	01 36	02 46	03 53	04 57
01		194 31.7	26.0	258 13.3	11.2	10	52.1	8.9	57.2	52	06 45	07 29	08 10	01 38	02 50	03 59	05 04
02		209 31.6	26.0	272 43.5	11.1	11	01.0	8.8	57.1	54	06 51	07 37	08 21	01 41	02 55	04 05	05 12
03		224 31.4	26.0	287 13.6	11.2	11	09.8	8.8	57.1	56	06 57	07 46	08 34	01 45	03 00	04 12	05 21
04		239 31.3	26.0	301 43.8	11.1	11	18.6	8.7	57.1	58	07 04	07 56	08 48	01 48	03 06	04 21	05 30
05		254 31.2	26.0	316 13.9	11.1	11	27.3	8.6	57.1	S 60	07 11	08 08	09 06	01 53	03 13	04 30	05 42
06		269 31.0	N23 26.0	330 44.0	11.1	N11	35.9	8.5	57.0	Ocaso Sol		Crepúsculo		Ocaso Luna			
07		284 30.9	26.0	345 14.1	11.1	11	44.4	8.5	57.0	Lat.	Ocaso Sol	Civil	Náut.	21	22	23	24
08		299 30.8	25.9	359 44.2	11.1	11	52.9	8.5	57.0	h m		h m		h m	h m	h m	h m
09		314 30.6	25.9	14 14.3	11.1	12	01.4	8.3	57.0	N 72	□	□	□	15 29	17 21	19 19	21 53
10		329 30.5	25.9	28 44.4	11.1	12	09.7	8.3	56.9	N 70	□	□	□	15 14	16 56	18 36	20 12
11		344 30.3	25.9	43 14.5	11.1	12	18.0	8.2	56.9	68	□	□	□	15 02	16 37	18 08	19 32
12		359 30.2	N23 25.9	57 44.6	11.0	N12	26.2	8.1	56.9	66	□	□	□	14 52	16 21	17 47	19 05
13		14 30.1	25.8	72 14.6	11.1	12	34.3	8.1	56.9	64	22 32	////	////	14 44	16 09	17 30	18 44
14		29 29.9	25.8	86 44.7	11.0	12	42.4	8.0	56.8	62	21 54	////	////	14 37	15 58	17 16	18 27
15		44 29.8	25.8	101 14.7	11.1	12	50.4	8.0	56.8	60	21 28	23 14	////	14 31	15 49	17 04	18 13
16		59 29.7	25.8	115 44.8	11.0	13	06.2	7.8	56.8	N 58	21 07	22 23	////	14 25	15 42	16 54	18 01
17		74 29.5	25.8	130 14.8	11.0	13	13.7	7.7	56.7	56	20 51	21 53	////	14 21	15 35	16 45	17 50
18		89 29.4	N23 25.7	144 44.8	11.0	N13	14.0	7.7	56.7	54	20 36	21 31	23 18	14 16	15 29	16 37	17 41
19		104 29.3	25.7	159 14.8	11.0	13	21.7	7.6	56.7	52	20 24	21 13	22 31	14 13	15 23	16 30	17 33
20		119 29.1	25.7	173 44.8	11.0	13	29.3	7.6	56.7	50	20 13	20 58	22 03	14 09	15 18	16 24	17 26
21		134 29.0	25.7	188 14.8	11.0	13	36.9	7.5	56.6	45	19 51	20 28	21 18	14 02	15 07	16 10	17 10
22		149 28.8	25.7	202 44.8	11.0	13	44.4	7.4	56.6	N 40	19 32	20 05	20 47	13 55	14 58	15 59	16 57
23		164 28.7	25.6	217 14.8	11.0	13	51.8	7.3	56.6	35	19 17	19 47	20 24	13 50	14 51	15 50	16 46
L U N E S		23 00	179 28.6	N23 25.6	231 44.8	10.9	N13	59.1	7.3	56.6	30	19 04	19 32	20 05	13 45	14 44	15 41	16 37
	01	194 28.4	25.6	246 14.7	11.0	14	06.4	7.1	56.6	20	18 42	19 07	19 36	13 37	14 33	15 27	16 21
	02	209 28.3	25.5	260 44.7	10.9	14	13.5	7.1	56.5	N 10	18 23	18 46	19 13	13 30	14 22	15 14	16 06
	03	224 28.2	25.5	275 14.6	10.9	14	20.6	7.1	56.5	0	18 06	18 28	18 54	13 24	14 13	15 03	15 53
	04	239 28.0	25.5	289 44.5	10.9	14	27.7	6.9	56.5	S 10	17 48	18 11	18 37	13 17	14 04	14 51	15 40
	05	254 27.9	25.5	304 14.4	10.9	14	34.6	6.9	56.5	20	17 30	17 54	18 21	13 10	13 53	14 39	15 25
	06	269 27.8	N23 25.4	318 44.3	10.9	N14	41.5	6.7	56.5	30	17 08	17 35	18 05	13 02	13 42	14 24	15 09
	07	284 27.6	25.4	333 14.2	10.9	14	48.2	6.7	56.4	35	16 56	17 24	17 56	12 57	13 35	14 16	14 59
	08	299 27.5	25.4	347 44.1	10.9	14	54.9	6.6	56.4	40	16 42	17 12	17 46	12 52	13 28	14 07	14 49
	09	314 27.4	25.3	2 14.0	10.9	15	01.5	6.6	56.4	45	16 25	16 59	17 36	12 46	13 19	13 56	14 36
	10	329 27.2	25.3	16 43.9	10.8	15	08.1	6.4	56.4	S 50	16 04	16 43	17 24	12 38	13 09	13 42	14 20
	11	344 27.1	25.3	31 13.7	10.9	15	14.5	6.4	56.3	52	15 54	16 35	17 19	12 35	13 04	13 36	14 13
	12	359 26.9	N23 25.2	45 43.6	10.8	N15	20.9	6.3	56.3	54	15 43	16 27	17 13	12 31	12 59	13 29	14 05
	13	14 26.8	25.2	60 13.4	10.9	15	27.2	6.2	56.3	56	15 30	16 18	17 07	12 27	12 53	13 22	13 56
	14	29 26.7	25.2	74 43.3	10.8	15	33.4	6.1	56.3	58	15 16	16 08	17 00	12 23	12 46	13 13	13 46
	15	44 26.5	25.1	89 13.1	10.8	15	39.5	6.0	56.3	S 60	14 58	15 56	16 53	12 18	12 39	13 04	13 35
	16	59 26.4	25.1	103 42.9	10.8	15	45.5	6.0	56.2	SOL		LUNA					
	17	74 26.3	25.0	118 12.7	10.8	15	51.5	5.8	56.2	Día	Ec. Tiempo	Paso Mer.	Paso Mer.	Paso Mer.	Edad	Fase	
	18	89 26.1	N23 25.0	132 42.5	10.8	N15	57.3	5.8	56.2	00h	12h						
	19	104 26.0	25.0	147 12.3	10.8	16	03.1	5.7	56.2	d	m s	m s	h m	h m	h m	d %	
	20																

UT (HmGr)	ARIES	VENUS -3.9	MARTE -0.1	JÚPITER -1.8	SATURNO +0.3	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
24 00	272 04.4	213 18.1 N18 39.7	77 41.9 S 6 29.5	154 57.8 N21 27.6	46 37.7 S14 41.1	Acamar 315 18.1 S40 14.7
01	287 06.8	228 17.5 40.4	92 43.5 29.9	169 59.7 27.6	61 40.3 41.0	Achernar 335 26.6 S57 09.6
02	302 09.3	243 17.0 41.1	107 45.2 30.3	185 01.6 27.5	76 42.9 41.0	Acrux 173 08.3 S63 11.1
03	317 11.8	258 16.4 . . 41.8	122 46.9 . . 30.7	200 03.5 . . 27.4	91 45.4 . . 41.0	Adhara 255 12.3 S28 59.7
04	332 14.2	273 15.8 42.5	137 48.6 31.1	215 05.4 27.3	106 48.0 41.0	Aldebarán 290 48.9 N16 32.1
05	347 16.7	288 15.2 43.2	152 50.2 31.5	230 07.3 27.2	121 50.6 41.0	
06	2 19.2	303 14.6 N18 43.8	167 51.9 S 6 31.9	245 09.2 N21 27.1	136 53.1 S14 40.9	Alioth 166 20.1 N55 53.2
07	17 21.6	318 14.0 44.5	182 53.6 32.3	260 11.1 27.0	151 55.7 40.9	Alkaid 152 58.2 N49 14.7
08	32 24.1	333 13.4 45.2	197 55.2 32.7	275 13.0 26.9	166 58.3 40.9	Al Na'ir 27 42.7 S46 53.1
09	47 26.6	348 12.8 . . 45.9	212 56.9 . . 33.1	290 14.9 . . 26.8	182 00.8 . . 40.9	Alnilam 275 46.0 S 1 11.8
10	62 29.0	3 12.2 46.5	227 58.6 33.5	305 16.8 26.7	197 03.4 40.9	Alphard 217 55.6 S 8 43.5
11	77 31.5	18 11.6 47.2	243 00.3 33.9	320 18.7 26.6	212 06.0 40.8	
12	92 33.9	33 11.0 N18 47.9	258 01.9 S 6 34.3	335 20.6 N21 26.5	227 08.5 S14 40.8	Alphecca 126 10.1 N26 40.2
13	107 36.4	48 10.4 48.6	273 03.6 34.7	350 22.5 26.4	242 11.1 40.8	Alpheratz 357 42.7 N29 10.1
14	122 38.9	63 09.8 49.3	288 05.3 35.1	5 24.4 26.3	257 13.7 40.8	Altair 62 07.2 N 8 54.6
15	137 41.3	78 09.3 . . 49.9	303 06.9 . . 35.5	20 26.3 . . 26.2	272 16.2 . . 40.8	Ankaa 353 15.1 S42 13.4
16	152 43.8	93 08.7 50.6	318 08.6 35.9	35 28.2 26.1	287 18.8 40.7	Antares 112 25.0 S26 27.7
17	167 46.3	108 08.1 51.3	333 10.3 36.3	50 30.1 26.0	302 21.4 40.7	
18	182 48.7	123 07.5 N18 51.9	348 11.9 S 6 36.7	65 32.0 N21 25.9	317 23.9 S14 40.7	Arcturus 145 54.9 N19 06.6
19	197 51.2	138 06.9 52.6	3 13.6 37.0	80 33.9 25.9	332 26.5 40.7	Atria 107 25.6 S69 03.1
20	212 53.7	153 06.3 53.3	18 15.2 37.4	95 35.8 25.8	347 29.1 40.7	Avior 234 18.2 S59 33.7
21	227 56.1	168 05.7 . . 54.0	33 16.9 . . 37.8	110 37.7 . . 25.7	2 31.6 . . 40.6	Bellatrix 278 31.6 N 6 21.6
22	242 58.6	183 05.1 54.6	48 18.6 38.2	125 39.6 25.6	17 34.2 40.6	Betelgeuse 271 00.9 N 7 24.4
23	258 01.1	198 04.5 55.3	63 20.2 38.6	140 41.5 25.5	32 36.8 40.6	
25 00	273 03.5	213 03.9 N18 56.0	78 21.9 S 6 39.0	155 43.4 N21 25.4	47 39.3 S14 40.6	Canopus 263 56.4 S52 42.4
01	288 06.0	228 03.3 56.6	93 23.5 39.4	170 45.3 25.3	62 41.9 40.6	Capella 280 33.9 N46 00.5
02	303 08.4	243 02.7 57.3	108 25.2 39.8	185 47.2 25.2	77 44.5 40.5	Deneb 49 30.6 N45 20.0
03	318 10.9	258 02.1 . . 58.0	123 26.9 . . 40.2	200 49.1 . . 25.1	92 47.0 . . 40.5	Denébola 182 33.0 N14 29.5
04	333 13.4	273 01.5 58.6	138 28.5 40.6	215 51.0 25.0	107 49.6 40.5	Diphda 348 55.2 S17 54.3
05	348 15.8	288 00.9 59.3	153 30.2 41.0	230 52.9 24.9	122 52.2 40.5	
06	3 18.3	303 00.3 N18 59.9	168 31.8 S 6 41.4	245 54.8 N21 24.8	137 54.7 S14 40.5	Dubhe 193 51.2 N61 40.6
07	18 20.8	317 59.7 19 00.6	183 33.5 41.8	260 56.7 24.7	152 57.3 40.5	Elnath 278 12.1 N28 36.9
08	33 23.2	332 59.1 01.3	198 35.1 42.2	275 58.6 24.6	167 59.9 40.4	Eltanin 90 45.3 N51 29.4
09	48 25.7	347 58.4 . . 01.9	213 36.8 . . 42.6	291 00.5 . . 24.5	183 02.4 . . 40.4	Enif 33 46.2 N 9 56.6
10	63 28.2	2 57.8 02.6	228 38.4 43.0	306 02.4 24.4	198 05.0 40.4	Fomalhaut 15 23.1 S29 32.5
11	78 30.6	17 57.2 03.2	243 40.1 43.4	321 04.2 24.3	213 07.6 40.4	
12	93 33.1	32 56.6 N19 03.9	258 41.7 S 6 43.8	336 06.1 N21 24.2	228 10.1 S14 40.4	Gacrux 171 59.9 S57 12.0
13	108 35.6	47 56.0 04.6	273 43.4 44.2	351 08.0 24.1	243 12.7 40.3	Gienah 175 51.5 S17 37.5
14	123 38.0	62 55.4 05.2	288 45.0 44.6	6 09.9 24.0	258 15.2 40.3	Hadar 148 46.4 S60 26.7
15	138 40.5	77 54.8 . . 05.9	303 46.7 . . 45.0	21 11.8 . . 23.9	273 17.8 . . 40.3	Hamal 328 00.1 N23 31.7
16	153 42.9	92 54.2 06.5	318 48.3 45.4	36 13.7 23.8	288 20.4 40.3	Kaus Aust. 83 42.5 S34 22.4
17	168 45.4	107 53.6 07.2	333 50.0 45.8	51 15.6 23.8	303 22.9 40.3	
18	183 47.9	122 53.0 N19 07.8	348 51.6 S 6 46.2	66 17.5 N21 23.7	318 25.5 S14 40.3	Kochab 137 19.5 N74 06.1
19	198 50.3	137 52.4 08.5	3 53.3 46.6	81 19.4 23.6	333 28.1 40.2	Markab 13 37.5 N15 17.0
20	213 52.8	152 51.8 09.1	18 54.9 47.0	96 21.3 23.5	348 30.6 40.2	Menkar 314 14.5 N 4 08.7
21	228 55.3	167 51.2 . . 09.8	33 56.6 . . 47.4	111 23.2 . . 23.4	3 33.2 . . 40.2	Menkent 148 06.5 S36 26.6
22	243 57.7	182 50.6 10.4	48 58.2 47.8	126 25.1 23.3	18 35.8 40.2	Miaplacidus 221 40.1 S69 47.0
23	259 00.2	197 49.9 11.1	63 59.9 48.3	141 27.0 23.2	33 38.3 40.2	
26 00	274 02.7	212 49.3 N19 11.7	79 01.5 S 6 48.7	156 28.9 N21 23.1	48 40.9 S14 40.1	Mirfak 308 39.7 N49 54.4
01	289 05.1	227 48.7 12.4	94 03.1 49.1	171 30.8 23.0	63 43.4 40.1	Nunki 75 57.1 S26 16.5
02	304 07.6	242 48.1 13.0	109 04.8 49.5	186 32.7 22.9	78 46.0 40.1	Peacock 53 17.7 S56 40.9
03	319 10.1	257 47.5 . . 13.7	124 06.4 . . 49.9	201 34.6 . . 22.8	93 48.6 . . 40.1	Póllux 243 27.2 N27 59.3
04	334 12.5	272 46.9 14.3	139 08.1 50.3	216 36.5 22.7	108 51.1 40.1	Procyon 244 59.3 N 5 11.1
05	349 15.0	287 46.3 14.9	154 09.7 50.7	231 38.4 22.6	123 53.7 40.1	
06	4 17.4	302 45.7 N19 15.6	169 11.3 S 6 51.1	246 40.3 N21 22.5	138 56.3 S14 40.0	Rasalhague 96 05.5 N12 33.2
07	19 19.9	317 45.0 16.2	184 13.0 51.5	261 42.2 22.4	153 58.8 40.0	Régulus 207 43.0 N11 53.7
08	34 22.4	332 44.4 16.9	199 14.6 51.9	276 44.1 22.3	169 01.4 40.0	Rigel 281 11.7 S 8 11.3
09	49 24.8	347 43.8 . . 17.5	214 16.3 . . 52.3	291 46.0 . . 22.2	184 03.9 . . 40.0	Rigel Kent. 139 50.2 S60 53.8
10	64 27.3	2 43.2 18.2	229 17.9 52.7	306 47.9 22.1	199 06.5 40.0	Sabik 102 11.4 S15 44.4
11	79 29.8	17 42.6 18.8	244 19.5 53.1	321 49.8 22.0	214 09.1 39.9	
12	94 32.2	32 42.0 N19 19.4	259 21.2 S 6 53.5	336 51.7 N21 21.9	229 11.6 S14 39.9	Schedar 349 39.7 N56 36.7
13	109 34.7	47 41.3 20.1	274 22.8 53.9	351 53.5 21.8	244 14.2 39.9	Shaula 96 20.5 S37 06.7
14	124 37.2	62 40.7 20.7	289 24.4 54.3	6 55.4 21.7	259 16.7 39.9	Sirius 258 33.4 S16 44.4
15	139 39.6	77 40.1 . . 21.3	304 26.1 . . 54.7	21 57.3 . . 21.6	274 19.3 . . 39.9	Spica 158 30.4 S11 14.2
16	154 42.1	92 39.5 22.0	319 27.7 55.1	36 59.2 21.5	289 21.9 39.9	Suhail 222 52.2 S43 29.8
17	169 44.5	107 38.9 22.6	334 29.3 55.5	52 01.1 21.4	304 24.4 39.8	
18	184 47.0	122 38.2 N19 23.2	349 30.9 S 6 56.0	67 03.0 N21 21.3	319 27.0 S14 39.8	Vega 80 38.0 N38 48.0
19	199 49.5	137 37.6 23.9	4 32.6 56.4	82 04.9 21.2	334 29.5 39.8	Zuben'ubi 137 04.4 S16 06.1
20	214 51.9	152 37.0 24.5	19 34.2 56.8	97 06.8 21.2	349 32.1 39.8	
21	229 54.4	167 36.4 . . 25.1	34 35.8 . . 57.2	112 08.7 . . 21.1	4 34.7 . . 39.8	AHS Paso Mer.
22	244 56.9	182 35.8 25.8	49 37.5 57.6	127 10.6 21.0	19 37.2 39.8	Venus 300 00.4 9 48
23	259 59.3	197 35.1 26.4	64 39.1 58.0	142 12.5 20.9	34 39.8 39.7	Marte 165 18.4 18 44
						Júpiter 242 39.9 13 35
						Saturno 134 35.8 20 46
Paso Mer.	h m					
	5 46.8	v -0.6 d 0.7	v 1.7 d 0.4	v 1.9 d 0.1	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		24	25	26	27			
M A R T E S	d h	° / °	° / °	° / °	° / °	° / °	°	h m	h m	h m	h m	h m	h m	h m				
	24 00	179 25.3	N23 24.7	219 41.1	10.7	N16 30.7	5.3	56.1	68	23 54	24 19	00 19	01 14					
	01	194 25.2	24.7	234 10.8	10.8	16 36.0	5.1	56.0	68	00 14	00 35	01 09	02 03					
	02	209 25.1	24.7	248 40.6	10.7	16 41.1	5.1	56.0	66	00 36	01 02	01 41	02 34					
	03	224 24.9	24.6	263 10.3	10.7	16 46.2	5.0	56.0	64	01 33	00 54	01 24	02 04					
	04	239 24.8	24.6	277 40.0	10.7	16 51.2	4.9	56.0	62	02 11	01 08	01 41	02 23	03 15				
	05	254 24.6	24.5	292 09.7	10.7	16 56.1	4.8	55.9	60	02 37	01 20	01 55	02 38	03 30				
	06	269 24.5	N23 24.5	306 39.4	10.7	N17 00.9	4.7	55.9	N 58	01 42	02 58	01 31	02 07	02 51				
	07	284 24.4	24.4	321 09.1	10.7	17 05.6	4.6	55.9	56	02 12	03 14	01 40	02 18	03 02				
	08	299 24.2	24.4	335 38.8	10.7	17 10.2	4.6	55.9	54	00 48	02 34	03 29	01 48	02 27				
	09	314 24.1	24.3	350 08.5	10.7	17 14.8	4.4	55.9	52	01 34	02 52	03 41	01 56	02 35				
	10	329 24.0	24.3	4 38.2	10.7	17 19.2	4.4	55.8	50	02 02	03 07	03 52	02 02	02 43				
	11	344 23.8	24.2	19 07.9	10.7	17 23.6	4.2	55.8	45	02 47	03 37	04 14	02 17	02 59				
	12	359 23.7	N23 24.2	33 37.6	10.6	N17 27.8	4.2	55.8	N 40	03 18	03 59	04 32	02 28	03 12				
	13	14 23.6	24.1	48 07.2	10.7	17 32.0	4.1	55.8	35	03 41	04 18	04 47	02 39	03 23				
	14	29 23.4	24.1	62 36.9	10.7	17 36.1	3.9	55.8	30	04 00	04 33	05 00	02 47	03 33				
	15	44 23.3	24.0	77 06.6	10.7	17 40.0	3.9	55.7	20	04 29	04 58	05 22	03 03	03 50				
	16	59 23.2	24.0	91 36.3	10.6	17 43.9	3.8	55.7	N 10	04 51	05 18	05 41	03 16	04 05				
	17	74 23.0	23.9	106 05.9	10.7	17 47.7	3.7	55.7	0	05 10	05 36	05 59	03 29	04 19				
	18	89 22.9	N23 23.8	120 35.6	10.6	N17 51.4	3.7	55.7	S 10	05 27	05 54	06 16	03 41	04 33				
	19	104 22.8	23.8	135 05.2	10.7	17 55.1	3.5	55.7	20	05 43	06 11	06 35	03 55	04 48				
	20	119 22.6	23.7	149 34.9	10.7	17 58.6	3.4	55.6	30	06 00	06 30	06 56	04 11	05 05				
	21	134 22.5	23.7	164 04.6	10.6	18 02.0	3.3	55.6	35	06 09	06 40	07 08	04 20	05 15				
	22	149 22.4	23.6	178 34.2	10.7	18 05.3	3.3	55.6	40	06 18	06 52	07 23	04 30	05 26				
	23	164 22.2	23.5	193 03.9	10.6	18 08.6	3.1	55.6	45	06 28	07 06	07 39	04 42	05 40				
M I É R C O L E S	25 00	179 22.1	N23 23.5	207 33.5	10.7	N18 11.7	3.1	55.6	S 50	06 40	07 22	08 00	04 57	05 56				
	01	194 22.0	23.4	222 03.2	10.7	18 14.8	2.9	55.5	52	06 45	07 29	08 10	05 04	06 04				
	02	209 21.8	23.4	236 32.9	10.6	18 17.7	2.9	55.5	54	06 51	07 37	08 21	05 12	06 13				
	03	224 21.7	23.3	251 02.5	10.7	18 20.6	2.7	55.5	56	06 57	07 46	08 34	05 21	06 22				
	04	239 21.6	23.2	265 32.2	10.7	18 23.3	2.7	55.5	58	07 04	07 57	08 48	05 30	06 34				
	05	254 21.4	23.2	280 01.9	10.7	18 26.0	2.6	55.5	S 60	07 11	08 08	09 06	05 42	06 46				
	06	269 21.3	N23 23.1	294 31.6	10.6	N18 28.6	2.4	55.4	Lat. Ocaso Sol						Crepúsculo			
	07	284 21.2	23.0	309 01.2	10.7	18 31.0	2.4	55.4	Civil						Náut.			
	08	299 21.0	23.0	323 30.9	10.7	18 33.4	2.3	55.4	24						25			
	09	314 20.9	22.9	338 00.6	10.7	18 35.7	2.2	55.4	26						27			
	10	329 20.7	22.8	352 30.3	10.7	18 37.9	2.1	55.4	h m						h m			
	11	344 20.6	22.8	7 00.0	10.7	18 40.0	2.0	55.4	h m						h m			
	12	359 20.5	N23 22.7	21 29.7	10.7	N18 42.0	1.9	55.3	N 70						21 53			
	13	14 20.3	22.6	35 59.4	10.8	18 43.9	1.8	55.3	N 70						20 12			
	14	29 20.2	22.6	50 29.2	10.7	18 45.7	1.7	55.3	68						19 32			
	15	44 20.1	22.5	64 58.9	10.7	18 47.4	1.7	55.3	66						19 05			
	16	59 19.9	22.4	79 28.6	10.8	18 49.1	1.5	55.3	64						18 44			
	17	74 19.8	22.3	93 58.4	10.7	18 50.6	1.4	55.2	62						18 27			
	18	89 19.7	N23 22.3	108 28.1	10.8	N18 52.0	1.3	55.2	60						18 13			
	19	104 19.5	22.2	122 57.9	10.8	18 53.3	1.3	55.2	N 58						18 01			
	20	119 19.4	22.1	137 27.7	10.8	18 54.6	1.1	55.2	56						17 50			
	21	134 19.3	22.0	151 57.5	10.8	18 55.7	1.1	55.2	54						17 41			
	22	149 19.1	22.0	166 27.3	10.8	18 56.8	0.9	55.2	52						17 33			
	23	164 19.0	21.9	180 57.1	10.8	18 57.7	0.9	55.1	50						17 26			
	J U E V E S	26 00	179 18.9	N23 21.8	195 26.9	10.9	N18 58.6	0.7	55.1	45						17 10		
01		194 18.7	21.7	209 56.8	10.8	18 59.3	0.7	55.1	N 40						16 57			
02		209 18.6	21.7	224 26.6	10.9	19 00.0	0.6	55.1	35						16 46			
03		224 18.5	21.6	238 56.5	10.9	19 00.6	0.4	55.1	30						16 37			
04		239 18.4	21.5	253 26.4	10.9	19 01.0	0.4	55.1	20						16 21			
05		254 18.2	21.4	267 56.3	10.9	19 01.4	0.3	55.0	N 10						16 06			
06		269 18.1	N23 21.3	282 26.2	11.0	N19 01.7	0.2	55.0	0						15 53			
07		284 18.0	21.3	296 56.2	10.9	19 01.9	0.1	55.0	S 10						15 40			
08		299 17.8	21.2	311 26.1	11.0	19 02.0	0.0	55.0	20						15 25			
09		314 17.7	21.1	325 56.1	11.0	19 02.0	0.1	55.0	30						15 09			
10		329 17.6	21.0	340 26.1	11.0	19 01.9	0.2	55.0	35						14 59			
11		344 17.4	20.9	354 56.1	11.0	19 01.7	0.3	54.9	40						14 49			
12		359 17.3	N23 20.8	9 26.1	11.1	N19 01.4	0.3	54.9	45						14 36			
13		14 17.2	20.7	23 56.2	11.0	19 01.1	0.5	54.9	S 50						14 25			
14		29 17.0	20.7	38 26.2	11.1	19 00.6	0.6	54.9	52						14 13			
15		44 16.9	20.6	52 56.3	11.1	19 00.0	0.6	54.9	54						14 05			
16		59 16.8	20.5	67 26.4	11.2	18 59.4	0.8	54.9	56						13 56			
17		74 16.6	20.4	81 56.6	11.1	18 58.6	0.8	54.9	58						13 46			
18		89 16.5	N23 20.3	96 26.7	11.2	N18 57.8	0.9	54.8	S 60						13 35			
19		104 16.4	20.2	110 56.9	11.2	18 56.9	1.1	54.8										
20		119 16.2	20.1	125 27.1	11.2	18 55.8	1.1	54.8	Día						SOL			
21		134 16.1	20.0	139 57.3	11.3	18 54.7	1.2	54.8	Ec. Tiempo						LUNA			
22		149 16.0	19.9	154 27.6	11.2	18 53.5	1.3	54.8	00 ^h 12 ^h						Paso Mer.			
23		164 15.8	19.8	168 57.8	11.3	N18 52.2	1.4	54.8	h m						Paso Mer. Sup. Inf.			
		S/D 15.8	<i>d</i> 0.1	S/D 15.2	15.1	15.0			h m						Edad Fase			
								d %										
								24 25 26										
								02 18 02 25 12 02										
								02 31 02 38 12 03										
								02 44 02 51 12 03										

UT (HmGr)	ARIES	VENUS −3.9	MARTE +0.0	JÚPITER −1.8	SATURNO +0.4	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
d h	° /	° /	° /	° /	° /	° /
27 00	275 01.8	212 34.5 N19 27.0	79 40.7 S 6 58.4	157 14.4 N21 20.8	49 42.3 S14 39.7	Acamar 315 18.1 S40 14.7
01	290 04.3	227 33.9 27.6	94 42.3 58.8	172 16.3 20.7	64 44.9 39.7	Achernar 335 26.5 S57 09.6
02	305 06.7	242 33.3 28.3	109 44.0 59.2	187 18.2 20.6	79 47.5 39.7	Acrux 173 08.3 S63 11.1
03	320 09.2	257 32.6 . . 28.9	124 45.6 6 59.6	202 20.1 . . 20.5	94 50.0 . . 39.7	Adhara 255 12.3 S28 59.7
04	335 11.7	272 32.0 29.5	139 47.2 7 00.0	217 22.0 20.4	109 52.6 39.7	Aldebarán 290 48.9 N16 32.1
05	350 14.1	287 31.4 30.1	154 48.8 00.4	232 23.9 20.3	124 55.1 39.6	
06	5 16.6	302 30.8 N19 30.8	169 50.4 S 7 00.9	247 25.8 N21 20.2	139 57.7 S14 39.6	Alioth 166 20.1 N55 53.2
07	20 19.0	317 30.1 31.4	184 52.1 01.3	262 27.7 20.1	155 00.2 39.6	Alkaid 152 58.2 N49 14.7
08	35 21.5	332 29.5 32.0	199 53.7 01.7	277 29.6 20.0	170 02.8 39.6	Al Na'ir 27 42.6 S46 53.1
09	50 24.0	347 28.9 . . 32.6	214 55.3 . . 02.1	292 31.5 . . 19.9	185 05.4 . . 39.6	Alnilam 275 46.0 S 1 11.7
10	65 26.4	2 28.3 33.2	229 56.9 02.5	307 33.3 19.8	200 07.9 39.6	Alphard 217 55.6 S 8 43.5
11	80 28.9	17 27.6 33.9	244 58.5 02.9	322 35.2 19.7	215 10.5 39.5	
12	95 31.4	32 27.0 N19 34.5	260 00.2 S 7 03.3	337 37.1 N21 19.6	230 13.0 S14 39.5	Alphecca 126 10.1 N26 40.2
13	110 33.8	47 26.4 35.1	275 01.8 03.7	352 39.0 19.5	245 15.6 39.5	Alpheratz 357 42.7 N29 10.1
14	125 36.3	62 25.7 35.7	290 03.4 04.1	7 40.9 19.4	260 18.1 39.5	Altair 62 07.2 N 8 54.6
15	140 38.8	77 25.1 . . 36.3	305 05.0 . . 04.6	22 42.8 . . 19.3	275 20.7 . . 39.5	Ankaa 353 15.1 S42 13.4
16	155 41.2	92 24.5 36.9	320 06.6 05.0	37 44.7 19.2	290 23.3 39.5	Antares 112 25.0 S26 27.7
17	170 43.7	107 23.9 37.6	335 08.2 05.4	52 46.6 19.1	305 25.8 39.4	
18	185 46.2	122 23.2 N19 38.2	350 09.9 S 7 05.8	67 48.5 N21 19.0	320 28.4 S14 39.4	Arcturus 145 54.9 N19 06.6
19	200 48.6	137 22.6 38.8	5 11.5 06.2	82 50.4 18.9	335 30.9 39.4	Atria 107 25.6 S69 03.1
20	215 51.1	152 22.0 39.4	20 13.1 06.6	97 52.3 18.8	350 33.5 39.4	Avior 234 18.2 S59 33.7
21	230 53.5	167 21.3 . . 40.0	35 14.7 . . 07.0	112 54.2 . . 18.7	5 36.0 . . 39.4	Bellatrix 278 31.6 N 6 21.6
22	245 56.0	182 20.7 40.6	50 16.3 07.4	127 56.1 18.6	20 38.6 39.4	Betelgeuse 271 00.9 N 7 24.4
23	260 58.5	197 20.1 41.2	65 17.9 07.9	142 58.0 18.5	35 41.2 39.4	
28 00	276 00.9	212 19.4 N19 41.8	80 19.5 S 7 08.3	157 59.9 N21 18.4	50 43.7 S14 39.3	Canopus 263 56.4 S52 42.4
01	291 03.4	227 18.8 42.4	95 21.1 08.7	173 01.8 18.3	65 46.3 39.3	Capella 280 33.8 N46 00.5
02	306 05.9	242 18.2 43.0	110 22.7 09.1	188 03.7 18.2	80 48.8 39.3	Deneb 49 30.5 N45 20.0
03	321 08.3	257 17.5 . . 43.6	125 24.3 . . 09.5	203 05.5 . . 18.1	95 51.4 . . 39.3	Denébola 182 33.0 N14 29.5
04	336 10.8	272 16.9 44.2	140 25.9 09.9	218 07.4 18.0	110 53.9 39.3	Diphda 348 55.2 S17 54.3
05	351 13.3	287 16.3 44.9	155 27.6 10.3	233 09.3 17.9	125 56.5 39.3	
06	6 15.7	302 15.6 N19 45.5	170 29.2 S 7 10.8	248 11.2 N21 17.8	140 59.0 S14 39.2	Dubhe 193 51.2 N61 40.6
07	21 18.2	317 15.0 46.1	185 30.8 11.2	263 13.1 17.7	156 01.6 39.2	Elnath 278 12.1 N28 36.9
08	36 20.7	332 14.3 46.7	200 32.4 11.6	278 15.0 17.6	171 04.1 39.2	Eltanin 90 45.3 N51 29.5
09	51 23.1	347 13.7 . . 47.3	215 34.0 . . 12.0	293 16.9 . . 17.5	186 06.7 . . 39.2	Enif 33 46.2 N 9 56.6
10	66 25.6	2 13.1 47.9	230 35.6 12.4	308 18.8 17.4	201 09.3 39.2	Fomalhaut 15 23.1 S29 32.5
11	81 28.0	17 12.4 48.5	245 37.2 12.8	323 20.7 17.3	216 11.8 39.2	
12	96 30.5	32 11.8 N19 49.1	260 38.8 S 7 13.3	338 22.6 N21 17.2	231 14.4 S14 39.2	Gacrux 171 59.9 S57 12.0
13	111 33.0	47 11.1 49.6	275 40.4 13.7	353 24.5 17.1	246 16.9 39.1	Gienah 175 51.5 S17 37.5
14	126 35.4	62 10.5 50.2	290 42.0 14.1	8 26.4 17.0	261 19.5 39.1	Hadar 148 46.4 S60 26.8
15	141 37.9	77 09.9 . . 50.8	305 43.6 . . 14.5	23 28.3 . . 16.9	276 22.0 . . 39.1	Hamal 328 00.1 N23 31.7
16	156 40.4	92 09.2 51.4	320 45.2 14.9	38 30.2 16.9	291 24.6 39.1	Kaus Aust. 83 42.5 S34 22.4
17	171 42.8	107 08.6 52.0	335 46.8 15.3	53 32.1 16.8	306 27.1 39.1	
18	186 45.3	122 07.9 N19 52.6	350 48.4 S 7 15.8	68 34.0 N21 16.7	321 29.7 S14 39.1	Kochab 137 19.5 N74 06.1
19	201 47.8	137 07.3 53.2	5 50.0 16.2	83 35.8 16.6	336 32.2 39.0	Markab 13 37.5 N15 17.0
20	216 50.2	152 06.7 53.8	20 51.6 16.6	98 37.7 16.5	351 34.8 39.0	Menkar 314 14.5 N 4 08.7
21	231 52.7	167 06.0 . . 54.4	35 53.1 . . 17.0	113 39.6 . . 16.4	6 37.3 . . 39.0	Menkent 148 06.5 S36 26.6
22	246 55.2	182 05.4 55.0	50 54.7 17.4	128 41.5 16.3	21 39.9 39.0	Miaplacidus 221 40.1 S69 47.0
23	261 57.6	197 04.7 55.6	65 56.3 17.8	143 43.4 16.2	36 42.4 39.0	
29 00	277 00.1	212 04.1 N19 56.1	80 57.9 S 7 18.3	158 45.3 N21 16.1	51 45.0 S14 39.0	Mirfak 308 39.6 N49 54.4
01	292 02.5	227 03.4 56.7	95 59.5 18.7	173 47.2 16.0	66 47.5 39.0	Nunki 75 57.1 S26 16.5
02	307 05.0	242 02.8 57.3	111 01.1 19.1	188 49.1 15.9	81 50.1 38.9	Peacock 53 17.7 S56 40.9
03	322 07.5	257 02.1 . . 57.9	126 02.7 . . 19.5	203 51.0 . . 15.8	96 52.7 . . 38.9	Póllux 243 27.2 N27 59.3
04	337 09.9	272 01.5 58.5	141 04.3 19.9	218 52.9 15.7	111 55.2 38.9	Procyon 244 59.3 N 5 11.1
05	352 12.4	287 00.8 59.1	156 05.9 20.4	233 54.8 15.6	126 57.8 38.9	
06	7 14.9	302 00.2 N19 59.7	171 07.5 S 7 20.8	248 56.7 N21 15.5	142 00.3 S14 38.9	Rasalhague 96 05.4 N12 33.2
07	22 17.3	316 59.6 20 00.2	186 09.1 21.2	263 58.6 15.4	157 02.9 38.9	Régulus 207 43.0 N11 53.7
08	37 19.8	331 58.9 00.8	201 10.6 21.6	279 00.5 15.3	172 05.4 38.9	Rigel 281 11.7 S 8 11.3
09	52 22.3	346 58.3 . . 01.4	216 12.2 . . 22.0	294 02.3 . . 15.2	187 08.0 . . 38.8	Rigel Kent. 139 50.3 S60 53.8
10	67 24.7	1 57.6 02.0	231 13.8 22.5	309 04.2 15.1	202 10.5 38.8	Sabik 102 11.4 S15 44.4
11	82 27.2	16 57.0 02.5	246 15.4 22.9	324 06.1 15.0	217 13.1 38.8	
12	97 29.6	31 56.3 N20 03.1	261 17.0 S 7 23.3	339 08.0 N21 14.9	232 15.6 S14 38.8	Schedar 349 39.6 N56 36.7
13	112 32.1	46 55.7 03.7	276 18.6 23.7	354 09.9 14.8	247 18.2 38.8	Shaula 96 20.5 S37 06.7
14	127 34.6	61 55.0 04.3	291 20.2 24.1	9 11.8 14.7	262 20.7 38.8	Sirius 258 33.4 S16 44.4
15	142 37.0	76 54.4 . . 04.8	306 21.7 . . 24.6	24 13.7 . . 14.6	277 23.3 . . 38.8	Spica 158 30.4 S11 14.2
16	157 39.5	91 53.7 05.4	321 23.3 25.0	39 15.6 14.5	292 25.8 38.7	Suhail 222 52.2 S43 29.8
17	172 42.0	106 53.0 06.0	336 24.9 25.4	54 17.5 14.4	307 28.4 38.7	
18	187 44.4	121 52.4 N20 06.6	351 26.5 S 7 25.8	69 19.4 N21 14.3	322 30.9 S14 38.7	Vega 80 38.0 N38 48.0
19	202 46.9	136 51.7 07.1	6 28.1 26.3	84 21.3 14.2	337 33.5 38.7	Zuben'ubi 137 04.4 S16 06.1
20	217 49.4	151 51.1 07.7	21 29.6 26.7	99 23.2 14.1	352 36.0 38.7	
21	232 51.8	166 50.4 . . 08.3	36 31.2 . . 27.1	114 25.1 . . 14.0	7 38.6 . . 38.7	AHS Paso Mer.
22	247 54.3	181 49.8 08.8	51 32.8 27.5	129 26.9 13.9	22 41.1 38.7	Venus 296 18.5 9 51
23	262 56.8	196 49.1 09.4	66 34.4 27.9	144 28.8 13.8	37 43.6 38.6	Marte 164 18.6 18 37
						Júpiter 241 58.9 13 26
						Saturno 134 42.8 20 34
Paso Mer.	h m					
	5 35.0	v −0.6 d 0.6	v 1.6 d 0.4	v 1.9 d 0.1	v 2.6 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	27	28	29	30
VERNES	d h	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m
	27 00	179 15.7	N23 19.7	183 28.1	N18 50.8	1.5	54.7	68	01 14	02 36	04 06	05 38	01 21	03 26	05 13
	01	194 15.6	19.6	197 58.5	11.3	18 49.3	1.5	54.7	66	02 03	03 13	04 33	05 56	02 34	03 39
	02	209 15.4	19.5	212 28.8	11.4	18 47.8	1.7	54.7	64	02 34	03 39	04 53	06 11	03 40	04 45
	03	224 15.3	19.4	226 59.2	11.4	18 46.1	1.7	54.7	62	02 57	04 00	05 10	06 24	04 01	05 06
	04	239 15.2	19.3	241 29.6	11.4	18 44.4	1.9	54.7	60	02 13	03 15	04 16	05 23	04 16	05 24
	05	254 15.1	19.2	256 00.0	11.5	18 42.5	1.9	54.7	58	02 39	03 30	04 30	05 35	04 30	05 36
	06	269 14.9	N23 19.1	270 30.5	11.5	N18 40.6	2.0	54.7	56	02 59	03 43	04 41	05 44	04 41	05 45
	07	284 14.8	19.0	285 01.0	11.5	18 38.6	2.1	54.7	54	03 16	03 54	04 51	05 53	04 51	05 54
	08	299 14.7	18.9	299 31.5	11.6	18 36.5	2.2	54.6	52	03 30	04 04	05 00	06 01	05 00	06 02
	09	314 14.5	18.8	314 02.1	11.5	18 34.3	2.3	54.6	50	03 42	04 12	05 08	06 08	05 08	06 09
	10	329 14.4	18.7	328 32.6	11.6	18 32.0	2.4	54.6	48	03 53	04 20	05 15	06 14	05 14	06 15
	11	344 14.3	18.6	343 03.2	11.7	18 29.6	2.5	54.6	46	04 16	04 37	05 31	06 27	05 31	06 28
	12	359 14.1	N23 18.5	357 33.9	11.7	N18 27.1	2.5	54.6	44	04 33	04 50	05 43	06 38	05 43	06 39
	13	14 14.0	18.4	12 04.6	11.7	18 24.6	2.6	54.6	42	04 48	05 02	05 54	06 47	05 54	06 48
	14	29 13.9	18.3	26 35.3	11.7	18 22.0	2.7	54.6	40	05 01	05 12	06 03	06 55	06 03	06 56
	15	44 13.7	18.2	41 06.0	11.8	18 19.3	2.8	54.5	38	05 23	05 29	06 19	07 09	06 19	07 10
	16	59 13.6	18.1	55 36.8	11.7	18 16.5	2.9	54.5	36	05 42	05 44	06 33	07 22	06 33	07 23
	17	74 13.5	18.0	70 07.5	11.9	18 13.6	3.0	54.5	34	06 00	06 06	06 56	07 45	06 56	07 46
	18	89 13.4	N23 17.9	84 38.4	11.8	N18 10.6	3.1	54.5	32	06 11	06 16	07 06	07 57	07 06	07 58
	19	104 13.2	17.8	99 09.2	11.9	18 07.5	3.1	54.5	30	06 30	06 36	07 20	08 11	07 20	08 12
	20	119 13.1	17.7	113 40.1	12.0	18 04.4	3.2	54.5	28	06 41	06 47	07 31	08 22	07 31	08 23
	21	134 13.0	17.6	128 11.1	11.9	18 01.2	3.3	54.5	26	06 52	06 58	07 42	08 33	07 42	08 34
	22	149 12.8	17.5	142 42.0	12.0	17 57.9	3.4	54.5	24	07 03	07 09	07 53	08 44	07 53	08 45
	23	164 12.7	17.4	157 13.0	12.1	17 54.5	3.5	54.4	22	07 14	07 20	08 04	08 39	08 04	08 40
SABADO	00	179 12.6	N23 17.2	171 44.1	12.0	N17 51.0	3.6	54.4	52	07 22	08 00	07 37	08 17	08 52	09 22
	01	194 12.4	17.1	186 15.1	12.1	17 47.4	3.6	54.4	50	07 29	08 10	07 44	08 24	08 58	09 26
	02	209 12.3	17.0	200 46.2	12.2	17 43.8	3.7	54.4	48	07 37	08 21	07 53	08 32	09 04	09 32
	03	224 12.2	16.9	215 17.4	12.1	17 40.1	3.8	54.4	46	07 46	08 33	08 03	08 40	09 12	09 38
	04	239 12.1	16.8	229 48.5	12.2	17 36.3	3.9	54.4	44	07 56	08 48	08 14	08 50	09 20	09 44
	05	254 11.9	16.7	244 19.7	12.3	17 32.4	3.9	54.4	42	08 08	09 05	08 26	09 02	09 29	09 51
	06	269 11.8	N23 16.6	258 51.0	12.2	N17 28.5	4.1	54.4	40	08 19	09 16	08 37	09 13	09 40	10 02
	07	284 11.7	16.4	273 22.2	12.4	17 24.4	4.1	54.4	38	08 30	09 27	08 48	09 24	09 51	10 13
	08	299 11.5	16.3	287 53.6	12.3	17 20.3	4.2	54.3	36	08 41	09 38	08 59	09 35	10 02	10 24
	09	314 11.4	16.2	302 24.9	12.4	17 16.1	4.3	54.3	34	08 52	09 49	09 10	09 46	10 13	10 35
	10	329 11.3	16.1	316 56.3	12.4	17 11.8	4.3	54.3	32	09 03	09 59	09 20	09 56	10 23	10 45
	11	344 11.2	16.0	331 27.7	12.5	17 07.5	4.4	54.3	30	09 14	10 10	09 31	10 07	10 34	10 56
	12	359 11.0	N23 15.8	345 59.2	12.5	N17 03.1	4.5	54.3	28	09 25	10 21	09 42	10 18	10 45	11 07
	13	14 10.9	15.7	0 30.7	12.5	16 58.6	4.6	54.3	26	09 36	10 31	09 52	10 28	10 55	11 17
	14	29 10.8	15.6	15 02.2	12.6	16 54.0	4.7	54.3	24	09 47	10 42	09 63	10 39	11 06	11 28
	15	44 10.6	15.5	29 33.8	12.6	16 49.3	4.7	54.3	22	09 58	10 53	10 14	10 50	11 17	11 39
	16	59 10.5	15.3	44 05.4	12.6	16 44.6	4.8	54.3	20	10 09	11 04	10 25	11 01	11 28	11 50
	17	74 10.4	15.2	58 37.0	12.7	16 39.8	4.8	54.3	18	10 20	11 15	10 36	11 12	11 39	12 01
	18	89 10.3	N23 15.1	73 08.7	12.8	N16 35.0	5.0	54.3	16	10 31	11 26	10 47	11 23	11 50	12 12
	19	104 10.1	15.0	87 40.5	12.7	16 30.0	5.0	54.2	14	10 42	11 37	10 58	11 34	12 01	12 23
	20	119 10.0	14.8	102 12.2	12.8	16 25.0	5.1	54.2	12	10 53	11 48	11 09	11 45	12 12	12 34
	21	134 09.9	14.7	116 44.0	12.8	16 19.9	5.2	54.2	10	11 04	12 00	11 20	11 56	12 23	12 45
	22	149 09.7	14.6	131 15.8	12.9	16 14.7	5.2	54.2	8	11 15	12 11	11 31	12 07	12 34	12 56
	23	164 09.6	14.5	145 47.7	12.9	16 09.5	5.3	54.2	6	11 26	12 17	11 42	12 18	12 45	13 07
	DOMINGO	00	179 09.5	N23 14.3	160 19.6	13.0	N16 04.2	5.4	54.2	52	12 18	13 00	12 21	13 01	12 28	13 09
01		194 09.4	14.2	174 51.6	13.0	15 58.8	5.4	54.2	50	12 29	13 11	12 32	13 12	12 39	13 20
02		209 09.2	14.1	189 23.6	13.0	15 53.4	5.5	54.2	48	12 40	13 22	12 43	13 23	12 50	13 31
03		224 09.1	13.9	203 55.6	13.1	15 47.9	5.6	54.2	46	12 51	13 33	12 54	13 34	13 01	13 42
04		239 09.0	13.8	218 27.7	13.1	15 42.3	5.7	54.2	44	13 02	13 44	13 05	13 45	13 12	13 53
05		254 08.9	13.7	232 59.8	13.1	15 36.6	5.7	54.2	42	13 13	13 55	13 16	13 56	13 23	14 04
06		269 08.7	N23 13.5	247 31.9	13.2	N15 30.9	5.9	54.2	40	13 24	14 06	13 27	14 07	13 34	14 15
07		284 08.6	13.4	262 04.1	13.2	15 25.2	5.9	54.1	38	13 35	14 17	13 38	14 18	13 45	14 26
08		299 08.5	13.3	276 36.3	13.2	15 19.3	5.9	54.1	36	13 46	14 28	13 49	14 29	13 56	14 37
09		314 08.3	13.1	291 08.5	13.3	15 13.4	6.0	54.1	34	13 57	14 39	14 00	14 40	14 07	14 48
10		329 08.2	13.0	305 40.8	13.3	15 07.4	6.0	54.1	32	14 08	14 50	14 11	14 51	14 18	14 59
11		344 08.1	12.9	320 13.1	13.4	15 01.4	6.1	54.1	30	14 19	15 01	14 22	15 02	14 29	15 10
12		359 08.0	N23 12.7	334 45.5	13.4	N14 55.3	6.2	54.1	28	14 30	15 12	14 33	15 13	14 40	15 21
13		14 07.8	12.6	349 17.9	13.4	14 49.1	6.2	54.1	26	14 41	15 23	14 44	15 24	14 51	15 32
14		29 07.7	12.5	3 50.3	13.5	14 42.9	6.3	54.1	24	14 52	15 34	14 55	15 35	15 02	15 43
15		44 07.6	12.3	18 22.8	13.5	14 36.6	6.4	54.1	22	15 03	15 45	15 06	15 46	15 13	15 54
16		59 07.5	12.2	32 55.3	13.6	14 30.2	6.4	54.1	20	15 14	15 56	15 17	15 57	15 24	16 05
17		74 07.3	12.0	47 27.9	13.6	14 23.8	6.5	54.1	18	15 25	16 07	15 28	16 08	15 35	16 16
18		89 07.2	N23 11.9	62 00.5	13.6	N14 17.3	6.5	54.1	16	15 36	16 18	15 39	16 19	15 46	16 27
19		104 07.1	11.8	76 33.1	13.6	14 10.8	6.6	54.1	14	15 47	16 29	15 50	16 30	15 57	16 38
20		119 07.0	11.6	91 05.7	13.7	14 04.2	6.7	54.1	12	15 58	16 40	16 01	16 41	16 08	16 49
21		134 06.8	11.5	105 38.4	13.8	13 57.5	6.7	54.1	10	16 09	16 51	16 12	16 52	16 19	16 60
22		149 06.7	11.3	120 11.2	13.7	13 50.8	6.8	54.1	8	16 20	17 02	16 23	17 03	16 30	17 11
23		164 06.6	11.2	134 43.9	13.8	N13 44.0	6.8	54.1	6	16 31	17 13	16 34	17 14	16 41	17 22
		S/D 15.8	<i>d</i> 0.1	S/D	14.9	14.8	14.7								

UT (HmGr)	ARIES			VENUS -3.9			MARTE +0.0			JÚPITER -1.8			SATURNO+0.4			ESTRELLAS		
d h	AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre	AHS	Dec		
3000	277 59.2	211 48.5	N20 10.0	81 35.9	S 7 28.4	159 30.7	N21 13.7	52 46.2	S14 38.6	Acamar	315 18.1	S40 14.7						
	293 01.7	226 47.8	10.5	96 37.5	28.8	174 32.6	13.6	67 48.7	38.6	Achernar	335 26.5	S57 09.5						
	308 04.1	241 47.2	11.1	111 39.1	29.2	189 34.5	13.5	82 51.3	38.6	Acrux	173 08.3	S63 11.1						
	323 06.6	256 46.5	11.7	126 40.7	29.6	204 36.4	13.4	97 53.8	38.6	Adhara	255 12.3	S28 59.7						
	338 09.1	271 45.8	12.2	141 42.2	30.1	219 38.3	13.3	112 56.4	38.6	Aldebarán	290 48.8	N16 32.1						
	353 11.5	286 45.2	12.8	156 43.8	30.5	234 40.2	13.2	127 58.9	38.6									
	8 14.0	301 44.5	N20 13.3	171 45.4	S 7 30.9	249 42.1	N21 13.1	143 01.5	S14 38.6	Alioth	166 20.1	N55 53.2						
	23 16.5	316 43.9	13.9	186 47.0	31.3	264 44.0	13.0	158 04.0	38.5	Alkaid	152 58.2	N49 14.8						
	38 18.9	331 43.2	14.5	201 48.5	31.8	279 45.9	12.9	173 06.6	38.5	Al Na'ir	27 42.6	S46 53.1						
	53 21.4	346 42.5	15.0	216 50.1	32.2	294 47.8	12.8	188 09.1	38.5	Alnilam	275 46.0	S 1 11.7						
LUNES	68 23.9	1 41.9	15.6	231 51.7	32.6	309 49.6	12.7	203 11.7	38.5	Alphard	217 55.6	S 8 43.5						
	83 26.3	16 41.2	16.1	246 53.2	33.0	324 51.5	12.6	218 14.2	38.5									
	98 28.8	31 40.6	N20 16.7	261 54.8	S 7 33.5	339 53.4	N21 12.5	233 16.8	S14 38.5	Alphecca	126 10.1	N26 40.2						
	113 31.3	46 39.9	17.2	276 56.4	33.9	354 55.3	12.4	248 19.3	38.5	Alpheratz	357 42.7	N29 10.1						
	128 33.7	61 39.2	17.8	291 57.9	34.3	9 57.2	12.3	263 21.9	38.4	Altair	62 07.2	N 8 54.6						
	143 36.2	76 38.6	18.3	306 59.5	34.7	24 59.1	12.2	278 24.4	38.4	Ankaa	353 15.0	S42 13.4						
	158 38.6	91 37.9	18.9	322 01.1	35.2	40 01.0	12.1	293 26.9	38.4	Antares	112 25.0	S26 27.7						
	173 41.1	106 37.2	19.4	337 02.6	35.6	55 02.9	12.0	308 29.5	38.4									
	188 43.6	121 36.6	N20 20.0	352 04.2	S 7 36.0	70 04.8	N21 11.9	323 32.0	S14 38.4	Arcturus	145 54.9	N19 06.6						
	203 46.0	136 35.9	20.5	7 05.8	36.5	85 06.7	11.8	338 34.6	38.4	Atria	107 25.6	S69 03.1						
MARTES	218 48.5	151 35.3	21.1	22 07.3	36.9	100 08.6	11.7	353 37.1	38.4	Avior	234 18.2	S59 33.7						
	233 51.0	166 34.6	21.6	37 08.9	37.3	115 10.5	11.6	8 39.7	38.4	Bellatrix	278 31.6	N 6 21.6						
	248 53.4	181 33.9	22.2	52 10.5	37.7	130 12.3	11.5	23 42.2	38.3	Betelgeuse	271 00.8	N 7 24.4						
	263 55.9	196 33.3	22.7	67 12.0	38.2	145 14.2	11.4	38 44.8	38.3									
	278 58.4	211 32.6	N20 23.3	82 13.6	S 7 38.6	160 16.1	N21 11.3	53 47.3	S14 38.3	Canopus	263 56.4	S52 42.4						
	294 00.8	226 31.9	23.8	97 15.1	39.0	175 18.0	11.2	68 49.9	38.3	Capella	280 33.8	N46 00.5						
	309 03.3	241 31.3	24.4	112 16.7	39.4	190 19.9	11.1	83 52.4	38.3	Deneb	49 30.5	N45 20.0						
	324 05.7	256 30.6	24.9	127 18.3	39.9	205 21.8	11.0	98 54.9	38.3	Denébola	182 33.0	N14 29.5						
	339 08.2	271 29.9	25.4	142 19.8	40.3	220 23.7	10.9	113 57.5	38.3	Diphda	348 55.2	S17 54.3						
	354 10.7	286 29.3	26.0	157 21.4	40.7	235 25.6	10.8	129 00.0	38.3									
MARTES	9 13.1	301 28.6	N20 26.5	172 22.9	S 7 41.2	250 27.5	N21 10.7	144 02.6	S14 38.2	Dubhe	193 51.2	N61 40.6						
	24 15.6	316 27.9	27.1	187 24.5	41.6	265 29.4	10.6	159 05.1	38.2	Elnath	278 12.1	N28 36.9						
	39 18.1	331 27.2	27.6	202 26.0	42.0	280 31.3	10.5	174 07.7	38.2	Eltanin	90 45.3	N51 29.5						
	54 20.5	346 26.6	28.1	217 27.6	42.4	295 33.2	10.4	189 10.2	38.2	Enif	33 46.2	N 9 56.6						
	69 23.0	1 25.9	28.7	232 29.2	42.9	310 35.0	10.3	204 12.7	38.2	Fomalhaut	15 23.1	S29 32.4						
	84 25.5	16 25.2	29.2	247 30.7	43.3	325 36.9	10.2	219 15.3	38.2									
	99 27.9	31 24.6	N20 29.7	262 32.3	S 7 43.7	340 38.8	N21 10.1	234 17.8	S14 38.2	Gacrux	172 00.0	S57 12.0						
	114 30.4	46 23.9	30.3	277 33.8	44.2	355 40.7	09.9	249 20.4	38.2	Gienah	175 51.6	S17 37.5						
	129 32.9	61 23.2	30.8	292 35.4	44.6	10 42.6	09.8	264 22.9	38.2	Hadar	148 46.5	S60 26.8						
	144 35.3	76 22.5	31.3	307 36.9	45.0	25 44.5	09.7	279 25.5	38.1	Hamal	328 00.0	N23 31.7						
MARTES	159 37.8	91 21.9	31.9	322 38.5	45.5	40 46.4	09.6	294 28.0	38.1	Kaus Aust.	83 42.4	S34 22.4						
	174 40.2	106 21.2	32.4	337 40.0	45.9	55 48.3	09.5	309 30.5	38.1									
	189 42.7	121 20.5	N20 32.9	352 41.6	S 7 46.3	70 50.2	N21 09.4	324 33.1	S14 38.1	Kochab	137 19.6	N74 06.1						
	204 45.2	136 19.8	33.4	7 43.1	46.8	85 52.1	09.3	339 35.6	38.1	Markab	13 37.4	N15 17.0						
	219 47.6	151 19.2	34.0	22 44.7	47.2	100 53.9	09.2	354 38.2	38.1	Menkar	314 14.5	N 4 08.7						
	234 50.1	166 18.5	34.5	37 46.2	47.6	115 55.8	09.1	9 40.7	38.1	Menkent	148 06.5	S36 26.6						
	249 52.6	181 17.8	35.0	52 47.8	48.1	130 57.7	09.0	24 43.2	38.1	Miaplacidus	221 40.1	S69 47.0						
	264 55.0	196 17.1	35.5	67 49.3	48.5	145 59.6	08.9	39 45.8	38.1									
	279 57.5	211 16.5	N20 36.1	82 50.8	S 7 48.9	161 01.5	N21 08.8	54 48.3	S14 38.0	Mirfak	308 39.6	N49 54.4						
	MARTES	295 00.0	226 15.8	36.6	97 52.4	49.3	176 03.4	08.7	69 50.9	38.0	Nunki	75 57.0	S26 16.5					
310 02.4		241 15.1	37.1	112 53.9	49.8	191 05.3	08.6	84 53.4	38.0	Peacock	53 17.6	S56 40.9						
325 04.9		256 14.4	37.6	127 55.5	50.2	206 07.2	08.5	99 56.0	38.0	Póllux	243 27.2	N27 59.3						
340 07.4		271 13.8	38.1	142 57.0	50.6	221 09.1	08.4	114 58.5	38.0	Procyon	244 59.3	N 5 11.1						
355 09.8		286 13.1	38.7	157 58.6	51.1	236 11.0	08.3	130 01.0	38.0									
10 12.3		301 12.4	N20 39.2	173 00.1	S 7 51.5	251 12.9	N21 08.2	145 03.6	S14 38.0	Rasalhague	96 05.4	N12 33.2						
25 14.7		316 11.7	39.7	188 01.6	51.9	266 14.7	08.1	160 06.1	38.0	Régulus	207 43.0	N11 53.7						
40 17.2		331 11.0	40.2	203 03.2	52.4	281 16.6	08.0	175 08.7	37.9	Rigel	281 11.7	S 8 11.2						
55 19.7		346 10.4	40.7	218 04.7	52.8	296 18.5	07.9	190 11.2	37.9	Rigel Kent.	139 50.3	S60 53.8						
70 22.1		1 09.7	41.2	233 06.3	53.3	311 20.4	07.8	205 13.7	37.9	Sabik	102 11.4	S15 44.4						
MARTES	85 24.6	16 09.0	41.7	248 07.8	53.7	326 22.3	07.7	220 16.3	37.9									
	100 27.1	31 08.3	N20 42.3	263 09.3	S 7 54.1	341 24.2	N21 07.6	235 18.8	S14 37.9	Schedar	349 39.6	N56 36.8						
	115 29.5	46 07.6	42.8	278 10.9	54.6	356 26.1	07.5	250 21.3	37.9	Shaula	96 20.5	S37 06.7						
	130 32.0	61 07.0	43.3	293 12.4	55.0	11 28.0	07.4	265 23.9	37.9	Sirius	258 33.4	S16 44.4						
	145 34.5	76 06.3	43.8	308 13.9	55.4	26 29.9	07.3	280 26.4	37.9	Spica	158 30.4	S11 14.2						
	160 36.9	91 05.6	44.3	323 15.5	55.9	41 31.8	07.2	295 29.0	37.9	Suhail	222 52.2	S43 29.8						
	175 39.4	106 04.9	44.8	338 17.0	56.3	56 33.6	07.1	310 31.5	37.9									
	190 41.8	121 04.2	N20 45.3	353 18.5	S 7 56.7	71 35.5	N21 07.0	325 34.0	S14 37.8	Vega	80 38.0	N38 48.0						
	205 44.3	136 03.5	45.8	8 20.1	57.2	86 37.4	06.9	340 36.6	37.8	Zuben'ubi	137 04.4	S16 06.1						
	220 46.8	151 02.8	46.3	23 21.6	57.6	101 39.3	06.8	355 39.1	37.8									
235 49.2	166 02.2	46.8	38 23.1	58.0	116 41.2	06.7	10 41.7	37.8	AHS Paso Mer.									
250 51.7	181 01.5	47.3	53 24.7	58.5	131 43.1	06.6	25 44.2	37.8	Venus	292 34.2	h m 9 54							
265 54.2	196 00.8	47.8	68 26.2	58.9	146 45.0	06.5	40 46.7	37.8	Marte	163 15.2	18 29							
										Júpiter	241 17.8	13 17						
										Saturno	134 49.0	20 21						
Paso Mer.	h m																	
	5 23.2	v -0.7	d 0.5	v 1.6	d 0.4	v 1.9	d 0.1	v 2.5	d 0.0									

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		30	1	2	3
d h	° /	° /	° /		° /		/ /	°	h m	h m	h m	h m	h m	h m	h m
LUNES	N 72							72				05 13	06 52	08 29	10 04
	N 70							70				05 38	07 08	08 37	10 07
	68							68				05 56	07 20	08 44	10 09
	66	////	////					66	////	////	00 19	06 11	07 31	08 50	10 10
	64	////	////					64	////	////	01 41	06 24	07 39	08 55	10 12
	62	////	////					62	////	////	02 17	06 34	07 46	08 59	10 13
	60	////		01 03				60	////		02 42	06 43	07 53	09 03	10 14
	N 58	////	01 48		03 02			58	////	01 48	03 02	06 51	07 58	09 06	10 15
	56	////	02 17		03 18			56	////	02 17	03 18	06 57	08 03	09 09	10 16
	54	00 58	02 38		03 32			54	00 58	02 38	03 32	07 03	08 07	09 12	10 17
	52	01 40	02 56		03 44			52	01 40	02 56	03 44	07 09	08 11	09 14	10 18
	50	02 06	03 11		03 55			50	02 06	03 11	03 55	07 14	08 15	09 16	10 18
	45	02 51	03 40		04 17			45	02 51	03 40	04 17	07 24	08 23	09 21	10 20
	N 40	03 21	04 02		04 35			40	03 21	04 02	04 35	07 33	08 29	09 25	10 21
	35	03 43	04 20		04 50			35	03 43	04 20	04 50	07 41	08 34	09 28	10 22
	30	04 02	04 35		05 02			30	04 02	04 35	05 02	07 47	08 39	09 31	10 23
	20	04 31	05 00		05 24			20	04 31	05 00	05 24	07 59	08 48	09 36	10 25
	N 10	04 53	05 20		05 43			10	04 53	05 20	05 43	08 09	08 55	09 41	10 26
	0	05 12	05 38		06 00			0	05 12	05 38	06 00	08 18	09 02	09 45	10 27
	S 10	05 28	05 55		06 17			10	05 28	05 55	06 17	08 28	09 09	09 49	10 29
	20	05 44	06 12		06 36			20	05 44	06 12	06 36	08 37	09 16	09 53	10 30
	30	06 00	06 30		06 57			30	06 00	06 30	06 57	08 49	09 24	09 58	10 32
	35	06 09	06 41		07 09			35	06 09	06 41	07 09	08 55	09 29	10 01	10 33
	40	06 18	06 52		07 23			40	06 18	06 52	07 23	09 03	09 35	10 05	10 34
	45	06 28	07 05		07 39			45	06 28	07 05	07 39	09 11	09 41	10 08	10 35
S 50	06 40	07 21		08 00			50	06 40	07 21	08 00	09 22	09 48	10 13	10 36	
52	06 45	07 29		08 09			52	06 45	07 29	08 09	09 26	09 52	10 15	10 37	
54	06 51	07 37		08 20			54	06 51	07 37	08 20	09 32	09 56	10 17	10 38	
56	06 57	07 45		08 32			56	06 57	07 45	08 32	09 38	10 00	10 20	10 39	
58	07 03	07 55		08 47			58	07 03	07 55	08 47	09 44	10 04	10 23	10 40	
S 60	07 10	08 07		09 04			60	07 10	08 07	09 04	09 51	10 10	10 26	10 41	
MARTES	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna										
			Civil	Náut.	30	1	2	3							
	N 72				23 06	22 58	22 52	22 45							
	N 70				22 49	22 48	22 47	22 45							
	68				22 35	22 39	22 43	22 46							
	66	23 40	////	////	22 24	22 32	22 39	22 46							
	64	22 25	////	////	22 14	22 26	22 36	22 46							
	62	21 50	////	////	22 06	22 21	22 34	22 46							
	60	21 25	23 03	////	21 59	22 16	22 32	22 46							
	N 58	21 05	22 18	////	21 53	22 12	22 30	22 46							
	56	20 49	21 50	////	21 48	22 09	22 28	22 47							
	54	20 35	21 29	23 08	21 43	22 05	22 26	22 47							
	52	20 23	21 11	22 27	21 38	22 02	22 25	22 47							
	50	20 13	20 57	22 01	21 34	22 00	22 24	22 47							
	45	19 50	20 28	21 17	21 25	21 54	22 21	22 47							
	N 40	19 33	20 05	20 47	21 18	21 49	22 18	22 47							
	35	19 18	19 48	20 24	21 12	21 45	22 16	22 47							
	30	19 05	19 33	20 06	21 06	21 41	22 14	22 47							
	20	18 43	19 08	19 37	20 56	21 34	22 11	22 48							
	N 10	18 25	18 48	19 15	20 48	21 28	22 08	22 48							
	0	18 08	18 30	18 56	20 39	21 23	22 05	22 48							
	S 10	17 50	18 13	18 39	20 31	21 17	22 03	22 48							
	20	17 32	17 56	18 24	20 23	21 11	22 00	22 48							
	30	17 11	17 38	18 07	20 13	21 04	21 56	22 48							
	35	16 59	17 27	17 59	20 07	21 00	21 54	22 48							
40	16 45	17 16	17 50	20 00	20 56	21 52	22 48								
45	16 29	17 02	17 39	19 52	20 51	21 49	22 48								
S 50	16 08	16 47	17 28	19 43	20 44	21 46	22 48								
52	15 59	16 39	17 23	19 39	20 41	21 45	22 49								
54	15 48	16 31	17 17	19 34	20 38	21 43	22 49								
56	15 35	16 22	17 11	19 29	20 35	21 41	22 49								
58	15 21	16 12	17 05	19 23	20 31	21 39	22 49								
S 60	15 04	16 01	16 57	19 16	20 26	21 37	22 49								
MIÉRCOLES	SOL					LUNA									
	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase							
		00 ^h	12 ^h		Sup.	Inf.									
	d	m s	m s	h m	h m	h m	d	%							
	30	03 34	03 40	12 04	14 29	02 07	03	9							
	1	03 46	03 52	12 04	15 12	02 51	04	15							
	2	03 57	04 03	12 04	15 55	03 34	05	23							
	S/D 15.8		<i>d</i> 0.2	S/D	14.7	14.7	14.8								

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.1	JÚPITER -1.8	SATURNO+0.4	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
J U E V E S	300 280 56.6	211 00.1 N20 48.3	83 27.7 S 7 59.3	161 46.9 N21 06.4	55 49.3 S14 37.8	Acamar	315 18.1 S40 14.7	
	01 295 59.1	225 59.4 48.8	98 29.3 7 59.8	176 48.8 06.3	70 51.8 37.8	Achernar	335 26.5 S57 09.5	
	02 311 01.6	240 58.7 49.3	113 30.8 8 00.2	191 50.7 06.2	85 54.3 37.8	Acrux	173 08.4 S63 11.1	
	03 326 04.0	255 58.0 49.8	128 32.3 00.7	206 52.5 06.1	100 56.9 37.8	Adhara	255 12.3 S28 59.7	
	04 341 06.5	270 57.3 50.3	143 33.8 01.1	221 54.4 06.0	115 59.4 37.7	Aldebarán	290 48.8 N16 32.1	
	05 356 09.0	285 56.7 50.8	158 35.4 01.5	236 56.3 05.9	131 02.0 37.7			
	06 11 11.4	300 56.0 N20 51.3	173 36.9 S 8 02.0	251 58.2 N21 05.8	146 04.5 S14 37.7	Alioth	166 20.1 N55 53.2	
	07 26 13.9	315 55.3 51.8	188 38.4 02.4	267 00.1 05.7	161 07.0 37.7	Alkaid	152 58.3 N49 14.8	
	08 41 16.3	330 54.6 52.3	203 39.9 02.8	282 02.0 05.6	176 09.6 37.7	Al Na'ir	27 42.6 S46 53.1	
	09 56 18.8	345 53.9 52.8	218 41.5 03.3	297 03.9 05.5	191 12.1 37.7	Anilam	275 45.9 S 1 11.7	
V I E R N E S	10 71 21.3	0 53.2 53.3	233 43.0 03.7	312 05.8 05.3	206 14.6 37.7	Alphard	217 55.6 S 8 43.5	
	11 86 23.7	15 52.5 53.8	248 44.5 04.2	327 07.7 05.2	221 17.2 37.7			
	12 101 26.2	30 51.8 N20 54.2	263 46.0 S 8 04.6	342 09.5 N21 05.1	236 19.7 S14 37.7	Alphecca	126 10.2 N26 40.2	
	13 116 28.7	45 51.1 54.7	278 47.6 05.0	357 11.4 05.0	251 22.2 37.7	Alpheratz	357 42.6 N29 10.1	
	14 131 31.1	60 50.4 55.2	293 49.1 05.5	12 13.3 04.9	266 24.8 37.6	Altair	62 07.2 N 8 54.6	
	15 146 33.6	75 49.7 55.7	308 50.6 05.9	27 15.2 04.8	281 27.3 37.6	Ankaa	353 15.0 S42 13.4	
	16 161 36.1	90 49.1 56.2	323 52.1 06.4	42 17.1 04.7	296 29.8 37.6	Antares	112 25.0 S26 27.7	
	17 176 38.5	105 48.4 56.7	338 53.6 06.8	57 19.0 04.6	311 32.4 37.6			
	18 191 41.0	120 47.7 N20 57.2	353 55.2 S 8 07.2	72 20.9 N21 04.5	326 34.9 S14 37.6	Arcturus	145 55.0 N19 06.6	
	19 206 43.5	135 47.0 57.6	8 56.7 07.7	87 22.8 04.4	341 37.4 37.6	Atria	107 25.6 S69 03.2	
S Á B A D O	20 221 45.9	150 46.3 58.1	23 58.2 08.1	102 24.7 04.3	356 40.0 37.6	Avior	234 18.3 S59 33.6	
	21 236 48.4	165 45.6 58.6	38 59.7 08.6	117 26.5 04.2	11 42.5 37.6	Bellatrix	278 31.5 N 6 21.6	
	22 251 50.8	180 44.9 59.1	54 01.2 09.0	132 28.4 04.1	26 45.0 37.6	Betelgeuse	271 00.8 N 7 24.4	
	23 266 53.3	195 44.2 20 59.6	69 02.7 09.4	147 30.3 04.0	41 47.6 37.6			
	400 281 55.8	210 43.5 N21 00.0	84 04.3 S 8 09.9	162 32.2 N21 03.9	56 50.1 S14 37.5	Canopus	263 56.4 S52 42.4	
	01 296 58.2	225 42.8 00.5	99 05.8 10.3	177 34.1 03.8	71 52.6 37.5	Capella	280 33.8 N46 00.5	
	02 312 00.7	240 42.1 01.0	114 07.3 10.8	192 36.0 03.7	86 55.2 37.5	Deneb	49 30.5 N45 20.0	
	03 327 03.2	255 41.4 01.5	129 08.8 11.2	207 37.9 03.6	101 57.7 37.5	Denebola	182 33.0 N14 29.5	
	04 342 05.6	270 40.7 01.9	144 10.3 11.6	222 39.8 03.5	117 00.2 37.5	Diphda	348 55.2 S17 54.3	
	05 357 08.1	285 40.0 02.4	159 11.8 12.1	237 41.7 03.4	132 02.8 37.5			
S Á B A D O	06 12 10.6	300 39.3 N21 02.9	174 13.3 S 8 12.5	252 43.6 N21 03.3	147 05.3 S14 37.5	Dubhe	193 51.3 N61 40.5	
	07 27 13.0	315 38.6 03.4	189 14.8 13.0	267 45.4 03.2	162 07.8 37.5	Elnath	278 12.1 N28 36.9	
	08 42 15.5	330 37.9 03.8	204 16.3 13.4	282 47.3 03.1	177 10.4 37.5	Eltanin	90 45.5 N51 29.5	
	09 57 17.9	345 37.2 04.3	219 17.9 13.9	297 49.2 03.0	192 12.9 37.5	Enif	33 46.1 N 9 56.6	
	10 72 20.4	0 36.5 04.8	234 19.4 14.3	312 51.1 02.9	207 15.4 37.5	Fomalhaut	15 23.0 S29 32.4	
	11 87 22.9	15 35.8 05.2	249 20.9 14.7	327 53.0 02.8	222 18.0 37.5			
	12 102 25.3	30 35.1 N21 05.7	264 22.4 S 8 15.2	342 54.9 N21 02.7	237 20.5 S14 37.4	Gacrux	172 00.0 S57 12.0	
	13 117 27.8	45 34.4 06.2	279 23.9 15.6	357 56.8 02.6	252 23.0 37.4	Gienah	175 51.6 S17 37.5	
	14 132 30.3	60 33.7 06.6	294 25.4 16.1	12 58.7 02.4	267 25.6 37.4	Hadar	148 46.5 S60 26.8	
	15 147 32.7	75 33.0 07.1	309 26.9 16.5	28 00.5 02.3	282 28.1 37.4	Hamal	328 00.0 N23 31.7	
S Á B A D O	16 162 35.2	90 32.3 07.5	324 28.4 17.0	43 02.4 02.2	297 30.6 37.4	Kaus Aust.	83 42.4 S34 22.4	
	17 177 37.7	105 31.6 08.0	339 29.9 17.4	58 04.3 02.1	312 33.2 37.4			
	18 192 40.1	120 30.9 N21 08.5	354 31.4 S 8 17.8	73 06.2 N21 02.0	327 35.7 S14 37.4	Kochab	137 19.6 N74 06.1	
	19 207 42.6	135 30.2 08.9	9 32.9 18.3	88 08.1 01.9	342 38.2 37.4	Markab	13 37.4 N15 17.0	
	20 222 45.1	150 29.5 09.4	24 34.4 18.7	103 10.0 01.8	357 40.7 37.4	Menkar	314 14.5 N 4 08.7	
	21 237 47.5	165 28.8 09.8	39 35.9 19.2	118 11.9 01.7	12 43.3 37.4	Menkent	148 06.5 S36 26.6	
	22 252 50.0	180 28.1 10.3	54 37.4 19.6	133 13.8 01.6	27 45.8 37.4	Miaplacidus	221 40.1 S69 46.9	
	23 267 52.4	195 27.3 10.8	69 38.9 20.1	148 15.7 01.5	42 48.3 37.4			
	500 282 54.9	210 26.6 N21 11.2	84 04.0 S 8 20.5	163 17.5 N21 01.4	57 50.9 S14 37.3	Mirfak	308 39.6 N49 54.4	
	01 297 57.4	225 25.9 11.7	99 41.9 21.0	178 19.4 01.3	72 53.4 37.3	Nunki	75 57.0 S26 16.5	
02 312 59.8	240 25.2 12.1	114 43.4 21.4	193 21.3 01.2	87 55.9 37.3	Péacock	53 17.6 S56 41.0		
03 328 02.3	255 24.5 12.6	129 44.9 21.8	208 23.2 01.1	102 58.5 37.3	Póllux	243 27.2 N27 59.3		
04 343 04.8	270 23.8 13.0	144 46.4 22.3	223 25.1 01.0	118 01.0 37.3	Procyon	244 59.3 N 5 11.1		
05 358 07.2	285 23.1 13.5	159 47.9 22.7	238 27.0 00.9	133 03.5 37.3				
S Á B A D O	06 13 09.7	300 22.4 N21 13.9	174 49.4 S 8 23.2	253 28.9 N21 00.8	148 06.0 S14 37.3	Rasalhague	96 05.4 N12 33.2	
	07 28 12.2	315 21.7 14.4	189 50.9 23.6	268 30.8 00.7	163 08.6 37.3	Régulus	207 43.0 N11 53.7	
	08 43 14.6	330 21.0 14.8	204 52.4 24.1	283 32.7 00.6	178 11.1 37.3	Rigel	281 11.7 S 8 11.2	
	09 58 17.1	345 20.3 15.3	219 53.9 24.5	298 34.5 00.5	193 13.6 37.3	Rigil Kent.	139 50.3 S60 53.8	
	10 73 19.6	0 19.6 15.7	234 55.4 25.0	313 36.4 00.4	208 16.2 37.3	Sabik	102 11.4 S15 44.4	
	11 88 22.0	15 18.8 16.1	249 56.9 25.4	328 38.3 00.3	223 18.7 37.3			
	12 103 24.5	30 18.1 N21 16.6	264 58.4 S 8 25.9	343 40.2 N21 00.1	238 21.2 S14 37.3	Schedar	349 39.5 N56 36.8	
	13 118 26.9	45 17.4 17.0	279 59.9 26.3	358 42.1 21 00.0	253 23.7 37.2	Shaula	96 20.5 S37 06.7	
	14 133 29.4	60 16.7 17.5	295 01.4 26.8	13 44.0 20 59.9	268 26.3 37.2	Sirius	258 33.4 S16 44.3	
	15 148 31.9	75 16.0 17.9	310 02.8 27.2	28 45.9 59.8	283 28.8 37.2	Spica	158 30.0 S11 14.2	
S Á B A D O	16 163 34.3	90 15.3 18.3	325 04.3 27.6	43 47.8 59.7	298 31.3 37.2	Suhail	222 52.2 S43 29.8	
	17 178 36.8	105 14.6 18.8	340 05.8 28.1	58 49.6 59.6	313 33.8 37.2			
	18 193 39.3	120 13.9 N21 19.2	355 07.3 S 8 28.5	73 51.5 N20 59.5	328 36.4 S14 37.2	Vega	80 38.0 N38 48.1	
	19 208 41.7	135 13.1 19.7	10 08.8 29.0	88 53.4 59.4	343 38.9 37.2	Zuben'ubi	137 04.4 S16 06.1	
	20 223 44.2	150 12.4 20.1	25 10.3 29.4	103 55.3 59.3	358 41.4 37.2		AHS Paso Mer.	
	21 238 46.7	165 11.7 20.5	40 11.8 29.9	118 57.2 59.2	13 14.0 37.2			
	22 253 49.1	180 11.0 21.0	55 13.3 30.3	133 59.1 59.1	28 46.5 37.2	Venus	288 47.7 h 9 58	
	23 268 51.6	195 10.3 21.4	70 14.7 30.8	149 01.0 59.0	43 49.0 37.2	Marte	162 08.5 18 22	
						Júpiter	240 36.4 13 08	
						Saturno	134 54.3 20 09	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	ν	Dec	d		Ph	Náut.		Civil	3	4	5	6	
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m	
J U E V E S	300	178 57.7	N22 58.7	117 45.8	15.2	N 30.7	9.5	54.3	N 72				10 04	11 40	13 19	15 04
	01	193 57.6	58.5	132 20.0	15.2	3 21.2	9.5	54.4	N 70				10 07	11 37	13 09	14 46
	02	208 57.5	58.3	146 54.2	15.2	3 11.7	9.6	54.4	66	////	////	00 41	10 10	11 32	12 55	14 21
	03	223 57.4	58.1	161 28.4	15.2	3 02.1	9.6	54.4	64	////	////	01 47	10 12	11 30	12 49	14 11
	04	238 57.3	57.9	176 02.6	15.2	2 52.5	9.6	54.4	62	////	////	02 21	10 13	11 28	12 45	14 03
	05	253 57.2	57.7	190 36.8	15.2	2 42.9	9.6	54.4	60	////	01 11	02 46	10 14	11 27	12 41	13 56
	06	268 57.0	N22 57.5	205 11.0	15.2	N 2 33.3	9.6	54.4	N 58	////	01 53	03 05	10 15	11 25	12 37	13 50
	07	283 56.9	57.3	219 45.2	15.1	2 23.7	9.7	54.4	56	////	02 20	03 21	10 16	11 24	12 34	13 45
	08	298 56.8	57.1	234 19.3	15.2	2 14.0	9.6	54.5	54	01 05	02 41	03 35	10 17	11 23	12 31	13 40
	09	313 56.7	56.9	248 53.5	15.2	2 04.4	9.7	54.5	52	01 44	02 59	03 47	10 18	11 22	12 28	13 36
V I R N E S	10	328 56.6	56.7	263 27.7	15.1	1 54.7	9.7	54.5	50	02 10	03 13	03 57	10 18	11 21	12 26	13 32
	11	343 56.5	56.5	278 01.8	15.2	1 45.0	9.7	54.5	45	02 53	03 42	04 19	10 20	11 20	12 21	13 23
	12	358 56.4	N22 56.3	292 36.0	15.1	N 1 35.3	9.7	54.5	N 40	03 23	04 04	04 36	10 21	11 18	12 16	13 16
	13	13 56.2	56.1	307 10.1	15.1	1 25.6	9.7	54.5	35	03 45	04 21	04 51	10 22	11 17	12 13	13 10
	14	28 56.1	55.9	321 44.2	15.1	1 15.9	9.7	54.6	30	04 03	04 36	05 04	10 23	11 16	12 09	13 05
	15	43 56.0	55.6	336 18.3	15.1	1 06.2	9.7	54.6	20	04 32	05 01	05 25	10 25	11 14	12 04	12 56
	16	58 55.9	55.4	350 52.4	15.1	0 56.5	9.8	54.6	N 10	04 54	05 21	05 44	10 26	11 12	11 59	12 48
	17	73 55.8	55.2	5 26.5	15.0	0 46.7	9.7	54.6	0	05 12	05 38	06 01	10 27	11 10	11 54	12 41
	18	88 55.7	N22 55.0	20 00.5	15.1	N 0 37.0	9.8	54.6	S 10	05 29	05 55	06 18	10 29	11 09	11 50	12 33
	19	103 55.6	54.8	34 34.6	15.0	0 27.2	9.8	54.6	20	05 45	06 12	06 36	10 30	11 07	11 45	12 25
S Á B A D O	20	118 55.4	54.6	49 08.6	15.0	0 17.4	9.7	54.7	30	06 00	06 30	06 56	10 32	11 05	11 40	12 17
	21	133 55.3	54.4	63 42.6	15.0	N 0 07.7	9.8	54.7	35	06 09	06 40	07 08	10 33	11 04	11 37	12 12
	22	148 55.2	54.2	78 16.6	15.0	S 0 02.1	9.8	54.7	40	06 18	06 52	07 22	10 34	11 03	11 33	12 06
	23	163 55.1	54.0	92 50.6	15.0	0 11.9	9.8	54.7	45	06 28	07 05	07 39	10 35	11 01	11 29	11 59
	400	178 55.0	N22 53.8	107 24.6	14.9	S 0 21.7	9.8	54.7	S 50	06 39	07 21	07 59	10 36	11 00	11 24	11 51
	01	193 54.9	53.5	121 58.5	14.9	0 31.5	9.8	54.8	52	06 44	07 28	08 08	10 37	10 59	11 22	11 48
	02	208 54.8	53.3	136 32.4	14.9	0 41.3	9.8	54.8	54	06 50	07 36	08 19	10 38	10 58	11 20	11 44
	03	223 54.6	53.1	151 06.3	14.9	0 51.1	9.8	54.8	56	06 56	07 44	08 31	10 39	10 57	11 17	11 39
	04	238 54.5	52.9	165 40.2	14.9	1 00.9	9.9	54.8	58	07 02	07 54	08 45	10 40	10 56	11 14	11 34
	05	253 54.4	52.7	180 14.1	14.8	1 10.8	9.8	54.8	S 60	07 09	08 05	09 02	10 41	10 55	11 11	11 29
V I R N E S	06	268 54.3	N22 52.5	194 47.9	14.8	S 1 20.6	9.8	54.9	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	283 54.2	52.2	209 21.7	14.8	1 30.4	9.8	54.9			Civil	Náut.	3	4	5	6
	08	298 54.1	52.0	223 55.5	14.7	1 40.2	9.8	54.9								
	09	313 54.0	51.8	238 29.2	14.8	1 50.0	9.8	54.9								
	10	328 53.9	51.6	253 03.0	14.7	1 59.8	9.9	54.9								
	11	343 53.8	51.4	267 36.7	14.6	2 09.7	9.8	55.0								
	12	358 53.6	N22 51.1	282 10.3	14.7	S 2 19.5	9.8	55.0	N 72				22 45	22 38	22 31	22 23
	13	13 53.5	50.9	296 44.0	14.6	2 29.3	9.8	55.0	N 70				22 45	22 44	22 43	22 42
	14	28 53.4	50.7	311 17.6	14.6	2 39.1	9.8	55.0	68				22 46	22 49	22 52	22 57
	15	43 53.3	50.5	325 51.2	14.5	2 48.9	9.8	55.1	66	23 23	////	////	22 46	22 52	23 00	23 10
S Á B A D O	16	58 53.2	50.2	340 24.7	14.5	2 48.9	9.8	55.1	64	22 20	////	////	22 46	22 56	23 07	23 20
	17	73 53.1	50.0	354 58.2	14.5	2 58.7	9.8	55.1	62	21 47	////	////	22 46	22 59	23 13	23 29
	18	88 53.0	N22 49.8	9 31.7	14.4	S 3 18.3	9.8	55.1	60	21 22	22 56	////	22 46	23 01	23 18	23 37
	19	103 52.9	49.6	24 05.1	14.4	S 3 18.3	9.8	55.1	N 58	21 03	22 15	////	22 46	23 04	23 22	23 44
	20	118 52.8	49.3	38 38.5	14.4	3 28.1	9.8	55.2	56	20 47	21 47	////	22 47	23 06	23 26	23 50
	21	133 52.6	49.1	53 11.9	14.4	3 37.9	9.7	55.2	54	20 34	21 27	23 02	22 47	23 07	23 30	23 55
	22	148 52.5	48.9	67 45.3	14.3	3 47.6	9.8	55.2	52	20 22	21 10	22 24	22 47	23 09	23 33	24 00
	23	163 52.4	48.7	82 18.6	14.2	3 57.4	9.8	55.2	50	20 11	20 55	21 58	22 47	23 11	23 36	24 04
	500	178 52.3	N22 48.4	96 51.8	14.2	S 4 16.9	9.8	55.3	45	19 50	20 27	21 15	22 47	23 14	23 42	24 14
	01	193 52.2	48.2	111 25.0	14.2	S 4 16.9	9.8	55.3	N 40	19 32	20 05	20 46	22 47	23 17	23 48	24 22
02	208 52.1	48.0	125 58.2	14.1	4 26.7	9.7	55.3	35	19 18	19 47	20 23	22 47	23 19	23 53	24 29	
03	223 52.0	47.7	140 31.3	14.1	4 36.4	9.7	55.3	30	19 05	19 32	20 05	22 47	23 21	23 57	24 35	
04	238 51.9	47.5	155 04.4	14.1	4 46.1	9.7	55.4	20	18 44	19 08	19 37	22 48	23 25	24 04	00 04	
05	253 51.8	47.3	169 37.5	14.0	4 55.8	9.7	55.4	N 10	18 25	18 48	19 15	22 48	23 28	24 10	00 10	
06	268 51.7	N22 47.0	184 10.5	14.0	5 05.5	9.7	55.4	0	18 08	18 31	18 57	22 48	23 31	24 16	00 16	
07	283 51.6	46.8	198 43.5	13.9	S 5 15.2	9.7	55.4	S 10	17 51	18 14	18 40	22 48	23 34	24 22	00 22	
08	298 51.4	46.6	213 16.4	13.9	5 24.9	9.6	55.5	20	17 33	17 57	18 24	22 48	23 38	24 29	00 29	
09	313 51.3	46.3	227 49.3	13.8	5 34.5	9.7	55.5	30	17 12	17 39	18 08	22 48	23 41	24 36	00 36	
10	328 51.2	46.1	242 22.1	13.8	5 44.2	9.6	55.5	35	17 00	17 28	18 00	22 48	23 43	24 40	00 40	
11	343 51.1	45.9	256 54.9	13.7	5 53.8	9.6	55.6	40	16 47	17 17	17 51	22 48	23 46	24 45	00 45	
12	358 51.0	N22 45.6	271 27.6	13.7	6 03.4	9.6	55.6	45	16 30	17 04	17 41	22 48	23 49	24 50	00 50	
13	13 50.9	45.4	286 00.3	13.6	S 6 13.0	9.6	55.6	S 50	16 10	16 49	17 30	22 48	23 52	24 57	00 57	
14	28 50.8	45.1	300 32.9	13.6	6 22.6	9.5	55.6	52	16 01	16 41	17 25	22 49	23 54	25 00	01 00	
15	43 50.7	44.9	315 05.5	13.5	6 32.1	9.6	55.7	54	15 50	16 33	17 19	22 49	23 55	25 04	01 04	
16	58 50.6	44.7	329 38.0	13.5	6 41.7	9.5	55.7	56	15 38	16 25	17 13	22 49	23 57	25 07	01 07	
17	73 50.5	44.4	344 10.5	13.4	6 51.2	9.5	55.7	58	15 24	16 15	17 07	22 49	23 59	25 12	01 12	
18	88 50.4	N22 44.2	358 42.9	13.4	7 00.7	9.4	55.8	S 60	15 07	16 04	17 00	22 49	24 02	00 02	01 16	
19	103 50.3	43.9	13 15.3	13.3	S 7 10.1	9.5	55.8	SOL		LUNA						
20	118 50.2	43.7	2													

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.1	JÚPITER -1.8	SATURNO +0.4	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° ' "	° ' "	° ' "	° ' "	° ' "		° ' "	° ' "
DOMINGO	6 00	283 54.0	210 09.6 N21 21.8	85 16.2 S 8 31.2	164 02.9 N20 58.9	58 51.5 S14 37.2	Acamar	315 18.1 S40 14.7
	01	298 56.5	225 08.8 22.2	100 17.7 31.7	179 04.7 58.8	73 54.1 37.2	Achernar	335 26.4 S57 09.5
	02	313 59.0	240 08.1 22.7	115 19.2 32.1	194 06.6 58.7	88 56.6 37.2	Acrux	173 08.4 S63 11.1
	03	329 01.4	255 07.4 . . 23.1	130 20.7 . . 32.6	209 08.5 . . 58.6	103 59.1 . . 37.1	Adhara	255 12.3 S28 59.7
	04	344 03.9	270 06.7 23.5	145 22.2 33.0	224 10.4 58.5	119 01.6 37.1	Aldebarán	290 48.8 N16 32.1
	05	359 06.4	285 06.0 24.0	160 23.6 33.5	239 12.3 58.4	134 04.2 37.1		
	06	14 08.8	300 05.3 N21 24.4	175 25.1 S 8 33.9	254 14.2 N20 58.2	149 06.7 S14 37.1	Alioth	166 20.2 N55 53.2
	07	29 11.3	315 04.5 24.8	190 26.6 34.4	269 16.1 58.1	164 09.2 37.1	Alkaid	152 58.3 N49 14.8
	08	44 13.8	330 03.8 25.2	205 28.1 34.8	284 18.0 58.0	179 11.7 37.1	Al Na'ir	27 42.6 S46 53.1
	09	59 16.2	345 03.1 . . 25.7	220 29.6 . . 35.3	299 19.9 . . 57.9	194 14.3 . . 37.1	Alnilam	275 45.9 S 1 11.7
	10	74 18.7	0 02.4 26.1	235 31.0 35.7	314 21.7 57.8	209 16.8 37.1	Alphard	217 55.6 S 8 43.5
	11	89 21.2	15 01.7 26.5	250 32.5 36.2	329 23.6 57.7	224 19.3 37.1		
	12	104 23.6	30 00.9 N21 26.9	265 34.0 S 8 36.6	344 25.5 N20 57.6	239 21.8 S14 37.1	Alphecca	126 10.2 N26 40.2
	13	119 26.1	45 00.2 27.3	280 35.5 37.1	359 27.4 57.5	254 24.3 37.1	Alpheratz	357 42.6 N29 10.1
	14	134 28.5	59 59.5 27.7	295 37.0 37.5	14 29.3 57.4	269 26.9 37.1	Altair	62 07.2 N 8 54.6
	15	149 31.0	74 58.8 . . 28.2	310 38.4 . . 38.0	29 31.2 . . 57.3	284 29.4 . . 37.1	Ankaa	353 15.0 S42 13.3
	16	164 33.5	89 58.1 28.6	325 39.9 38.4	44 33.1 57.2	299 31.9 37.1	Antares	112 25.0 S26 27.7
	17	179 35.9	104 57.3 29.0	340 41.4 38.9	59 35.0 57.1	314 34.4 37.1		
	18	194 38.4	119 56.6 N21 29.4	355 42.9 S 8 39.3	74 36.8 N20 57.0	329 37.0 S14 37.1	Arcturus	145 55.0 N19 06.6
	19	209 40.9	134 55.9 29.8	10 44.3 39.8	89 38.7 56.9	344 39.5 37.0	Atria	107 25.6 S69 03.2
	20	224 43.3	149 55.2 30.2	25 45.8 40.2	104 40.6 56.8	359 42.0 37.0	Avior	234 18.3 S59 33.6
	21	239 45.8	164 54.4 . . 30.6	40 47.3 . . 40.7	119 42.5 . . 56.7	14 44.5 . . 37.0	Bellatrix	278 31.5 N 6 21.6
	22	254 48.3	179 53.7 31.0	55 48.8 41.1	134 44.4 56.6	29 47.1 37.0	Betelgeuse	271 00.8 N 7 24.4
	23	269 50.7	194 53.0 31.5	70 50.2 41.6	149 46.3 56.4	44 49.6 37.0		
LUNES	7 00	284 53.2	209 52.3 N21 31.9	85 51.7 S 8 42.0	164 48.2 N20 56.3	59 52.1 S14 37.0	Canopus	263 56.4 S52 42.3
	01	299 55.6	224 51.5 32.3	100 53.2 42.5	179 50.0 56.2	74 54.6 37.0	Capella	280 33.8 N46 00.5
	02	314 58.1	239 50.8 32.7	115 54.6 42.9	194 51.9 56.1	89 57.1 37.0	Deneb	49 30.5 N45 20.0
	03	330 00.6	254 50.1 . . 33.1	130 56.1 . . 43.4	209 53.8 . . 56.0	104 59.7 . . 37.0	Denébola	182 33.0 N14 29.5
	04	345 03.0	269 49.4 33.5	145 57.6 43.9	224 55.7 55.9	120 02.2 37.0	Diphda	348 55.2 S17 54.3
	05	0 05.5	284 48.6 33.9	160 59.0 44.3	239 57.6 55.8	135 04.7 37.0		
	06	15 08.0	299 47.9 N21 34.3	176 00.5 S 8 44.8	254 59.5 N20 55.7	150 07.2 S14 37.0	Dubhe	193 51.3 N61 40.5
	07	30 10.4	314 47.2 34.7	191 02.0 45.2	270 01.4 55.6	165 09.7 37.0	Elnath	278 12.0 N28 36.9
	08	45 12.9	329 46.5 35.1	206 03.4 45.7	285 03.3 55.5	180 12.3 37.0	Eltanin	90 45.3 N51 29.5
	09	60 15.4	344 45.7 . . 35.5	221 04.9 . . 46.1	300 05.1 . . 55.4	195 14.8 . . 37.0	Enif	33 46.1 N 9 56.6
	10	75 17.8	359 45.0 35.9	236 06.4 46.6	315 07.0 55.3	210 17.3 37.0	Fomalhaut	15 23.0 S29 32.4
	11	90 20.3	14 44.3 36.3	251 07.8 47.0	330 08.9 55.2	225 19.8 37.0		
	12	105 22.8	29 43.5 N21 36.7	266 09.3 S 8 47.5	345 10.8 N20 55.1	240 22.4 S14 37.0	Gacrux	172 00.0 S57 11.9
	13	120 25.2	44 42.8 37.1	281 10.8 47.9	0 12.7 55.0	255 24.9 36.9	Gienah	175 51.6 S17 37.5
	14	135 27.7	59 42.1 37.5	296 12.2 48.4	15 14.6 54.8	270 27.4 36.9	Hadar	148 46.5 S60 26.8
	15	150 30.1	74 41.4 . . 37.9	311 13.7 . . 48.8	30 16.5 . . 54.7	285 29.9 . . 36.9	Hamal	328 00.0 N23 31.7
	16	165 32.6	89 40.6 38.2	326 15.1 49.3	45 18.4 54.6	300 32.4 36.9	Kaus Aust.	83 42.4 S34 22.4
	17	180 35.1	104 39.9 38.6	341 16.6 49.8	60 20.2 54.5	315 34.9 36.9		
	18	195 37.5	119 39.2 N21 39.0	356 18.1 S 8 50.2	75 22.1 N20 54.4	330 37.5 S14 36.9	Kochab	137 19.7 N74 06.1
	19	210 40.0	134 38.4 39.4	11 19.5 50.7	90 24.0 54.3	345 40.0 36.9	Markab	13 37.4 N15 17.1
	20	225 42.5	149 37.7 39.8	26 21.0 51.1	105 25.9 54.2	0 42.5 36.9	Menkar	314 14.5 N 4 08.7
	21	240 44.9	164 37.0 . . 40.2	41 22.4 . . 51.6	120 27.8 . . 54.1	15 45.0 . . 36.9	Menkent	148 06.5 S36 26.6
	22	255 47.4	179 36.2 40.6	56 23.9 52.0	135 29.7 54.0	30 47.5 36.9	Miaplacidus	221 40.2 S69 46.9
	23	270 49.9	194 35.5 41.0	71 25.4 52.5	150 31.6 53.9	45 50.1 36.9		
MARTES	8 00	285 52.3	209 34.8 N21 41.3	86 26.8 S 8 52.9	165 33.5 N20 53.8	60 52.6 S14 36.9	Mirfak	308 39.5 N49 54.4
	01	300 54.8	224 34.0 41.7	101 28.3 53.4	180 35.3 53.7	75 55.1 36.9	Nunki	75 57.0 S26 16.5
	02	315 57.3	239 33.3 42.1	116 29.7 53.9	195 37.2 53.6	90 57.6 36.9	Peacock	53 17.6 S56 41.0
	03	330 59.7	254 32.6 . . 42.5	131 31.2 . . 54.3	210 39.1 . . 53.5	106 00.1 . . 36.9	Póllux	243 27.2 N27 59.3
	04	346 02.2	269 31.8 42.9	146 32.6 54.8	225 41.0 53.3	121 02.6 36.9	Procyon	244 59.3 N 5 11.1
	05	1 04.6	284 31.1 43.2	161 34.1 55.2	240 42.9 53.2	136 05.2 36.9		
	06	16 07.1	299 30.3 N21 43.6	176 35.5 S 8 55.7	255 44.8 N20 53.1	151 07.7 S14 36.9	Rasalhague	96 05.4 N12 33.2
	07	31 09.6	314 29.6 44.0	191 37.0 56.1	270 46.7 53.0	166 10.2 36.9	Régulus	207 43.0 N11 53.7
	08	46 12.0	329 28.9 44.4	206 38.4 56.6	285 48.5 52.9	181 12.7 36.9	Rigel	281 11.7 S 8 11.2
	09	61 14.5	344 28.1 . . 44.7	221 39.9 . . 57.0	300 50.4 . . 52.8	196 15.2 . . 36.9	Rigel Kent.	139 50.3 S60 53.8
	10	76 17.0	359 27.4 45.1	236 41.3 57.5	315 52.3 52.7	211 17.8 36.9	Sabik	102 11.4 S15 44.4
	11	91 19.4	14 26.7 45.5	251 42.8 58.0	330 54.2 52.6	226 20.3 36.9		
	12	106 21.9	29 25.9 N21 45.9	266 44.2 S 8 58.4	345 56.1 N20 52.5	241 22.8 S14 36.8	Schedar	349 39.5 N56 36.8
	13	121 24.4	44 25.2 46.2	281 45.7 58.9	0 58.0 52.4	256 25.3 36.8	Shaula	96 20.5 S37 06.7
	14	136 26.8	59 24.4 46.6	296 47.1 59.3	15 59.9 52.3	271 27.8 36.8	Sirius	258 33.4 S16 44.3
	15	151 29.3	74 23.7 . . 47.0	311 48.6 59.8	31 01.8 . . 52.2	286 30.3 . . 36.8	Spica	158 30.4 S11 14.2
	16	166 31.8	89 23.0 47.3	326 50.0 9 00.3	46 03.6 52.1	301 32.8 36.8	Suhail	222 52.2 S43 29.7
	17	181 34.2	104 22.2 47.7	341 51.5 00.7	61 05.5 51.9	316 35.4 36.8		
	18	196 36.7	119 21.5 N21 48.1	356 52.9 S 9 01.2	76 07.4 N20 51.8	331 37.9 S14 36.8	Vega	80 38.0 N38 48.1
	19	211 39.1	134 20.8 48.4	11 54.4 01.6	91 09.3 51.7	346 40.4 36.8	Zuben'ubi	137 04.4 S16 06.1
	20	226 41.6	149 20.0 48.8	26 55.8 02.1	106 11.2 51.6	1 42.9 36.8		
	21	241 44.1	164 19.3 . . 49.1	41 57.3 . . 02.5	121 13.1 . . 51.5	16 45.4 . . 36.8	AHS Paso Mer.	
	22	256 46.5	179 18.5 49.5	56 58.7 03.0	136 15.0 51.4	31 47.9 36.8	Venus	284 59.1 10 01
	23	271 49.0	194 17.8 49.9	72 00.2 03.5	151 16.8 51.3	46 50.5 36.8	Marte	160 58.5 18 15
h m							Júpiter	239 55.0 12 59
Paso Mer. 4 59.6		v -0.7 d 0.4	v 1.5 d 0.5	v 1.9 d 0.1	v 2.5 d 0.0		Saturno	134 58.9 19 57

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph	Náut.		Civil	6		7	8	9	
DOMINGO	d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
	6 00	178 49.7	N22 42.7	85 56.3	13.1 S	8 06.5	9.3	56.0	N 72				15 04	16 58	19 10	
	01	193 49.6	42.5	100 28.4	12.9	8 15.8	9.3	56.0	N 70				14 46	16 28	18 15	20 00
	02	208 49.5	42.2	115 00.3	13.0	8 25.1	9.2	56.0	68				14 32	16 06	17 42	19 13
	03	223 49.4	42.0	129 32.3	12.8	8 34.3	9.3	56.1	66	////	////	00 57	14 21	15 49	17 18	18 42
	04	238 49.3	41.7	144 04.1	12.8	8 43.6	9.1	56.1	64	////	////	01 54	14 11	15 35	17 00	18 19
	05	253 49.2	41.5	158 35.9	12.7	8 52.7	9.2	56.1	62	////	////	02 26	14 03	15 24	16 44	18 01
	06	268 49.1	N22 41.2	173 07.6	12.7 S	9 01.9	9.1	56.2	60	////	01 19	02 50	13 56	15 14	16 32	17 46
	07	283 49.0	41.0	187 39.3	12.6	9 11.0	9.1	56.2	N 58	////	01 58	03 09	13 50	15 05	16 21	17 33
	08	298 48.9	40.7	202 10.9	12.5	9 20.1	9.1	56.2	56	////	02 25	03 24	13 45	14 58	16 11	17 22
	09	313 48.8	40.5	216 42.4	12.5	9 29.2	9.0	56.3	54	01 13	02 45	03 38	13 40	14 51	16 03	17 12
	10	328 48.7	40.2	231 13.9	12.4	9 38.2	9.0	56.3	52	01 49	03 02	03 49	13 36	14 45	15 55	17 04
	11	343 48.6	40.0	245 45.3	12.3	9 47.2	9.0	56.3	50	02 14	03 16	03 59	13 32	14 40	15 48	16 56
	12	358 48.5	N22 39.7	260 16.6	12.3 S	9 56.2	8.9	56.4	45	02 56	03 44	04 21	13 23	14 28	15 34	16 39
	13	13 48.4	39.5	274 47.9	12.2	10 05.1	8.9	56.4	N 40	03 25	04 06	04 38	13 16	14 18	15 22	16 26
	14	28 48.3	39.2	289 19.1	12.1	10 14.0	8.8	56.4	35	03 47	04 23	04 53	13 10	14 10	15 12	16 14
	15	43 48.2	38.9	303 50.2	12.1	10 22.8	8.8	56.5	30	04 05	04 38	05 05	13 05	14 03	15 03	16 04
	16	58 48.1	38.7	318 21.3	12.0	10 31.6	8.8	56.5	20	04 33	05 02	05 26	12 56	13 51	14 48	15 47
	17	73 48.0	38.4	332 52.3	11.9	10 40.4	8.7	56.5	N 10	04 55	05 21	05 44	12 48	13 40	14 35	15 32
	18	88 47.9	N22 38.2	347 23.2	11.8 S	10 49.1	8.7	56.6	0	05 13	05 39	06 01	12 41	13 30	14 22	15 19
	19	103 47.7	37.9	1 54.0	11.8	10 57.8	8.6	56.6	S 10	05 29	05 55	06 18	12 33	13 20	14 10	15 05
	20	118 47.6	37.7	16 24.8	11.7	11 06.4	8.6	56.7	20	05 45	06 12	06 36	12 25	13 09	13 57	14 50
	21	133 47.5	37.4	30 55.5	11.7	11 15.0	8.6	56.7	30	06 00	06 30	06 56	12 17	12 57	13 42	14 33
	22	148 47.4	37.1	45 26.2	11.5	11 23.6	8.5	56.7	35	06 09	06 40	07 08	12 12	12 50	13 34	14 23
	23	163 47.3	36.9	59 56.7	11.5	11 32.1	8.4	56.8	40	06 18	06 51	07 22	12 06	12 42	13 24	14 12
									45	06 27	07 04	07 38	11 59	12 33	13 12	13 59
LUNES	7 00	178 47.2	N22 36.6	74 27.2	11.4 S	11 40.5	8.4	56.8	S 50	06 38	07 19	07 57	11 51	12 22	12 59	13 43
	01	193 47.1	36.3	88 57.6	11.3	11 48.9	8.4	56.8	52	06 43	07 26	08 07	11 48	12 17	12 52	13 36
	02	208 47.0	36.1	103 27.9	11.3	11 57.3	8.3	56.9	54	06 49	07 34	08 17	11 44	12 11	12 45	13 28
	03	223 46.9	35.8	117 58.2	11.2	12 05.6	8.3	56.9	56	06 54	07 43	08 29	11 39	12 05	12 37	13 18
	04	238 46.8	35.5	132 28.4	11.1	12 13.9	8.2	57.0	58	07 01	07 52	08 43	11 34	11 58	12 29	13 08
	05	253 46.7	35.3	146 58.5	11.0	12 22.1	8.1	57.0	S 60	07 08	08 03	08 59	11 29	11 51	12 18	12 56
	06	268 46.6	N22 35.0	161 28.5	10.9 S	12 30.2	8.1	57.0	Ocaso Sol		Crepúsculo		Ocaso Luna			
	07	283 46.5	34.7	175 58.4	10.9	12 38.3	8.1	57.1	Lat.	Ocaso Sol	Civil	Náut.	6	7	8	9
	08	298 46.4	34.5	190 28.3	10.8	12 46.4	8.0	57.1								
	09	313 46.3	34.2	204 58.1	10.7	12 54.4	7.9	57.1								
	10	328 46.2	33.9	219 27.8	10.6	13 02.3	7.9	57.2								
	11	343 46.1	33.7	233 57.4	10.5	13 10.2	7.8	57.2								
	12	358 46.0	N22 33.4	248 26.9	10.5 S	13 18.0	7.8	57.3	N 72	h m	h m	h m	h m	h m	h m	h m
	13	13 45.9	33.1	262 56.4	10.4	13 25.8	7.7	57.3	N 70				22 23	22 12	21 51	
	14	28 45.8	32.9	277 25.8	10.3	13 33.5	7.6	57.3	68				22 42	22 43	22 46	23 00
	15	43 45.7	32.6	291 55.1	10.2	13 41.1	7.6	57.4	66	23 08	////	////	22 57	23 06	23 20	23 48
	16	58 45.6	32.3	306 24.3	10.1	13 48.7	7.5	57.4	64	22 14	////	////	23 10	23 24	23 45	24 19
	17	73 45.5	32.0	320 53.4	10.1	13 56.2	7.4	57.4	62	21 43	////	////	23 20	23 38	24 04	00 04
	18	88 45.4	N22 31.8	335 22.5	10.0 S	14 03.6	7.4	57.5	60	21 19	22 48	////	23 29	23 50	24 20	00 20
	19	103 45.3	31.5	349 51.5	9.8	14 11.0	7.3	57.5	N 58	21 00	22 10	////	23 37	24 01	00 01	00 33
	20	118 45.2	31.2	4 20.3	9.8	14 18.3	7.3	57.6	56	20 45	21 44	////	23 44	24 10	00 10	00 44
	21	133 45.1	30.9	18 49.1	9.7	14 25.6	7.1	57.6	54	20 32	21 24	22 55	23 50	24 18	00 18	00 54
	22	148 45.0	30.7	33 17.8	9.7	14 32.7	7.1	57.6	52	20 20	21 07	22 20	23 55	24 25	00 25	01 03
	23	163 44.9	30.4	47 46.5	9.5	14 39.8	7.1	57.7	50	20 10	20 53	21 55	24 00	24 30	00 30	01 11
									45	19 49	20 25	21 13	24 04	24 35	00 35	01 18
	MARTES	8 00	178 44.8	N22 30.1	62 15.0	9.5 S	14 46.9	6.9	57.7	N 40	19 31	20 04	20 45	24 22	00 22	01 01
01		193 44.7	29.8	76 43.5	9.3	14 53.8	6.9	57.8	35	19 17	19 46	20 23	24 29	00 29	01 10	01 56
02		208 44.6	29.5	91 11.8	9.3	15 00.7	6.8	57.8	30	19 05	19 32	20 05	24 35	00 35	01 18	02 05
03		223 44.6	29.3	105 40.1	9.2	15 07.5	6.8	57.8	20	18 44	19 08	19 37	00 04	00 46	01 31	02 22
04		238 44.5	29.0	120 08.3	9.2	15 14.3	6.6	57.9	N 10	18 25	18 48	19 15	00 10	00 55	01 43	02 36
05		253 44.4	28.7	134 36.5	9.0	15 20.9	6.6	57.9	0	18 09	18 31	18 57	00 16	01 04	01 54	02 49
06		268 44.3	N22 28.4	149 04.5	8.9 S	15 27.5	6.5	58.0	S 10	17 52	18 15	18 41	00 22	01 13	02 06	03 02
07		283 44.2	28.1	163 32.4	8.9	15 34.0	6.4	58.0	20	17 34	17 58	18 25	00 29	01 22	02 18	03 16
08		298 44.1	27.8	178 00.3	8.8	15 40.4	6.4	58.0	30	17 14	17 40	18 10	00 36	01 33	02 31	03 32
09		313 44.0	27.6	192 28.1	8.6	15 46.8	6.2	58.1	35	17 02	17 30	18 01	00 40	01 39	02 39	03 42
10		328 43.9	27.3	206 55.7	8.6	15 53.0	6.2	58.1	40	16 48	17 19	17 53	00 45	01 46	02 49	03 52
11		343 43.8	27.0	221 23.3	8.6	15 59.2	6.1	58.2	45	16 32	17 06	17 43	00 50	01 54	02 59	04 05
12		358 43.7	N22 26.7	235 50.9	8.4 S	16 05.3	6.0	58.2	S 50	16 13	16 51	17 32	00 57	02 04	03 12	04 20
13		13 43.6	26.4	250 18.3	8.3	16 11.3	5.9	58.2	52	16 03	16 44	17 27	01 00	02 09	03 18	04 27
14		28 43.5	26.1	264 45.6	8.3	16 17.2	5.8	58.3	54	15 53	16 36	17 22	01 04	02 14	03 25	04 35
15		43 43.4	25.8	279 12.9	8.2	16 23.0	5.8	58.3	56	15 41	16 27	17 16	01 07	02 19	03 32	04 44
16		58 43.3	25.6	293 40.1	8.0	16 28.8	5.6	58.4	58	15 27	16 18	17 10	01 12	02 26	03 41	04 55
17		73 43.2	25.3	308 07.1	8.0	16 34.4	5.6	58.4	S 60	15 11	16 07	17 03	01 16	02 33	03 50	05 06
18		88 43.1	N22 25.0	322 34.1	8.0 S	16 40.0	5.4	58.4	SOL		LUNA					
19		103 43.0	24.7	337 01.1	7.8	16 45.4	5.4	58.5	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase
20		118 42.9	24.4	351 27.9	7.7	16 50.8	5.3	58.5		00 ^h	12 ^h		Sup.	Inf.		
21		133 42.8	24.1	5 54.6	7.6	16 56.1	5.2	58.6	d	m s	m s	h m	h m	h m	d	%
22		148 42.7	23.8	20 21.3	7.6	17 01.3	5.1	58.6	6	04 41	04 46	12 05	18 52	06 28	09 60	
23</																

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.2	JÚPITER -1.8	SATURNO +0.4	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
9 00	286 51.5	209 17.0 N21 50.2	87 01.6 S 9 03.9	166 18.7 N20 51.2	61 53.0 S14 36.8	Acamar	315 18.0 S40 14.7	
01	301 53.9	224 16.3 50.6	102 03.0 04.4	181 20.6 51.1	76 55.5 36.8	Achernar	335 26.4 S57 09.5	
02	316 56.4	239 15.6 50.9	117 04.5 04.8	196 22.5 51.0	91 58.0 36.8	Acrux	173 08.4 S63 11.1	
03	331 58.9	254 14.8 . . 51.3	132 05.9 . . 05.3	211 24.4 . . 50.9	107 00.5 . . 36.8	Adhara	255 12.3 S28 59.7	
04	347 01.3	269 14.1 51.7	147 07.4 05.8	226 26.3 50.8	122 03.0 36.8	Aldebarán	290 48.8 N16 32.1	
05	2 03.8	284 13.3 52.0	162 08.8 06.2	241 28.2 50.7	137 05.5 36.8			
06	17 06.2	299 12.6 N21 52.4	177 10.2 S 9 06.7	256 30.1 N20 50.5	152 08.0 S14 36.8	Alioth	166 20.2 N55 53.2	
07	32 08.7	314 11.8 52.7	192 11.7 07.1	271 31.9 50.4	167 10.6 36.8	Alkaid	152 58.3 N49 14.8	
08	47 11.2	329 11.1 53.1	207 13.1 07.6	286 33.8 50.3	182 13.1 36.8	Al Na'ir	27 42.5 S46 53.1	
09	62 13.6	344 10.3 . . 53.4	222 14.6 . . 08.1	301 35.7 . . 50.2	197 15.6 . . 36.8	Alnilam	275 45.9 S 1 11.7	
10	77 16.1	359 09.6 53.8	237 16.0 08.5	316 37.6 50.1	212 18.1 36.8	Alphard	217 55.6 S 8 43.5	
11	92 18.6	14 08.9 54.1	252 17.4 09.0	331 39.5 50.0	227 20.6 36.8			
12	107 21.0	29 08.1 N21 54.5	267 18.9 S 9 09.4	346 41.4 N20 49.9	242 23.1 S14 36.8	Alphecca	126 10.2 N26 40.2	
13	122 23.5	44 07.4 54.8	282 20.3 09.9	1 43.3 49.8	257 25.6 36.8	Alpheratz	357 42.6 N29 10.2	
14	137 26.0	59 06.6 55.1	297 21.7 10.4	16 45.1 49.7	272 28.1 36.8	Altair	62 07.2 N 8 54.6	
15	152 28.4	74 05.9 . . 55.5	312 23.2 . . 10.8	31 47.0 . . 49.6	287 30.7 . . 36.8	Ankaa	353 15.0 S42 13.3	
16	167 30.9	89 05.1 55.8	327 24.6 11.3	46 48.9 49.5	302 33.2 36.8	Antares	112 25.0 S26 27.7	
17	182 33.4	104 04.4 56.2	342 26.0 11.7	61 50.8 49.3	317 35.7 36.8			
18	197 35.8	119 03.6 N21 56.5	357 27.5 S 9 12.2	76 52.7 N20 49.2	332 38.2 S14 36.8	Arcturus	145 55.0 N19 06.6	
19	212 38.3	134 02.9 56.8	12 28.9 12.7	91 54.6 49.1	347 40.7 36.7	Atria	107 25.6 S69 03.2	
20	227 40.7	149 02.1 57.2	27 30.3 13.1	106 56.5 49.0	2 43.2 36.7	Avior	234 18.3 S59 33.6	
21	242 43.2	164 01.4 . . 57.5	42 31.8 . . 13.6	121 58.3 . . 48.9	17 45.7 . . 36.7	Bellatrix	278 31.5 N 6 21.6	
22	257 45.7	179 00.6 57.9	57 33.2 14.1	137 00.2 48.8	32 48.2 36.7	Betelgeuse	271 00.8 N 7 24.4	
23	272 48.1	193 59.9 58.2	72 34.6 14.5	152 02.1 48.7	47 50.7 36.7			
10 00	287 50.6	208 59.1 N21 58.5	87 36.1 S 9 15.0	167 04.0 N20 48.6	62 53.3 S14 36.7	Canopus	263 56.4 S52 42.3	
01	302 53.1	223 58.4 58.9	102 37.5 15.4	182 05.9 48.5	77 55.8 36.7	Capella	280 33.8 N46 00.5	
02	317 55.5	238 57.6 59.2	117 38.9 15.9	197 07.8 48.4	92 58.3 36.7	Deneb	49 30.5 N45 20.0	
03	332 58.0	253 56.9 . . 59.5	132 40.3 . . 16.4	212 09.7 . . 48.3	108 00.8 . . 36.7	Denébola	182 33.0 N14 29.5	
04	348 00.5	268 56.1 21 59.9	147 41.8 16.8	227 11.5 48.1	123 03.3 36.7	Diphda	348 55.1 S17 54.3	
05	3 02.9	283 55.4 22 00.2	162 43.2 17.3	242 13.4 48.0	138 05.8 36.7			
06	18 05.4	298 54.6 N22 00.5	177 44.6 S 9 17.8	257 15.3 N20 47.9	153 08.3 S14 36.7	Dubhe	193 51.3 N61 40.5	
07	33 07.9	313 53.9 00.8	192 46.0 18.2	272 17.2 47.8	168 10.8 36.7	Elnath	278 12.0 N28 36.9	
08	48 10.3	328 53.1 01.2	207 47.5 18.7	287 19.1 47.7	183 13.3 36.7	Eltanin	90 45.3 N51 29.5	
09	63 12.8	343 52.4 . . 01.5	222 48.9 . . 19.1	302 21.0 . . 47.6	198 15.8 . . 36.7	Enif	33 46.1 N 9 56.7	
10	78 15.2	358 51.6 01.8	237 50.3 19.6	317 22.9 47.5	213 18.4 36.7	Fomalhaut	15 23.0 S29 32.4	
11	93 17.7	13 50.9 02.1	252 51.7 20.1	332 24.9 47.4	228 20.9 36.7			
12	108 20.2	28 50.1 N22 02.5	267 53.2 S 9 20.5	347 26.6 N20 47.3	243 23.4 S14 36.7	Gacrux	172 00.0 S57 11.9	
13	123 22.6	43 49.3 02.8	282 54.6 21.0	2 28.5 47.2	258 25.9 36.7	Gienah	175 51.6 S17 37.4	
14	138 25.1	58 48.6 03.1	297 56.0 21.5	17 30.4 47.1	273 28.4 36.7	Hadar	148 46.5 S60 26.8	
15	153 27.6	73 47.8 . . 03.4	312 57.4 . . 21.9	32 32.3 . . 46.9	288 30.9 . . 36.7	Hamal	328 00.0 N23 31.7	
16	168 30.0	88 47.1 03.7	327 58.8 22.4	47 34.2 46.8	303 33.4 36.7	Kaus Aust.	83 42.4 S34 22.4	
17	183 32.5	103 46.3 04.0	343 00.3 22.9	62 36.1 46.7	318 35.9 36.7			
18	198 35.0	118 45.6 N22 04.4	358 01.7 S 9 23.3	77 38.0 N20 46.6	333 38.4 S14 36.7	Kochab	137 19.7 N74 06.1	
19	213 37.4	133 44.8 04.7	13 03.1 23.8	92 39.8 46.5	348 40.9 36.7	Markab	13 37.4 N15 17.1	
20	228 39.9	148 44.1 05.0	28 04.5 24.3	107 41.7 46.4	3 43.4 36.7	Menkar	314 14.4 N 4 08.7	
21	243 42.4	163 43.3 . . 05.3	43 05.9 . . 24.7	122 43.6 . . 46.3	18 45.9 . . 36.7	Menkent	148 06.5 S36 26.6	
22	258 44.8	178 42.5 05.6	58 07.4 25.2	137 45.5 46.2	33 48.4 36.7	Miaplacidus	221 40.2 S69 46.9	
23	273 47.3	193 41.8 05.9	73 08.8 25.6	152 47.4 46.1	48 51.0 36.7			
11 00	288 49.7	208 41.0 N22 06.2	88 10.2 S 9 26.1	167 49.3 N20 46.0	63 53.5 S14 36.7	Mirfak	308 39.5 N49 54.4	
01	303 52.2	223 40.3 06.5	103 11.6 26.6	182 51.2 45.8	78 56.0 36.7	Nunki	75 57.0 S26 16.5	
02	318 54.7	238 39.5 06.8	118 13.0 27.0	197 53.0 45.7	93 58.5 36.7	Peacock	53 17.6 S56 41.0	
03	333 57.1	253 38.7 . . 07.2	133 14.4 . . 27.5	212 54.9 . . 45.6	109 01.0 . . 36.7	Póllux	243 27.2 N27 59.3	
04	348 59.6	268 38.0 07.5	148 15.8 28.0	227 56.8 45.5	124 03.5 36.7	Procyon	244 59.3 N 5 11.1	
05	4 02.1	283 37.2 07.8	163 17.3 28.4	242 58.7 45.4	139 06.0 36.7			
06	19 04.5	298 36.5 N22 08.1	178 18.7 S 9 28.9	258 00.6 N20 45.3	154 08.5 S14 36.7	Rasalhague	96 05.4 N12 33.2	
07	34 07.0	313 35.7 08.4	193 20.1 29.4	273 02.5 45.2	169 11.0 36.7	Régulus	207 43.0 N11 53.7	
08	49 09.5	328 34.9 08.7	208 21.5 29.8	288 04.4 45.1	184 13.5 36.7	Rigel	281 11.6 S 8 11.2	
09	64 11.9	343 34.2 . . 09.0	223 22.9 . . 30.3	303 06.2 . . 45.0	199 16.0 . . 36.7	Rigil Kent.	139 50.3 S60 53.8	
10	79 14.4	358 33.4 09.3	238 24.3 30.8	318 08.1 44.9	214 18.5 36.7	Sabik	102 11.4 S15 44.4	
11	94 16.9	13 32.7 09.6	253 25.7 31.2	333 10.0 44.7	229 21.0 36.7			
12	109 19.3	28 31.9 N22 09.9	268 27.1 S 9 31.7	348 11.9 N20 44.6	244 23.5 S14 36.7	Schedar	349 39.5 N56 36.8	
13	124 21.8	43 31.1 10.2	283 28.5 32.2	3 13.8 44.5	259 26.0 36.7	Shaula	96 20.5 S37 06.7	
14	139 24.2	58 30.4 10.5	298 29.9 32.6	18 15.7 44.4	274 28.5 36.7	Sirius	258 33.4 S16 44.3	
15	154 26.7	73 29.6 . . 10.7	313 31.4 . . 33.1	33 17.6 . . 44.3	289 31.0 . . 36.7	Spica	158 30.4 S11 14.2	
16	169 29.2	88 28.9 11.0	328 32.8 33.6	48 19.4 44.2	304 33.5 36.7	Suhail	222 52.2 S43 29.7	
17	184 31.6	103 28.1 11.3	343 34.2 34.0	63 21.3 44.1	319 36.0 36.7			
18	199 34.1	118 27.3 N22 11.6	358 35.6 S 9 34.5	78 23.2 N20 44.0	334 38.5 S14 36.7	Vega	80 38.0 N38 48.1	
19	214 36.6	133 26.6 11.9	13 37.0 35.0	93 25.1 43.9	349 41.1 36.7	Zuben'ubi	137 04.4 S16 06.1	
20	229 39.0	148 25.8 12.2	28 38.4 35.4	108 07.0 43.8	4 43.6 36.7			
21	244 41.5	163 25.0 . . 12.5	43 39.8 . . 35.9	123 28.9 . . 43.6	19 46.1 . . 36.7			
22	259 44.0	178 24.3 12.8	58 41.2 36.4	138 30.8 43.5	34 48.6 36.7			
23	274 46.4	193 23.5 13.1	73 42.6 36.8	153 32.6 43.4	49 51.1 36.7			
h m								
Paso Mer.	4 47.8	v -0.8 d 0.3	v 1.4 d 0.5	v 1.9 d 0.1	v 2.5 d 0.0			
						AHS	Paso Mer.	
						° /	h m	
						Venus	281 08.5 10 05	
						Marte	159 45.5 18 08	
						Júpiter	239 13.4 12 50	
						Saturno	135 02.7 19 45	

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.2	JÚPITER -1.8	SATURNO +0.4	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
12 00	289 48.9	208 22.7 N22 13.3	88 44.0 S 9 37.3	168 34.5 N20 43.3	64 53.6 S14 36.7	Acamar 315 18.0 S40 14.7
01	304 51.4	223 22.0 13.6	103 45.4 37.8	183 36.4 43.2	79 56.1 36.7	Achernar 335 26.4 S57 09.5
02	319 53.8	238 21.2 13.9	118 46.8 38.3	198 38.3 43.1	94 58.6 36.7	Acrux 173 08.4 S63 11.1
03	334 56.3	253 20.4 . . 14.2	133 48.2 . . 38.7	213 40.2 . . 43.0	110 01.1 . . 36.7	Adhara 255 12.3 S28 59.7
04	349 58.7	268 19.7 14.5	148 49.6 39.2	228 42.1 42.9	125 03.6 36.7	Aldebarán 290 48.8 N16 32.1
05	5 01.2	283 18.9 14.7	163 51.0 39.7	243 43.9 42.8	140 06.1 36.7	
06	20 03.7	298 18.1 N22 15.0	178 52.4 S 9 40.1	258 45.8 N20 42.6	155 08.6 S14 36.7	Alioth 166 20.2 N55 53.2
07	35 06.1	313 17.4 15.3	193 53.8 40.6	273 47.7 42.5	170 11.1 36.7	Alkaid 152 58.3 N49 14.8
08	50 08.6	328 16.6 15.6	208 55.2 41.1	288 49.6 42.4	185 13.6 36.7	Al Na'ir 27 42.5 S46 53.1
09	65 11.1	343 15.8 . . 15.8	223 56.6 . . 41.5	303 51.5 . . 42.3	200 16.1 . . 36.7	Alnilam 275 45.9 S 1 11.7
10	80 13.5	358 15.1 16.1	238 58.0 42.0	318 53.4 42.2	215 18.6 36.7	Alphard 217 55.6 S 8 43.4
11	95 16.0	13 14.3 16.4	253 59.4 42.5	333 55.3 42.1	230 21.1 36.7	
12	110 18.5	28 13.5 N22 16.7	269 00.8 S 9 42.9	348 57.1 N20 42.0	245 23.6 S14 36.7	Alphecca 126 10.2 N26 40.2
13	125 20.9	43 12.8 16.9	284 02.2 43.4	3 59.0 41.9	260 26.1 36.7	Alpheratz 357 42.6 N29 10.2
14	140 23.4	58 12.0 17.2	299 03.6 43.9	19 00.9 41.8	275 28.6 36.7	Altair 62 07.2 N 8 54.7
15	155 25.8	73 11.2 . . 17.5	314 05.0 . . 44.4	34 02.8 . . 41.6	290 31.1 . . 36.7	Ankaa 353 14.9 S42 13.3
16	170 28.3	88 10.5 17.7	329 06.4 44.8	49 04.7 41.5	305 33.6 36.7	Antares 112 25.0 S26 27.7
17	185 30.8	103 09.7 18.0	344 07.8 45.3	64 06.6 41.4	320 36.1 36.7	
18	200 33.2	118 08.9 N22 18.3	359 09.1 S 9 45.8	79 08.5 N20 41.3	335 38.6 S14 36.7	Arcturus 145 55.0 N19 06.6
19	215 35.7	133 08.1 18.5	14 10.5 46.2	94 10.3 41.2	350 41.1 36.7	Atria 107 25.7 S69 03.2
20	230 38.2	148 07.4 18.8	29 11.9 46.7	109 12.2 41.1	5 43.6 36.7	Avior 234 18.3 S59 33.6
21	245 40.6	163 06.6 . . 19.1	44 13.3 . . 47.2	124 14.1 . . 41.0	20 46.1 . . 36.7	Bellatrix 278 31.5 N 6 21.6
22	260 43.1	178 05.8 19.3	59 14.7 47.6	139 16.0 40.9	35 48.6 36.7	Betelgeuse 271 00.8 N 7 24.4
23	275 45.6	193 05.1 19.6	74 16.1 48.1	154 17.9 40.8	50 51.1 36.7	
13 00	290 48.0	208 04.3 N22 19.8	89 17.5 S 9 48.6	169 19.8 N20 40.6	65 53.6 S14 36.7	Canopus 263 56.3 S52 42.3
01	305 50.5	223 03.5 20.1	104 18.9 49.1	184 21.7 40.5	80 56.1 36.7	Capella 280 33.7 N46 00.5
02	320 53.0	238 02.7 20.3	119 20.3 49.5	199 23.5 40.4	95 58.6 36.7	Deneb 49 30.5 N45 20.1
03	335 55.4	253 02.0 . . 20.6	134 21.7 . . 50.0	214 25.4 . . 40.3	111 01.1 . . 36.7	Denébola 182 33.0 N14 29.5
04	350 57.9	268 01.2 20.9	149 23.0 50.5	229 27.3 40.2	126 03.6 36.7	Diphda 348 55.1 S17 54.3
05	6 00.3	283 00.4 21.1	164 24.4 50.9	244 29.2 40.1	141 06.1 36.7	
06	21 02.8	297 59.6 N22 21.4	179 25.8 S 9 51.4	259 31.1 N20 40.0	156 08.6 S14 36.7	Dubhe 193 51.3 N61 40.5
07	36 05.3	312 58.9 21.6	194 27.2 51.9	274 33.0 39.9	171 11.1 36.7	Elnath 278 12.0 N28 36.9
08	51 07.7	327 58.1 21.9	209 28.6 52.4	289 34.9 39.7	186 13.6 36.7	Eltanin 90 45.3 N51 29.5
09	66 10.2	342 57.3 . . 22.1	224 30.0 . . 52.8	304 36.7 . . 39.6	201 16.1 . . 36.7	Enif 33 46.1 N 9 56.7
10	81 12.7	357 56.5 22.4	239 31.4 53.3	319 38.6 39.5	216 18.6 36.7	Fomalhaut 15 23.0 S29 32.4
11	96 15.1	12 55.8 22.6	254 32.7 53.8	334 40.5 39.4	231 21.1 36.7	
12	111 17.6	27 55.0 N22 22.8	269 34.1 S 9 54.2	349 42.4 N20 39.3	246 23.5 S14 36.7	Gacrux 172 00.1 S57 11.9
13	126 20.1	42 54.2 23.1	284 35.5 54.7	4 44.3 39.2	261 26.0 36.7	Gienah 175 51.6 S17 37.4
14	141 22.5	57 53.4 23.3	299 36.9 55.2	19 46.2 39.1	276 28.5 36.7	Hadar 148 46.5 S60 26.8
15	156 25.0	72 52.7 . . 23.6	314 38.3 . . 55.7	34 48.0 . . 39.0	291 31.0 . . 36.7	Hamal 327 59.9 N23 31.7
16	171 27.5	87 51.9 23.8	329 39.6 56.1	49 49.9 38.9	306 33.5 36.7	Kaus Aust. 83 42.4 S34 22.4
17	186 29.9	102 51.1 24.1	344 41.0 56.6	64 51.8 38.7	321 36.0 36.7	
18	201 32.4	117 50.3 N22 24.3	359 42.4 S 9 57.1	79 53.7 N20 38.6	336 38.5 S14 36.7	Kochab 137 19.8 N74 06.1
19	216 34.8	132 49.6 24.5	14 43.8 57.6	94 55.6 38.5	351 41.0 36.7	Markab 13 37.4 N15 17.1
20	231 37.3	147 48.8 24.8	29 45.2 58.0	109 57.5 38.4	6 43.5 36.7	Menkar 314 14.4 N 4 08.7
21	246 39.8	162 48.0 . . 25.0	44 46.5 . . 58.5	124 59.4 . . 38.3	21 46.0 . . 36.7	Menkent 148 06.5 S36 26.6
22	261 42.2	177 47.2 25.2	59 47.9 59.0	140 01.2 38.2	36 48.5 36.8	Miaplacidus 221 40.2 S69 46.9
23	276 44.7	192 46.4 25.5	74 49.3 59.4	155 03.1 38.1	51 51.0 36.8	
14 00	291 47.2	207 45.7 N22 25.7	89 50.7 S 9 59.9	170 05.0 N20 38.0	66 53.5 S14 36.8	Mirfak 308 39.5 N49 54.4
01	306 49.6	222 44.9 25.9	104 52.1 10 00.4	185 06.9 37.8	81 56.0 36.8	Nunki 75 57.0 S26 16.5
02	321 52.1	237 44.1 26.2	119 53.4 100.9	200 08.8 37.7	96 58.5 36.8	Peacock 53 17.5 S56 41.0
03	336 54.6	252 43.3 . . 26.4	134 54.8 . . 01.3	215 10.7 . . 37.6	112 01.0 . . 36.8	Póllux 243 27.2 N27 59.3
04	351 57.0	267 42.5 26.6	149 56.2 01.8	230 12.6 37.5	127 03.5 36.8	Procyon 244 59.3 N 5 11.1
05	6 59.5	282 41.8 26.9	164 57.6 02.3	245 14.4 37.4	142 06.0 36.8	
06	22 02.0	297 41.0 N22 27.1	179 58.9 S10 02.8	260 16.3 N20 37.3	157 08.5 S14 36.8	Rasalhague 96 05.4 N12 33.2
07	37 04.4	312 40.2 27.3	195 00.3 03.2	275 18.2 37.2	172 11.0 36.8	Régulus 207 43.0 N11 53.7
08	52 06.9	327 39.4 27.5	210 01.7 03.7	290 20.1 37.1	187 13.4 36.8	Rigel 281 11.6 S 8 11.2
09	67 09.3	342 38.6 . . 27.8	225 03.0 . . 04.2	305 22.0 . . 36.9	202 15.9 . . 36.8	Rigel Kent. 139 50.4 S60 53.8
10	82 11.8	357 37.9 28.0	240 04.4 04.7	320 23.9 36.8	217 18.4 36.8	Sabik 102 11.4 S15 44.4
11	97 14.3	12 37.1 28.2	255 05.8 05.1	335 25.8 36.7	232 20.9 36.8	
12	112 16.7	27 36.3 N22 28.4	270 07.2 S10 05.6	350 27.6 N20 36.6	247 23.4 S14 36.8	Schedar 349 39.4 N56 36.8
13	127 19.2	42 35.5 28.6	285 08.5 06.1	5 29.5 36.5	262 25.9 36.8	Shaula 96 20.5 S37 06.7
14	142 21.7	57 34.7 28.9	300 09.9 06.6	20 31.4 36.4	277 28.4 36.8	Sirius 258 33.4 S16 44.3
15	157 24.1	72 33.9 . . 29.1	315 11.3 . . 07.0	35 33.3 . . 36.3	292 30.9 . . 36.8	Spica 158 30.4 S11 14.2
16	172 26.6	87 33.2 29.3	330 12.6 07.5	50 35.2 36.2	307 33.4 36.8	Suhail 222 52.2 S43 29.7
17	187 29.1	102 32.4 29.5	345 14.0 08.0	65 37.1 36.0	322 35.9 36.8	
18	202 31.5	117 31.6 N22 29.7	0 15.4 S10 08.5	80 38.9 N20 35.9	337 38.4 S14 36.8	Vega 80 38.0 N38 48.1
19	217 34.0	132 30.8 29.9	15 16.7 08.9	95 40.8 35.8	352 40.9 36.8	Zuben'ubi 137 04.4 S16 06.1
20	232 36.4	147 30.0 30.1	30 18.1 09.4	110 42.7 35.7	7 43.4 36.8	
21	247 38.9	162 29.2 . . 30.3	45 19.5 . . 09.9	125 44.6 . . 35.6	22 45.8 . . 36.8	AHS Paso Mer.
22	262 41.4	177 28.5 30.6	60 20.8 10.4	140 46.5 35.5	37 48.3 36.8	Venus 277 16.3 10 08
23	277 43.8	192 27.7 30.8	75 22.2 10.8	155 48.4 35.4	52 50.8 36.8	Marte 158 29.5 18 01
						Júpiter 238 31.7 12 41
						Saturno 135 05.6 19 33
Paso Mer.	h m					
	4 36.0	v -0.8 d 0.2	v 1.4 d 0.5	v 1.9 d 0.1	v 2.5 d 0.0	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		12	13	14	15		
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m	
12 00	178 36.3	N22 00.2	6 20.8	4.2	S17 55.7	4.3	60.9	N 72				22 37	22 23	22 13	22 05		
	193 36.3	21 59.9	20 44.0	4.2	17 51.4	4.3	60.9	N 70				21 58	22 00	22 00	22 00		
	208 36.2	59.6	35 07.2	4.2	17 47.1	4.5	61.0	68				21 30	21 42	21 50	21 55		
	223 36.1	59.2	49 30.4	4.3	17 42.6	4.6	61.0	66	////	////	01 26	21 09	21 28	21 41	21 51		
	238 36.0	58.9	63 53.7	4.2	17 38.0	4.7	61.0	64	////	////	02 09	20 52	21 16	21 34	21 48		
S Á B A D O	253 35.9	58.5	78 16.9	4.3	17 33.3	4.9	61.0	62	////	00 30	02 38	20 38	21 06	21 27	21 45		
	268 35.9	N21 58.2	92 40.2	4.2	S17 28.4	5.0	61.0	60	////	01 38	03 00	20 26	20 57	21 22	21 42		
	283 35.8	57.8	107 03.4	4.3	17 23.4	5.1	61.0	N 58	////	02 11	03 17	20 16	20 49	21 17	21 40		
	298 35.7	57.5	121 26.7	4.3	17 18.3	5.3	61.0	56	00 28	02 35	03 32	20 07	20 43	21 12	21 38		
	313 35.6	57.1	135 50.0	4.3	17 13.0	5.4	61.1	54	01 30	02 54	03 44	19 58	20 37	21 08	21 36		
	328 35.5	56.8	150 13.3	4.4	17 07.6	5.5	61.1	52	02 01	03 09	03 55	19 51	20 31	21 05	21 35		
	343 35.5	56.4	164 36.7	4.4	17 02.1	5.6	61.1	50	02 23	03 23	04 05	19 45	20 26	21 02	21 33		
	358 35.4	N21 56.1	179 00.1	4.4	S16 56.5	5.8	61.1	45	03 02	03 49	04 26	19 31	20 15	20 54	21 30		
	13 13	35.3	55.7	193 23.5	4.4	16 50.7	5.9	61.1	N 40	03 30	04 10	04 42	19 19	20 06	20 49	21 27	
	14 28	35.2	55.4	207 46.9	4.4	16 44.8	6.0	61.1	35	03 51	04 27	04 56	19 09	19 59	20 43	21 25	
	15 43	35.2	55.0	222 10.3	4.5	16 38.8	6.2	61.1	30	04 08	04 41	05 08	19 01	19 52	20 39	21 22	
	16 58	35.1	54.7	236 33.8	4.5	16 32.6	6.2	61.1	20	04 35	05 04	05 28	18 46	19 40	20 31	21 19	
	17 73	35.0	54.3	250 57.3	4.6	16 26.4	6.4	61.1	N 10	04 56	05 23	05 46	18 32	19 30	20 24	21 15	
	18 88	34.9	N21 54.0	265 20.9	4.6	S16 20.0	6.5	61.1	0	05 14	05 40	06 02	18 20	19 20	20 17	21 12	
	19 103	34.9	53.6	279 44.5	4.6	16 13.5	6.6	61.2	S 10	05 30	05 56	06 18	18 08	19 10	20 11	21 09	
	20 118	34.8	53.3	294 08.1	4.6	16 06.9	6.8	61.2	20	05 44	06 12	06 35	17 55	19 00	20 04	21 06	
	21 133	34.7	52.9	308 31.7	4.7	16 00.1	6.8	61.2	30	05 59	06 29	06 55	17 40	18 48	19 56	21 03	
	22 148	34.6	52.5	322 55.4	4.7	15 53.3	7.0	61.2	35	06 07	06 39	07 06	17 31	18 41	19 51	21 00	
	23 163	34.6	52.2	337 19.1	4.8	15 46.3	7.1	61.2	40	06 16	06 49	07 19	17 21	18 33	19 46	20 58	
									45	06 25	07 02	07 35	17 09	18 24	19 40	20 55	
	13 00	178 34.5	N21 51.8	351 42.9	4.8	S15 39.2	7.2	61.2	S 50	06 35	07 16	07 53	16 55	18 13	19 33	20 52	
		193 34.4	51.5	6 06.7	4.8	15 32.0	7.3	61.2	52	06 40	07 23	08 02	16 48	18 08	19 29	20 50	
		208 34.3	51.1	20 30.5	4.9	15 24.7	7.4	61.2	54	06 45	07 30	08 12	16 41	18 02	19 26	20 49	
		223 34.3	50.7	34 54.4	4.9	15 17.3	7.5	61.2	56	06 50	07 38	08 23	16 32	17 56	19 22	20 47	
		238 34.2	50.4	49 18.3	5.0	15 09.8	7.7	61.2	58	06 56	07 47	08 36	16 23	17 49	19 17	20 45	
253 34.1		50.0	63 42.3	5.0	15 02.1	7.7	61.2	S 60	07 03	07 57	08 51	16 12	17 40	19 12	20 43		
268 34.0		N21 49.7	78 06.3	5.1	S14 54.4	7.9	61.2	Ocaso Sol		Crepúsculo		Ocaso Luna					
283 34.0		49.3	92 30.4	5.1	14 46.5	7.9	61.2	Lat.	Civil	Náut.	12	13	14	15			
298 33.9		48.9	106 54.5	5.1	14 38.6	8.1	61.2	N 72	h m	h m	h m	h m	h m	h m	h m	h m	
313 33.8		48.6	121 18.6	5.2	14 30.5	8.2	61.2										
328 33.7		48.2	135 42.8	5.3	14 22.3	8.3	61.2	N 70					01 25	02 46	05 04	07 12	
343 33.7		47.8	150 07.1	5.3	14 14.0	8.3	61.2	68					02 07	03 51	05 42	07 32	
358 33.6		N21 47.5	164 31.4	5.3	S14 05.7	8.5	61.2	66	22 42	////	////	02 35	04 11	05 55	07 39		
13 13		33.5	47.1	178 55.7	5.4	13 57.2	8.6	61.2	64	22 00	////	////	02 56	04 28	06 06	07 45	
14 28		33.5	46.7	193 20.1	5.5	13 48.6	8.6	61.2	62	21 32	23 32	////	03 13	04 41	06 15	07 50	
15 43		33.4	46.4	207 44.6	5.5	13 40.0	8.8	61.2	60	21 11	22 31	////	03 27	04 52	06 23	07 54	
16 58		33.3	46.0	222 09.1	5.5	13 31.2	8.8	61.2	N 58	20 53	21 59	////	03 39	05 02	06 30	07 58	
17 73		33.2	45.6	236 33.6	5.6	13 22.4	9.0	61.2	56	20 39	21 35	23 35	03 50	05 10	06 36	08 02	
18 88		33.2	N21 45.3	250 58.2	5.7	S13 13.4	9.0	61.2	54	20 26	21 17	22 39	03 59	05 18	06 41	08 05	
19 103		33.1	44.9	265 22.9	5.7	13 04.4	9.1	61.2	52	20 15	21 01	22 09	04 07	05 25	06 46	08 08	
20 118		33.0	44.5	279 47.6	5.8	12 55.3	9.2	61.2	50	20 06	20 48	21 47	04 15	05 31	06 50	08 10	
21 133		33.0	44.2	294 12.4	5.8	12 46.1	9.3	61.2	45	19 45	20 21	21 08	04 31	05 44	07 00	08 16	
22 148		32.9	43.8	308 37.2	5.9	12 36.8	9.4	61.2	N 40	19 29	20 01	20 41	04 44	05 55	07 08	08 20	
23 163		32.8	43.4	323 02.1	6.0	12 27.4	9.5	61.1	35	19 15	19 44	20 20	04 55	06 04	07 15	08 24	
14 00	178 32.8	N21 43.0	337 27.1	6.0	S12 17.9	9.5	61.1	30	19 03	19 30	20 03	05 04	06 12	07 20	08 28		
	193 32.7	42.7	351 52.1	6.0	12 08.4	9.6	61.1	20	18 43	19 07	19 36	05 21	06 26	07 31	08 34		
	208 32.6	42.3	6 17.1	6.1	11 58.8	9.7	61.1	N 10	18 26	18 48	19 15	05 35	06 38	07 39	08 39		
	223 32.5	41.9	20 42.2	6.2	11 49.1	9.8	61.1	0	18 09	18 32	18 58	05 48	06 49	07 48	08 44		
	238 32.5	41.5	35 07.4	6.2	11 39.3	9.9	61.1	S 10	17 53	18 16	18 42	06 01	07 00	07 56	08 49		
	253 32.4	41.2	49 32.6	6.3	11 29.4	9.9	61.1	20	17 36	18 00	18 27	06 15	07 12	08 04	08 54		
	268 32.3	N21 40.8	63 57.9	6.4	S11 19.5	10.0	61.1	30	17 17	17 43	18 12	06 32	07 25	08 14	08 59		
	283 32.3	40.4	78 23.3	6.4	11 09.5	10.1	61.1	35	17 05	17 33	18 04	06 41	07 33	08 20	09 03		
	298 32.2	40.0	92 48.7	6.5	10 59.4	10.1	61.1	40	16 52	17 22	17 56	06 51	07 41	08 26	09 06		
	313 32.1	39.6	107 14.2	6.5	10 49.3	10.2	61.0	45	16 37	17 10	17 47	07 04	07 52	08 33	09 10		
	328 32.1	39.3	121 39.7	6.6	10 39.1	10.3	61.0	S 50	16 18	16 56	17 37	07 19	08 04	08 42	09 16		
	343 32.0	38.9	136 05.3	6.6	10 28.8	10.4	61.0	52	16 10	16 49	17 32	07 26	08 10	08 46	09 18		
	14 13	31.9	38.1	164 56.6	6.7	10 08.0	10.4	61.0	54	16 00	16 42	17 27	07 34	08 16	08 51	09 20	
	15 43	31.7	37.3	193 48.2	6.8	9 57.6	10.6	61.0	56	15 48	16 34	17 22	07 42	08 23	08 55	09 23	
	16 58	31.7	37.0	208 14.1	7.0	9 36.4	10.6	60.9	58	15 36	16 25	17 16	07 52	08 30	09 01	09 26	
	17 73	31.6	36.6	222 40.1	7.0	9 25.8	10.7	60.9	S 60	15 20	16 15	17 09	08 03	08 39	09 07	09 30	
	18 88	31.5	N21 36.2	237 06.1	7.0	S 9 15.1	10.8	60.9	SOL		LUNA						
	19 103	31.5	35.8	251 32.1	7.2	9 04.3	10.8	60.9	Día	Ec. Tiempo	Paso Mer.	Paso Mer.	Mer. Inf.	Edad	Fase		
	20 118	31.4	35.4	265 58.3	7.1	8 53.5	10.8	60.9	00h	12h							
	21 133	31.3	35.0	280 24.4	7.3	8 42.7	10.9	60.9	d	m s	m s	h m	h m	h m	d %		
	22 148	31.3	34.6	294 50.7	7.3	8 31.8	11.0	60.8	12	05 35	05 38	12 06	24 35	12 04	15 100		
	23 163	31.2	34.3	309 17.0	7.4	S 8 20.8	11.0	60.8	13	05 42	05 45	12 06	00 35	13 04	16 98		
									14	05 49	05 52	12 06	01 34	14 03	17 94		
		S/D 15.8	d 0.4	S/D 16.6	16.6	16.7	16.6										

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.2	JÚPITER -1.8	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
15 00	292 46.3	207 26.9 N22 31.0	90 23.6 S10 11.3	170 50.3 N20 35.2	67 53.3 S14 36.8	Acamar	315 18.0 S40 14.6	
01	307 48.8	222 26.1 31.2	105 24.9 11.8	185 52.1 35.1	82 55.8 36.8	Achernar	335 26.3 S57 09.5	
02	322 51.2	237 25.3 31.4	120 26.3 12.3	200 54.0 35.0	97 58.3 36.8	Acrux	173 08.5 S63 11.1	
03	337 53.7	252 24.5 . . 31.6	135 27.6 . . 12.7	215 55.9 . . 34.9	113 00.8 . . 36.8	Adhara	255 12.3 S28 59.6	
04	352 56.2	267 23.7 31.8	150 29.0 13.2	230 57.8 34.8	128 03.3 36.8	Aldebarán	290 48.7 N16 32.1	
05	7 58.6	282 23.0 32.0	165 30.4 13.7	245 59.7 34.7	143 05.8 36.8			
06	23 01.1	297 22.2 N22 32.2	180 31.7 S10 14.2	261 01.6 N20 34.6	158 08.3 S14 36.9	Alioth	166 20.2 N55 53.2	
07	38 03.6	312 21.4 32.4	195 33.1 14.7	276 03.5 34.5	173 10.8 36.9	Alkaid	152 58.3 N49 14.8	
08	53 06.0	327 20.6 32.6	210 34.4 15.1	291 05.3 34.3	188 13.2 36.9	Al Na'ir	27 42.5 S46 53.1	
09	68 08.5	342 19.8 . . 32.8	225 35.8 . . 15.6	306 07.2 . . 34.2	203 15.7 . . 36.9	Alnilam	275 45.9 S 1 11.7	
10	83 10.9	357 19.0 33.0	240 37.2 16.1	321 09.1 34.1	218 18.2 36.9	Alphard	217 55.6 S 8 43.4	
11	98 13.4	12 18.2 33.2	255 38.5 16.6	336 11.0 34.0	233 20.7 36.9			
12	113 15.9	27 17.5 N22 33.4	270 39.9 S10 17.0	351 12.9 N20 33.9	248 23.2 S14 36.9	Alphecca	126 10.2 N26 40.3	
13	128 18.3	42 16.7 33.6	285 41.2 17.5	6 14.8 33.8	263 25.7 36.9	Alpheratz	357 42.5 N29 10.2	
14	143 20.8	57 15.9 33.7	300 42.6 18.0	21 16.6 33.7	278 28.2 36.9	Altair	62 07.2 N 8 54.7	
15	158 23.3	72 15.1 . . 33.9	315 43.9 . . 18.5	36 18.5 . . 33.5	293 30.7 . . 36.9	Ankaa	353 14.9 S42 13.3	
16	173 25.7	87 14.3 34.1	330 45.3 18.9	51 20.4 33.4	308 33.2 36.9	Antares	112 25.0 S26 27.7	
17	188 28.2	102 13.5 34.3	345 46.7 19.4	66 22.3 33.3	323 35.6 36.9			
18	203 30.7	117 12.7 N22 34.5	0 48.0 S10 19.9	81 24.2 N20 33.2	338 38.1 S14 36.9	Arcturus	145 55.0 N19 06.6	
19	218 33.1	132 11.9 34.7	15 49.4 20.4	96 26.1 33.1	353 40.6 36.9	Atria	107 25.7 S69 03.2	
20	233 35.6	147 11.1 34.9	30 50.7 20.9	111 28.0 33.0	8 43.1 36.9	Avior	234 18.3 S59 33.6	
21	248 38.1	162 10.4 . . 35.1	45 52.1 . . 21.3	126 29.8 . . 32.9	23 45.6 . . 36.9	Bellatrix	278 31.5 N 6 21.6	
22	263 40.5	177 09.6 35.2	60 53.4 21.8	141 31.7 32.7	38 48.1 36.9	Betelgeuse	271 00.8 N 7 24.4	
23	278 43.0	192 08.8 35.4	75 54.8 22.3	156 33.6 32.6	53 50.6 36.9			
16 00	293 45.4	207 08.0 N22 35.6	90 56.1 S10 22.8	171 35.5 N20 32.5	68 53.1 S14 36.9	Canopus	263 56.3 S52 42.3	
01	308 47.9	222 07.2 35.8	105 57.5 23.3	186 37.4 32.4	83 55.5 36.9	Capella	280 33.7 N46 00.5	
02	323 50.4	237 06.4 36.0	120 58.8 23.7	201 39.3 32.3	98 58.0 36.9	Deneb	49 30.5 N45 20.1	
03	338 52.8	252 05.6 . . 36.1	136 00.2 . . 24.2	216 41.1 . . 32.2	114 00.5 . . 36.9	Denébola	182 33.1 N14 29.5	
04	353 55.3	267 04.8 36.3	151 01.5 24.7	231 43.0 32.1	129 03.0 37.0	Diphda	348 55.1 S17 54.2	
05	8 57.8	282 04.0 36.5	166 02.9 25.2	246 44.9 32.0	144 05.5 37.0			
06	24 00.2	297 03.2 N22 36.7	181 04.2 S10 25.6	261 46.8 N20 31.8	159 08.0 S14 37.0	Dubhe	193 51.3 N61 40.5	
07	39 02.7	312 02.4 36.8	196 05.6 26.1	276 48.7 31.7	174 10.5 37.0	Elnath	278 12.0 N28 36.9	
08	54 05.2	327 01.6 37.0	211 06.9 26.6	291 50.6 31.6	189 12.9 37.0	Eltanin	90 45.3 N51 29.5	
09	69 07.6	342 00.9 . . 37.2	226 08.3 . . 27.1	306 52.5 . . 31.5	204 15.4 . . 37.0	Enif	33 46.1 N 9 56.7	
10	84 10.1	357 00.1 37.3	241 09.6 27.6	321 54.3 31.4	219 17.9 37.0	Fomalhaut	15 22.9 S29 32.4	
11	99 12.5	11 59.3 37.5	256 10.9 28.0	336 56.2 31.3	234 20.4 37.0			
12	114 15.0	26 58.5 N22 37.7	271 12.3 S10 28.5	351 58.1 N20 31.2	249 22.9 S14 37.0	Gacrux	172 00.1 S57 11.9	
13	129 17.5	41 57.7 37.8	286 13.6 29.0	7 00.0 31.0	264 25.4 37.0	Gienah	175 51.6 S17 37.4	
14	144 19.9	56 56.9 38.0	301 15.0 29.5	22 01.9 30.9	279 27.8 37.0	Hadar	148 46.6 S60 26.8	
15	159 22.4	71 56.1 . . 38.2	316 16.3 . . 30.0	37 03.8 . . 30.8	294 30.3 . . 37.0	Hamal	327 59.9 N23 31.7	
16	174 24.9	86 55.3 38.3	331 17.7 30.4	52 05.7 30.7	309 32.8 37.0	Kaus Aust.	83 42.4 S34 22.4	
17	189 27.3	101 54.5 38.5	346 19.0 30.9	67 07.5 30.6	324 35.3 37.0			
18	204 29.8	116 53.7 N22 38.7	1 20.3 S10 31.4	82 09.4 N20 30.5	339 37.8 S14 37.0	Kochab	137 19.8 N74 06.1	
19	219 32.3	131 52.9 38.8	16 21.7 31.9	97 11.3 30.3	354 40.3 37.0	Markab	13 37.3 N15 17.1	
20	234 34.7	146 52.1 39.0	31 23.0 32.4	112 13.2 30.2	9 42.8 37.0	Menkar	314 14.4 N 4 08.7	
21	249 37.2	161 51.3 . . 39.1	46 24.4 . . 32.8	127 15.1 . . 30.1	24 45.2 . . 37.0	Menkent	148 06.6 S36 26.6	
22	264 39.7	176 50.5 39.3	61 25.7 33.3	142 17.0 30.0	39 47.7 37.0	Miaplacidus	221 40.2 S69 46.9	
23	279 42.1	191 49.7 39.4	76 27.0 33.8	157 18.8 29.9	54 50.2 37.1			
17 00	294 44.6	206 48.9 N22 39.6	91 28.4 S10 34.3	172 20.7 N20 29.8	69 52.7 S14 37.1	Mirfak	308 39.4 N49 54.4	
01	309 47.0	221 48.1 39.7	106 29.7 34.8	187 22.6 29.7	84 55.2 37.1	Nunki	75 57.0 S26 16.5	
02	324 49.5	236 47.3 39.9	121 31.1 35.2	202 24.5 29.5	99 57.7 37.1	Peacock	53 17.5 S56 41.0	
03	339 52.0	251 46.5 . . 40.0	136 32.4 . . 35.7	217 26.4 . . 29.4	115 00.1 . . 37.1	Póllux	243 27.2 N27 59.3	
04	354 54.4	266 45.7 40.2	151 33.7 36.2	232 28.3 29.3	130 02.6 37.1	Procyon	244 59.3 N 5 11.1	
05	9 56.9	281 45.0 40.3	166 35.1 36.7	247 30.2 29.2	145 05.1 37.1			
06	24 59.4	296 44.2 N22 40.5	181 36.4 S10 37.2	262 32.0 N20 29.1	160 07.6 S14 37.1	Rasalhague	96 05.4 N12 33.3	
07	40 01.8	311 43.4 40.6	196 37.7 37.6	277 33.9 29.0	175 10.1 37.1	Régulus	207 43.0 N11 53.7	
08	55 04.3	326 42.6 40.8	211 39.1 38.1	292 35.8 28.9	190 12.5 37.1	Rigel	281 11.6 S 8 11.2	
09	70 06.8	341 41.8 . . 40.9	226 40.4 . . 38.6	307 37.7 . . 28.7	205 15.0 . . 37.1	Rigel Kent.	139 50.4 S60 53.8	
10	85 09.2	356 41.0 41.1	241 41.7 39.1	322 39.6 28.6	220 17.5 37.1	Sabik	102 11.4 S15 44.4	
11	100 11.7	11 40.2 41.2	256 43.1 39.6	337 41.5 28.5	235 20.0 37.1			
12	115 14.2	26 39.4 N22 41.4	271 44.4 S10 40.1	352 43.3 N20 28.4	250 22.5 S14 37.1	Schedar	349 39.4 N56 36.8	
13	130 16.6	41 38.6 41.5	286 45.7 40.5	7 45.2 28.3	265 24.9 37.1	Shaula	96 20.5 S37 06.7	
14	145 19.1	56 37.8 41.6	301 47.1 41.0	22 47.1 28.2	280 27.4 37.1	Sirius	258 33.4 S16 44.3	
15	160 21.5	71 37.0 . . 41.8	316 48.4 . . 41.5	37 49.0 . . 28.0	295 29.9 . . 37.2	Spica	158 30.4 S11 14.2	
16	175 24.0	86 36.2 41.9	331 49.7 42.0	52 50.9 27.9	310 32.4 37.2	Suhail	222 52.2 S43 29.7	
17	190 26.5	101 35.4 42.0	346 51.1 42.5	67 52.8 27.8	325 34.9 37.2			
18	205 28.9	116 34.6 N22 42.2	1 52.4 S10 42.9	82 54.7 N20 27.7	340 37.3 S14 37.2	Vega	80 38.0 N38 48.1	
19	220 31.4	131 33.8 42.3	16 53.7 43.4	97 56.5 27.6	355 39.8 37.2	Zuben'ubi	137 04.4 S16 06.1	
20	235 33.9	146 33.0 42.4	31 55.0 43.9	112 58.4 27.5	10 42.3 37.2			
21	250 36.3	161 32.2 . . 42.6	46 56.4 . . 44.9	128 00.3 . . 27.4	25 44.8 . . 37.2			
22	265 38.8	176 31.4 42.7	61 57.7 44.9	143 02.2 27.2	40 47.3 37.2	Venus	273 22.5 10 12	
23	280 41.3	191 30.6 42.8	76 59.0 45.4	158 04.1 27.1	55 49.7 37.2	Marte	157 10.7 17 55	
						Júpiter	237 50.1 12 32	
						Saturno	135 07.6 19 21	
Paso Mer.	h m 4 24.2	v -0.8 d 0.2	v 1.3 d 0.5	v 1.9 d 0.1	v 2.5 d 0.0		AHS Paso Mer.	

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	15		16	17	18	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
M A R T E S	15 00	178 31.1	N21 33.9	323 43.4	7.4 S	8 09.8	11.0	60.8	N 72				22 05	21 58	21 51	21 44
	01	193 31.1	33.5	338 09.8	7.5	7 58.8	11.1	60.8	N 70				22 00	21 59	21 58	21 57
	02	208 31.0	33.1	352 36.3	7.5	7 47.7	11.2	60.8	68				21 55	21 59	22 04	22 09
	03	223 30.9	32.7	7 02.8	7.6	7 36.5	11.1	60.7	66	////	////	01 39	21 51	22 00	22 08	22 18
	04	238 30.9	32.3	21 29.4	7.7	7 25.4	11.2	60.7	64	////	////	02 18	21 48	22 00	22 12	22 26
	05	253 30.8	31.9	35 56.1	7.7	7 14.2	11.3	60.7	62	////	00 56	02 45	21 45	22 01	22 16	22 32
	06	268 30.8	N21 31.5	50 22.8	7.7 S	7 02.9	11.3	60.7	60	////	01 48	03 05	21 42	22 01	22 19	22 38
	07	283 30.7	31.1	64 49.5	7.9	6 51.6	11.3	60.6	N 58	////	02 18	03 22	21 40	22 01	22 22	22 44
	08	298 30.6	30.7	79 16.4	7.9	6 40.3	11.3	60.6	56	00 52	02 40	03 36	21 38	22 01	22 24	22 48
	09	313 30.6	30.3	93 43.3	7.9	6 29.0	11.4	60.6	54	01 39	02 58	03 48	21 36	22 02	22 27	22 52
	10	328 30.5	29.9	108 10.2	8.0	6 17.6	11.4	60.6	52	02 07	03 14	03 59	21 35	22 02	22 29	22 56
	11	343 30.4	29.5	122 37.2	8.0	6 06.2	11.5	60.6	50	02 28	03 26	04 08	21 33	22 02	22 31	23 00
	12	358 30.4	N21 29.1	137 04.2	8.2 S	5 54.7	11.5	60.5	45	03 06	03 53	04 28	21 30	22 03	22 35	23 07
	13	13 30.3	28.8	151 31.4	8.1	5 43.2	11.4	60.5	N 40	03 33	04 13	04 44	21 27	22 03	22 38	23 14
	14	28 30.3	28.4	165 58.5	8.2	5 31.8	11.6	60.5	35	03 53	04 29	04 58	21 25	22 03	22 41	23 19
	15	43 30.2	28.0	180 25.7	8.3	5 20.2	11.5	60.5	30	04 10	04 43	05 10	21 22	22 04	22 44	23 24
	16	58 30.1	27.6	194 53.0	8.3	5 08.7	11.6	60.4	20	04 37	05 05	05 29	21 19	22 04	22 48	23 32
	17	73 30.1	27.2	209 20.3	8.4	4 57.1	11.6	60.4	N 10	04 57	05 24	05 47	21 15	22 05	22 53	23 40
	18	88 30.0	N21 26.8	223 47.7	8.5 S	4 45.5	11.6	60.4	0	05 14	05 40	06 02	21 12	22 05	22 56	23 47
	19	103 30.0	26.4	238 15.2	8.4	4 33.9	11.6	60.3	S 10	05 30	05 56	06 18	21 09	22 06	23 00	23 54
	20	118 29.9	26.0	252 42.6	8.6	4 22.3	11.6	60.3	20	05 44	06 11	06 35	21 06	22 06	23 05	24 01
	21	133 29.8	25.6	267 10.2	8.6	4 10.7	11.6	60.3	30	05 59	06 28	06 54	21 03	22 07	23 09	24 10
	22	148 29.8	25.1	281 37.8	8.6	3 59.1	11.7	60.3	35	06 06	06 38	07 05	21 00	22 07	23 12	24 15
	23	163 29.7	24.7	296 05.4	8.7	3 47.4	11.7	60.2	40	06 14	06 48	07 18	20 58	22 08	23 16	24 21
	M I É R C O L E S	00	178 29.7	N21 24.3	310 33.1	8.7 S	3 35.7	11.7	60.2	45	06 23	07 00	07 33	20 55	22 08	23 19	24 28
01		193 29.6	23.9	325 00.8	8.8	3 24.0	11.6	60.2	S 50	06 33	07 14	07 51	20 52	22 09	23 24	24 36
02		208 29.5	23.5	339 28.6	8.9	3 12.4	11.7	60.2	52	06 38	07 20	07 59	20 50	22 09	23 26	24 40
03		223 29.5	23.1	353 56.5	8.8	3 00.7	11.7	60.1	54	06 43	07 27	08 09	20 49	22 10	23 28	24 44
04		238 29.4	22.7	8 24.3	9.0	2 49.0	11.8	60.1	56	06 48	07 35	08 20	20 47	22 10	23 31	24 48
05		253 29.4	22.3	22 52.3	9.0	2 37.2	11.7	60.1	58	06 53	07 44	08 32	20 45	22 11	23 33	24 53
06		268 29.3	N21 21.9	37 20.3	9.0 S	2 25.5	11.7	60.0	S 60	06 59	07 54	08 47	20 43	22 11	23 37	24 59
07		283 29.2	21.5	51 48.3	9.1	2 13.8	11.7	60.0	Ocaso Sol		Crepúsculo		Ocaso Luna			
08		298 29.2	21.1	66 16.4	9.1	2 02.1	11.7	60.0	Lat.				15	16	17	18
09		313 29.1	20.7	80 44.5	9.1	1 50.4	11.7	59.9								
10		328 29.1	20.3	95 12.6	9.2	1 38.7	11.7	59.9								
11		343 29.0	19.8	109 40.8	9.3	1 27.0	11.7	59.9								
12		358 29.0	N21 19.4	124 09.1	9.3 S	1 15.3	11.7	59.9	N 72				07 12	09 13	11 09	13 03
13		13 28.9	19.0	138 37.4	9.3	1 03.6	11.7	59.8	N 70				07 23	09 16	11 05	12 51
14		28 28.8	18.6	153 05.7	9.4	0 51.9	11.7	59.8	68				07 32	09 18	11 01	12 41
15		43 28.8	18.2	167 34.1	9.4	0 40.2	11.7	59.8	66	22 29	////	////	07 39	09 20	10 58	12 33
16		58 28.7	17.8	182 02.5	9.5	0 28.5	11.6	59.7	64	21 52	////	////	07 45	09 22	10 56	12 27
17		73 28.7	17.4	196 31.0	9.5	0 16.9	11.7	59.7	62	21 26	23 10	////	07 50	09 23	10 54	12 21
18		88 28.6	N21 17.0	210 59.5	9.5 S	0 05.2	11.6	59.7	60	21 05	22 22	////	07 54	09 24	10 52	12 16
19		103 28.6	16.5	225 28.0	9.6 N	0 06.4	11.6	59.6	N 58	20 49	21 52	////	07 58	09 25	10 50	12 12
20		118 28.5	16.1	239 56.6	9.6	0 18.0	11.6	59.6	56	20 35	21 30	23 15	08 02	09 26	10 48	12 08
21		133 28.5	15.7	254 25.2	9.7	0 29.6	11.6	59.6	54	20 23	21 12	22 31	08 05	09 27	10 47	12 04
22		148 28.4	15.3	268 53.9	9.7	0 41.2	11.6	59.5	52	20 12	20 58	22 03	08 08	09 28	10 46	12 01
23		163 28.3	14.9	283 22.6	9.7	0 52.8	11.5	59.5	50	20 03	20 45	21 43	08 10	09 29	10 45	11 58
J U E V E S		00	178 28.3	N21 14.4	297 51.3	9.8 N	1 04.3	11.6	59.5	45	19 43	20 19	21 05	08 16	09 30	10 42	11 52
	01	193 28.2	14.0	312 20.1	9.8	1 15.9	11.5	59.4	N 40	19 27	19 59	20 39	08 20	09 31	10 40	11 47
	02	208 28.2	13.6	326 48.9	9.8	1 27.4	11.5	59.4	35	19 14	19 43	20 18	08 24	09 33	10 39	11 43
	03	223 28.1	13.2	341 17.7	9.9	1 38.9	11.4	59.4	30	19 02	19 29	20 01	08 28	09 33	10 37	11 39
	04	238 28.1	12.8	355 46.6	9.9	1 50.3	11.5	59.3	20	18 43	19 07	19 35	08 34	09 35	10 34	11 32
	05	253 28.0	12.3	10 15.5	9.9	2 01.8	11.4	59.3	N 10	18 25	18 48	19 15	08 39	09 36	10 32	11 26
	06	268 28.0	N21 11.9	24 44.4	9.9 N	2 13.2	11.4	59.3	0	18 10	18 32	18 58	08 44	09 38	10 30	11 20
	07	283 27.9	11.5	39 13.3	10.0	2 24.6	11.3	59.2	S 10	17 54	18 16	18 42	08 49	09 39	10 27	11 15
	08	298 27.9	11.1	53 42.3	10.1	2 35.9	11.4	59.2	20	17 37	18 01	18 28	08 54	09 40	10 25	11 09
	09	313 27.8	10.6	68 11.4	10.0	2 47.3	11.3	59.2	30	17 18	17 44	18 14	08 59	09 42	10 22	11 02
	10	328 27.8	10.2	82 40.4	10.1	2 58.6	11.2	59.1	35	17 07	17 35	18 06	09 03	09 43	10 21	10 59
	11	343 27.7	09.8	97 09.5	10.1	3 09.8	11.3	59.1	40	16 55	17 24	17 58	09 06	09 43	10 19	10 54
	12	358 27.7	N21 09.4	111 38.6	10.2 N	3 21.1	11.2	59.0	45	16 40	17 13	17 49	09 10	09 44	10 17	10 49
	13	13 27.6	08.9	126 07.8	10.1	3 32.3	11.2	59.0	S 50	16 22	16 59	17 39	09 16	09 46	10 14	10 43
	14	28 27.5	08.5	140 36.9	10.2	3 43.5	11.1	59.0	52	16 13	16 52	17 35	09 18	09 46	10 13	10 40
	15	43 27.5	08.1	155 06.1	10.2	3 54.6	11.1	58.9	54	16 03	16 45	17 30	09 20	09 47	10 12	10 37
	16	58 27.4	07.6	169 35.3	10.3	4 05.7	11.1	58.9	56	15 53	16 37	17 25	09 23	09 48	10 11	10 34
	17	73 27.4	07.2	184 04.6	10.3	4 16.8	11.0	58.9	58	15 40	16 29	17 19	09 26	09 48	10 09	10 30
	18	88 27.3	N21 06.8	198 33.9	10.3 N	4 27.8	11.0	58.8	S 60	15 26	16 19	17 13	09 30	09 49	10 08	10 26
	19	103 27.3	06.4	213 03.2	10.3	4 38.8	11.0	58.8	SOL		LUNA					
	20	118 27.2	05.9	227 32.5	10.3	4 49.8	10.9	58.8	Día	Ec. Tiempo		Paso Mer.	Paso Mer. Sup.		Edad	Fase
	21	133 27.2	05.5	242 01.8	10.4	5 00.7	10.8	58.7		00 ^h	12 ^h					

UT (HmGr)		ARIES		VENUS -3.8		MARTE +0.3		JÚPITER -1.8		SATURNO+0.5		ESTRELLAS			
		AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre	AHS	Dec
V I E R N E S	1800	295 43.7	206 29.8	N22 43.0	92 00.3	S10 45.8	173 06.0	N20 27.0	70 52.2	S14 37.2	Acamar	315 18.0	S40 14.6		
	01	310 46.2	221 29.0	43.1	107 01.7	46.3	188 07.9	26.9	85 54.7	37.2	Achernar	335 26.3	S57 09.5		
	02	325 48.6	236 28.2	43.2	122 03.0	46.8	203 09.7	26.8	100 57.2	37.2	Acrux	173 08.5	S63 11.1		
	03	340 51.1	251 27.4	43.3	137 04.3	47.3	218 11.6	26.7	115 59.7	37.2	Adhara	255 12.3	S28 59.6		
	04	355 53.6	266 26.6	43.5	152 05.6	47.8	233 13.5	26.5	131 02.1	37.2	Aldebarán	290 48.7	N16 32.1		
	05	10 56.0	281 25.8	43.6	167 07.0	48.3	248 15.4	26.4	146 04.6	37.3					
	06	25 58.5	296 25.0	N22 43.7	182 08.3	S10 48.7	263 17.3	N20 26.3	161 07.1	S14 37.3	Alioth	166 20.2	N55 53.2		
	07	41 01.0	311 24.2	43.8	197 09.6	49.2	278 19.2	26.2	176 09.6	37.3	Alkaid	152 58.4	N49 14.8		
	08	56 03.4	326 23.4	43.9	212 10.9	49.7	293 21.0	26.1	191 12.0	37.3	Al Na'ir	27 42.5	S46 53.3		
	09	71 05.9	341 22.6	44.1	227 12.3	50.2	308 22.9	26.0	206 14.5	37.3	Anilam	275 45.9	S 1 11.7		
	10	86 08.4	356 21.8	44.2	242 13.6	50.7	323 24.8	25.8	221 17.0	37.3	Alphard	217 55.6	S 8 43.4		
	11	101 10.8	11 21.0	44.3	257 14.9	51.2	338 26.7	25.7	236 19.5	37.3					
	12	116 13.3	26 20.2	N22 44.4	272 16.2	S10 51.6	353 28.6	N20 25.6	251 22.0	S14 37.3	Alphecca	126 10.2	N26 40.3		
	13	131 15.8	41 19.3	44.5	287 17.5	52.1	8 30.5	25.5	266 24.4	37.3	Alpheratz	357 42.5	N29 10.2		
	14	146 18.2	56 18.5	44.6	302 18.9	52.6	23 32.4	25.4	281 26.9	37.3	Altair	62 07.1	N 8 54.7		
	15	161 20.7	71 17.7	44.7	317 20.2	53.1	38 34.2	25.3	296 29.4	37.3	Ankaa	353 14.9	S42 13.3		
	16	176 23.1	86 16.9	44.8	332 21.5	53.6	53 36.1	25.2	311 31.9	37.3	Antares	112 25.0	S26 27.7		
	17	191 25.6	101 16.1	44.9	347 22.8	54.1	68 38.0	25.0	326 34.3	37.3					
	18	206 28.1	116 15.3	N22 45.1	2 24.1	S10 54.5	83 39.9	N20 24.9	341 36.8	S14 37.4	Arcturus	145 55.0	N19 06.6		
	19	221 30.5	131 14.5	45.2	17 25.4	55.0	98 41.8	24.8	356 39.3	37.4	Atria	107 25.7	S69 03.2		
	20	236 33.0	146 13.7	45.3	32 26.8	55.5	113 43.7	24.7	11 41.8	37.4	Avior	234 18.3	S59 33.6		
	21	251 35.5	161 12.9	45.4	47 28.1	56.0	128 45.5	24.6	26 44.2	37.4	Bellatrix	278 31.5	N 6 21.6		
	22	266 37.9	176 12.1	45.5	62 29.4	56.5	143 47.4	24.5	41 46.7	37.4	Betelgeuse	271 00.8	N 7 24.4		
	23	281 40.4	191 11.3	45.6	77 30.7	57.0	158 49.3	24.3	56 49.2	37.4					
S Á B A D O	1900	296 42.9	206 10.5	N22 45.7	92 32.0	S10 57.4	173 51.2	N20 24.2	71 51.7	S14 37.4	Canopus	263 56.3	S52 42.3		
	01	311 45.3	221 09.7	45.8	107 33.3	57.9	188 53.1	24.1	86 54.1	37.4	Capella	280 33.7	N46 00.4		
	02	326 47.8	236 08.9	45.9	122 34.6	58.4	203 55.0	24.0	101 56.6	37.4	Deneb	49 30.4	N45 20.1		
	03	341 50.2	251 08.1	46.0	137 35.9	58.9	218 56.9	23.9	116 59.1	37.4	Denebola	182 33.1	N14 29.5		
	04	356 52.7	266 07.3	46.1	152 37.3	59.4	233 58.7	23.8	132 01.6	37.4	Diphda	348 55.1	S17 54.2		
	05	11 55.2	281 06.5	46.2	167 38.6	10 59.9	249 00.6	23.6	147 04.0	37.4					
	06	26 57.6	296 05.7	N22 46.3	182 39.9	S11 00.4	264 02.5	N20 23.5	162 06.5	S14 37.5	Dubhe	193 51.3	N61 40.5		
	07	42 00.1	311 04.9	46.3	197 41.2	00.8	279 04.4	23.4	177 09.0	37.5	Elnath	278 12.0	N28 36.9		
	08	57 02.6	326 04.1	46.4	212 42.5	01.3	294 06.3	23.3	192 11.5	37.5	Eltanin	90 45.3	N51 29.6		
	09	72 05.0	341 03.3	46.5	227 43.8	01.8	309 08.2	23.2	207 13.9	37.5	Enif	33 46.1	N 9 56.7		
	10	87 07.5	356 02.4	46.6	242 45.1	02.3	324 10.0	23.1	222 16.4	37.5	Fomalhaut	15 22.9	S29 32.4		
	11	102 10.0	11 01.6	46.7	257 46.4	02.8	339 11.9	22.9	237 18.9	37.5					
	12	117 12.4	26 00.8	N22 46.8	272 47.7	S11 03.3	354 13.8	N20 22.8	252 21.4	S14 37.5	Gacrux	172 00.1	S57 11.9		
	13	132 14.9	41 00.0	46.9	287 49.0	03.8	9 15.7	22.7	267 23.8	37.5	Gienah	175 51.6	S17 37.4		
	14	147 17.4	55 59.2	47.0	302 50.3	04.2	24 17.6	22.6	282 26.3	37.5	Hadar	148 46.6	S60 26.8		
	15	162 19.8	70 58.4	47.0	317 51.7	04.7	39 19.5	22.5	297 28.8	37.5	Hamal	327 59.9	N23 31.7		
	16	177 22.3	85 57.6	47.1	332 53.0	05.2	54 21.4	22.4	312 31.2	37.5	Kaus Aust.	83 42.4	S34 22.4		
	17	192 24.7	100 56.8	47.2	347 54.3	05.7	69 23.2	22.2	327 33.7	37.5					
	18	207 27.2	115 56.0	N22 47.3	2 55.6	S11 06.2	84 25.1	N20 22.1	342 36.2	S14 37.6	Kochab	137 19.9	N74 06.1		
	19	222 29.7	130 55.2	47.4	17 56.9	06.7	99 27.0	22.0	357 38.7	37.6	Markab	13 37.3	N15 17.1		
	20	237 32.1	145 54.4	47.5	32 58.2	07.2	114 28.9	21.9	12 41.1	37.6	Menkar	314 14.4	N 4 08.7		
	21	252 34.6	160 53.6	47.5	47 59.5	07.6	129 30.8	21.8	27 43.6	37.6	Menkent	148 06.6	S36 26.6		
	22	267 37.1	175 52.8	47.6	63 00.8	08.1	144 32.7	21.7	42 46.1	37.6	Miaplacidus	221 40.2	S69 46.9		
	23	282 39.5	190 52.0	47.7	78 02.1	08.6	159 34.6	21.5	57 48.5	37.6					
D O M I N G O	2000	297 42.0	205 51.1	N22 47.8	93 03.4	S11 09.1	174 36.4	N20 21.4	72 51.0	S14 37.6	Mirfak	308 39.4	N49 54.4		
	01	312 44.5	220 50.3	47.8	108 04.7	09.6	189 38.3	21.3	87 53.5	37.6	Nunki	75 57.0	S26 16.5		
	02	327 46.9	235 49.5	47.9	123 06.0	10.1	204 40.2	21.2	102 56.0	37.6	Péacock	53 17.5	S56 41.0		
	03	342 49.4	250 48.7	48.0	138 07.3	10.6	219 42.1	21.1	117 58.4	37.6	Pollux	243 27.2	N27 59.3		
	04	357 51.9	265 47.9	48.0	153 08.6	11.0	234 44.0	20.9	133 00.9	37.7	Procyon	244 59.3	N 5 11.1		
	05	12 54.3	280 47.1	48.1	168 09.9	11.5	249 45.9	20.8	148 03.4	37.7					
	06	27 56.8	295 46.3	N22 48.2	183 11.2	S11 12.0	264 47.7	N20 20.7	163 05.8	S14 37.7	Rasalhague	96 05.5	N12 33.3		
	07	42 59.2	310 45.5	48.2	198 12.5	12.5	279 49.6	20.6	178 08.3	37.7	Régulus	207 43.0	N11 53.7		
	08	58 01.7	325 44.7	48.3	213 13.8	13.0	294 51.5	20.5	193 10.8	37.7	Rigel	281 11.6	S 8 11.2		
	09	73 04.2	340 43.9	48.4	228 15.1	13.5	309 53.4	20.4	208 13.2	37.7	Rigil Kent.	139 50.4	S60 53.8		
	10	88 06.6	355 43.1	48.4	243 16.4	14.0	324 55.3	20.2	223 15.7	37.7	Sabik	102 11.4	S15 44.4		
	11	103 09.1	10 42.2	48.5	258 17.7	14.5	339 57.2	20.1	238 18.2	37.7					
	12	118 11.6	25 41.4	N22 48.5	273 19.0	S11 14.9	354 59.1	N20 20.0	253 20.7	S14 37.7	Schedar	349 39.4	N56 36.8		
	13	133 14.0	40 40.6	48.6	288 20.2	15.4	10 00.9	19.9	268 23.1	37.7	Shaula	96 20.5	S37 06.7		
	14	148 16.5	55 39.8	48.7	303 21.5	15.9	25 02.8	19.8	283 25.6	37.8	Sirius	258 33.4	S16 44.3		
	15	163 19.0	70 39.0	48.7	318 22.8	16.4	40 04.7	19.7	298 28.1	37.8	Spica	158 30.5	S11 14.2		
	16	178 21.4	85 38.2	48.8	333 24.1	16.9	55 06.6	19.5	313 30.5	37.8	Suhail	222 52.3	S43 29.7		
	17	193 23.9	100 37.4	48.8	348 25.4	17.4	70 08.5	19.4	328 33.0	37.8					
	18	208 26.3	115 36.6	N22 48.9	3 26.7	S11 17.9	85 10.4	N20 19.3	343 35.5	S14 37.8	Vega	80 38.0	N38 48.1		
	19	223 28.8	130 35.8	48.9	18 28.0	18.4	100 12.3	19.2	358 37.9	37.8	Zuben'ubi	137 04.4	S16 06.1		
	20	238 31.3	145 34.9	49.0	33 29.3	18.8	115 14.1	19.1	13 40.4	37.8					
	21	253 33.7	160 34.1	49.0	48 30.6	19.3	130 16.0	18.9	28 42.9	37.8		AHS	Paso Mer.		
	22	268 36.2	175 33.3	49.1	63 31.9	19.8	145 17.9	18.8	43 45.3	37.8	Venus	269 27.6	10 16		
	23	283 38.7	190 32.5	49.1	78 33.2	20.3	160 19.8	18.7	58 47.8	37.8	Marte	155 49.2	17 48		
Paso Mer. 4 12.5		v -0.8 d 0.1			v 1.3 d 0.5			v 1.9 d 0.1			v 2.5 d 0.0			Saturno 135 08.8 19 09	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna																		
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	18	19	20	21														
<i>d</i> <i>h</i>	°	°	°	°	°	°	°	h	m	h	m	h	m	h	m	h	m												
18 00	178	27.0	N21	04.2	285	30.0	10.4	N	5	33.1	10.8	58.6	N	72	21	44	21	05											
	01	193	27.0		03.8	299	59.4	10.5		5	43.9	10.7	58.6	N	70	21	57	22	08										
	02	208	27.0		03.3	314	28.9	10.4		5	54.6	10.6	58.6	66	01	52	22	18	23	08									
	03	223	26.9	.	02.9	328	58.3	10.5		6	05.2	10.6	58.5	64	02	27	22	26	23	02	23	28							
	04	238	26.9		02.4	343	27.8	10.5		6	15.8	10.6	58.5	62	02	52	22	32	22	51	23	15	23	44					
	05	253	26.8		02.0	357	57.3	10.5		6	26.4	10.5	58.5	60	03	11	22	38	23	00	23	26	23	58					
	06	268	26.8	N21	01.6	12	26.8	10.6	N	6	36.9	10.5	58.4	N	58	03	27	22	44	23	08	23	36	24	10				
	07	283	26.7		01.1	26	56.4	10.5		6	47.4	10.4	58.4	56	01	08	02	47	03	41	22	48	23	14	23	44	24	20	
	08	298	26.7		00.7	41	25.9	10.6		6	57.8	10.3	58.3	54	01	48	03	04	03	53	22	52	23	20	23	52	24	22	
	09	313	26.6	21	00.2	55	55.5	10.6		7	08.1	10.3	58.3	52	02	14	03	18	04	03	22	56	23	26	23	59	24	37	
V I E R N E S	10	328	26.6	20	59.8	70	25.1	10.6		7	18.4	10.3	58.3	50	02	34	03	31	04	12	23	00	23	31	24	05	00	05	
	11	343	26.5		59.4	84	54.7	10.6		7	28.7	10.2	58.2	45	03	10	03	56	04	31	23	07	23	41	24	18	00	18	
	12	358	26.5	N20	58.9	99	24.3	10.7	N	7	38.9	10.1	58.2	N	40	03	36	04	15	04	47	23	14	23	50	24	30	00	30
	13	13	26.4		58.5	113	54.0	10.6		7	49.0	10.1	58.2	35	03	56	04	31	05	00	23	19	23	58	24	39	00	39	
	14	28	26.4		58.0	128	23.6	10.7		7	59.1	10.1	58.1	30	04	12	04	45	05	11	23	24	24	05	00	05	00	47	
	15	43	26.3	.	57.6	142	53.3	10.6		8	09.2	9.9	58.1	20	04	38	05	07	05	31	23	32	24	17	00	17	01	02	
	16	58	26.3		57.2	157	22.9	10.7		8	19.1	10.0	58.1	N	10	04	58	05	25	05	47	23	40	24	27	00	27	01	15
	17	73	26.2		56.7	171	52.6	10.7		8	29.1	9.8	58.0	0	05	15	05	41	06	03	23	47	24	37	00	37	01	26	
	18	88	26.2	N20	56.3	186	22.3	10.7	N	8	38.9	9.8	58.0	S	10	05	30	05	56	06	18	23	54	24	46	00	46	01	38
	19	103	26.2		55.8	200	52.0	10.7		8	48.7	9.8	58.0	20	05	44	06	11	06	34	24	01	00	01	00	57	01	51	
S Á B A D O	20	118	26.1		55.4	215	21.7	10.8		8	58.5	9.7	57.9	30	05	58	06	27	06	53	24	10	00	10	01	09	02	06	
	21	133	26.1	.	54.9	229	51.5	10.7		9	08.2	9.6	57.9	35	06	05	06	36	07	04	24	15	00	15	01	16	02	15	
	22	148	26.0		54.5	244	21.2	10.8		9	17.8	9.6	57.9	40	06	13	06	46	07	16	24	21	00	21	01	24	02	24	
	23	163	26.0		54.0	258	51.0	10.7		9	27.4	9.5	57.8	45	06	21	06	58	07	30	24	28	00	28	01	33	02	36	
	19 00	178	25.9	N20	53.6	273	20.7	10.8	N	9	36.9	9.4	57.8	S	50	06	31	07	11	07	48	24	36	00	36	01	45	02	50
	01	193	25.9		53.1	287	50.5	10.8		9	46.3	9.4	57.8	52	06	35	07	17	07	56	24	40	00	40	01	50	02	57	
	02	208	25.9		52.7	302	20.3	10.7		9	55.7	9.3	57.7	54	06	40	07	24	08	06	24	44	00	44	01	56	03	04	
	03	223	25.8	.	52.2	316	50.0	10.8		10	05.0	9.3	57.7	56	06	45	07	32	08	16	24	48	00	48	02	02	03	12	
	04	238	25.8		51.8	331	19.8	10.8		10	14.3	9.1	57.7	58	06	50	07	40	08	28	24	53	00	53	02	10	03	21	
	05	253	25.7		51.3	345	49.6	10.8		10	23.4	9.2	57.6	S	60	06	56	07	50	08	42	24	59	00	59	02	18	03	32
S Á B A D O	06	268	25.7	N20	50.9	0	19.4	10.8	N10	32.6	9.0	57.6	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna										
	07	283	25.6		50.4	14	49.2	10.9		10	41.6	9.0	57.5																
	08	298	25.6		50.0	29	19.1	10.8		10	50.6	8.9	57.5																
	09	313	25.6	.	49.5	43	48.9	10.8		10	59.5	8.9	57.5																
	10	328	25.5		49.0	58	18.7	10.8		11	08.4	8.8	57.4																
	11	343	25.5		48.6	72	48.5	10.9		11	17.2	8.7	57.4	N	72	13	03	14	55	16	50	17	52	18	54	19	57	20	59
	12	358	25.4	N20	48.1	87	18.4	10.8	N11	25.9	8.6	57.4	N	70	12	51	14	34	16	15	17	52	18	54	19	57	20	59	
	13	13	25.4		47.7	101	48.2	10.8		11	34.5	8.6	57.3	68	23	18	14	18	15	51	17	17	52	18	54	19	57	20	59
	14	28	25.4		47.2	116	18.0	10.9		11	43.1	8.5	57.3	66	22	17	13	14	15	52	16	52	18	54	19	57	20	59	
	15	43	25.3	.	46.8	130	47.9	10.8		11	51.6	8.4	57.3	64	21	43	13	14	15	57	16	33	18	54	19	57	20	59	
16	58	25.3		46.3	145	17.7	10.9		12	00.0	8.4	57.2	62	21	19	12	25	13	45	15	04	16	17	52	18	54	19	57	
D O M I N G O	17	73	25.2		45.8	159	47.6	10.8		12	08.4	8.2	57.2	60	21	00	12	12	16	13	37	14	53	16	04	17	52	18	54
	18	88	25.2	N20	45.4	174	17.4	10.9	N12	16.6	8.3	57.2	N	58	20	44	21	45	12	12	13	30	14	44	15	53	16	04	
	19	103	25.2		44.9	188	47.3	10.9		12	24.9	8.1	57.2	56	20	31	21	25	23	00	12	08	13	24	14	36	15	43	
	20	118	25.1		44.5	203	17.2	10.8		12	33.0	8.0	57.1	54	20	19	21	08	22	22	12	04	13	18	14	29	15	34	
	21	133	25.1	.	44.0	217	47.0	10.9		12	41.0	8.0	57.1	52	20	09	20	53	21	57	12	01	13	13	14	22	15	26	
	22	148	25.0		43.5	232	16.9	10.9		12	49.0	7.9	57.1	50	20	00	20	41	21	38	11	58	13	09	14	16	15	19	
	23	163	25.0		43.1	246	46.8	10.8		12	56.9	7.9	57.0	45	19	41	20	16	21	02	11	52	12	59	14	04	15	04	
	20 00	178	25.0	N20	42.6	261	16.6	10.9	N13	04.8	7.7	57.0	N	40	19	25	19	57	20	36	11	47	12	51	13	53	14	52	
	01	193	24.9		42.1	275	46.5	10.9		13	12.5	7.7	57.0	35	19	12	19	41	20	16	11	43	12	44	13	44	14	42	
	02	208	24.9		41.7	290	16.4	10.8		13	20.2	7.6	56.9	30	19	01	19	28	20	00	11	39	12	38	13	37	14	33	
03	223	24.8	.	41.2	304	46.2	10.9		13	27.8	7.5	56.9	20	18	42	19	06	19	34	11	32	12	28	13	23	14	17		
04	238	24.8		40.7	319	16.1	10.9		13	35.3	7.5	56.9	N	10	18	25	18	48	19	14	11	26	12	19	13	11	14	03	
05	253	24.8		40.3	333	46.0	10.8		13	42.8	7.4	56.8	0	18	10	18	32	18	58	11	20	12	11	13	01	13	50		
D O M I N G O	06	268	24.7	N20	39.8	348	15.8	10.9																					

UT (HmGr)	ARIES			VENUS -3.8			MARTE +0.3			JÚPITER -1.8			SATURNO+0.5			ESTRELLAS			
	AHGr	AHGr	Dec	AHGr	Dec		AHGr	Dec		AHGr	Dec		AHGr	Dec		Nombre	AHS	Dec	
LUNES	21 00	298 41.1	205 31.7	N22 49.2	93 34.4	S11 20.8	175 21.7	N20 18.6	73 50.3	S14 37.9	Acamar	315 17.9	S40 14.6						
	01	313 43.6	220 30.9	49.2	108 35.7	21.3	190 23.6	18.5	88 52.7	37.9	Achernar	335 26.3	S57 09.5						
	02	328 46.1	235 30.1	49.3	123 37.0	21.8	205 25.4	18.4	103 55.2	37.9	Acrux	173 08.5	S63 11.1						
	03	343 48.5	250 29.3	49.3	138 38.3	22.3	220 27.3	18.2	118 57.7	37.9	Adhara	255 12.3	S28 59.6						
	04	358 51.0	265 28.5	49.4	153 39.6	22.8	235 29.2	18.1	134 00.1	37.9	Aldebarán	290 48.7	N16 32.1						
	05	13 53.5	280 27.6	49.4	168 40.9	23.2	250 31.1	18.0	149 02.6	37.9									
	06	28 55.9	295 26.8	N22 49.4	183 42.2	S11 23.7	265 33.0	N20 17.9	164 05.1	S14 37.9	Alioth	166 20.3	N55 53.1						
	07	43 58.4	310 26.0	49.5	198 43.5	24.2	280 34.9	17.8	179 07.5	37.9	Alkaid	152 58.4	N49 14.8						
	08	59 00.8	325 25.2	49.5	213 44.7	24.7	295 36.8	17.6	194 10.0	37.9	Al Na'ir	27 42.4	S46 53.5						
	09	74 03.3	340 24.4	49.6	228 46.0	25.2	310 38.6	17.5	209 12.5	38.0	Anilam	275 45.9	S 1 11.7						
	10	89 05.8	355 23.6	49.6	243 47.3	25.7	325 40.5	17.4	224 14.9	38.0	Alphard	217 55.6	S 8 43.4						
	11	104 08.2	10 22.8	49.6	258 48.6	26.2	340 42.4	17.3	239 17.4	38.0									
	12	119 10.7	25 22.0	N22 49.7	273 49.9	S11 26.7	355 44.3	N20 17.2	254 19.9	S14 38.0	Alphecca	126 10.2	N26 40.3						
	13	134 13.2	40 21.1	49.7	288 51.2	27.2	10 46.2	17.1	269 22.3	38.0	Alpheratz	357 42.5	N29 10.2						
	14	149 15.6	55 20.3	49.7	303 52.4	27.6	25 48.1	16.9	284 24.8	38.0	Altair	62 07.1	N 8 54.7						
	15	164 18.1	70 19.5	49.7	318 53.7	28.1	40 50.0	16.8	299 27.2	38.0	Ankaa	353 14.8	S42 13.3						
	16	179 20.6	85 18.7	49.8	333 55.0	28.6	55 51.8	16.7	314 29.7	38.0	Antares	112 25.1	S26 27.7						
	17	194 23.0	100 17.9	49.8	348 56.3	29.1	70 53.7	16.6	329 32.2	38.0									
	18	209 25.5	115 17.1	N22 49.8	3 57.6	S11 29.6	85 55.6	N20 16.5	344 34.6	S14 38.1	Arcturus	145 55.0	N19 06.6						
	19	224 28.0	130 16.3	49.9	18 58.8	30.1	100 57.5	16.3	359 37.1	38.1	Atria	107 25.7	S69 03.2						
	20	239 30.4	145 15.4	49.9	34 00.1	30.6	115 59.4	16.2	14 39.6	38.1	Avior	234 18.3	S59 33.6						
	21	254 32.9	160 14.6	49.9	49 01.4	31.1	131 01.3	16.1	29 42.0	38.1	Bellatrix	278 31.4	N 6 21.6						
	22	269 35.3	175 13.8	49.9	64 02.7	31.6	146 03.1	16.0	44 44.5	38.1	Betelgeuse	271 00.8	N 7 24.4						
	23	284 37.8	190 13.0	49.9	79 04.0	32.0	161 05.0	15.9	59 47.0	38.1									
MARTES	22 00	299 40.3	205 12.2	N22 50.0	94 05.2	S11 32.5	176 06.9	N20 15.8	74 49.4	S14 38.1	Canopus	263 56.3	S52 42.3						
	01	314 42.7	220 11.4	50.0	109 06.5	33.0	191 08.8	15.6	89 51.9	38.1	Capella	280 33.7	N46 00.4						
	02	329 45.2	235 10.6	50.0	124 07.8	33.5	206 10.7	15.5	104 54.3	38.1	Deneb	49 30.4	N45 20.1						
	03	344 47.7	250 09.7	50.0	139 09.1	34.0	221 12.6	15.4	119 56.8	38.2	Denebola	182 33.1	N14 29.5						
	04	359 50.1	265 08.9	50.0	154 10.3	34.5	236 14.5	15.3	134 59.3	38.2	Diphda	348 55.0	S17 54.2						
	05	14 52.6	280 08.1	50.0	169 11.6	35.0	251 16.3	15.2	150 01.7	38.2									
	06	29 55.1	295 07.3	N22 50.1	184 12.9	S11 35.5	266 18.2	N20 15.0	165 04.2	S14 38.2	Dubhe	193 51.4	N61 40.5						
	07	44 57.5	310 06.5	50.1	199 14.1	36.0	281 20.1	14.9	180 06.7	38.2	Elnath	278 11.9	N28 36.9						
	08	60 00.0	325 05.7	50.1	214 15.4	36.5	296 22.0	14.8	195 09.1	38.2	Eltanin	90 45.3	N51 29.6						
	09	75 02.5	340 04.9	50.1	229 16.7	36.9	311 23.9	14.7	210 11.6	38.2	Enif	33 46.1	N 9 56.7						
	10	90 04.9	355 04.0	50.1	244 18.0	37.4	326 25.8	14.6	225 14.0	38.2	Fomalhaut	15 22.9	S29 32.4						
	11	105 07.4	10 03.2	50.1	259 19.2	37.9	341 27.7	14.4	240 16.5	38.3									
	12	120 09.8	25 02.4	N22 50.1	274 20.5	S11 38.4	356 29.5	N20 14.3	255 19.0	S14 38.3	Gacrux	172 00.1	S57 11.9						
	13	135 12.3	40 01.6	50.1	289 21.8	38.9	11 31.4	14.2	270 21.4	38.3	Gienah	175 51.6	S17 37.4						
	14	150 14.8	55 00.8	50.1	304 23.0	39.4	26 33.3	14.1	285 23.9	38.3	Hadar	148 46.6	S60 26.8						
	15	165 17.2	70 00.0	50.1	319 24.3	39.9	41 35.2	14.0	300 26.3	38.3	Hamal	327 59.9	N23 31.7						
	16	180 19.7	84 59.1	50.1	334 25.6	40.4	56 37.1	13.8	315 28.8	38.3	Kaus Aust.	83 42.4	S34 22.4						
	17	195 22.2	99 58.3	50.1	349 26.9	40.9	71 39.0	13.7	330 31.3	38.3									
	18	210 24.6	114 57.5	N22 50.1	4 28.1	S11 41.4	86 40.9	N20 13.6	345 33.7	S14 38.3	Kochab	137 19.9	N74 06.1						
	19	225 27.1	129 56.7	50.1	19 29.4	41.9	101 42.7	13.5	0 36.2	38.4	Markab	13 37.3	N15 17.1						
	20	240 29.6	144 55.9	50.1	34 30.7	42.3	116 44.6	13.4	15 38.6	38.4	Menkar	314 14.3	N 4 08.7						
	21	255 32.0	159 55.1	50.1	49 31.9	42.8	131 46.5	13.3	30 41.1	38.4	Menkent	148 06.6	S36 26.6						
	22	270 34.5	174 54.3	50.1	64 33.2	43.3	146 48.4	13.1	45 43.6	38.4	Miaplacidus	221 40.3	S69 46.9						
	23	285 36.9	189 53.4	50.1	79 34.4	43.8	161 50.3	13.0	60 46.0	38.4									
MIÉRCOLES	23 00	300 39.4	204 52.6	N22 50.1	94 35.7	S11 44.3	176 52.2	N20 12.9	75 48.5	S14 38.4	Mirfak	308 39.4	N49 54.4						
	01	315 41.9	219 51.8	50.1	109 37.0	44.8	191 54.1	12.8	90 50.9	38.4	Nunki	75 57.0	S26 16.5						
	02	330 44.3	234 51.0	50.1	124 38.2	45.3	206 55.9	12.7	105 53.4	38.4	Peacock	53 17.5	S56 41.0						
	03	345 46.8	249 50.2	50.1	139 39.5	45.8	221 57.8	12.5	120 55.8	38.5	Póllux	243 27.2	N27 59.3						
	04	0 49.3	264 49.4	50.0	154 40.8	46.3	236 59.7	12.4	135 58.3	38.5	Procyon	244 59.3	N 5 11.1						
	05	15 51.7	279 48.5	50.0	169 42.0	46.8	252 01.6	12.3	151 00.8	38.5									
	06	30 54.2	294 47.7	N22 50.0	184 43.3	S11 47.3	267 03.5	N20 12.2	166 03.2	S14 38.5	Rasalhague	96 05.5	N12 33.3						
	07	45 56.7	309 46.9	50.0	199 44.6	47.8	282 05.4	12.1	181 05.7	38.5	Régulus	207 43.0	N11 53.7						
	08	60 59.1	324 46.1	50.0	214 45.8	48.2	297 07.3	11.9	196 08.1	38.5	Rigel	281 11.6	S 8 11.2						
	09	76 01.6	339 45.3	50.0	229 47.1	48.7	312 09.1	11.8	211 10.6	38.5	Rigil Kent.	139 50.4	S60 58.8						
	10	91 04.1	354 44.5	50.0	244 48.3	49.2	327 11.0	11.7	226 13.1	38.6	Sabik	102 11.4	S15 44.4						
	11	106 06.5	9 43.6	49.9	259 49.6	49.7	342 12.9	11.6	241 15.5	38.6									
	12	121 09.0	24 42.8	N22 49.9	274 50.8	S11 50.2	357 14.8	N20 11.5	256 18.0	S14 38.6	Schedar	349 39.3	N56 36.8						
	13	136 11.4	39 42.0	49.9	289 52.1	50.7	12 16.7	11.3	271 20.4	38.6	Shaula	96 20.5	S37 06.7						
	14	151 13.9	54 41.2	49.9	304 53.4	51.2	27 18.6	11.2	286 22.9	38.6	Sirius	258 33.4	S16 44.3						
	15	166 16.4	69 40.4	49.8	319 54.6	51.7	42 20.4	11.1	301 25.3	38.6	Spica	158 30.5	S11 14.2						
	16	181 18.8	84 39.6	49.8	334 55.9	52.2	57 22.3	11.0	316 27.8	38.6	Suhail	222 52.3	S43 29.7						
	17	196 21.3	99 38.7	49.8	349 57.1	52.7	72 24.2	10.9	331 30.2	38.6									
	18	211 23.8	114 37.9	N22 49.8	4 58.4	S11 53.2	87 26.1	N20 10.7	346 32.7	S14 38.7	Vega	80 38.0	N38 48.2						
	19	226 26.2	129 37.1	49.7	19 59.6	53.7	102 28.0	10.6	1 35.2	38.7	Zuben'ubi	137 04.5	S16 06.1						
	20	241 28.7	144 36.3	49.7	35 00.9	54.2	117 29.9	10.5	16 37.6	38.7									
	21	256 31.2	159 35.5	49.7	50 02.2	54.6	132 31.8	10.4	31 40.1	38.7									
	22	271 33.6	174 34.6	49.6	65 03.4	55.1	147 33.6	10.3	46 42.5	38.7	Venus	265 31.9	h 10 20						
	23	286 36.1	189 33.8	49.6	80 04.7	55.6	162 35.5	10.1	61 45.0	38.7	Marte	154 25.0	17 42						
										Júpiter	236 26.6	12 14							
										Saturno	135 09.1	18 58							
Paso Mer.	4 00.7																		
						</													

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	ν	Dec	d		Ph	Náut.		Civil	21	22	23	24
L U N E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m
	00	178 24.1	N20 31.3	249 13.4	10.9	N15 48.8	5.8 56.3	68	01 13	02 05	02 36	22 08	22 26	23 09	24 21
	01	193 24.1	30.8	263 43.3	10.8	15 54.6	5.7 56.2	66	02 05	02 36	02 59	22 43	23 12	23 58	25 02
	02	208 24.1	30.3	278 13.1	10.9	16 00.3	5.6 56.2	64	02 20	03 23	04 07	23 08	23 42	24 29	00 29
	03	223 24.0	29.9	292 43.0	10.9	16 05.9	5.5 56.2	62	02 39	03 35	04 16	23 28	24 05	00 05	00 52
	04	238 24.0	29.4	307 12.9	10.8	16 11.4	5.5 56.2	60	02 57	03 53	04 34	23 44	24 23	00 23	01 11
	05	253 24.0	28.9	321 42.7	10.9	16 16.9	5.3 56.1	58	03 14	04 18	04 49	23 58	24 38	00 38	01 26
	06	268 23.9	N20 28.4	336 12.6	10.8	N16 22.2	5.3 56.1	56	03 39	04 43	05 02	24 10	00 10	00 50	01 39
	07	283 23.9	27.9	350 42.4	10.9	16 27.5	5.2 56.1	54	04 14	05 13	05 44	24 20	00 20	01 01	01 50
	08	298 23.9	27.4	5 12.3	10.8	16 32.7	5.1 56.1	52	04 39	05 38	05 57	24 29	00 29	01 11	02 00
	09	313 23.8	27.0	19 42.1	10.9	16 37.8	5.0 56.0	50	05 15	06 14	06 34	24 37	00 37	01 20	02 08
	10	328 23.8	26.5	34 12.0	10.9	16 42.8	4.9 56.0	48	05 41	06 40	06 59	00 05	00 44	01 27	02 16
	11	343 23.8	26.0	48 41.9	10.8	16 47.7	4.8 56.0	46	06 19	07 18	07 37	00 18	00 59	01 44	02 33
	12	358 23.7	N20 25.5	63 11.7	10.9	N16 52.5	4.7 55.9	44	06 46	07 45	07 54	00 30	01 12	01 58	02 47
	13	13 23.7	25.0	77 41.6	10.8	16 57.2	4.7 55.9	42	07 24	08 23	08 32	00 39	01 23	02 09	02 58
	14	28 23.7	24.5	92 11.4	10.9	17 01.9	4.5 55.9	40	07 57	08 56	09 05	00 47	01 32	02 19	03 08
	15	43 23.7	24.0	106 41.3	10.9	17 06.4	4.5 55.9	38	08 35	09 34	09 43	01 02	01 49	02 37	03 26
	16	58 23.6	23.6	121 11.2	10.8	17 10.9	4.3 55.8	36	09 14	10 13	10 22	01 15	02 03	02 52	03 41
	17	73 23.6	23.1	135 41.0	10.9	17 15.2	4.3 55.8	34	09 52	10 51	10 59	01 26	02 16	03 06	03 55
	18	88 23.6	N20 22.6	150 10.9	10.9	N17 19.5	4.2 55.8	32	10 30	11 29	11 38	01 38	02 30	03 20	04 09
	19	103 23.5	22.1	164 40.8	10.8	17 23.7	4.1 55.8	30	11 08	12 07	12 16	01 51	02 44	03 36	04 25
	20	118 23.5	21.6	179 10.6	10.9	17 27.8	4.0 55.7	28	11 46	12 45	12 54	02 06	03 01	03 53	04 42
	21	133 23.5	21.1	193 40.5	10.9	17 31.8	3.9 55.7	26	12 24	13 23	13 32	02 15	03 11	04 03	04 52
	22	148 23.5	20.6	208 10.4	10.8	17 35.7	3.8 55.7	24	13 02	14 01	14 10	02 24	03 22	04 15	05 04
	23	163 23.4	20.1	222 40.2	10.9	17 39.5	3.8 55.7	22	13 40	14 39	14 48	02 36	03 35	04 29	05 18
M A R T E S	2200	178 23.4	N20 19.6	237 10.1	10.9	N17 43.3	3.6 55.6	50	06 28	07 27	07 36	02 50	03 51	04 46	05 34
	01	193 23.4	19.1	251 40.0	10.9	17 46.9	3.5 55.6	48	07 06	08 05	08 14	02 57	03 58	04 54	05 42
	02	208 23.4	18.6	266 09.9	10.9	17 50.4	3.5 55.6	46	07 44	08 43	08 52	03 04	04 06	05 02	05 51
	03	223 23.3	18.1	280 39.8	10.9	17 53.9	3.4 55.6	44	08 22	09 21	09 30	03 12	04 16	05 12	06 01
	04	238 23.3	17.7	295 09.7	10.9	17 57.3	3.2 55.6	42	09 00	10 00	10 09	03 21	04 26	05 24	06 12
	05	253 23.3	17.2	309 39.6	10.9	18 00.5	3.2 55.5	40	09 38	10 38	10 47	03 32	04 39	05 37	06 25
	06	268 23.3	N20 16.7	324 09.5	10.9	N18 03.7	3.1 55.5	38	10 16	11 16	11 25	03 43	04 50	05 48	06 36
	07	283 23.2	16.2	338 39.4	10.9	18 06.8	3.0 55.5	36	10 54	11 54	12 03	03 54	05 01	05 59	06 47
	08	298 23.2	15.7	353 09.3	10.9	18 09.8	2.9 55.5	34	11 32	12 32	12 41	04 05	05 12	06 10	06 58
	09	313 23.2	15.2	7 39.2	10.9	18 12.7	2.8 55.4	32	12 10	13 10	13 19	04 16	05 23	06 21	07 09
	10	328 23.2	14.7	22 09.1	11.0	18 15.5	2.7 55.4	30	12 48	13 48	13 57	04 27	05 34	06 32	07 20
	11	343 23.1	14.2	36 39.1	10.9	18 18.2	2.6 55.4	28	13 26	14 26	14 35	04 38	05 45	06 43	07 31
	12	358 23.1	N20 13.7	51 09.0	10.9	N18 20.8	2.5 55.4	26	14 04	15 04	15 13	04 49	05 56	06 54	07 42
	13	13 23.1	13.2	65 38.9	11.0	18 23.3	2.4 55.4	24	14 42	15 42	15 51	04 59	06 06	07 04	07 52
	14	28 23.1	12.7	80 08.9	11.0	18 25.7	2.4 55.3	22	15 20	16 20	16 29	05 10	06 17	07 15	08 03
	15	43 23.0	12.2	94 38.9	10.9	18 28.1	2.2 55.3	20	15 58	16 58	17 07	05 21	06 28	07 26	08 14
	16	58 23.0	11.7	109 08.8	11.0	18 30.3	2.1 55.3	18	16 36	17 36	17 45	05 32	06 39	07 37	08 25
	17	73 23.0	11.2	123 38.8	11.0	18 32.4	2.1 55.3	16	17 14	18 14	18 23	05 43	06 50	07 48	08 36
	18	88 23.0	N20 10.7	138 08.8	11.0	N18 34.5	2.0 55.2	14	17 52	18 52	19 01	05 54	07 01	07 59	08 47
	19	103 22.9	10.2	152 38.8	11.0	18 36.5	1.8 55.2	12	18 30	19 30	19 39	06 05	07 12	08 10	08 58
	20	118 22.9	09.6	167 08.8	11.0	18 38.3	1.8 55.2	10	19 08	20 08	20 17	06 16	07 23	08 21	09 09
	21	133 22.9	09.1	181 38.8	11.0	18 40.1	1.7 55.2	8	19 46	20 46	20 55	06 27	07 34	08 32	09 20
	22	148 22.9	08.6	196 08.8	11.0	18 41.8	1.6 55.2	6	20 24	21 24	21 33	06 38	07 45	08 43	09 31
	23	163 22.9	08.1	210 38.8	11.1	18 43.4	1.4 55.1	4	21 02	22 02	22 11	06 49	07 56	08 54	09 42
	M I É R C O L E S	2300	178 22.8	N20 07.6	225 08.9	11.0	N18 44.8	1.4 55.1	40	19 23	20 23	20 33	06 59	08 06	09 04	09 52
01		193 22.8	07.1	239 38.9	11.1	18 46.2	1.3 55.1	38	20 01	21 01	21 11	07 10	08 17	09 15	10 03
02		208 22.8	06.6	254 09.0	11.1	18 47.5	1.3 55.1	36	20 39	21 39	21 49	07 21	08 28	09 26	10 14
03		223 22.8	06.1	268 39.1	11.1	18 48.8	1.1 55.1	34	21 17	22 17	22 27	07 32	08 39	09 37	10 25
04		238 22.8	05.6	283 09.2	11.1	18 49.9	1.0 55.0	32	21 55	22 55	23 05	07 43	08 50	09 48	10 36
05		253 22.7	05.1	297 39.3	11.1	18 50.9	0.9 55.0	30	22 33	23 33	23 43	07 54	09 01	10 00	10 48
06		268 22.7	N20 04.6	312 09.4	11.1	N18 51.8	0.9 55.0	28	23 11	24 11	24 21	08 05	09 12	10 10	10 58
07		283 22.7	04.1	326 39.5	11.2	18 52.7	0.7 55.0	26	23 49	24 49	24 59	08 16	09 23	10 21	11 09
08		298 22.7	03.5	341 09.7	11.1	18 53.4	0.7 55.0	24	24 27	25 27	25 37	08 27	09 34	10 32	11 20
09		313 22.7	03.0	355 39.8	11.2	18 54.1	0.5 55.0	22	25 05	26 05	26 15	08 38	09 45	10 43	11 31
10		328 22.6	02.5	10 10.0	11.2	18 54.6	0.5 54.9	20	25 43	26 43	26 53	08 49	09 56	10 54	11 42
11		343 22.6	02.0	24 40.2	11.2	18 55.1	0.3 54.9	18	26 21	27 21	27 31	08 59	10 06	11 04	11 52
12		358 22.6	N20 01.5	39 10.4	11.2	N18 55.4	0.3 54.9	16	26 59	27 59	28 09	09 09	10 16	11 14	12 02
13		13 22.6	01.0	53 40.6	11.2	18 55.7	0.2 54.9	14	27 37	28 37	28 47	09 19	10 26	11 24	12 12
14		28 22.6	00.5	68 10.8	11.3	18 55.9	0.1 54.9	12	28 15	29 15	29 25	09 29	10 36	11 34	12 22
15		43 22.6	20 00.0	82 41.1	11.3	18 56.0	0.0 54.9	10	28 53	29 53	29 63	09 39	10 46	11 44	12 32
16		58 22.5	19 59.4	97 11.4	11.2	18 56.0	0.1 54.8	8	29 31	30 31	30 41	09 49	10 56	11 54	12 42
17		73 22.5	58.9	111 41.6	11.3	18 55.9	0.2 54.8	6	30 09	31 09	31 19	09 59	11 06	12 04	12 52
18		88 22.5	N19 58.4	126 11.9	11.4	N18 55.7	0.2 54.8	4	30 47	31 47	31 57	10 09	11 16	12 14	13 02
19		103 22.5	57.9	140 42.3	11.3	18 55.5	0.4 54.8	2	31 25	32 25	32 35	10 19	11 26	12 24	13 12
20		118 22.5	57.4	155 12.6	11.4	18 55.1	0.5 54.8	0	32 03	3					

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.3	JÚPITER -1.8	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
24 00	301 38.6	204 33.0 N22 49.6	95 05.9 S11 56.1	177 37.4 N20 10.0	76 47.4 S14 38.7	Acamar 315 17.9 S40 14.6
01	316 41.0	219 32.2 49.5	110 07.2 56.6	192 39.3 09.9	91 49.9 38.8	Achernar 335 26.2 S57 09.5
02	331 43.5	234 31.4 49.5	125 08.4 57.1	207 41.2 09.8	106 52.3 38.8	Acrux 173 08.5 S63 11.1
03	346 45.9	249 30.6 . . 49.5	140 09.7 . . 57.6	222 43.1 . . 09.7	121 54.8 . . 38.8	Adhara 255 12.3 S28 59.6
04	1 48.4	264 29.7 49.4	155 10.9 58.1	237 45.0 09.5	136 57.3 38.8	Aldebarán 290 48.7 N16 32.1
05	16 50.9	279 28.9 49.4	170 12.2 58.6	252 46.8 09.4	151 59.7 38.8	
06	31 53.3	294 28.1 N22 49.3	185 13.4 S11 59.1	267 48.7 N20 09.3	167 02.2 S14 38.8	Alioth 166 20.3 N55 53.1
07	46 55.8	309 27.3 49.3	200 14.7 11 59.6	282 50.6 09.2	182 04.6 38.8	Alkaid 152 58.4 N49 14.8
08	61 58.3	324 26.5 49.2	215 15.9 12 00.1	297 52.5 09.1	197 07.1 38.9	Al Na'ir 27 42.4 S46 53.1
09	77 00.7	339 25.7 . . 49.2	230 17.2 . . 00.6	312 54.4 . . 08.9	212 09.5 . . 38.9	Alnilam 275 45.8 S 1 11.7
10	92 03.2	354 24.8 49.2	245 18.4 01.0	327 56.3 08.8	227 12.0 38.9	Alphard 217 55.6 S 8 43.4
11	107 05.7	9 24.0 49.1	260 19.7 01.5	342 58.2 08.7	242 14.4 38.9	
12	122 08.1	24 23.2 N22 49.1	275 20.9 S12 02.0	358 00.0 N20 08.6	257 16.9 S14 38.9	Alphecca 126 10.2 N26 40.3
13	137 10.6	39 22.4 49.0	290 22.1 02.5	13 01.9 08.5	272 19.3 38.9	Alpheratz 357 42.5 N29 10.2
14	152 13.1	54 21.6 49.0	305 23.4 03.0	28 03.8 08.3	287 21.8 38.9	Altair 62 07.1 N 8 54.7
15	167 15.5	69 20.7 . . 48.9	320 24.6 . . 03.5	43 05.7 . . 08.2	302 24.2 . . 39.0	Ankaa 353 14.8 S42 13.3
16	182 18.0	84 19.9 48.9	335 25.9 04.0	58 07.6 08.1	317 26.7 39.0	Antares 112 25.1 S26 27.7
17	197 20.4	99 19.1 48.8	350 27.1 04.5	73 09.5 08.0	332 29.1 39.0	
18	212 22.9	114 18.3 N22 48.7	5 28.4 S12 05.0	88 11.4 N20 07.9	347 31.6 S14 39.0	Arcturus 145 55.0 N19 06.6
19	227 25.4	129 17.5 48.7	20 29.6 05.5	103 13.3 07.7	2 34.0 39.0	Atria 107 25.7 S69 03.2
20	242 27.8	144 16.7 48.6	35 30.9 06.0	118 15.1 07.6	17 36.5 39.0	Avior 234 18.3 S59 33.5
21	257 30.3	159 15.8 . . 48.6	50 32.1 . . 06.5	133 17.0 . . 07.5	32 38.9 . . 39.1	Bellatrix 278 31.4 N 6 21.6
22	272 32.8	174 15.0 48.5	65 33.3 07.0	148 18.9 07.4	47 41.4 39.1	Betelgeuse 271 00.7 N 7 24.4
23	287 35.2	189 14.2 48.4	80 34.6 07.5	163 20.8 07.3	62 43.8 39.1	
25 00	302 37.7	204 13.4 N22 48.4	95 35.8 S12 08.0	178 22.7 N20 07.1	77 46.3 S14 39.1	Canopus 263 56.3 S52 42.2
01	317 40.2	219 12.6 48.3	110 37.1 08.5	193 24.6 07.0	92 48.7 39.1	Capella 280 33.6 N46 00.4
02	332 42.6	234 11.7 48.3	125 38.3 08.9	208 26.5 06.9	107 51.2 39.1	Deneb 49 30.4 N45 20.1
03	347 45.1	249 10.9 . . 48.2	140 39.5 . . 09.4	223 28.4 . . 06.8	122 53.6 . . 39.1	Denébola 182 33.1 N14 29.5
04	2 47.6	264 10.1 48.1	155 40.8 09.9	238 30.2 06.7	137 56.1 39.2	Diphda 348 55.0 S17 54.2
05	17 50.0	279 09.3 48.1	170 42.0 10.4	253 32.1 06.5	152 58.5 39.2	
06	32 52.5	294 08.5 N22 48.0	185 43.3 S12 10.9	268 34.0 N20 06.4	168 01.0 S14 39.2	Dubhe 193 51.4 N61 40.5
07	47 54.9	309 07.6 47.9	200 44.5 11.4	283 35.9 06.3	183 03.4 39.2	Elnath 278 11.9 N28 36.9
08	62 57.4	324 06.8 47.8	215 45.7 11.9	298 37.8 06.2	198 05.9 39.2	Eltanin 90 45.3 N51 29.6
09	77 59.9	339 06.0 . . 47.8	230 47.0 . . 12.4	313 39.7 . . 06.0	213 08.3 . . 39.2	Enif 33 46.0 N 9 56.7
10	93 02.3	354 05.2 47.7	245 48.2 12.9	328 41.6 05.9	228 10.8 39.3	Fomalhaut 15 22.9 S29 32.4
11	108 04.8	9 04.4 47.6	260 49.4 13.4	343 43.4 05.8	243 13.2 39.3	
12	123 07.3	24 03.6 N22 47.5	275 50.7 S12 13.9	358 45.3 N20 05.7	258 15.7 S14 39.3	Gacrux 172 00.1 S57 11.9
13	138 09.7	39 02.7 47.5	290 51.9 14.4	13 47.2 05.6	273 18.1 39.3	Gienah 175 51.6 S17 37.4
14	153 12.2	54 01.9 47.4	305 53.1 14.9	28 49.1 05.4	288 20.6 39.3	Hadar 148 46.6 S60 26.8
15	168 14.7	69 01.1 . . 47.3	320 54.4 . . 15.4	43 51.0 . . 05.3	303 23.0 . . 39.3	Hamal 327 59.9 N23 31.7
16	183 17.1	84 00.3 47.2	335 55.6 15.9	58 52.9 05.2	318 25.5 39.4	Kaus Aust. 83 42.4 S34 22.4
17	198 19.6	98 59.5 47.2	350 56.8 16.4	73 54.8 05.1	333 27.9 39.4	
18	213 22.0	113 58.6 N22 47.1	5 58.1 S12 16.9	88 56.6 N20 04.9	348 30.4 S14 39.4	Kochab 137 20.0 N74 06.1
19	228 24.5	128 57.8 47.0	20 59.3 17.4	103 58.5 04.8	3 32.8 39.4	Markab 13 37.3 N15 17.1
20	243 27.0	143 57.0 46.9	36 00.5 17.8	119 00.4 04.7	18 35.3 39.4	Menkar 314 14.3 N 4 08.7
21	258 29.4	158 56.2 . . 46.8	51 01.8 . . 18.3	134 02.3 . . 04.6	33 37.7 . . 39.4	Menkent 148 06.6 S36 26.6
22	273 31.9	173 55.4 46.7	66 03.0 18.8	149 04.2 04.5	48 40.2 39.4	Miaplacidus 221 40.3 S69 46.8
23	288 34.4	188 54.5 46.6	81 04.2 19.3	164 06.1 04.3	63 42.6 39.5	
26 00	303 36.8	203 53.7 N22 46.5	96 05.4 S12 19.8	179 08.0 N20 04.2	78 45.1 S14 39.5	Mirfak 308 39.3 N49 54.4
01	318 39.3	218 52.9 46.5	111 06.7 20.3	194 09.9 04.1	93 47.5 39.5	Nunki 75 57.0 S26 16.5
02	333 41.8	233 52.1 46.4	126 07.9 20.8	209 11.7 04.0	108 50.0 39.5	Peacock 53 17.5 S56 41.0
03	348 44.2	248 51.3 . . 46.3	141 09.1 . . 21.3	224 13.6 . . 03.9	123 52.4 . . 39.5	Póllux 243 27.2 N27 59.3
04	3 46.7	263 50.5 46.2	156 10.4 21.8	239 15.5 03.7	138 54.8 39.5	Procyon 244 59.3 N 5 11.1
05	18 49.2	278 49.6 46.1	171 11.6 22.3	254 17.4 03.6	153 57.3 39.6	
06	33 51.6	293 48.8 N22 46.0	186 12.8 S12 22.8	269 19.3 N20 03.5	168 59.7 S14 39.6	Rasalhague 96 05.5 N12 33.3
07	48 54.1	308 48.0 45.9	201 14.0 23.3	284 21.2 03.4	184 02.2 39.6	Régulus 207 43.0 N11 53.7
08	63 56.5	323 47.2 45.8	216 15.3 23.8	299 23.1 03.2	199 04.6 39.6	Rigel 281 11.6 S 8 11.2
09	78 59.0	338 46.4 . . 45.7	231 16.5 . . 24.3	314 24.9 . . 03.1	214 07.1 . . 39.6	Rigel Kent. 139 50.5 S60 53.8
10	94 01.5	353 45.5 45.6	246 17.7 24.8	329 26.8 03.0	229 09.5 39.6	Sabik 102 11.4 S15 44.4
11	109 03.9	8 44.7 45.5	261 18.9 25.3	344 28.7 02.9	244 12.0 39.7	
12	124 06.4	23 43.9 N22 45.4	276 20.1 S12 25.8	359 30.6 N20 02.8	259 14.4 S14 39.7	Schedar 349 39.3 N56 36.8
13	139 08.9	38 43.1 45.3	291 21.4 26.3	14 32.5 02.6	274 16.9 39.7	Shaula 96 20.5 S37 06.7
14	154 11.3	53 42.3 45.2	306 22.6 26.8	29 34.4 02.5	289 19.3 39.7	Sirius 258 33.4 S16 44.3
15	169 13.8	68 41.4 . . 45.1	321 23.8 . . 27.3	44 36.3 . . 02.4	304 21.7 . . 39.7	Spica 158 30.5 S11 14.2
16	184 16.3	83 40.6 45.0	336 25.0 27.7	59 38.2 02.3	319 24.2 39.8	Suhail 222 52.3 S43 29.7
17	199 18.7	98 39.8 44.8	351 26.3 28.2	74 40.0 02.1	334 26.6 39.8	
18	214 21.2	113 39.0 N22 44.7	6 27.5 S12 28.7	89 41.9 N20 02.0	349 29.1 S14 39.8	Vega 80 38.0 N38 48.2
19	229 23.7	128 38.2 44.6	21 28.7 29.2	104 43.8 01.9	4 31.5 39.8	Zuben'ubi 137 04.5 S16 06.1
20	244 26.1	143 37.4 44.5	36 29.9 30.7	119 45.7 01.8	19 34.0 39.8	
21	259 28.6	158 36.5 . . 44.4	51 31.1 . . 30.2	134 47.6 . . 01.7	34 36.4 . . 39.8	AHS Paso Mer.
22	274 31.0	173 35.7 44.3	66 32.3 30.7	149 49.5 01.5	49 38.8 39.9	Venus 261 35.7 10 24
23	289 33.5	188 34.9 44.2	81 33.6 31.2	164 51.4 01.4	64 41.3 39.9	Marte 152 58.1 17 36
						Júpiter 235 45.0 12 05
						Saturno 135 08.6 18 46
Paso Mer.	3 48.9	v -0.8 d 0.1	v 1.2 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	24	25	26	27
J U E V E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m
	24 00	178 22.4	N19 55.3	213 14.2	N18 52.7	0.8	54.7	N 70				24 21	00 21	01 48	03 18
	01	193 22.4	54.8	227 44.6	18 51.9	0.9	54.7	68	////	////	01 34	25 02	01 02	02 18	03 40
	02	208 22.4	54.2	242 15.1	18 51.0	1.0	54.7	66	////	////	02 17	00 29	01 30	02 41	03 57
	03	223 22.4	53.7	256 45.6	18 50.0	1.1	54.7	64	////	00 43	02 46	00 52	01 51	02 58	04 11
	04	238 22.4	53.2	271 16.1	18 48.9	1.2	54.6	62	////	01 45	03 07	01 11	02 08	03 13	04 22
	05	253 22.3	52.7	285 46.6	18 47.7	1.3	54.6	60	////	02 17	03 24	01 26	02 22	03 25	04 32
	06	268 22.3	N19 52.1	300 17.1	N18 46.4	1.3	54.6	N 58	00 39	02 41	03 39	01 39	02 34	03 35	04 40
	07	283 22.3	51.6	314 47.7	18 45.1	1.5	54.6	56	01 35	02 59	03 51	01 50	02 45	03 45	04 48
	08	298 22.3	51.1	329 18.3	18 43.6	1.5	54.6	54	02 05	03 15	04 02	02 00	02 54	03 53	04 54
	09	313 22.3	50.6	343 48.9	18 42.1	1.6	54.6	52	02 28	03 28	04 11	02 08	03 02	04 00	05 00
	10	328 22.3	50.0	358 19.6	18 40.5	1.8	54.6	50	02 45	03 39	04 20	02 16	03 10	04 07	05 06
	11	343 22.3	49.5	12 50.3	18 38.7	1.8	54.5	45	03 18	04 03	04 37	02 33	03 25	04 21	05 17
	12	358 22.3	N19 49.0	27 20.9	N18 36.9	1.8	54.5	N 40	03 42	04 21	04 52	02 47	03 38	04 32	05 27
	13	13 22.2	48.5	41 51.7	18 35.1	2.0	54.5	35	04 01	04 36	05 04	02 58	03 49	04 42	05 35
	14	28 22.2	47.9	56 22.4	18 33.1	2.1	54.5	30	04 17	04 48	05 15	03 08	03 59	04 51	05 42
	15	43 22.2	47.4	70 53.2	18 31.0	2.1	54.5	20	04 41	05 09	05 33	03 26	04 15	05 05	05 55
	16	58 22.2	46.9	85 24.0	18 28.9	2.3	54.5	N 10	05 00	05 26	05 48	03 41	04 30	05 18	06 06
	17	73 22.2	46.3	99 54.8	18 26.6	2.3	54.5	0	05 16	05 41	06 03	03 55	04 43	05 30	06 16
	18	88 22.2	N19 45.8	114 25.7	N18 24.3	2.4	54.5	S 10	05 29	05 55	06 17	04 09	04 57	05 42	06 26
	19	103 22.2	45.3	128 56.5	18 21.9	2.5	54.4	20	05 42	06 09	06 33	04 25	05 11	05 55	06 37
	20	118 22.2	44.7	143 27.4	18 19.4	2.6	54.4	30	05 55	06 24	06 50	04 42	05 28	06 10	06 49
	21	133 22.2	44.2	157 58.4	18 16.8	2.6	54.4	35	06 02	06 33	07 00	04 52	05 37	06 19	06 56
	22	148 22.1	43.7	172 29.3	18 14.2	2.8	54.4	40	06 09	06 42	07 11	05 04	05 48	06 28	07 04
	23	163 22.1	43.1	187 00.3	18 11.4	2.8	54.4	45	06 17	06 53	07 25	05 18	06 01	06 40	07 14
V I E R N E S	25 00	178 22.1	N19 42.6	201 31.3	N18 08.6	2.9	54.4	S 50	06 25	07 05	07 41	05 34	06 17	06 53	07 25
	01	193 22.1	42.1	216 02.4	18 05.7	3.0	54.4	52	06 29	07 11	07 49	05 42	06 24	07 00	07 30
	02	208 22.1	41.5	230 33.5	18 02.7	3.1	54.4	54	06 33	07 17	07 57	05 51	06 32	07 07	07 36
	03	223 22.1	41.0	245 04.6	17 59.6	3.2	54.3	56	06 37	07 24	08 07	06 01	06 41	07 15	07 42
	04	238 22.1	40.5	259 35.7	17 56.4	3.2	54.3	58	06 42	07 31	08 18	06 12	06 51	07 23	07 50
	05	253 22.1	39.9	274 06.9	17 53.2	3.4	54.3	S 60	06 47	07 40	08 30	06 25	07 03	07 34	07 58
	06	268 22.1	N19 39.4	288 38.1	N17 49.8	3.4	54.3	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	07	283 22.1	38.9	303 09.3	17 46.4	3.5	54.3				24	25	26	27	
	08	298 22.1	38.3	317 40.5	17 42.9	3.5	54.3	N 72	h m	h m	h m	h m	h m	h m	h m
	09	313 22.1	37.8	332 11.8	17 39.4	3.7	54.3								
	10	328 22.1	37.2	346 43.1	17 35.7	3.7	54.3	N 70					21 45	21 32	21 23
	11	343 22.0	36.7	1 14.5	17 32.0	3.8	54.3	68	22 33	////	////	20 46	20 57	21 01	21 03
	12	358 22.0	N19 36.2	15 45.9	N17 28.2	3.9	54.2	66	21 53	////	////	20 05	20 26	20 39	20 47
	13	13 22.0	35.6	30 17.3	17 24.3	4.0	54.2	64	21 25	23 19	////	19 15	19 45	20 07	20 23
	14	28 22.0	35.1	44 48.7	17 20.3	4.0	54.2	62	21 04	22 24	////	18 58	19 30	19 55	20 14
	15	43 22.0	34.5	59 20.2	17 16.3	4.1	54.2	60	20 47	21 53	////	18 43	19 18	19 45	20 06
	16	58 22.0	N19 32.9	102 54.8	N17 03.7	4.4	54.2	N 58	20 33	21 30	23 24	18 31	19 07	19 36	19 59
	17	73 22.0	33.4	88 23.3	17 08.0	4.3	54.2	56	20 21	21 12	22 34	18 20	18 57	19 28	19 53
	18	88 22.0	32.9	102 54.8	N17 03.7	4.4	54.2	54	20 10	20 57	22 05	18 11	18 49	19 21	19 48
	19	103 22.0	32.4	117 26.4	16 59.3	4.4	54.2	52	20 01	20 44	21 44	18 02	18 41	19 14	19 43
	20	118 22.0	31.8	131 58.1	16 54.9	4.5	54.2	50	19 53	20 33	21 26	17 55	18 34	19 08	19 38
	21	133 22.0	31.3	146 29.7	16 50.4	4.6	54.2	45	19 35	20 10	20 54	17 39	18 20	18 56	19 28
	22	148 22.0	30.7	161 01.4	16 45.8	4.6	54.2	N 40	19 21	19 52	20 30	17 26	18 08	18 46	19 20
	23	163 22.0	30.2	175 33.2	16 41.2	4.7	54.1	35	19 09	19 37	20 11	17 14	17 57	18 37	19 13
	S Á B A D O	00	178 22.0	N19 29.6	190 05.0	N16 36.5	4.8	54.1	30	18 58	19 24	19 56	17 04	17 48	18 29	19 07
01		193 22.0	29.1	204 36.8	16 31.7	4.9	54.1	20	18 40	19 04	19 32	16 47	17 33	18 16	18 56
02		208 22.0	28.5	219 08.6	16 26.8	5.0	54.1	N 10	18 24	18 47	19 13	16 33	17 19	18 04	18 46
03		223 22.0	28.0	233 40.5	16 21.8	5.0	54.1	0	18 10	18 32	18 58	16 19	17 06	17 53	18 37
04		238 22.0	27.4	248 12.4	16 16.8	5.1	54.1	S 10	17 56	18 18	18 44	16 05	16 53	17 41	18 28
05		253 22.0	26.9	262 44.3	16 11.7	5.1	54.1	20	17 41	18 04	18 31	15 50	16 40	17 29	18 19
06		268 22.0	N19 26.3	277 16.3	N16 06.6	5.2	54.1	30	17 23	17 49	18 18	15 32	16 24	17 16	18 08
07		283 22.0	25.8	291 48.3	16 01.4	5.3	54.1	35	17 13	17 41	18 11	15 22	16 15	17 08	18 01
08		298 22.0	25.2	306 20.3	15 56.1	5.4	54.1	40	17 02	17 31	18 04	15 11	16 04	16 58	17 54
09		313 22.0	24.7	320 52.4	15 50.7	5.4	54.1	45	16 49	17 21	17 57	14 57	15 52	16 48	17 45
10		328 22.0	24.1	335 24.5	15 45.3	5.6	54.1	S 50	16 32	17 08	17 48	14 41	15 36	16 35	17 35
11		343 22.0	23.5	349 56.7	15 39.7	5.5	54.1	52	16 25	17 03	17 44	14 33	15 29	16 29	17 30
12		358 22.0	N19 23.0	4 28.8	N15 34.2	5.7	54.1	54	16 16	16 57	17 40	14 25	15 21	16 22	17 25
13		13 22.0	22.4	19 01.1	15 28.5	5.7	54.1	56	16 07	16 50	17 36	14 15	15 13	16 14	17 19
14		28 22.0	21.9	33 33.3	15 22.8	5.7	54.0	58	15 56	16 42	17 32	14 04	15 03	16 06	17 12
15		43 22.0	21.3	48 05.6	15 17.1	5.9	54.0	S 60	15 43	16 34	17 26	13 51	14 51	15 56	17 05
16		58 22.0	20.8	62 37.9	15 11.2	5.9	54.0	Día	SOL		Paso Mer.	LUNA			
17		73 22.0	20.2	77 10.2	15 05.3	5.9	54.0		Ec. Tiempo			Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase
18		88 22.0	N19 19.7	91 42.6	N14 59.4	6.1	54.0	d	m s	m s	h m	h m	h m	d	%
19		103 22.0	19.1	106 15.0	14 53.3	6.1	54.0	24	06 30	06 31	12 07	10 07	22 31	27 6	
20		118 22.0	18.5	120 47.5	14 47.2	6.1	54.0	25	06 31	06 32	12 07	10 55	23 18	28 2	
21		133 22.0	18.0	135 20.0	14 41.1	6.3	54.0	26	06 32	06 32	12 07	11 42	24 04	29 0	
22		148 22.0	17.4	149 52.5	14 34.8	6.2	54.0								
23		163 22.0	16.9	164 25.0	13.6	N14 28.6	6.4	54.0							
				S/D 15.8	<i>d</i> 0.5	S/D 14.9	14.8	14.7							

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.4	JÚPITER -1.8	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
DOMINION						
27 00	304 36.0	203 34.1 N22 44.1	96 34.8 S12 31.7	179 53.2 N20 01.3	79 43.7 S14 39.9	Acamar 315 17.9 S40 14.6
01	319 38.4	218 33.3 43.9	111 36.0 32.2	194 55.1 01.2	94 46.2 39.9	Achernar 335 26.2 S57 09.5
02	334 40.9	233 32.4 43.8	126 37.2 32.7	209 57.0 01.0	109 48.6 39.9	Acrux 173 08.6 S63 11.1
03	349 43.4	248 31.6 . . 43.7	141 38.4 . . 33.2	224 58.9 . . 00.9	124 51.1 . . 39.9	Adhara 255 12.3 S28 59.6
04	4 45.8	263 30.8 43.6	156 39.6 33.7	240 00.8 00.8	139 53.5 40.0	Aldebarán 290 48.7 N16 32.1
05	19 48.3	278 30.0 43.5	171 40.9 34.2	255 02.7 00.7	154 55.9 40.0	
06	34 50.8	293 29.2 N22 43.3	186 42.1 S12 34.7	270 04.6 N20 00.6	169 58.4 S14 40.0	Alioth 166 20.3 N55 53.1
07	49 53.2	308 28.3 43.2	201 43.3 35.2	285 06.5 00.4	185 00.8 40.0	Alkaid 152 58.4 N49 14.8
08	64 55.7	323 27.5 43.1	216 44.5 35.7	300 08.3 00.3	200 03.3 40.0	Al Na'ir 27 42.4 S46 53.1
09	79 58.1	338 26.7 . . 43.0	231 45.7 . . 36.2	315 10.2 . . 00.2	215 05.7 . . 40.0	Alnilam 275 45.8 S 1 11.7
10	95 00.6	353 25.9 42.8	246 46.9 36.7	330 12.1 20 00.1	230 08.1 40.1	Alphard 217 55.6 S 8 43.4
11	110 03.1	8 25.1 42.7	261 48.1 37.2	345 14.0 19 59.9	245 10.6 40.1	
12	125 05.5	23 24.3 N22 42.6	276 49.3 S12 37.7	0 15.9 N19 59.8	260 13.0 S14 40.1	Alphecca 126 10.2 N26 40.3
13	140 08.0	38 23.4 42.4	291 50.6 38.2	15 17.8 59.7	275 15.5 40.1	Alpheratz 357 42.4 N29 10.2
14	155 10.5	53 22.6 42.3	306 51.8 38.7	30 19.7 59.6	290 17.9 40.1	Altair 62 07.1 N 8 54.7
15	170 12.9	68 21.8 . . 42.2	321 53.0 . . 39.2	45 21.6 . . 59.4	305 20.3 . . 40.2	Ankaa 353 14.8 S42 13.3
16	185 15.4	83 21.0 42.0	336 54.2 39.7	60 23.4 59.3	320 22.8 40.2	Antares 112 25.1 S26 27.7
17	200 17.9	98 20.2 41.9	351 55.4 40.1	75 25.3 59.2	335 25.2 40.2	
18	215 20.3	113 19.3 N22 41.8	6 56.6 S12 40.6	90 27.2 N19 59.1	350 27.7 S14 40.2	Arcturus 145 55.0 N19 06.6
19	230 22.8	128 18.5 41.6	21 57.8 41.1	105 29.1 59.0	5 30.1 40.2	Atria 107 25.8 S69 03.2
20	245 25.3	143 17.7 41.5	36 59.0 41.6	120 31.0 58.8	20 32.5 40.3	Avior 234 18.3 S59 33.5
21	260 27.7	158 16.9 . . 41.3	52 00.2 . . 42.1	135 32.9 . . 58.7	35 35.0 . . 40.3	Bellatrix 278 31.4 N 6 21.6
22	275 30.2	173 16.1 41.2	67 01.4 42.6	150 34.8 58.6	50 37.4 40.3	Betelgeuse 271 00.7 N 7 24.4
23	290 32.6	188 15.3 41.0	82 02.6 43.1	165 36.7 58.5	65 39.9 40.3	
LUNES						
28 00	305 35.1	203 14.4 N22 40.9	97 03.8 S12 43.6	180 38.5 N19 58.3	80 42.3 S14 40.3	Canopus 263 56.3 S52 42.2
01	320 37.6	218 13.6 40.8	112 05.0 44.1	195 40.4 58.2	95 44.7 40.3	Capella 280 33.6 N46 00.4
02	335 40.0	233 12.8 40.6	127 06.3 44.6	210 42.3 58.1	110 47.2 40.4	Deneb 49 30.4 N45 20.1
03	350 42.5	248 12.0 . . 40.5	142 07.5 . . 45.1	225 44.2 . . 58.0	125 49.6 . . 40.4	Denébola 182 33.1 N14 29.5
04	5 45.0	263 11.2 40.3	157 08.7 45.6	240 46.1 57.9	140 52.1 40.4	Diphda 348 55.0 S17 54.2
05	20 47.4	278 10.4 40.2	172 09.9 46.1	255 48.0 57.7	155 54.5 40.4	
06	35 49.9	293 09.5 N22 40.0	187 11.1 S12 46.6	270 49.9 N19 57.6	170 56.9 S14 40.4	Dubhe 193 51.4 N61 40.5
07	50 52.4	308 08.7 39.9	202 12.3 47.1	285 51.8 57.5	185 59.4 40.5	Elnath 278 11.9 N28 36.9
08	65 54.8	323 07.9 39.7	217 13.5 47.6	300 53.6 57.4	201 01.8 40.5	Eltanin 90 45.3 N51 29.6
09	80 57.3	338 07.1 . . 39.6	232 14.7 . . 48.1	315 55.5 . . 57.2	216 04.2 . . 40.5	Enif 33 46.0 N 9 56.7
10	95 59.8	353 06.3 39.4	247 15.9 48.6	330 57.4 57.1	231 06.7 40.5	Fomalhaut 15 22.9 S29 32.4
11	111 02.2	8 05.4 39.2	262 17.1 49.1	345 59.3 57.0	246 09.1 40.5	
12	126 04.7	23 04.6 N22 39.1	277 18.3 S12 49.6	1 01.2 N19 56.9	261 11.5 S14 40.6	Gacrux 172 00.2 S57 11.9
13	141 07.1	38 03.8 38.9	292 19.5 50.1	16 03.1 56.7	276 14.0 40.6	Gienah 175 51.6 S17 37.4
14	156 09.6	53 03.0 38.8	307 20.7 50.6	31 05.0 56.6	291 16.4 40.6	Hadar 148 46.7 S60 26.8
15	171 12.1	68 02.2 . . 38.6	322 21.9 . . 51.1	46 06.9 . . 56.5	306 18.9 . . 40.6	Hamal 327 59.8 N23 31.8
16	186 14.5	83 01.4 38.4	337 23.1 51.6	61 08.7 56.4	321 21.3 40.6	Kaus Aust. 83 42.4 S34 22.5
17	201 17.0	98 00.5 38.3	352 24.3 52.1	76 10.6 56.3	336 23.7 40.7	
18	216 19.5	112 59.7 N22 38.1	7 25.5 S12 52.6	91 12.5 N19 56.1	351 26.2 S14 40.7	Kochab 137 20.0 N74 06.1
19	231 21.9	127 58.9 37.9	22 26.6 53.1	106 14.4 56.0	6 28.6 40.7	Markab 13 37.3 N15 17.1
20	246 24.4	142 58.1 37.8	37 27.8 53.6	121 16.3 55.9	21 31.0 40.7	Menkar 314 14.3 N 4 08.8
21	261 26.9	157 57.3 . . 37.6	52 29.0 . . 54.1	136 18.2 . . 55.8	36 33.5 . . 40.7	Menkent 148 06.6 S36 26.6
22	276 29.3	172 56.5 37.4	67 30.2 54.6	151 20.1 55.6	51 35.9 40.7	Miaplacidus 221 40.3 S69 46.8
23	291 31.8	187 55.6 37.3	82 31.4 55.1	166 22.0 55.5	66 38.3 40.8	
MARTE						
29 00	306 34.2	202 54.8 N22 37.1	97 32.6 S12 55.6	181 23.9 N19 55.4	81 40.8 S14 40.8	Mirfak 308 39.3 N49 54.4
01	321 36.7	217 54.0 36.9	112 33.8 56.0	196 25.7 55.3	96 43.2 40.8	Nunki 75 57.0 S26 16.5
02	336 39.2	232 53.2 36.8	127 35.0 56.5	211 27.6 55.1	111 45.6 40.8	Peacock 53 17.5 S56 41.0
03	351 41.6	247 52.4 . . 36.6	142 36.2 . . 57.0	226 29.5 . . 55.0	126 48.1 . . 40.8	Póllux 243 27.2 N27 59.3
04	6 44.1	262 51.6 36.4	157 37.4 57.5	241 31.4 54.9	141 50.5 40.9	Procyon 244 59.2 N 5 11.1
05	21 46.6	277 50.7 36.2	172 38.6 58.0	256 33.3 54.8	156 52.9 40.9	
06	36 49.0	292 49.9 N22 36.0	187 39.8 S12 58.5	271 35.2 N19 54.6	171 55.4 S14 40.9	Rasalhague 96 05.5 N12 33.3
07	51 51.5	307 49.1 35.9	202 41.0 59.0	286 37.1 54.5	186 57.8 40.9	Régulus 207 43.0 N11 53.7
08	66 54.0	322 48.3 35.7	217 42.2 12 59.5	301 39.0 54.4	202 00.2 40.9	Rigel 281 11.5 S 8 11.2
09	81 56.4	337 47.5 . . 35.5	232 43.3 13 00.0	316 40.8 . . 54.3	217 02.7 . . 41.0	Rigel Kent. 139 50.5 S60 53.8
10	96 58.9	352 46.7 35.3	247 44.5 00.5	331 42.7 54.1	232 05.1 41.0	Sabik 102 11.4 S15 44.4
11	112 01.4	7 45.9 35.1	262 45.7 01.0	346 44.6 54.0	247 07.5 41.0	
12	127 03.8	22 45.0 N22 35.0	277 46.9 S13 01.5	1 46.5 N19 53.9	262 10.0 S14 41.0	Schedar 349 39.3 N56 36.8
13	142 06.3	37 44.2 34.8	292 48.1 02.0	16 48.4 53.8	277 12.4 41.1	Shaula 96 20.5 S37 06.7
14	157 08.7	52 43.4 34.6	307 49.3 02.5	31 50.3 53.7	292 14.8 41.1	Sirius 258 33.3 S16 44.3
15	172 11.2	67 42.6 . . 34.4	322 50.5 . . 03.0	46 52.2 . . 53.5	307 17.3 . . 41.1	Spica 158 30.5 S11 14.2
16	187 13.7	82 41.8 34.2	337 51.7 03.5	61 54.1 53.4	322 19.7 41.1	Suhail 222 52.3 S43 29.7
17	202 16.1	97 41.0 34.0	352 52.8 04.0	76 56.0 53.3	337 22.1 41.1	
18	217 18.6	112 40.1 N22 33.8	7 54.0 S13 04.5	91 57.8 N19 53.2	352 24.6 S14 41.2	Vega 80 38.0 N38 48.2
19	232 21.1	127 39.3 33.6	22 55.2 05.0	106 59.7 53.0	7 27.0 41.2	Zuben'ubi 137 04.5 S16 06.0
20	247 23.5	142 38.5 33.4	37 56.4 05.5	122 01.6 52.9	22 29.4 41.2	
21	262 26.0	157 37.7 . . 33.2	52 57.6 . . 06.0	137 03.5 . . 52.8	37 31.9 . . 41.2	AHS Paso Mer.
22	277 28.5	172 36.9 33.0	67 58.8 06.5	152 05.4 52.7	52 34.3 41.2	Venus 257 39.3 10 28
23	292 30.9	187 36.1 32.8	82 59.9 07.0	167 07.3 52.5	67 36.7 41.3	Marte 151 28.7 17 30
						Júpiter 235 03.4 11 56
						Saturno 135 07.2 18 34
Paso Mer.	3 37.1	v -0.8 d 0.2	v 1.2 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	27	28	29	30	
d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m	
DOMINGO	27 00	178 22.0	N19 16.3	178 57.6	13.6	N14 22.2	6.4	54.0	N 72				02 49	04 30	06 08	07 43
	01	193 22.0		193 30.2	13.7	14 15.8	6.5	54.0	N 70	////	////	00 33	03 18	04 49	06 19	07 47
	02	208 22.0		208 02.9	13.6	14 09.3	6.5	54.0	68	////	////	01 53	03 40	05 04	06 28	07 51
	03	223 22.0	. .	222 35.5	13.7	14 02.8	6.6	54.0	66	////	////	02 29	03 57	05 16	06 35	07 55
	04	238 22.0		237 08.2	13.8	13 56.2	6.6	54.0	64	////		02 55	04 11	05 25	06 41	07 57
	05	253 22.0		251 41.0	13.8	13 49.6	6.7	54.0	62	////	01 58	03 15	04 22	05 34	06 46	08 00
	06	268 22.0	N19 12.9	266 13.8	13.8	N13 42.9	6.8	54.0	60	////	02 27	03 31	04 32	05 41	06 51	08 02
	07	283 22.0		280 46.6	13.8	13 36.1	6.8	54.0	N 58	01 05	02 49	03 45	04 40	05 47	06 55	08 04
	08	298 22.0		295 19.4	13.9	13 29.3	6.9	54.0	56	01 47	03 06	03 56	04 48	05 53	06 59	08 05
	09	313 22.0	. .	309 52.3	13.9	13 22.4	6.9	54.0	54	02 14	03 21	04 06	04 54	05 58	07 02	08 07
	10	328 22.1		324 25.2	13.9	13 15.5	7.0	54.0	52	02 35	03 33	04 15	05 00	06 02	07 05	08 08
	11	343 22.1		338 58.1	14.0	13 08.5	7.0	54.0	50	02 51	03 44	04 24	05 06	06 06	07 08	08 09
	12	358 22.1	N19 09.5	353 31.1	14.0	N13 01.5	7.1	54.0	45	03 23	04 06	04 41	05 17	06 15	07 14	08 12
	13	13 22.1		8 04.1	14.0	12 54.4	7.2	53.9	N 40	03 46	04 24	04 55	05 27	06 23	07 18	08 14
	14	28 22.1		22 37.1	14.1	12 47.2	7.2	53.9	35	04 04	04 38	05 06	05 35	06 29	07 23	08 16
	15	43 22.1	. .	37 10.2	14.1	12 40.0	7.2	53.9	30	04 19	04 50	05 17	05 42	06 34	07 26	08 18
	16	58 22.1		51 43.3	14.1	12 32.8	7.3	53.9	20	04 42	05 10	05 34	05 55	06 44	07 33	08 21
	17	73 22.1		66 16.4	14.2	12 25.5	7.4	53.9	N 10	05 01	05 27	05 49	06 06	06 52	07 38	08 23
	18	88 22.1	N19 06.1	80 49.6	14.1	N12 18.1	7.4	53.9	0	05 16	05 41	06 03	06 16	07 00	07 43	08 26
	19	103 22.1		95 22.7	14.2	12 10.7	7.4	53.9	S 10	05 29	05 55	06 17	06 26	07 08	07 49	08 28
	20	118 22.1		109 55.9	14.3	12 03.3	7.5	53.9	20	05 42	06 08	06 32	06 37	07 16	07 54	08 31
	21	133 22.1	. .	124 29.2	14.3	11 55.8	7.6	53.9	30	05 54	06 23	06 48	06 49	07 26	08 00	08 34
	22	148 22.1		139 02.5	14.3	11 48.2	7.6	53.9	35	06 00	06 31	06 58	06 56	07 31	08 04	08 36
	23	163 22.2		153 35.8	14.3	11 40.6	7.7	53.9	40	06 07	06 40	07 09	07 04	07 37	08 08	08 37
									45	06 14	06 50	07 22	07 14	07 44	08 13	08 40
LUNES	28 00	178 22.2	N19 02.7	168 09.1	14.3	N11 32.9	7.7	53.9	S 50	06 22	07 02	07 37	07 25	07 53	08 18	08 42
	01	193 22.2		182 42.4	14.4	11 25.2	7.7	53.9	52	06 26	07 07	07 45	07 30	07 57	08 21	08 44
	02	208 22.2		197 15.8	14.4	11 17.5	7.8	53.9	54	06 29	07 13	07 53	07 36	08 01	08 24	08 45
	03	223 22.2	. .	211 49.2	14.5	11 09.7	7.9	53.9	56	06 33	07 19	08 02	07 42	08 06	08 27	08 46
	04	238 22.2	19 00.4	226 22.7	14.4	11 01.8	7.8	53.9	S 60	06 38	07 26	08 12	07 50	08 11	08 30	08 48
	05	253 22.2	18 59.8	240 56.1	14.5	10 54.0	8.0	53.9		06 42	07 34	08 24	07 58	08 17	08 34	08 50
	06	268 22.2	N18 59.2	255 29.6	14.5	N10 46.0	7.9	53.9	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	283 22.2		270 03.1	14.6	10 38.1	8.1	53.9			Civil	Náut.	27	28	29	30
	08	298 22.3		284 36.7	14.5	10 30.0	8.0	53.9					h m	h m	h m	h m
	09	313 22.3	. .	299 10.2	14.6	10 22.0	8.1	53.9					h m	h m	h m	h m
	10	328 22.3		313 43.8	14.6	10 13.9	8.2	53.9	N 72	h m			21 23	21 15	21 09	21 03
	11	343 22.3		328 17.4	14.7	10 05.7	8.2	53.9	N 70				21 03	21 03	21 02	21 01
	12	358 22.3	N18 55.7	342 51.1	14.7	N 9 57.5	8.2	53.9	68	23 22	////	////	20 47	20 52	20 56	20 59
	13	13 22.3		357 24.8	14.6	9 49.3	8.3	53.9	66	22 16	////	////	20 34	20 44	20 51	20 58
	14	28 22.3		11 58.4	14.8	9 41.0	8.3	53.9	64	21 41	////	////	20 23	20 36	20 47	20 57
	15	43 22.3	. .	26 32.2	14.7	9 32.7	8.3	53.9	62	21 16	22 54	////	20 14	20 30	20 44	20 56
	16	58 22.4		41 05.9	14.7	9 24.4	8.4	53.9	60	20 56	22 11	////	20 06	20 25	20 41	20 56
	17	73 22.4		55 39.6	14.8	9 16.0	8.4	53.9	N 58	20 40	21 44	////				
	18	88 22.4	N18 52.2	70 13.4	14.8	N 9 07.6	8.5	54.0	56	20 27	21 22	23 01	19 59	20 20	20 38	20 55
	19	103 22.4		84 47.2	14.8	8 59.1	8.5	54.0	54	20 15	21 05	22 22	19 53	20 16	20 36	20 54
	20	118 22.4		99 21.0	14.9	8 50.6	8.5	54.0	52	20 05	20 51	21 56	19 48	20 12	20 33	20 54
	21	133 22.4	. .	113 54.9	14.8	8 42.1	8.6	54.0	50	19 57	20 39	21 37	19 43	20 08	20 31	20 53
	22	148 22.4		128 28.7	14.9	8 33.5	8.6	54.0	45	19 49	20 28	21 20	19 38	20 05	20 29	20 53
	23	163 22.5		143 02.6	14.9	8 24.9	8.6	54.0		19 32	20 06	20 49	19 28	19 58	20 25	20 52
	MARTES	29 00	178 22.5	N18 48.7	157 36.5	14.9	N 8 16.3	8.7	54.0	N 40	19 18	19 49	20 26	19 20	19 52	20 22	20 55
01		193 22.5		172 10.4	15.0	8 07.6	8.7	54.0	35	19 06	19 34	20 08	19 13	19 47	20 19	20 50
02		208 22.5		186 44.4	14.9	7 58.9	8.8	54.0	30	18 56	19 22	19 54	19 07	19 42	20 16	20 50
03		223 22.5	. .	201 18.3	15.0	7 50.1	8.7	54.0	20	18 39	19 02	19 30	18 56	19 35	20 12	20 48
04		238 22.5		215 52.3	15.0	7 41.4	8.8	54.0	N 10	18 24	18 46	19 12	18 46	19 28	20 08	20 47
05		253 22.6		230 26.3	15.0	7 32.6	8.9	54.0	0	18 10	18 32	18 57	18 37	19 21	20 04	20 46
06		268 22.6	N18 45.2	245 00.3	15.0	N 7 23.7	8.8	54.0	S 10	17 56	18 18	18 44	18 28	19 15	20 00	20 45
07		283 22.6		259 34.3	15.1	7 14.9	8.9	54.0	20	17 42	18 05	18 32	18 19	19 08	19 56	20 44
08		298 22.6		274 08.4	15.0	7 06.0	9.0	54.0	30	17 25	17 50	18 19	18 08	18 59	19 51	20 43
09		313 22.6	. .	288 42.4	15.1	6 57.0	8.9	54.0	35	17 16	17 43	18 13	18 01	18 55	19 48	20 42
10		328 22.7		303 16.5	15.1	6 48.1	9.0	54.0	40	17 05	17 34	18 07	17 54	18 49	19 45	20 41
11		343 22.7		317 50.6	15.1	6 39.1	9.0	54.0	45	16 52	17 24	17 59	17 45	18 43	19 42	20 40
12		358 22.7	N18 41.6	332 24.7	15.1	N 6 30.1	9.0	54.0	S 50	16 36	17 12	17 51	17 35	18 36	19 37	20 39
13		13 22.7		346 58.8	15.1	6 21.1	9.1	54.0	52	16 29	17 07	17 48	17 30	18 32	19 35	20 39
14		28 22.7		1 32.9	15.1	6 12.0	9.1	54.0	54	16 21	17 01	17 44	17 25	18 29	19 33	20 38
15		43 22.8	. .	16 07.0	15.2	6 02.9	9.1	54.0	56	16 12	16 54	17 40	17 19	18 24	19 31	20 37
16		58 22.8		30 41.2	15.1	5 53.8	9.2	54.0	58	16 02	16 47	17 36	17 12	18 20	19 28	20 37
17		73 22.8		45 15.3	15.2	5 44.6	9.1	54.1	S 60	15 50	16 39	17 31	17 05	18 14	19 25	20 36
18		88 22.8	N18 38.0	59 49.5	15.1	N 5 35.5	9.2	54.1								
19		103 22.8		74 23.6	15.2	5 26.3	9.2	54.1								
20		118 22.9		88 57.8	15.2	5 17.1	9.3	54.1								
21		133 22.9	. .	103 32.0	15.2	5 07.8	9.2	54.1								
22		148 22.9		118 06.2	15.2	4 58.6	9.3	54.1								
23		163 22.9		132 40.												

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.4	JÚPITER -1.8	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
30 00	307 33.4	202 35.3 N22 32.6	98 01.1 S13 07.5	182 09.2 N19 52.4	82 39.1 S14 41.3	Acamar 315 17.8 S40 14.6
01	322 35.9	217 34.4 32.4	113 02.3 08.0	197 11.1 52.3	97 41.6 41.3	Achernar 335 26.2 S57 09.5
02	337 38.3	232 33.6 32.2	128 03.5 08.5	212 13.0 52.2	112 44.0 41.3	Acrux 173 08.6 S63 11.0
03	352 40.8	247 32.8 . . 32.0	143 04.7 . . 09.0	227 14.8 . . 52.0	127 46.4 . . 41.3	Adhara 255 12.2 S28 59.6
04	7 43.2	262 32.0 31.8	158 05.9 09.5	242 16.7 51.9	142 48.9 41.4	Aldebarán 290 48.6 N16 32.1
05	22 45.7	277 31.2 31.6	173 07.0 10.0	257 18.6 51.8	157 51.3 41.4	
06	37 48.2	292 30.4 N22 31.4	188 08.2 S13 10.5	272 20.5 N19 51.7	172 53.7 S14 41.4	Alioth 166 20.3 N55 53.1
07	52 50.6	307 29.6 31.2	203 09.4 11.0	287 22.4 51.5	187 56.2 41.4	Alkaid 152 58.4 N49 14.8
08	67 53.1	322 28.7 31.0	218 10.6 11.5	302 24.3 51.4	202 58.6 41.4	Al Na'ir 27 42.4 S46 53.1
09	82 55.6	337 27.9 . . 30.8	233 11.7 . . 12.0	317 26.2 . . 51.3	218 01.0 . . 41.5	Alnilam 275 45.8 S 1 11.7
10	97 58.0	352 27.1 30.6	248 12.9 12.5	332 28.1 51.2	233 03.4 41.5	Alphard 217 55.6 S 8 43.4
11	113 00.5	7 26.3 30.4	263 14.1 13.0	347 30.0 51.0	248 05.9 41.5	
12	128 03.0	22 25.5 N22 30.2	278 15.3 S13 13.5	2 31.8 N19 50.9	263 08.3 S14 41.5	Alphecca 126 10.2 N26 40.3
13	143 05.4	37 24.7 30.0	293 16.5 14.0	17 33.7 50.8	278 10.7 41.6	Alpheratz 357 42.4 N29 10.2
14	158 07.9	52 23.9 29.7	308 17.6 14.5	32 35.6 50.7	293 13.2 41.6	Altair 62 07.1 N 8 54.7
15	173 10.3	67 23.0 . . 29.5	323 18.8 . . 15.0	47 37.5 . . 50.5	308 15.6 . . 41.6	Ankaa 353 14.8 S42 13.3
16	188 12.8	82 22.2 29.3	338 20.0 15.5	62 39.4 50.4	323 18.0 41.6	Antares 112 25.1 S26 27.7
17	203 15.3	97 21.4 29.1	353 21.2 16.0	77 41.3 50.3	338 20.4 41.6	
18	218 17.7	112 20.6 N22 28.9	8 22.3 S13 16.5	92 43.2 N19 50.2	353 22.9 S14 41.7	Arcturus 145 55.0 N19 06.6
19	233 20.2	127 19.8 28.6	23 23.5 17.0	107 45.1 50.0	8 25.3 41.7	Atria 107 25.8 S69 03.2
20	248 22.7	142 19.0 28.4	38 24.7 17.5	122 47.0 49.9	23 27.7 41.7	Avior 234 18.3 S59 33.5
21	263 25.1	157 18.2 . . 28.2	53 25.8 . . 18.0	137 48.8 . . 49.8	38 30.1 . . 41.7	Bellatrix 278 31.4 N 6 21.6
22	278 27.6	172 17.4 28.0	68 27.0 18.4	152 50.7 49.7	53 32.6 41.8	Betelgeuse 271 00.7 N 7 24.4
23	293 30.1	187 16.5 27.8	83 28.2 18.9	167 52.6 49.5	68 35.0 41.8	
31 00	308 32.5	202 15.7 N22 27.5	98 29.4 S13 19.4	182 54.5 N19 49.4	83 37.4 S14 41.8	Canopus 263 56.3 S52 42.2
01	323 35.0	217 14.9 27.3	113 30.5 19.9	197 56.4 49.3	98 39.9 41.8	Capella 280 33.6 N46 00.4
02	338 37.5	232 14.1 27.1	128 31.7 20.4	212 58.3 49.2	113 42.3 41.8	Deneb 49 30.4 N45 20.2
03	353 39.9	247 13.3 . . 26.8	143 32.9 . . 20.9	228 00.2 . . 49.1	128 44.7 . . 41.9	Denébola 182 33.1 N14 29.5
04	8 42.4	262 12.5 26.6	158 34.0 21.4	243 02.1 48.9	143 47.1 41.9	Diphda 348 55.0 S17 54.2
05	23 44.8	277 11.7 26.4	173 35.2 21.9	258 04.0 48.8	158 49.6 41.9	
06	38 47.3	292 10.9 N22 26.1	188 36.4 S13 22.4	273 05.8 N19 48.7	173 52.0 S14 41.9	Dubhe 193 51.4 N61 40.5
07	53 49.8	307 10.0 25.9	203 37.5 22.9	288 07.7 48.6	188 54.4 42.0	Elnath 278 11.9 N28 36.9
08	68 52.2	322 09.2 25.7	218 38.7 23.4	303 09.6 48.4	203 56.8 42.0	Eltanin 90 45.4 N51 29.6
09	83 54.7	337 08.4 . . 25.4	233 39.9 . . 23.9	318 11.5 . . 48.3	218 59.3 . . 42.0	Enif 33 46.0 N 9 56.7
10	98 57.2	352 07.6 25.2	248 41.0 24.4	333 13.4 48.2	234 01.7 42.0	Fomalhaut 15 22.9 S29 32.4
11	113 59.6	7 06.8 25.0	263 42.2 24.9	348 15.3 48.1	249 04.1 42.0	
12	129 02.1	22 06.0 N22 24.7	278 43.4 S13 25.4	3 17.2 N19 47.9	264 06.5 S14 42.1	Gacrux 172 00.2 S57 11.9
13	144 04.6	37 05.2 24.5	293 44.5 25.9	18 19.1 47.8	279 09.0 42.1	Gienah 175 51.6 S17 37.4
14	159 07.0	52 04.4 24.2	308 45.7 26.4	33 21.0 47.7	294 11.4 42.1	Hadar 148 46.7 S60 26.8
15	174 09.5	67 03.6 . . 24.0	323 46.9 . . 26.9	48 22.9 . . 47.5	309 13.8 . . 42.1	Hamal 327 59.8 N23 31.8
16	189 11.9	82 02.8 23.8	338 48.0 27.4	63 24.7 47.4	324 16.2 42.2	Kaus Aust. 83 42.4 S34 22.5
17	204 14.4	97 01.9 23.5	353 49.2 27.9	78 26.6 47.3	339 18.7 42.2	
18	219 16.9	112 01.1 N22 23.3	8 50.4 S13 28.4	93 28.5 N19 47.2	354 21.1 S14 42.2	Kochab 137 20.1 N74 06.1
19	234 19.3	127 00.3 23.0	23 51.5 28.9	108 30.4 47.0	9 23.5 42.2	Markab 13 37.3 N15 17.1
20	249 21.8	141 59.5 22.8	38 52.7 29.4	123 32.3 46.9	24 25.9 42.3	Menkar 314 14.3 N 4 08.8
21	264 24.3	156 58.7 . . 22.5	53 53.8 . . 29.9	138 34.2 . . 46.8	39 28.3 . . 42.3	Menkent 148 06.6 S36 26.6
22	279 26.7	171 57.9 22.3	68 55.0 30.4	153 36.1 46.7	54 30.8 42.3	Miaplacidus 221 40.3 S69 46.8
23	294 29.2	186 57.1 22.0	83 56.2 30.9	168 38.0 46.5	69 33.2 42.3	
1 00	309 31.7	201 56.3 N22 21.8	98 57.3 S13 31.4	183 39.9 N19 46.4	84 35.6 S14 42.3	Mirfak 308 39.3 N49 54.4
01	324 34.1	216 55.5 21.5	113 58.5 31.9	198 41.8 46.3	99 38.0 42.4	Nunki 75 57.0 S26 16.5
02	339 36.6	231 54.7 21.3	128 59.6 32.4	213 43.6 46.2	114 40.5 42.4	Peacock 53 17.5 S56 41.0
03	354 39.1	246 53.8 . . 21.0	144 00.8 . . 32.9	228 45.5 . . 46.0	129 42.9 . . 42.4	Póllux 243 27.2 N27 59.3
04	9 41.5	261 53.0 20.7	159 01.9 33.4	243 47.4 45.9	144 45.3 42.4	Procyon 244 59.2 N 5 11.1
05	24 44.0	276 52.2 20.5	174 03.1 33.9	258 49.3 45.8	159 47.7 42.5	
06	39 46.4	291 51.4 N22 20.2	189 04.3 S13 34.4	273 51.2 N19 45.7	174 50.1 S14 42.5	Rasalhague 96 05.5 N12 33.3
07	54 48.9	306 50.6 20.0	204 05.4 34.9	288 53.1 45.5	189 52.6 42.5	Régulus 207 43.0 N11 53.7
08	69 51.4	321 49.8 19.7	219 06.6 35.4	303 55.0 45.4	204 55.0 42.5	Rigel 281 11.5 S 8 11.2
09	84 53.8	336 49.0 . . 19.4	234 07.7 . . 35.9	318 56.9 . . 45.3	219 57.4 . . 42.6	Rigel Kent. 139 50.5 S60 53.8
10	99 56.3	351 48.2 19.2	249 08.9 36.4	333 58.8 45.2	234 59.8 42.6	Sabik 102 11.4 S15 44.4
11	114 58.8	6 47.4 18.9	264 10.0 36.9	349 00.7 45.0	250 02.2 42.6	
12	130 01.2	21 46.6 N22 18.6	279 11.2 S13 37.4	4 02.6 N19 44.9	265 04.7 S14 42.6	Schedar 349 39.2 N56 36.9
13	145 03.7	36 45.8 18.4	294 12.3 37.9	19 04.4 44.8	280 07.1 42.6	Shaula 96 20.5 S37 06.7
14	160 06.2	51 45.0 18.1	309 13.5 38.4	34 06.3 44.7	295 09.5 42.7	Sirius 258 33.3 S16 44.3
15	175 08.6	66 44.2 . . 17.8	324 14.7 . . 38.9	49 08.2 . . 44.5	310 11.9 . . 42.7	Spica 158 30.5 S11 14.2
16	190 11.1	81 43.3 17.6	339 15.8 39.4	64 10.1 44.4	325 14.3 42.7	Suhail 222 52.3 S43 29.6
17	205 13.6	96 42.5 17.3	354 17.0 39.9	79 12.0 44.3	340 16.8 42.7	
18	220 16.0	111 41.7 N22 17.0	9 18.1 S13 40.4	94 13.9 N19 44.2	355 19.2 S14 42.8	Vega 80 38.0 N38 48.2
19	235 18.5	126 40.9 16.7	24 19.3 40.9	109 15.8 44.0	10 21.6 42.8	Zuben'ubi 137 04.5 S16 06.0
20	250 20.9	141 40.1 16.5	39 20.4 41.4	124 17.7 43.9	25 24.0 42.8	
21	265 23.4	156 39.3 . . 16.2	54 21.6 . . 41.9	139 19.6 . . 43.8	40 26.4 . . 42.8	AHS Paso Mer.
22	280 25.9	171 38.5 15.9	69 22.7 42.4	154 21.5 43.7	55 28.9 42.9	Venus 253 43.2 10 32
23	295 28.3	186 37.7 15.6	84 23.9 42.9	169 23.4 43.5	70 31.3 42.9	Marte 149 56.8 17 25
						Júpiter 234 22.0 11 47
						Saturno 135 04.9 18 23
Paso Mer.	3 25.3	v -0.8 d 0.2	v 1.2 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	v	Dec	d		Ph	Náut.		Civil	30	31	1	2		
d h	°	°	°	°	°	°	°	h m	h m	h m	h m	h m	h m	h m	h m		
MIÉRCOLES	30 00	178 22.9	N18 34.4	147 14.6	15.2 N	4 40.0	9.3 54.1	N 72	00	01 16	07 47	09 16	10 47	12 19			
	01	193 23.0	33.8	161 48.8	15.3	4 30.7	9.4 54.1	N 70	68	02 09	07 51	09 15	10 41	12 08			
	02	208 23.0	33.2	176 23.1	15.2	4 21.3	9.3 54.1	66	02 41	07 55	09 15	10 36	11 59				
	03	223 23.0	32.6	190 57.3	15.2	4 12.0	9.4 54.1	64	03 05	07 57	09 14	10 32	11 51				
	04	238 23.0	32.0	205 31.5	15.3	4 02.6	9.4 54.1	62	02 11	03 23	08 00	09 14	10 29	11 45			
	05	253 23.1	31.4	220 05.8	15.2	3 53.2	9.4 54.1	60	02 36	03 38	08 02	09 13	10 26	11 39			
	06	268 23.1	N18 30.8	234 40.0	15.2 N	3 43.8	9.4 54.2	N 58	01 24	02 56	03 51	08 04	09 13	10 23	11 34		
	07	283 23.1	30.2	249 14.2	15.3	3 34.4	9.5 54.2	56	01 59	03 13	04 02	08 05	09 12	10 20	11 30		
	08	298 23.1	29.6	263 48.5	15.2	3 24.9	9.5 54.2	54	02 23	03 27	04 11	08 07	09 12	10 18	11 26		
	09	313 23.2	29.0	278 22.7	15.3	3 15.4	9.4 54.2	52	02 42	03 38	04 20	08 08	09 12	10 16	11 22		
	10	328 23.2	28.4	292 57.0	15.2	3 06.0	9.5 54.2	50	02 57	03 49	04 28	08 09	09 12	10 15	11 19		
	11	343 23.2	27.8	307 31.2	15.3	2 56.5	9.5 54.2	45	03 27	04 10	04 44	08 12	09 11	10 11	11 12		
	12	358 23.2	N18 27.2	322 05.5	15.2 N	2 47.0	9.6 54.2	N 40	03 49	04 27	04 57	08 14	09 11	10 08	11 06		
	13	13 23.3	26.6	336 39.7	15.3	2 37.4	9.5 54.2	35	04 07	04 41	05 09	08 16	09 10	10 05	11 01		
	14	28 23.3	26.0	351 14.0	15.2	2 27.9	9.6 54.2	30	04 21	04 52	05 18	08 18	09 10	10 03	10 57		
	15	43 23.3	25.4	5 48.2	15.2	2 18.3	9.5 54.2	20	04 44	05 11	05 35	08 21	09 09	09 58	10 49		
	16	58 23.3	24.8	20 22.4	15.3	2 08.8	9.6 54.3	N 10	05 01	05 27	05 49	08 23	09 09	09 55	10 42		
	17	73 23.4	24.2	34 56.7	15.2	1 59.2	9.6 54.3	0	05 16	05 41	06 03	08 26	09 08	09 52	10 36		
	18	88 23.4	N18 23.5	49 30.9	15.2 N	1 49.6	9.6 54.3	S 10	05 29	05 54	06 16	08 28	09 08	09 48	10 30		
	19	103 23.4	22.9	64 05.1	15.3	1 40.0	9.6 54.3	20	05 41	06 07	06 30	08 31	09 08	09 45	10 23		
	20	118 23.5	22.3	78 39.4	15.2	1 30.4	9.6 54.3	30	05 52	06 21	06 46	08 34	09 07	09 41	10 16		
	21	133 23.5	21.7	93 13.6	15.2	1 20.8	9.6 54.3	35	05 58	06 29	06 55	08 36	09 07	09 38	10 12		
	22	148 23.5	21.1	107 47.8	15.2	1 11.2	9.6 54.3	40	06 04	06 37	07 06	08 37	09 06	09 36	10 07		
	23	163 23.5	20.5	122 22.0	15.2	1 01.6	9.7 54.3	45	06 11	06 47	07 18	08 40	09 06	09 33	10 02		
	JUEVES	31 00	178 23.6	N18 19.9	136 56.2	15.2 N	0 51.9	9.6 54.4	S 50	06 19	06 58	07 33	08 42	09 06	09 29	09 55	
01		193 23.6	19.3	151 30.4	15.1	0 42.3	9.7 54.4	52	06 22	07 03	07 40	08 44	09 05	09 28	09 52		
02		208 23.6	18.6	166 04.5	15.2	0 32.6	9.6 54.4	54	06 25	07 08	07 48	08 45	09 05	09 26	09 49		
03		223 23.7	18.0	180 38.7	15.1	0 23.0	9.7 54.4	56	06 29	07 14	07 56	08 46	09 05	09 24	09 45		
04		238 23.7	17.4	195 12.8	15.2	0 13.3	9.7 54.4	58	06 33	07 21	08 06	08 48	09 05	09 22	09 41		
05		253 23.7	16.8	209 47.0	15.1 N	0 03.6	9.6 54.4	S 60	06 37	07 29	08 17	08 50	09 05	09 20	09 36		
06		268 23.7	N18 16.2	224 21.1	15.1 S	0 06.0	9.7 54.4	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna			
07		283 23.8	15.6	238 55.2	15.1	0 15.7	9.7 54.5										
08		298 23.8	15.0	253 29.3	15.1	0 25.4	9.7 54.5										
09		313 23.8	14.3	268 03.4	15.1	0 35.1	9.7 54.5										
10		328 23.9	13.7	282 37.5	15.0	0 44.8	9.6 54.5										
11		343 23.9	13.1	297 11.5	15.1	0 54.4	9.7 54.5										
12		358 23.9	N18 12.5	311 45.6	15.0 S	1 04.1	9.7 54.5										
13		13 24.0	11.9	326 19.6	15.0	1 13.8	9.7 54.5	N 70	22 48	23 05	23 22	21 03	20 56	20 50	20 43		
14		28 24.0	11.2	340 53.6	15.0	1 23.5	9.7 54.6	68	21 59	22 16	22 33	20 59	21 03	21 06	21 11		
15		43 24.0	10.6	355 27.6	15.0	1 33.2	9.7 54.6	66	21 29	21 46	22 03	20 58	21 05	21 12	21 21		
16		58 24.1	10.0	10 01.6	14.9	1 42.9	9.6 54.6	64	21 06	21 23	21 40	20 57	21 07	21 18	21 30		
17		73 24.1	09.4	24 35.5	14.9	1 52.5	9.7 54.6	62	20 48	21 05	21 22	20 56	21 09	21 22	21 37		
18		88 24.1	N18 08.8	39 09.4	14.9 S	2 02.2	9.7 54.6	60	20 33	21 00	21 17	20 56	21 10	21 26	21 44		
19		103 24.2	08.1	53 43.3	14.9	2 11.9	9.7 54.6	N 58	20 21	21 14	22 07	20 55	21 12	21 30	21 50		
20		118 24.2	07.5	68 17.2	14.9	2 21.6	9.6 54.7	56	20 10	20 58	22 11	20 54	21 13	21 33	21 55		
21		133 24.2	06.9	82 51.1	14.8	2 31.2	9.7 54.7	54	20 00	20 45	21 48	20 54	21 14	21 36	21 59		
22		148 24.3	06.3	97 24.9	14.8	2 40.9	9.6 54.7	52	19 52	20 33	21 29	20 53	21 15	21 38	22 03		
23		163 24.3	05.6	111 58.7	14.8	2 50.5	9.7 54.7	50	19 44	20 23	21 14	20 53	21 16	21 41	22 07		
VIERNES		1 00	178 24.3	N18 05.0	126 32.5	14.8 S	3 00.2	9.6 54.7	45	19 28	20 02	20 45	20 52	21 18	21 46	22 15	
	01	193 24.4	04.4	141 06.3	14.7	3 09.8	9.7 54.8	N 40	19 15	19 45	20 23	20 51	21 20	21 50	22 22		
	02	208 24.4	03.8	155 40.0	14.7	3 19.5	9.6 54.8	35	19 04	19 32	20 05	20 50	21 22	21 54	22 28		
	03	223 24.4	03.1	170 13.7	14.7	3 29.1	9.6 54.8	30	18 54	19 20	19 51	20 50	21 23	21 57	22 34		
	04	238 24.5	02.5	184 47.4	14.7	3 38.7	9.6 54.8	20	18 38	19 01	19 29	20 48	21 25	22 03	22 43		
	05	253 24.5	01.9	199 21.1	14.6	3 48.3	9.6 54.8	N 10	18 23	18 45	19 11	20 47	21 27	22 08	22 51		
	06	268 24.6	N18 01.2	213 54.7	14.6 S	3 57.9	9.6 54.9	0	18 10	18 32	18 57	20 46	21 29	22 13	22 58		
	07	283 24.6	00.6	228 28.3	14.5	4 07.5	9.6 54.9	S 10	17 57	18 19	18 44	20 45	21 31	22 18	23 06		
	08	298 24.6	18 00.0	243 01.8	14.6	4 17.1	9.5 54.9	20	17 43	18 06	18 32	20 44	21 33	22 23	23 14		
	09	313 24.7	17 59.4	257 35.4	14.5	4 26.6	9.6 54.9	30	17 27	17 52	18 21	20 43	21 35	22 28	23 23		
	10	328 24.7	58.7	272 08.9	14.4	4 36.2	9.5 54.9	35	17 18	17 45	18 15	20 42	21 37	22 32	23 28		
	11	343 24.7	58.1	286 42.3	14.5	4 45.7	9.5 55.0	40	17 07	17 36	18 09	20 41	21 38	22 36	23 34		
	12	358 24.8	N17 57.5	301 15.8	14.4 S	4 55.2	9.5 55.0	45	16 55	17 27	18 02	20 40	21 40	22 40	23 41		
	13	13 24.8	56.8	315 49.2	14.3	5 04.7	9.5 55.0	S 50	16 40	17 16	17 55	20 39	21 42	22 45	23 50		
	14	28 24.9	56.2	330 22.5	14.4	5 14.2	9.5 55.0	52	16 33	17 11	17 52	20 39	21 43	22 48	23 54		
	15	43 24.9	55.6	344 55.9	14.3	5 23.7	9.5 55.0	54	16 26	17 05	17 48	20 38	21 44	22 50	23 58		
	16	58 24.9	54.9	359 29.2	14.2	5 33.2	9.4 55.1	56	16 17	16 59	17 45	20 37	21 45	22 53	24 03		
	17	73 25.0	54.3	14 02.4	14.2	5 42.6	9.4 55.1	58	16 07	16 52	17 41	20 37	21 46	22 57	24 08		
	18	88 25.0	N17 53.7	28 35.6	14.2 S	5 52.0	9.5 55.1	S 60	15 56	16 45	17 36	20 36	21 48	23 00	24 14		
	19	103 25.1	53.0	43 08.8	14.1	6 01.5	9.3 55.1	Día		SOL		LUNA					
	20	118 25.1	52.4	57 41.9	14.1	6 10.8	9.4 55.2			Ec. Tiempo		Paso Mer.		Paso Mer.		Fase	
	21	133 25.1	51.8	72 15.0	14.1	6 20.2	9.4 55.2			00h 12h		Sup. Inf.		Edad			
	22	148 25.2	51.1	86 48.1	14.0	6 29.6	9.3 55.2	d	m s	m s	h m	h m	h m	d	%		
	23	163 25.2	50.5	101 21.1	14.0 S	6 38.9	9.3 55.2	30	06 28	06 27	12 06	14 36	02 15	04 11			
								31	06 26	06 24	12 06	15 19	02 57	05 18			
							1	06 23	06 21	12 06	16 02	03 40	06 26				
	S/D	15.8 d 0.6	S/D	14.8	14.9	15.0											

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.4	JÚPITER -1.8	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
d h	° /	° /	° /	° /	° /	° /
200	310 30.8	201 36.9 N22 15.3	99 25.0 S13 43.4	184 25.2 N19 43.4	85 33.7 S14 42.9	Acamar 315 17.8 S40 14.6
01	325 33.3	216 36.1 15.1	114 26.2 43.9	199 27.1 43.3	100 36.1 42.9	Achernar 335 26.1 S57 09.5
02	340 35.7	231 35.3 14.8	129 27.3 44.4	214 29.0 43.2	115 38.5 43.0	Acrux 173 08.6 S63 11.0
03	355 38.2	246 34.5 . . 14.5	144 28.4 . . 44.9	229 30.9 . . 43.0	130 41.0 . . 43.0	Adhara 255 12.2 S28 59.6
04	10 40.7	261 33.7 14.2	159 29.6 45.4	244 32.8 42.9	145 43.4 43.0	Aldebarán 290 48.6 N16 32.1
05	25 43.1	276 32.9 13.9	174 30.7 45.9	259 34.7 42.8	160 45.8 43.0	
06	40 45.6	291 32.1 N22 13.6	189 31.9 S13 46.4	274 36.6 N19 42.6	175 48.2 S14 43.1	Alioth 166 20.3 N55 53.1
07	55 48.0	306 31.3 13.4	204 33.0 46.9	289 38.5 42.5	190 50.6 43.1	Alkaid 152 58.4 N49 14.8
08	70 50.5	321 30.4 13.1	219 34.2 47.4	304 40.4 42.4	205 53.0 43.1	Al Na'ir 27 42.4 S46 53.1
09	85 53.0	336 29.6 . . 12.8	234 35.3 . . 47.9	319 42.3 . . 42.3	220 55.5 . . 43.1	Alnilam 275 45.8 S 1 11.7
10	100 55.4	351 28.8 12.5	249 36.5 48.4	334 44.2 42.1	235 57.9 43.2	Alphard 217 55.6 S 8 43.4
11	115 57.9	6 28.0 12.2	264 37.6 48.9	349 46.0 42.0	251 00.3 43.2	
12	131 00.4	21 27.2 N22 11.9	279 38.7 S13 49.3	4 47.9 N19 41.9	266 02.7 S14 43.2	Alphecca 126 10.3 N26 40.3
13	146 02.8	36 26.4 11.6	294 39.9 49.8	19 49.8 41.8	281 05.1 43.2	Alpheratz 357 42.4 N29 10.3
14	161 05.3	51 25.6 11.3	309 41.0 50.3	34 51.7 41.6	296 07.5 43.3	Altair 62 07.1 N 8 54.7
15	176 07.8	66 24.8 . . 11.0	324 42.2 . . 50.8	49 53.6 . . 41.5	311 10.0 . . 43.3	Ankaa 353 14.7 S42 13.3
16	191 10.2	81 24.0 10.7	339 43.3 51.3	64 55.5 41.4	326 12.4 43.3	Antares 112 25.1 S26 27.7
17	206 12.7	96 23.2 10.4	354 44.5 51.8	79 57.4 41.3	341 14.8 43.3	
18	221 15.2	111 22.4 N22 10.1	9 45.6 S13 52.3	94 59.3 N19 41.1	356 17.2 S14 43.4	Arcturus 145 55.1 N19 06.6
19	236 17.6	126 21.6 09.8	24 46.7 52.8	110 01.2 41.0	11 19.6 43.4	Atria 107 25.8 S69 03.2
20	251 20.1	141 20.8 09.5	39 47.9 53.3	125 03.1 40.9	26 22.0 43.4	Avior 234 18.3 S59 33.5
21	266 22.5	156 20.0 . . 09.2	54 49.0 . . 53.8	140 05.0 . . 40.8	41 24.4 . . 43.4	Bellatrix 278 31.4 N 6 21.6
22	281 25.0	171 19.2 08.9	69 50.2 54.3	155 06.9 40.6	56 26.9 43.5	Betelgeuse 271 00.7 N 7 24.4
23	296 27.5	186 18.4 08.6	84 51.3 54.8	170 08.7 40.5	71 29.3 43.5	
300	311 29.9	201 17.6 N22 08.3	99 52.4 S13 55.3	185 10.6 N19 40.4	86 31.7 S14 43.5	Canopus 263 56.2 S52 42.2
01	326 32.4	216 16.8 08.0	114 53.6 55.8	200 12.5 40.2	101 34.1 43.5	Capella 280 33.6 N46 00.4
02	341 34.9	231 16.0 07.7	129 54.7 56.3	215 14.4 40.1	116 36.5 43.6	Deneb 49 30.4 N45 20.2
03	356 37.3	246 15.2 . . 07.4	144 55.8 . . 56.8	230 16.3 . . 40.0	131 38.9 . . 43.6	Denébola 182 33.1 N14 29.5
04	11 39.8	261 14.4 07.0	159 57.0 57.3	245 18.2 39.9	146 41.3 43.6	Diphda 348 55.0 S17 54.2
05	26 42.3	276 13.6 06.7	174 58.1 57.8	260 20.1 39.7	161 43.8 43.6	
06	41 44.7	291 12.8 N22 06.4	189 59.2 S13 58.3	275 22.0 N19 39.6	176 46.2 S14 43.7	Dubhe 193 51.4 N61 40.5
07	56 47.2	306 12.0 06.1	205 00.4 58.8	290 23.9 39.5	191 48.6 43.7	Elnath 278 11.9 N28 36.9
08	71 49.7	321 11.2 05.8	220 01.5 59.3	305 25.8 39.4	206 51.0 43.7	Eltanin 90 45.4 N51 29.6
09	86 52.1	336 10.4 . . 05.5	235 02.6 13 59.8	320 27.7 . . 39.2	221 53.4 . . 43.7	Enif 33 46.0 N 9 56.7
10	101 54.6	351 09.6 05.2	250 03.8 14 00.3	335 29.6 39.1	236 55.8 43.8	Fomalhaut 15 22.8 S29 32.4
11	116 57.0	6 08.8 04.8	265 04.9 00.8	350 31.5 39.0	251 58.2 43.8	
12	131 59.5	21 08.0 N22 04.5	280 06.0 S14 01.3	5 33.3 N19 38.9	267 00.6 S14 43.8	Gacrux 172 00.2 S57 11.9
13	147 02.0	36 07.2 04.2	295 07.2 01.8	20 35.2 38.7	282 03.1 43.8	Gienah 175 51.7 S17 37.4
14	162 04.4	51 06.4 03.9	310 08.3 02.3	35 37.1 38.6	297 05.5 43.9	Hadar 148 46.7 S60 26.8
15	177 06.9	66 05.6 . . 03.5	325 09.4 . . 02.8	50 39.0 . . 38.5	312 07.9 . . 43.9	Hamal 327 59.8 N23 31.8
16	192 09.4	81 04.8 03.2	340 10.6 03.3	65 40.9 38.3	327 10.3 43.9	Kaus Aust. 83 42.4 S34 22.5
17	207 11.8	96 04.0 02.9	355 11.7 03.8	80 42.8 38.2	342 12.7 44.0	
18	222 14.3	111 03.2 N22 02.6	10 12.8 S14 04.3	95 44.7 N19 38.1	357 15.1 S14 44.0	Kochab 137 20.1 N74 06.1
19	237 16.8	126 02.4 02.2	25 13.9 04.8	110 46.6 38.0	12 17.5 44.0	Markab 13 37.2 N15 17.2
20	252 19.2	141 01.6 01.9	40 15.1 05.3	125 48.5 37.8	27 19.9 44.0	Menkar 314 14.3 N 4 08.8
21	267 21.7	156 00.8 . . 01.6	55 16.2 . . 05.8	140 50.4 . . 37.7	42 22.3 . . 44.1	Menkent 148 06.6 S36 26.6
22	282 24.1	171 00.0 01.3	70 17.3 06.3	155 52.3 37.6	57 24.8 44.1	Miaplacidus 221 40.3 S69 46.8
23	297 26.6	185 59.2 00.9	85 18.5 06.8	170 54.2 37.5	72 27.2 44.1	
400	312 29.1	200 58.4 N22 00.6	100 19.6 S14 07.3	185 56.1 N19 37.3	87 29.6 S14 44.1	Mirfak 308 39.3 N49 54.5
01	327 31.5	215 57.6 22 00.2	115 20.7 07.8	200 57.9 37.2	102 32.0 44.2	Nunki 75 57.0 S26 16.5
02	342 34.0	230 56.8 21 59.9	130 21.8 08.3	215 59.8 37.1	117 34.4 44.2	Peacock 53 17.5 S56 41.0
03	357 36.5	245 56.0 . . 59.6	145 23.0 . . 08.8	231 01.7 . . 36.9	132 36.8 . . 44.2	Póllux 243 27.1 N27 59.3
04	12 38.9	260 55.2 59.2	160 24.1 09.3	246 03.6 36.8	147 39.2 44.2	Procyon 244 59.2 N 5 11.1
05	27 41.4	275 54.4 58.9	175 25.2 09.8	261 05.5 36.7	162 41.6 44.3	
06	42 43.9	290 53.6 N21 58.6	190 26.3 S14 10.3	276 07.4 N19 36.6	177 44.0 S14 44.3	Rasalhague 96 05.5 N12 33.3
07	57 46.3	305 52.8 58.2	205 27.5 10.8	291 09.3 36.4	192 46.4 44.3	Régulus 207 43.0 N11 53.7
08	72 48.8	320 52.0 57.9	220 28.6 11.3	306 11.2 36.3	207 48.9 44.4	Rigel 281 11.5 S 8 11.2
09	87 51.3	335 51.2 . . 57.5	235 29.7 . . 11.8	321 13.1 . . 36.2	222 51.3 . . 44.4	Rigel Kent. 139 50.5 S60 53.8
10	102 53.7	350 50.4 57.2	250 30.8 12.3	336 15.0 36.1	237 53.7 44.4	Sabik 102 11.4 S15 44.4
11	117 56.2	5 49.6 56.8	265 31.9 12.8	351 16.9 35.9	252 56.1 44.4	
12	132 58.6	20 48.8 N21 56.5	280 33.1 S14 13.3	6 18.8 N19 35.8	267 58.5 S14 44.5	Schedar 349 39.2 N56 36.9
13	148 01.1	35 48.1 56.1	295 34.2 13.8	21 20.7 35.7	283 00.9 44.5	Shaula 96 20.5 S37 06.7
14	163 03.6	50 47.3 55.8	310 35.3 14.3	36 22.6 35.5	298 03.3 44.5	Sirius 258 33.3 S16 44.2
15	178 06.0	65 46.5 . . 55.4	325 36.4 . . 14.8	51 24.4 . . 35.4	313 05.7 . . 44.5	Spica 158 30.5 S11 14.2
16	193 08.5	80 45.7 55.1	340 37.5 15.3	66 26.3 35.3	328 08.1 44.6	Suhail 222 52.3 S43 29.6
17	208 11.0	95 44.9 54.7	355 38.7 15.8	81 28.2 35.2	343 10.5 44.6	
18	223 13.4	110 44.1 N21 54.4	10 39.8 S14 16.3	96 30.1 N19 35.0	358 12.9 S14 44.6	Vega 80 38.0 N38 48.2
19	238 15.9	125 43.3 54.0	25 40.9 16.8	111 32.0 34.9	13 15.3 44.7	Zuben'ubi 137 04.5 S16 06.0
20	253 18.4	140 42.5 53.7	40 42.0 17.3	126 33.9 34.8	28 17.8 44.7	
21	268 20.8	155 41.7 . . 53.3	55 43.1 . . 17.8	141 35.8 . . 34.7	43 20.2 . . 44.7	AHS Paso Mer.
22	283 23.3	170 40.9 53.0	70 44.2 18.2	156 37.7 34.5	58 22.6 44.7	Venus 249 47.7 10 35
23	298 25.8	185 40.1 52.6	85 45.4 18.7	171 39.6 34.4	73 25.0 44.8	Marte 148 22.5 17 19
						Júpiter 233 40.7 11 38
						Saturno 135 01.7 18 11
Paso Mer.	h m					
3 13.5	v -0.8 d 0.3	v 1.1 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0		

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	2	3	4	5
S Á B A D O	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m
	200	178 25.3	N17 49.8	115 54.1	13.9 S	6 48.2	9.3 55.2	N 70	□	□	□	12 33	14 20	16 16	18 44
	01	193 25.3	49.2	130 27.0	13.9	6 57.5	9.2 55.3	N 68	////	////	02 25	12 19	13 56	15 37	17 20
	02	208 25.4	48.6	144 59.9	13.8	7 06.7	9.3 55.3	66	////	00 52	02 53	11 59	13 24	14 50	16 14
	03	223 25.4	47.9	159 32.7	13.8	7 16.0	9.2 55.3	64	////	01 50	03 14	11 51	13 12	14 34	15 53
	04	238 25.4	47.3	174 05.5	13.8	7 25.2	9.2 55.3	62	////	02 23	03 31	11 45	13 02	14 21	15 37
	05	253 25.5	46.7	188 38.3	13.7	7 34.4	9.1 55.4	60	00 47	02 46	03 45	11 39	12 54	14 09	15 23
	06	268 25.5	N17 46.0	203 11.0	13.6 S	7 43.5	9.2 55.4	N 58	01 40	03 04	03 57	11 34	12 47	14 00	15 11
	07	283 25.6	45.4	217 43.6	13.6	7 52.7	9.1 55.4	56	02 09	03 20	04 07	11 30	12 40	13 51	15 01
	08	298 25.6	44.7	232 16.2	13.6	8 01.8	9.1 55.4	54	02 31	03 33	04 17	11 26	12 34	13 43	14 52
	09	313 25.7	44.1	246 48.8	13.5	8 10.9	9.0 55.5	52	02 49	03 44	04 25	11 22	12 29	13 37	14 44
	10	328 25.7	43.4	261 21.3	13.5	8 19.9	9.0 55.5	50	03 03	03 54	04 32	11 19	12 24	13 31	14 37
	11	343 25.8	42.8	275 53.8	13.4	8 28.9	9.0 55.5	45	03 32	04 14	04 47	11 12	12 14	13 17	14 21
	12	358 25.8	N17 42.2	290 26.2	13.3 S	8 37.9	9.0 55.6	N 40	03 53	04 30	05 00	11 06	12 06	13 07	14 08
	13	13 25.8	41.5	304 58.5	13.3	8 46.9	8.9 55.6	35	04 10	04 43	05 11	11 01	11 58	12 57	13 58
	14	28 25.9	40.9	319 30.8	13.3	8 55.8	8.9 55.6	30	04 23	04 54	05 20	10 57	11 52	12 49	13 48
	15	43 25.9	40.2	334 03.1	13.2	9 04.7	8.9 55.6	20	04 45	05 13	05 36	10 49	11 41	12 36	13 32
	16	58 26.0	39.6	348 35.3	13.1	9 13.6	8.8 55.7	N 10	05 02	05 28	05 50	10 42	11 32	12 24	13 18
	17	73 26.0	38.9	3 07.4	13.1	9 22.4	8.8 55.7	0	05 16	05 41	06 03	10 36	11 23	12 12	13 05
	18	88 26.1	N17 38.3	17 39.5	13.1 S	9 31.2	8.7 55.7	S 10	05 28	05 53	06 15	10 30	11 14	12 01	12 52
	19	103 26.1	37.6	32 11.6	12.9	9 39.9	8.8 55.7	20	05 39	06 06	06 29	10 23	11 05	11 49	12 38
	20	118 26.2	37.0	46 43.5	12.9	9 48.7	8.7 55.8	30	05 50	06 19	06 44	10 16	10 54	11 36	12 22
	21	133 26.2	36.3	61 15.4	12.9	9 57.4	8.6 55.8	35	05 56	06 26	06 53	10 12	10 48	11 28	12 13
	22	148 26.3	35.7	75 47.3	12.8	10 06.0	8.6 55.8	40	06 02	06 34	07 03	10 07	10 41	11 19	12 03
	23	163 26.3	35.0	90 19.1	12.8	10 14.6	8.6 55.9	45	06 08	06 43	07 15	10 02	10 33	11 09	11 51
D O M I N G O	300	178 26.4	N17 34.4	104 50.9	12.6 S	10 23.2	8.5 55.9	S 50	06 15	06 54	07 29	09 55	10 23	10 56	11 36
	01	193 26.4	33.7	119 22.5	12.7	10 31.7	8.5 55.9	52	06 18	06 58	07 35	09 52	10 19	10 51	11 29
	02	208 26.5	33.1	133 54.2	12.5	10 40.2	8.4 56.0	54	06 21	07 04	07 42	09 49	10 14	10 44	11 21
	03	223 26.5	32.4	148 25.7	12.5	10 48.6	8.5 56.0	56	06 24	07 09	07 51	09 45	10 09	10 37	11 13
	04	238 26.6	31.8	162 57.2	12.5	10 57.1	8.3 56.0	58	06 28	07 15	08 00	09 41	10 03	10 29	11 03
	05	253 26.6	31.1	177 28.7	12.3	11 05.4	8.3 56.0	S 60	06 32	07 22	08 10	09 36	09 56	10 20	10 52
	06	268 26.7	N17 30.5	192 00.0	12.3 S	11 13.7	8.3 56.1	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	07	283 26.7	29.8	206 31.3	12.3	11 22.0	8.2 56.1				2	3	4	5	
	08	298 26.8	29.2	221 02.6	12.2	11 30.2	8.2 56.1	N 72	h m	h m	h m	h m	h m	h m	h m
	09	313 26.8	28.5	235 33.8	12.1	11 38.4	8.1 56.2								
	10	328 26.9	27.9	250 04.9	12.0	11 46.5	8.1 56.2	N 70	22 24	23 10	23 43	20 43	20 34	20 22	19 45
	11	343 26.9	27.2	264 35.9	12.0	11 54.6	8.1 56.2	N 68	21 44	22 30	23 02	21 11	21 18	21 29	21 49
	12	358 27.0	N17 26.6	279 06.9	11.9 S	12 02.7	8.0 56.3	66	21 17	22 10	22 42	21 21	21 33	21 50	22 17
	13	13 27.0	25.9	293 37.8	11.9	12 10.7	7.9 56.3	64	20 56	22 17	22 49	21 30	21 45	22 07	22 38
	14	28 27.1	25.3	308 08.7	11.8	12 18.6	7.9 56.3	62	20 39	21 47	22 19	21 37	21 56	22 21	22 55
	15	43 27.1	24.6	322 39.5	11.7	12 26.5	7.8 56.4	60	20 26	21 24	22 16	21 44	22 05	22 32	23 09
	16	58 27.2	23.9	337 10.2	11.6	12 34.3	7.8 56.4	N 58	20 14	21 06	22 28	21 50	22 13	22 43	23 21
	17	73 27.2	23.3	351 40.8	11.6	12 42.1	7.7 56.4	56	20 04	20 51	22 00	21 55	22 20	22 52	23 31
	18	88 27.3	N17 22.6	6 11.4	11.5 S	12 49.8	7.7 56.5	54	19 55	20 38	21 39	21 59	22 27	23 00	23 41
	19	103 27.3	22.0	20 41.9	11.5	12 57.5	7.6 56.5	52	19 47	20 27	21 22	22 03	22 32	23 07	23 49
	20	118 27.4	21.3	35 12.4	11.3	13 05.1	7.5 56.5	50	19 40	20 18	21 07	22 07	22 38	23 13	23 56
	21	133 27.4	20.6	49 42.7	11.3	13 12.6	7.5 56.6	45	19 24	19 58	20 40	22 15	22 49	23 27	24 12
	22	148 27.5	20.0	64 13.0	11.2	13 20.1	7.5 56.6	N 40	19 12	19 42	20 19	22 22	22 58	23 39	24 25
	23	163 27.5	19.3	78 43.2	11.2	13 27.6	7.4 56.6	35	19 01	19 29	20 02	22 28	23 06	23 48	24 37
	L U N E S	400	178 27.6	N17 18.7	93 13.4	11.0 S	13 35.0	7.3 56.7	30	18 52	19 18	19 49	22 34	23 13	23 57	24 46
01		193 27.7	18.0	107 43.4	11.0	13 42.3	7.2 56.7	20	18 36	18 59	19 27	22 43	23 25	24 12	00 12
02		208 27.7	17.3	122 13.4	11.0	13 49.5	7.2 56.7	N 10	18 22	18 44	19 10	22 51	23 36	24 25	00 25
03		223 27.8	16.7	136 43.4	10.8	13 56.7	7.2 56.8	0	18 10	18 31	18 57	22 58	23 46	24 37	00 37
04		238 27.8	16.0	151 13.2	10.8	14 03.9	7.0 56.8	S 10	17 57	18 19	18 44	23 06	23 56	24 49	00 49
05		253 27.9	15.4	165 43.0	10.7	14 10.9	7.0 56.8	20	17 44	18 07	18 33	23 14	24 07	00 07	01 02
06		268 27.9	N17 14.7	180 12.7	10.6 S	14 17.9	7.0 56.9	30	17 29	17 54	18 22	23 23	24 19	00 19	01 17
07		283 28.0	14.0	194 42.3	10.6	14 24.9	6.8 56.9	35	17 20	17 47	18 17	23 28	24 26	00 26	01 26
08		298 28.1	13.4	209 11.9	10.5	14 31.7	6.8 56.9	40	17 10	17 39	18 11	23 34	24 35	00 35	01 36
09		313 28.1	12.7	223 41.4	10.4	14 38.5	6.8 57.0	45	16 58	17 30	18 05	23 41	24 44	00 44	01 48
10		328 28.2	12.0	238 10.8	10.3	14 45.3	6.6 57.0	S 50	16 44	17 19	17 58	23 50	24 56	00 56	02 02
11		343 28.2	11.4	252 40.1	10.2	14 51.9	6.6 57.1	52	16 38	17 15	17 55	23 54	25 01	01 01	02 08
12		358 28.3	N17 10.7	267 09.3	10.2 S	15 58.5	6.5 57.1	54	16 31	17 10	17 52	23 58	25 07	01 07	02 16
13		13 28.3	10.0	281 38.5	10.1	15 05.0	6.5 57.1	56	16 22	17 04	17 49	24 03	00 03	01 14	02 24
14		28 28.4	09.4	296 07.6	10.0	15 11.5	6.4 57.2	58	16 13	16 58	17 46	24 08	00 08	01 21	02 33
15		43 28.5	8.7	310 36.6	9.9	15 17.9	6.3 57.2	S 60	16 03	16 51	17 42	24 14	00 14	01 29	02 44
16		58 28.5	08.0	325 05.5	9.9	15 24.2	6.2 57.2	Día	SOL		LUNA				
17		73 28.6	07.4	339 34.4	9.8	15 30.4	6.1 57.3		Ec. Tiempo		Paso Mer.	Paso Mer.	Edad	Fase	
18		88 28.6	N17 06.7	354 03.2	9.7 S	15 36.5	6.1 57.3	00h	12h	Paso Mer.	h m	h m	h m	d	%
19		103 28.7	06.0	8 31.9	9.6	15 42.6	6.0 57.4								
20		118 28.8	05.3	23 00.5	9.6	15 48.6	5.9 57.4	2	3	4	12 06	16 47	04 24	07 35	
21		133 28.8	04.7	37 29.1	9.4	15 54.5	5.8 57.4	3	4	12 06	17 34	05 10	08 45		
22		148 28.9	04.0	51 57.5	9.4	16 00.3	5.8 57.5	4	5	12 06	18 25	05 59	09 55		
23		163 28.9	03.3	66 25.9	9.3	16 06.1	5.7 57.5								
		S/D	15.8	<i>d</i> 0.7	S/D										

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.5	JÚPITER -1.8	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
5 00	313 28.2	200 39.3 N21 52.2	100 46.5 S14 19.2	186 41.5 N19 34.3	88 27.4 S14 44.8	Acamar	315 17.8 S40 14.6	
01	328 30.7	215 38.5 51.9	115 47.6 19.7	201 43.4 34.1	103 29.8 44.8	Achernar	335 26.1 S57 09.5	
02	343 33.1	230 37.7 51.5	130 48.7 20.2	216 45.3 34.0	118 32.2 44.8	Acrux	173 08.6 S63 11.0	
03	358 35.6	245 36.9 . . 51.2	145 49.8 . . 20.7	231 47.2 . . 33.9	133 34.6 . . 44.9	Adhara	255 12.2 S28 59.6	
04	13 38.1	260 36.1 50.8	160 50.9 21.2	246 49.1 33.8	148 37.0 44.9	Aldebarán	290 48.6 N16 32.1	
05	28 40.5	275 35.4 50.4	175 52.1 21.7	261 51.0 33.6	163 39.4 44.9			
06	43 43.0	290 34.6 N21 50.1	190 53.2 S14 22.2	276 52.9 N19 33.5	178 41.8 S14 45.0	Alioth	166 20.4 N55 53.1	
07	58 45.5	305 33.8 49.7	205 54.3 22.7	291 54.7 33.4	193 44.2 45.0	Alkaid	152 58.5 N49 14.8	
08	73 47.9	320 33.0 49.3	220 55.4 23.2	306 56.6 33.2	208 46.6 45.0	Al Na'ir	27 42.3 S46 53.1	
09	88 50.4	335 32.2 . . 48.9	235 56.5 . . 23.7	321 58.5 . . 33.1	223 49.0 . . 45.0	Alnilam	275 45.8 S 1 11.7	
10	103 52.9	350 31.4 48.6	250 57.6 24.2	337 00.4 33.0	238 51.4 45.1	Alphard	217 55.6 S 8 43.4	
11	118 55.3	5 30.6 48.2	265 58.7 24.7	352 02.3 32.9	253 53.8 45.1			
12	133 57.8	20 29.8 N21 47.8	280 59.8 S14 25.2	7 04.2 N19 32.7	268 56.2 S14 45.1	Alphecca	126 10.3 N26 40.3	
13	149 00.2	35 29.0 47.5	296 00.9 25.7	22 06.1 32.6	283 58.6 45.2	Alpheratz	357 42.4 N29 10.3	
14	164 02.7	50 28.2 47.1	311 02.0 26.2	37 08.0 32.5	299 01.1 45.2	Altair	62 07.1 N 8 54.7	
15	179 05.2	65 27.5 . . 46.7	326 03.2 . . 26.7	52 09.9 . . 32.4	314 03.5 . . 45.2	Ankaa	353 14.7 S42 13.3	
16	194 07.6	80 26.7 46.3	341 04.3 27.2	67 11.8 32.2	329 05.9 45.2	Antares	112 25.1 S26 27.7	
17	209 10.1	95 25.9 45.9	356 05.4 27.7	82 13.7 32.1	344 08.3 45.3			
18	224 12.6	110 25.1 N21 45.6	11 06.5 S14 28.2	97 15.6 N19 32.0	359 10.7 S14 45.3	Arcturus	145 55.1 N19 06.6	
19	239 15.0	125 24.3 45.2	26 07.6 28.7	112 17.5 31.8	14 13.1 45.3	Atria	107 25.8 S69 03.3	
20	254 17.5	140 23.5 44.8	41 08.7 29.2	127 19.4 31.7	29 15.5 45.4	Avior	234 18.3 S59 33.5	
21	269 20.0	155 22.7 . . 44.4	56 09.8 . . 29.7	142 21.3 . . 31.6	44 17.9 . . 45.4	Bellatrix	278 31.4 N 6 21.6	
22	284 22.4	170 21.9 44.0	71 10.9 30.2	157 23.2 31.5	59 20.3 45.4	Betelgeuse	271 00.7 N 7 24.4	
23	299 24.9	185 21.1 43.7	86 12.0 30.7	172 25.1 31.3	74 22.7 45.4			
6 00	314 27.4	200 20.4 N21 43.3	101 13.1 S14 31.2	187 27.0 N19 31.2	89 25.1 S14 45.5	Canopus	263 56.2 S52 42.2	
01	329 29.8	215 19.6 42.9	116 14.2 31.7	202 28.8 31.1	104 27.5 45.5	Capella	280 33.5 N46 00.4	
02	344 32.3	230 18.8 42.5	131 15.3 32.2	217 30.7 30.9	119 29.9 45.5	Deneb	49 30.4 N45 20.2	
03	359 34.7	245 18.0 . . 42.1	146 16.4 . . 32.7	232 32.6 . . 30.8	134 32.3 . . 45.6	Denébola	182 33.1 N14 29.5	
04	14 37.2	260 17.2 41.7	161 17.5 33.2	247 34.5 30.7	149 34.7 45.6	Diphda	348 54.9 S17 54.2	
05	29 39.7	275 16.4 41.3	176 18.6 33.7	262 36.4 30.6	164 37.1 45.6			
06	44 42.1	290 15.6 N21 40.9	191 19.7 S14 34.2	277 38.3 N19 30.4	179 39.5 S14 45.6	Dubhe	193 51.4 N61 40.4	
07	59 44.6	305 14.8 40.5	206 20.8 34.7	292 40.2 30.3	194 41.9 45.7	Elnath	278 11.8 N28 36.9	
08	74 47.1	320 14.1 40.1	221 21.9 35.2	307 42.1 30.2	209 44.3 45.7	Eltanin	90 45.4 N51 29.6	
09	89 49.5	335 13.3 . . 39.7	236 23.0 . . 35.7	322 44.0 . . 30.0	224 46.7 . . 45.7	Enif	33 46.0 N 9 56.8	
10	104 52.0	350 12.5 39.3	251 24.1 36.2	337 45.9 29.9	239 49.1 45.8	Fomalhaut	15 22.8 S29 32.4	
11	119 54.5	5 11.7 38.9	266 25.2 36.7	352 47.8 29.8	254 51.5 45.8			
12	134 56.9	20 10.9 N21 38.5	281 26.3 S14 37.2	7 49.7 N19 29.7	269 53.9 S14 45.8	Gacrux	172 00.2 S57 11.9	
13	149 59.4	35 10.1 38.1	296 27.4 37.7	22 51.6 29.5	284 56.3 45.8	Gienah	175 51.7 S17 37.4	
14	165 01.9	50 09.4 37.7	311 28.5 38.2	37 53.5 29.4	299 58.7 45.9	Hadar	148 46.8 S60 26.8	
15	180 04.3	65 08.6 . . 37.3	326 29.6 . . 38.6	52 55.4 . . 29.3	315 01.1 . . 45.9	Hamal	327 59.8 N23 31.8	
16	195 06.8	80 07.8 36.9	341 30.7 39.1	67 57.3 29.1	330 03.5 45.9	Kaus Aust.	83 42.4 S34 22.5	
17	210 09.2	95 07.0 36.5	356 31.8 39.6	82 59.2 29.0	345 05.9 46.0			
18	225 11.7	110 06.2 N21 36.1	11 32.9 S14 40.1	98 01.1 N19 28.9	0 08.3 S14 46.0	Kochab	137 20.2 N74 06.1	
19	240 14.2	125 05.4 35.7	26 34.0 40.6	113 03.0 28.8	15 10.7 46.0	Markab	13 37.2 N15 17.2	
20	255 16.6	140 04.7 35.3	41 35.1 41.1	128 04.9 28.6	30 13.1 46.1	Menkar	314 14.2 N 4 08.8	
21	270 19.1	155 03.9 . . 34.9	56 36.2 . . 41.6	143 06.8 . . 28.5	45 15.5 . . 46.1	Menkent	148 06.6 S36 26.5	
22	285 21.6	170 03.1 34.5	71 37.3 42.1	158 08.6 28.4	60 17.9 46.1	Miaplacidus	221 40.3 S69 46.8	
23	300 24.0	185 02.3 34.1	86 38.4 42.6	173 10.5 28.2	75 20.3 46.1			
7 00	315 26.5	200 01.5 N21 33.7	101 39.5 S14 43.1	188 12.4 N19 28.1	90 22.7 S14 46.2	Mirfak	308 39.2 N49 54.5	
01	330 29.0	215 00.7 33.2	116 40.6 43.6	203 14.3 28.0	105 25.1 46.2	Nunki	75 57.0 S26 16.5	
02	345 31.4	230 00.0 32.8	131 41.7 44.1	218 16.2 27.9	120 27.5 46.2	Peacock	53 17.5 S56 41.0	
03	0 33.9	244 59.2 . . 32.4	146 42.8 . . 44.6	233 18.1 . . 27.7	135 29.9 . . 46.3	Póllux	243 27.1 N27 59.3	
04	15 36.4	259 58.4 32.0	161 43.9 45.1	248 20.0 27.6	150 32.3 46.3	Procyon	244 59.2 N 5 11.1	
05	30 38.8	274 57.6 31.6	176 45.0 45.6	263 21.9 27.5	165 34.7 46.3			
06	45 41.3	289 56.8 N21 31.2	191 46.0 S14 46.1	278 23.8 N19 27.3	180 37.1 S14 46.4	Rasalhague	96 05.5 N12 33.3	
07	60 43.7	304 56.1 30.7	206 47.1 46.6	293 25.7 27.2	195 39.5 46.4	Régulus	207 43.0 N11 53.7	
08	75 46.2	319 55.3 30.3	221 48.2 47.1	308 27.6 27.1	210 41.9 46.4	Rigel	281 11.5 S 8 11.1	
09	90 48.7	334 54.5 . . 29.9	236 49.3 . . 47.6	323 29.5 . . 27.0	225 44.3 . . 46.4	Rigel Kent.	139 50.6 S60 53.8	
10	105 51.1	349 53.7 29.5	251 50.4 48.1	338 31.4 26.8	240 46.7 46.5	Sabik	102 11.4 S15 44.4	
11	120 53.6	4 52.9 29.0	266 51.5 48.6	353 33.3 26.7	255 49.1 46.5			
12	135 56.1	19 52.2 N21 28.6	281 52.6 S14 49.1	8 35.2 N19 26.6	270 51.5 S14 46.5	Schedar	349 39.2 N56 36.9	
13	150 58.5	34 51.4 28.2	296 53.7 49.6	23 37.1 26.4	285 53.9 46.6	Shaula	96 20.5 S37 06.7	
14	166 01.0	49 50.6 27.8	311 54.8 50.1	38 39.0 26.3	300 56.3 46.6	Sirius	258 33.3 S16 44.2	
15	181 03.5	64 49.8 . . 27.3	326 55.9 . . 50.6	53 40.9 . . 26.2	315 58.7 . . 46.6	Spica	158 30.5 S11 14.2	
16	196 05.9	79 49.0 26.9	341 56.9 51.1	68 42.8 26.1	331 01.0 46.7	Suhail	222 52.3 S43 29.6	
17	211 08.4	94 48.3 26.5	356 58.0 51.6	83 44.7 25.9	346 03.4 46.7			
18	226 10.8	109 47.5 N21 26.0	11 59.1 S14 52.1	98 46.6 N19 25.8	1 05.8 S14 46.7	Vega	80 38.1 N38 48.2	
19	241 13.3	124 46.7 25.6	27 00.2 52.6	113 48.5 25.7	16 08.2 46.7	Zuben'ubi	137 04.5 S16 06.0	
20	256 15.8	139 45.9 25.2	42 01.3 53.1	128 50.4 25.5	31 10.6 46.8			
21	271 18.2	154 45.2 . . 24.7	57 02.4 . . 53.5	143 52.3 . . 25.4	46 13.0 . . 46.8			
22	286 20.7	169 44.4 24.3	72 03.5 54.0	158 54.2 25.3	61 15.4 46.8			
23	301 23.2	184 43.6 23.9	87 04.5 54.5	173 56.1 25.2	76 17.8 46.9			
h m								
Paso Mer.	3 01.7	v -0.8 d 0.4	v 1.1 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0			
						AHS	Paso Mer.	
						h m		
						Venus	245 53.0 10 39	
						Marte	146 45.8 17 14	
						Júpiter	232 59.6 11 29	
						Saturno	134 57.7 17 59	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	v	Dec	d		Ph	Náut.		Civil	5	6	7	8	
d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m		
M A R T E S	5 00	178 29.0	N17 02.7	80 54.2	9.2	S16 11.8	5.5	72	////	////	00 56	18 44	18 52	19 46	20 05	
	01	193 29.1	02.0	95 22.4	9.2	16 17.3	5.5	70	////	////	02 04	17 20	18 01	18 58	19 30	
	02	208 29.1	01.3	109 50.6	9.1	16 22.8	5.5	68	////	01 23	03 04	16 14	17 29	18 27	19 06	
	03	223 29.2	.. 00.6	124 18.7	9.0	16 28.3	5.3	66	////	02 06	03 23	15 53	17 05	18 04	18 46	
	04	238 29.3	17 00.0	138 46.7	8.9	16 33.6	5.2	64	////	02 34	03 39	15 37	16 47	17 45	18 30	
	05	253 29.3	16 59.3	153 14.6	8.8	16 38.8	5.2	60	01 14	02 55	03 52	15 23	16 31	17 30	18 17	
	06	268 29.4	N16 58.6	167 42.4	8.8	S16 44.0	5.0	58	01 54	03 12	04 03	15 11	16 18	17 17	18 06	
	07	283 29.4	57.9	182 10.2	8.6	16 49.0	5.0	56	02 20	03 27	04 13	15 01	16 07	17 06	17 56	
	08	298 29.5	57.3	196 37.8	8.6	16 54.0	4.9	54	02 40	03 39	04 22	14 52	15 57	16 56	17 46	
	09	313 29.6	.. 56.6	211 05.4	8.6	16 58.9	4.8	52	02 56	03 49	04 29	14 44	15 48	16 47	17 39	
	10	328 29.6	55.9	225 33.0	8.4	17 03.7	4.7	50	03 09	03 58	04 36	14 37	15 40	16 39	17 32	
	11	343 29.7	55.2	240 00.4	8.4	17 08.4	4.6	45	03 36	04 18	04 51	14 21	15 24	16 23	17 16	
	12	358 29.8	N16 54.5	254 27.8	8.2	S17 13.0	4.5	40	03 56	04 33	05 03	14 08	15 10	16 09	17 04	
	13	13 29.8	53.9	268 55.0	8.3	17 17.5	4.4	35	04 12	04 46	05 13	13 58	14 58	15 57	16 53	
	14	28 29.9	53.2	283 22.3	8.1	17 21.9	4.3	30	04 26	04 56	05 22	13 48	14 48	15 47	16 44	
	15	43 30.0	.. 52.5	297 49.4	8.0	17 26.2	4.2	20	04 46	05 14	05 37	13 32	14 30	15 29	16 28	
	16	58 30.0	51.8	312 16.4	8.0	17 30.4	4.1	N 10	05 02	05 28	05 50	13 18	14 15	15 14	16 13	
	17	73 30.1	51.1	326 43.4	7.9	17 34.5	4.1	0	05 16	05 41	06 02	13 05	14 01	15 00	16 00	
	18	88 30.2	N16 50.5	341 10.3	7.8	S17 38.6	3.9	S 10	05 27	05 53	06 15	12 52	13 47	14 46	15 47	
	19	103 30.2	49.8	355 37.1	7.8	17 42.5	3.8	20	05 38	06 04	06 27	12 38	13 32	14 30	15 33	
	20	118 30.3	49.1	10 03.9	7.6	17 46.3	3.7	30	05 48	06 17	06 42	12 22	13 15	14 13	15 17	
	21	133 30.4	.. 48.4	24 30.5	7.6	17 50.0	3.6	35	05 53	06 24	06 50	12 13	13 05	14 03	15 07	
	22	148 30.4	47.7	38 57.1	7.6	17 53.6	3.5	40	05 59	06 31	07 00	12 03	12 53	13 51	14 56	
23	163 30.5	47.0	53 23.7	7.4	17 57.1	3.4	45	06 04	06 39	07 11	11 51	12 40	13 38	14 44		
M I É R C O L E S	6 00	178 30.6	N16 46.4	67 50.1	7.4	S18 00.5	3.3	58.5	S 50	06 10	06 49	07 24	11 36	12 23	13 21	14 28
	01	193 30.6	45.7	82 16.5	7.3	18 03.8	3.2	58.5	52	06 13	06 54	07 30	11 29	12 16	13 13	14 21
	02	208 30.7	45.0	96 42.8	7.2	18 07.0	3.1	58.6	54	06 16	06 58	07 37	11 21	12 07	13 05	14 13
	03	223 30.8	.. 44.3	111 09.0	7.2	18 10.1	2.9	58.6	56	06 19	07 04	07 45	11 13	11 58	12 55	14 04
	04	238 30.8	43.6	125 35.2	7.1	18 13.0	2.9	58.6	58	06 22	07 10	07 53	11 03	11 47	12 44	13 54
	05	253 30.9	42.9	140 01.3	7.0	18 15.9	2.7	58.7	S 60	06 26	07 16	08 03	10 52	11 34	12 31	13 42
	06	268 31.0	N16 42.3	154 27.3	6.9	S18 18.6	2.7	58.7	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
	07	283 31.0	41.6	168 53.2	6.9	18 21.3	2.5	58.8			Civil		Náut.		5	6
	08	298 31.1	40.9	183 19.1	6.8	18 23.8	2.4	58.8							7	8
	09	313 31.2	.. 40.2	197 44.9	6.7	18 26.2	2.3	58.8							h m	h m
	10	328 31.3	39.5	212 10.6	6.7	18 28.5	2.2	58.9							h m	h m
	11	343 31.3	38.8	226 36.3	6.6	18 30.7	2.1	58.9							h m	h m
	12	358 31.4	N16 38.1	241 01.9	6.6	S18 32.8	1.9	59.0	N 70	23 02	////	////	19 45	20 36	21 27	22 38
	13	13 31.5	37.4	255 27.5	6.4	18 34.7	1.8	59.0	70	22 03	////	////	21 10	21 36	22 47	23 44
	14	28 31.5	36.7	269 52.9	6.4	18 36.5	1.8	59.0	68	21 29	////	////	21 49	22 27	23 34	24 34
	15	43 31.6	.. 36.0	284 18.3	6.4	18 38.3	1.6	59.1	66	21 05	22 42	////	22 17	22 59	24 05	00 05
	16	58 31.7	35.4	298 43.7	6.3	18 39.9	1.4	59.1	64	20 46	22 02	////	22 38	23 23	24 28	00 28
	17	73 31.8	34.7	313 09.0	6.2	18 41.3	1.4	59.2	62	20 31	21 35	////	22 55	23 42	24 46	00 46
	18	88 31.8	N16 34.0	327 34.2	6.1	S18 42.7	1.2	59.2	60	20 18	21 14	22 51	23 09	23 57	25 01	01 01
	19	103 31.9	33.3	341 59.3	6.1	18 43.9	1.1	59.2	N 58	20 07	20 57	22 14	23 21	24 11	25 01	01 14
	20	118 32.0	32.6	356 24.4	6.1	18 45.0	1.0	59.3	56	19 57	20 44	21 49	23 31	24 22	25 02	01 25
	21	133 32.0	.. 31.9	10 49.5	6.0	18 46.0	0.9	59.3	54	19 49	20 32	21 30	23 41	24 32	25 03	01 35
	22	148 32.1	31.2	25 14.5	5.9	18 46.9	0.8	59.3	52	19 41	20 21	21 14	23 49	24 41	25 04	01 43
23	163 32.2	30.5	39 39.4	5.9	18 47.7	0.6	59.4	50	19 35	20 12	21 01	23 56	24 49	25 04	01 51	
J U E V E S	7 00	178 32.3	N16 29.8	54 04.3	5.8	S18 48.3	0.5	59.4	45	19 20	19 53	20 34	24 12	25 00	25 01	02 08
	01	193 32.3	29.1	68 29.1	5.8	18 48.8	0.3	59.5	N 40	19 08	19 38	20 15	24 25	25 00	25 01	02 21
	02	208 32.4	28.4	82 53.9	5.7	18 49.1	0.3	59.5	35	18 58	19 26	19 59	24 37	25 00	25 01	02 33
	03	223 32.5	.. 27.7	97 18.6	5.6	18 49.4	0.1	59.5	30	18 49	19 15	19 46	24 46	25 00	25 01	02 43
	04	238 32.6	27.0	111 43.2	5.6	18 49.5	0.0	59.6	20	18 34	18 58	19 25	24 55	25 01	25 02	03 00
	05	253 32.6	26.3	126 07.8	5.6	18 49.5	0.1	59.6	N 10	18 21	18 43	19 09	25 00	25 01	25 02	03 15
	06	268 32.7	N16 25.6	140 32.4	5.5	S18 49.4	0.3	59.6	0	18 09	18 31	18 56	25 00	25 01	25 02	03 29
	07	283 32.8	24.9	154 56.9	5.5	18 49.1	0.4	59.7	S 10	17 57	18 19	18 45	25 00	25 01	25 02	03 42
	08	298 32.9	24.2	169 21.4	5.4	18 48.7	0.5	59.7	20	17 45	18 08	18 34	01 02	02 00	02 59	03 57
	09	313 32.9	.. 23.5	183 45.8	5.4	18 48.2	0.6	59.8	30	17 30	17 55	18 24	01 17	02 17	03 16	04 14
	10	328 33.0	22.8	198 10.2	5.3	18 47.6	0.8	59.8	35	17 22	17 49	18 19	01 26	02 26	03 26	04 24
	11	343 33.1	22.1	212 34.5	5.3	18 46.8	0.9	59.8	40	17 13	17 41	18 14	01 36	02 38	03 38	04 35
	12	358 33.2	N16 21.4	226 58.8	5.2	S18 45.9	1.1	59.9	45	17 02	17 33	18 08	01 48	02 51	03 52	04 48
	13	13 33.3	20.7	241 23.0	5.3	18 44.8	1.1	59.9	S 50	16 49	17 23	18 02	02 02	03 07	04 08	05 04
	14	28 33.3	20.0	255 47.3	5.1	18 43.7	1.3	59.9	52	16 42	17 19	17 59	02 08	03 14	04 16	05 11
	15	43 33.4	.. 19.3	270 11.4	5.2	18 42.4	1.5	60.0	54	16 36	17 14	17 57	02 16	03 23	04 25	05 20
	16	58 33.5	18.6	284 35.6	5.1	18 40.9	1.5	60.0	56	16 28	17 09	17 54	02 24	03 32	04 35	05 29
	17	73 33.6	17.9	298 59.7	5.0	18 39.4	1.7	60.0	58	16 19	17 03	17 51	02 33	03 43	04 46	05 39
	18	88 33.6	N16 17.2	313 23.7	5.1	S18 37.7	1.8	60.1	S 60	16 10	16 57	17 47	02 44	03 55	04 59	05 51
	19	103 33.7	16.5	327 47.8	5.0	18 35.9	2.0	60.1	Día		SOL		LUNA			
	20	118 33.8	15.8	342 11.8	4.9	18 33.9	2.1	60.1			Ec. Tiempo		Paso Mer.		Paso Mer.	
	21	133 33.9	.. 15.1	356 35.7	4.9	18 31.8	2.2	60.2			00h 12h		Sup. Inf.		Edad Fase	
	22	148 34.0	14.4	10 59.7	4.9	18 29.6	2.3	60.2								

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.5	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
8 00	316 25.6	199 42.8 N21 23.4	102 05.6 S14 55.0	188 57.9 N19 25.0	91 20.2 S14 46.9	Acamar	315 17.8 S40 14.6	
01	331 28.1	214 42.1 23.0	117 06.7 55.5	203 59.8 24.9	106 22.6 46.9	Achernar	335 26.1 S57 09.5	
02	346 30.6	229 41.3 22.5	132 07.8 56.0	219 01.7 24.8	121 25.0 47.0	Acrux	173 08.7 S63 11.0	
03	1 33.0	244 40.5 . . 22.1	147 08.9 . . 56.5	234 03.6 . . 24.6	136 27.4 . . 47.0	Adhara	255 12.2 S28 59.6	
04	16 35.5	259 39.7 21.7	162 09.9 57.0	249 05.5 24.5	151 29.8 47.0	Aldebarán	290 48.6 N16 32.1	
05	31 38.0	274 39.0 21.2	177 11.0 57.5	264 07.4 24.4	166 32.2 47.1			
06	46 40.4	289 38.2 N21 20.8	192 12.1 S14 58.0	279 09.3 N19 24.2	181 34.6 S14 47.1	Alioth	166 20.4 N55 53.1	
07	61 42.9	304 37.4 20.3	207 13.2 58.5	294 11.2 24.1	196 37.0 47.1	Alkaid	152 58.5 N49 14.8	
08	76 45.3	319 36.6 19.9	222 14.3 59.0	309 13.1 24.0	211 39.4 47.1	Al Na'ir	27 42.3 S46 53.1	
09	91 47.8	334 35.9 . . 19.4	237 15.3 14 59.0	324 15.0 . . 23.9	226 41.8 . . 47.2	Alnilam	275 45.8 S 1 11.7	
10	106 50.3	349 35.1 19.0	252 16.4 15 00.0	339 16.9 23.7	241 44.1 47.2	Alphard	217 55.6 S 8 43.4	
11	121 52.7	4 34.3 18.5	267 17.5 00.5	354 18.8 23.6	256 46.5 47.2			
12	136 55.2	19 33.5 N21 18.1	282 18.6 S15 01.0	9 20.7 N19 23.5	271 48.9 S14 47.3	Alphecca	126 10.3 N26 40.3	
13	151 57.7	34 32.8 17.6	297 19.7 01.5	24 22.6 23.3	286 51.3 47.3	Alpheratz	357 42.4 N29 10.3	
14	167 00.1	49 32.0 17.2	312 20.7 02.0	39 24.5 23.2	301 53.7 47.3	Altair	62 07.1 N 8 54.7	
15	182 02.6	64 31.2 . . 16.7	327 21.8 . . 02.5	54 26.4 . . 23.1	316 56.1 . . 47.4	Ankaa	353 14.7 S42 13.3	
16	197 05.1	79 30.5 16.3	342 22.9 03.0	69 28.3 23.0	331 58.5 47.4	Antares	112 25.1 S26 27.7	
17	212 07.5	94 29.7 15.8	357 24.0 03.5	84 30.2 22.8	347 00.9 47.4			
18	227 10.0	109 28.9 N21 15.3	12 25.0 S15 04.0	99 32.1 N19 22.7	2 03.3 S14 47.5	Arcturus	145 55.1 N19 06.6	
19	242 12.5	124 28.1 14.9	27 26.1 04.5	114 34.0 22.6	17 05.7 47.5	Atria	107 25.9 S69 03.3	
20	257 14.9	139 27.4 14.4	42 27.2 04.9	129 35.9 22.4	32 08.1 47.5	Avior	234 18.2 S59 33.5	
21	272 17.4	154 26.6 . . 14.0	57 28.3 . . 05.4	144 37.8 . . 22.3	47 10.5 . . 47.6	Bellatrix	278 31.3 N 6 21.6	
22	287 19.8	169 25.8 13.5	72 29.3 05.9	159 39.7 22.2	62 12.8 47.6	Betelgeuse	271 00.7 N 7 24.4	
23	302 22.3	184 25.1 13.0	87 30.4 06.4	174 41.6 22.0	77 15.2 47.6			
9 00	317 24.8	199 24.3 N21 12.6	102 31.5 S15 06.9	189 43.5 N19 21.9	92 17.6 S14 47.7	Canopus	263 56.2 S52 42.2	
01	332 27.2	214 23.5 12.1	117 32.6 07.4	204 45.4 21.8	107 20.0 47.7	Capella	280 33.5 N46 00.4	
02	347 29.7	229 22.8 11.6	132 33.6 07.9	219 47.3 21.7	122 22.4 47.7	Deneb	49 30.4 N45 20.2	
03	2 32.2	244 22.0 . . 11.2	147 34.7 . . 08.4	234 49.2 . . 21.5	137 24.8 . . 47.8	Denébola	182 33.1 N14 29.5	
04	17 34.6	259 21.2 10.7	162 35.8 08.9	249 51.1 21.4	152 27.2 47.8	Diphda	348 54.9 S17 54.2	
05	32 37.1	274 20.5 10.2	177 36.8 09.4	264 53.0 21.3	167 29.6 47.8			
06	47 39.6	289 19.7 N21 09.8	192 37.9 S15 09.9	279 54.9 N19 21.1	182 32.0 S14 47.8	Dubhe	193 51.4 N61 40.4	
07	62 42.0	304 18.9 09.3	207 39.0 10.4	294 56.8 21.0	197 34.4 47.9	Elnath	278 11.8 N28 36.9	
08	77 44.5	319 18.1 08.8	222 40.1 10.9	309 58.7 20.9	212 36.7 47.9	Eltanin	90 45.4 N51 29.6	
09	92 47.0	334 17.4 . . 08.3	237 41.1 . . 11.4	325 00.6 . . 20.8	227 39.1 . . 47.9	Enif	33 46.0 N 9 56.8	
10	107 49.4	349 16.6 07.9	252 42.2 11.9	340 02.5 20.6	242 41.5 48.0	Fomalhaut	15 22.8 S29 32.4	
11	122 51.9	4 15.8 07.4	267 43.3 12.4	355 04.4 20.5	257 43.9 48.0			
12	137 54.3	19 15.1 N21 06.9	282 44.3 S15 12.9	10 06.3 N19 20.4	272 46.3 S14 48.0	Gacrux	172 00.2 S57 11.9	
13	152 56.8	34 14.3 06.4	297 45.4 13.4	25 08.2 20.2	287 48.7 48.1	Gienah	175 51.7 S17 37.4	
14	167 59.3	49 13.6 05.9	312 46.5 13.9	40 10.1 20.1	302 51.1 48.1	Hadar	148 46.8 S60 26.8	
15	183 01.7	64 12.8 . . 05.5	327 47.5 . . 14.4	55 12.0 . . 20.0	317 53.5 . . 48.1	Hamal	327 59.7 N23 31.8	
16	198 04.2	79 12.0 05.0	342 48.6 14.8	70 13.9 19.8	332 55.9 48.2	Kaus Aust.	83 42.4 S34 22.5	
17	213 06.7	94 11.3 04.5	357 49.7 15.3	85 15.8 19.7	347 58.2 48.2			
18	228 09.1	109 10.5 N21 04.0	12 50.7 S15 15.8	100 17.7 N19 19.6	3 00.6 S14 48.2	Kochab	137 20.3 N74 06.1	
19	243 11.6	124 09.7 03.5	27 51.8 16.3	115 19.6 19.5	18 03.0 48.3	Markab	13 37.2 N15 17.2	
20	258 14.1	139 09.0 03.1	42 52.9 16.8	130 21.5 19.3	33 05.4 48.3	Menkar	314 14.2 N 4 08.8	
21	273 16.5	154 08.2 . . 02.6	57 53.9 . . 17.3	145 23.4 . . 19.2	48 07.8 . . 48.3	Menkent	148 06.7 S36 26.5	
22	288 19.0	169 07.4 02.1	72 55.0 17.8	160 25.3 19.1	63 10.2 48.4	Miaplacidus	221 40.3 S69 46.8	
23	303 21.5	184 06.7 01.6	87 56.0 18.3	175 27.2 18.9	78 12.6 48.4			
10 00	318 23.9	199 05.9 N21 01.1	102 57.1 S15 18.8	190 29.1 N19 18.8	93 15.0 S14 48.4	Mirfak	308 39.2 N49 54.5	
01	333 26.4	214 05.2 00.6	117 58.2 19.3	205 31.0 18.7	108 17.3 48.5	Nunki	75 57.0 S26 16.5	
02	348 28.8	229 04.4 21 00.1	132 59.2 19.8	220 32.9 18.5	123 19.7 48.5	Peacock	53 17.4 S56 41.1	
03	3 31.3	244 03.6 20 59.6	148 00.3 . . 20.3	235 34.8 . . 18.4	138 22.1 . . 48.5	Póllux	243 27.1 N27 59.3	
04	18 33.8	259 02.9 59.1	163 01.4 20.8	250 36.7 18.3	153 24.5 48.6	Procyon	244 59.2 N 5 11.1	
05	33 36.2	274 02.1 58.6	178 02.4 21.3	265 38.5 18.2	168 26.9 48.6			
06	48 38.7	289 01.3 N20 58.1	193 03.5 S15 21.8	280 40.4 N19 18.0	183 29.3 S14 48.6	Rasalhague	96 05.5 N12 33.3	
07	63 41.2	304 00.6 57.6	208 04.5 22.3	295 42.3 17.9	198 31.7 48.7	Régulus	207 43.0 N11 53.7	
08	78 43.6	318 59.8 57.1	223 05.6 22.8	310 44.2 17.8	213 34.0 48.7	Rigel	281 11.5 S 8 11.1	
09	93 46.1	333 59.1 . . 56.6	238 06.7 . . 23.2	325 46.1 . . 17.6	228 36.4 . . 48.7	Rigel Kent.	139 50.6 S60 53.8	
10	108 48.6	348 58.3 56.1	253 07.7 23.7	340 48.0 17.5	243 38.8 48.8	Sabik	102 11.4 S15 44.4	
11	123 51.0	3 57.5 55.6	268 08.8 24.2	355 49.9 17.4	258 41.2 48.8			
12	138 53.5	18 56.8 N20 55.1	283 09.8 S15 24.7	10 51.8 N19 17.2	273 43.6 S14 48.8	Schedar	349 39.1 N56 36.9	
13	153 55.9	33 56.0 54.6	298 10.9 25.2	25 53.7 17.1	288 46.0 48.9	Shaula	96 20.5 S37 06.7	
14	168 58.4	48 55.3 54.1	313 11.9 25.7	40 55.6 17.0	303 48.4 48.9	Sirius	258 33.3 S16 44.2	
15	184 00.9	63 54.5 . . 53.6	328 13.0 . . 26.2	55 57.5 . . 16.8	318 50.7 . . 48.9	Spica	158 30.5 S11 14.2	
16	199 03.3	78 53.8 53.1	343 14.1 26.7	70 59.4 16.7	333 53.1 49.0	Suhail	222 52.2 S43 29.6	
17	214 05.8	93 53.0 52.6	358 15.1 27.2	86 01.3 16.6	348 55.5 49.0			
18	229 08.3	108 52.2 N20 52.1	13 16.2 S15 27.7	101 03.2 N19 16.5	3 57.9 S14 49.0	Vega	80 38.1 N38 48.2	
19	244 10.7	123 51.5 51.6	28 17.2 28.2	116 05.1 16.3	19 00.3 49.1	Zuben'ubi	137 04.5 S16 06.0	
20	259 13.2	138 50.7 51.1	43 18.3 28.7	131 07.0 16.2	34 02.7 49.1			
21	274 15.7	153 50.0 . . 50.6	58 19.3 . . 29.2	146 08.9 . . 16.1	49 05.0 . . 49.1			
22	289 18.1	168 49.2 50.0	73 20.4 29.7	161 10.8 15.9	64 07.4 49.2			
23	304 20.6	183 48.5 49.5	88 21.4 30.1	176 12.7 15.8	79 09.8 49.2			
h m								
Paso Mer.	2 49.9	v -0.8 d 0.5	v 1.1 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0			
						AHS	Paso Mer.	
						° /	h m	
						Venus	241 59.5 10 43	
						Marte	145 06.7 17 09	
						Júpiter	232 18.7 11 20	
						Saturno	134 52.9 17 48	

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	8		9	10	11	
d h	° /	° /	° /	/	° /	/	/	°	h m	h m	h m	h m	h m	h m	h m	h m
V I E R N E S	8 00	178 34.1	N16 13.0	39 47.5	4.8	S18 24.8	2.6	60.3	N 72	////	////	01 34	21 01	20 41	20 31	20 23
	01	193 34.2	12.3	54 11.3	4.9	18 22.2	2.8	60.3	N 70	////	////	02 22	20 05	20 11	20 13	20 13
	02	208 34.3	11.6	68 35.2	4.8	18 19.4	2.9	60.3	68	////	00 25	02 53	19 30	19 48	19 59	20 06
	03	223 34.4	10.9	82 59.0	4.8	18 16.5	3.0	60.4	66	////	01 45	03 15	19 06	19 31	19 47	20 00
	04	238 34.5	10.2	97 22.8	4.8	18 13.5	3.1	60.4	64	////	02 20	03 33	18 46	19 16	19 38	19 54
	05	253 34.5	09.4	111 46.6	4.7	18 10.4	3.3	60.4	62	00 23	02 45	03 47	18 30	19 04	19 29	19 49
	06	268 34.6	N16 08.7	126 10.3	4.8	S18 07.1	3.4	60.5	60	01 34	03 04	03 59	18 17	18 54	19 22	19 45
	07	283 34.7	08.0	140 34.1	4.7	18 03.7	3.6	60.5	N 58	02 06	03 20	04 10	18 06	18 44	19 16	19 42
	08	298 34.8	07.3	154 57.8	4.7	18 00.1	3.6	60.5	56	02 30	03 33	04 19	17 56	18 36	19 10	19 39
	09	313 34.9	06.6	169 21.5	4.7	17 56.5	3.9	60.6	54	02 48	03 45	04 27	17 47	18 29	19 05	19 36
	10	328 34.9	05.9	183 45.2	4.7	17 52.6	3.9	60.6	52	03 03	03 55	04 34	17 39	18 23	19 00	19 33
	11	343 35.0	05.2	198 08.9	4.7	17 48.7	4.1	60.6	50	03 16	04 03	04 41	17 32	18 17	18 56	19 30
	12	358 35.1	N16 04.5	212 32.6	4.6	S17 44.6	4.2	60.6	45	03 41	04 22	04 54	17 16	18 05	18 47	19 25
	13	13 35.2	03.8	226 56.2	4.7	17 40.4	4.3	60.7	N 40	04 00	04 36	05 06	17 04	17 54	18 39	19 21
	14	28 35.3	03.1	241 19.9	4.6	17 36.1	4.5	60.7	35	04 15	04 48	05 15	16 53	17 45	18 33	19 17
	15	43 35.4	02.3	255 43.5	4.7	17 31.6	4.5	60.7	30	04 28	04 58	05 24	16 44	17 37	18 27	19 14
	16	58 35.5	01.6	270 07.2	4.6	17 27.1	4.8	60.7	20	04 48	05 15	05 38	16 28	17 24	18 17	19 08
	17	73 35.5	00.9	284 30.8	4.7	17 22.3	4.8	60.8	N 10	05 03	05 29	05 51	16 13	17 12	18 08	19 02
	18	88 35.6	N16 00.2	298 54.5	4.6	S17 17.5	5.0	60.8	0	05 16	05 41	06 02	16 00	17 01	18 00	18 58
	19	103 35.7	15 59.5	313 18.1	4.7	17 12.5	5.1	60.8	S 10	05 27	05 52	06 14	15 47	16 50	17 52	18 53
	20	118 35.8	58.8	327 41.8	4.6	17 07.4	5.2	60.8	20	05 36	06 03	06 26	15 33	16 38	17 43	18 47
	21	133 35.9	58.1	342 05.4	4.7	17 02.2	5.4	60.9	30	05 46	06 14	06 39	15 17	16 24	17 33	18 42
	22	148 36.0	57.3	356 29.1	4.6	16 56.8	5.5	60.9	35	05 51	06 21	06 47	15 07	16 16	17 27	18 38
	23	163 36.1	56.6	10 52.7	4.7	16 51.3	5.6	60.9	40	05 56	06 28	06 56	14 56	16 07	17 20	18 34
	S Á B A D O	9 00	178 36.1	N15 55.9	25 16.4	4.7	S16 45.7	5.7	60.9	45	06 01	06 36	07 06	14 44	15 56	17 13	18 30
01		193 36.2	55.2	39 40.1	4.7	16 40.0	5.9	61.0	S 50	06 06	06 45	07 19	14 28	15 43	17 03	18 24
02		208 36.3	54.5	54 03.8	4.7	16 34.1	6.0	61.0	52	06 08	06 49	07 25	14 21	15 37	16 59	18 22
03		223 36.4	53.8	68 27.5	4.7	16 28.1	6.1	61.0	54	06 11	06 53	07 31	14 13	15 31	16 54	18 19
04		238 36.5	53.0	82 51.2	4.7	16 22.0	6.2	61.0	56	06 13	06 58	07 38	14 04	15 23	16 49	18 16
05		253 36.6	52.3	97 14.9	4.7	16 15.8	6.3	61.1	58	06 16	07 03	07 46	13 54	15 15	16 43	18 13
06		268 36.7	N15 51.6	111 38.6	4.7	S16 09.5	6.5	61.1	S 60	06 19	07 09	07 55	13 42	15 05	16 36	18 09
07		283 36.8	50.9	126 02.3	4.8	16 03.0	6.6	61.1	Lat.		Ocaso Sol	Crepúsculo		Ocaso Luna		
08		298 36.8	50.2	140 26.1	4.8	15 56.4	6.7	61.1			Civil	Náut.	8	9	10	11
09		313 36.9	49.4	154 49.9	4.8	15 49.7	6.8	61.1								
10		328 37.0	48.7	169 13.7	4.8	15 42.9	7.0	61.1								
11		343 37.1	48.0	183 37.5	4.8	15 35.9	7.1	61.2								
12		358 37.2	N15 47.3	198 01.3	4.9	S15 28.8	7.1	61.2	N 72	22 28	////	////	23 38	26 05	02 05	04 19
13		13 37.3	46.5	212 25.2	4.8	15 21.7	7.3	61.2	N 70	21 44	////	////	24 34	00 34	02 34	04 35
14		28 37.4	45.8	226 49.0	4.9	15 14.4	7.4	61.2	68	21 15	23 23	////	25 08	01 08	02 55	04 47
15		43 37.5	45.1	241 12.9	5.0	15 07.0	7.6	61.2	66	20 53	22 20	////	00 05	01 32	03 12	04 57
16		58 37.6	44.4	255 36.9	4.9	14 59.4	7.6	61.2	64	20 36	21 47	////	00 28	01 51	03 26	05 06
17		73 37.7	43.7	270 00.8	5.0	14 51.8	7.7	61.3	62	20 22	21 23	23 28	00 46	02 06	03 37	05 13
18		88 37.7	N15 42.9	284 24.8	5.0	S14 44.1	7.9	61.3	60	20 10	21 04	22 32	01 01	02 19	03 47	05 19
19		103 37.8	42.2	298 48.8	5.0	14 36.2	7.9	61.3	N 58	20 00	20 49	22 01	01 14	02 30	03 55	05 25
20		118 37.9	41.5	313 12.8	5.1	14 28.3	8.1	61.3	56	19 51	20 36	21 39	01 25	02 40	04 03	05 30
21		133 38.0	40.8	327 36.9	5.1	14 20.2	8.2	61.3	54	19 43	20 25	21 21	01 35	02 48	04 09	05 34
22		148 38.1	40.0	342 01.0	5.1	14 12.0	8.2	61.3	52	19 36	20 15	21 06	01 43	02 56	04 15	05 38
23		163 38.2	39.3	356 25.1	5.1	14 03.8	8.4	61.3	50	19 29	20 06	20 54	01 51	03 03	04 20	05 41
10 M I N G O		9 00	178 38.3	N15 38.6	10 49.2	5.2	S13 55.4	8.5	61.3	45	19 16	19 48	20 29	02 08	03 17	04 32	05 49
	01	193 38.4	37.8	25 13.4	5.2	13 46.9	8.6	61.4	N 40	19 05	19 34	20 10	02 21	03 29	04 41	05 55
	02	208 38.5	37.1	39 37.6	5.3	13 38.3	8.7	61.4	35	18 55	19 22	19 55	02 33	03 39	04 49	06 01
	03	223 38.6	36.4	54 01.9	5.3	13 29.6	8.8	61.4	30	18 47	19 12	19 43	02 43	03 48	04 57	06 06
	04	238 38.7	35.7	68 26.2	5.3	13 20.8	8.8	61.4	20	18 33	18 56	19 23	03 00	04 03	05 09	06 14
	05	253 38.8	34.9	82 50.5	5.4	13 12.0	9.0	61.4	N 10	18 20	18 42	19 08	03 15	04 17	05 19	06 21
	06	268 38.9	N15 34.2	97 14.9	5.4	S13 03.0	9.1	61.4	0	18 09	18 30	18 55	03 29	04 29	05 29	06 28
	07	283 39.0	33.5	111 39.3	5.4	12 53.9	9.1	61.4	S 10	17 58	18 19	18 45	03 42	04 41	05 39	06 34
	08	298 39.0	32.7	126 03.7	5.5	12 44.8	9.3	61.4	20	17 46	18 09	18 35	03 57	04 54	05 49	06 41
	09	313 39.1	32.0	140 28.2	5.5	12 35.5	9.3	61.4	30	17 32	17 57	18 25	04 14	05 09	06 01	06 49
	10	328 39.2	31.3	154 52.7	5.5	12 26.2	9.5	61.4	35	17 24	17 51	18 21	04 24	05 18	06 08	06 54
	11	343 39.3	30.5	169 17.2	5.6	12 16.7	9.5	61.4	40	17 15	17 44	18 16	04 35	05 28	06 15	06 59
	12	358 39.4	N15 29.8	183 41.8	5.6	S12 07.2	9.6	61.4	45	17 05	17 36	18 11	04 48	05 39	06 24	07 04
	13	13 39.5	29.1	198 06.4	5.7	11 57.6	9.7	61.4	S 50	16 53	17 27	18 06	05 04	05 53	06 35	07 11
	14	28 39.6	28.3	212 31.1	5.7	11 47.9	9.8	61.4	52	16 47	17 23	18 03	05 11	05 59	06 40	07 15
	15	43 39.7	27.6	226 55.8	5.8	11 38.1	9.8	61.4	54	16 41	17 19	18 01	05 20	06 06	06 45	07 18
	16	58 39.8	26.9	241 20.6	5.8	11 28.3	10.0	61.4	56	16 34	17 14	17 58	05 29	06 14	06 51	07 22
	17	73 39.9	26.1	255 45.4	5.8	11 18.3	10.0	61.4	58	16 26	17 09	17 56	05 39	06 23	06 58	07 26
	18	88 40.0	N15 25.4	270 10.2	5.9	S11 08.3	10.1	61.4	S 60	16 17	17 03	17 53	05 51	06 33	07 05	07 31
	19	103 40.1	24.7	284 35.1	5.9	10 58.2	10.1	61.4	SOL		LUNA					
	20	118 40.2	23.9	299 00.0	6.0	10 48.1	10.3	61.4	Día				Paso Mer.		Edad	
	21	133 40.3	23.2	313 25.0	6.0	10 37.8	10.3	61.4		Ec. Tiempo	Paso Mer.		Sup.	Inf.		Fase
	22	148 40.4	22.5	327 50.0	6.1	10										

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.5	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
11 00	319 23.1	198 47.7 N20 49.0	103 22.5 S15 30.6	191 14.6 N19 15.7	94 12.2 S14 49.2	Acamar 315 17.7 S40 14.6
01	334 25.5	213 46.9 48.5	118 23.5 31.1	206 16.5 15.5	109 14.6 49.3	Achernar 335 26.0 S57 09.5
02	349 28.0	228 46.2 48.0	133 24.6 31.6	221 18.4 15.4	124 17.0 49.3	Acrux 173 08.7 S63 11.0
03	4 30.4	243 45.4 . . 47.5	148 25.6 . . 32.1	236 20.3 . . 15.3	139 19.3 . . 49.3	Adhara 255 12.2 S28 59.5
04	19 32.9	258 44.7 46.9	163 26.7 32.6	251 22.2 15.2	154 21.7 49.4	Aldebarán 290 48.6 N16 32.2
05	34 35.4	273 43.9 46.4	178 27.7 33.1	266 24.1 15.0	169 24.1 49.4	
06	49 37.8	288 43.2 N20 45.9	193 28.8 S15 33.6	281 26.1 N19 14.9	184 26.5 S14 49.4	Alioth 166 20.4 N55 53.1
07	64 40.3	303 42.4 45.4	208 29.8 34.1	296 28.0 14.8	199 28.9 49.5	Alkaid 152 58.5 N49 14.8
08	79 42.8	318 41.7 44.9	223 30.9 34.6	311 29.9 14.6	214 31.3 49.5	Al Na'ir 27 42.3 S46 53.1
09	94 45.2	333 40.9 . . 44.3	238 31.9 . . 35.1	326 31.8 . . 14.5	229 33.6 . . 49.6	Alnilam 275 45.7 S 1 11.6
10	109 47.7	348 40.2 43.8	253 33.0 35.6	341 33.7 14.4	244 36.0 49.6	Alphard 217 55.6 S 8 43.4
11	124 50.2	3 39.4 43.3	268 34.0 36.1	356 35.6 14.2	259 38.4 49.6	
12	139 52.6	18 38.7 N20 42.8	283 35.1 S15 36.6	11 37.5 N19 14.1	274 40.8 S14 49.7	Alphecca 126 10.3 N26 40.3
13	154 55.1	33 37.9 42.2	298 36.1 37.0	26 39.4 14.0	289 43.2 49.7	Alpheratz 357 42.3 N29 10.3
14	169 57.6	48 37.2 41.7	313 37.2 37.5	41 41.3 13.8	304 45.5 49.7	Altair 62 07.1 N 8 54.7
15	185 00.0	63 36.4 . . 41.2	328 38.2 . . 38.0	56 43.2 . . 13.7	319 47.9 . . 49.8	Ankaa 353 14.7 S42 13.3
16	200 02.5	78 35.7 40.6	343 39.3 38.5	71 45.1 13.6	334 50.3 49.8	Antares 112 25.1 S26 27.7
17	215 04.9	93 34.9 40.1	358 40.3 39.0	86 47.0 13.5	349 52.7 49.8	
18	230 07.4	108 34.2 N20 39.6	13 41.3 S15 39.5	101 48.9 N19 13.3	4 55.1 S14 49.9	Arcturus 145 55.1 N19 06.6
19	245 09.9	123 33.4 39.0	28 42.4 40.0	116 50.8 13.2	19 57.4 49.9	Atria 107 25.9 S69 03.3
20	260 12.3	138 32.7 38.5	43 43.4 40.5	131 52.7 13.1	34 59.8 49.9	Avior 234 18.2 S69 33.4
21	275 14.8	153 31.9 . . 38.0	58 44.5 . . 41.0	146 54.6 . . 12.9	50 02.2 . . 50.0	Bellatrix 278 31.3 N 6 21.7
22	290 17.3	168 31.2 37.4	73 45.5 41.5	161 56.5 12.8	65 04.6 50.0	Betelgeuse 271 00.6 N 7 24.5
23	305 19.7	183 30.4 36.9	88 46.6 42.0	176 58.4 12.7	80 07.0 50.0	
12 00	320 22.2	198 29.7 N20 36.3	103 47.6 S15 42.5	192 00.3 N19 12.5	95 09.3 S14 50.1	Canopus 263 56.2 S52 42.2
01	335 24.7	213 28.9 35.8	118 48.6 42.9	207 02.2 12.4	110 11.7 50.1	Capella 280 33.5 N46 00.4
02	350 27.1	228 28.2 35.3	133 49.7 43.4	222 04.1 12.3	125 14.1 50.1	Deneb 49 30.4 N45 20.2
03	5 29.6	243 27.4 . . 34.7	148 50.7 . . 43.9	237 06.0 . . 12.1	140 16.5 . . 50.2	Denébola 182 33.1 N14 29.5
04	20 32.0	258 26.7 34.2	163 51.8 44.4	252 07.9 12.0	155 18.9 50.2	Diphda 348 54.9 S17 54.2
05	35 34.5	273 25.9 33.6	178 52.8 44.9	267 09.8 11.9	170 21.2 50.2	
06	50 37.0	288 25.2 N20 33.1	193 53.8 S15 45.4	282 11.7 N19 11.8	185 23.6 S14 50.3	Dubhe 193 51.4 N61 40.4
07	65 39.4	303 24.4 32.5	208 54.9 45.9	297 13.6 11.6	200 26.0 50.3	Elnath 278 11.8 N28 36.9
08	80 41.9	318 23.7 32.0	223 55.9 46.4	312 15.5 11.5	215 28.4 50.4	Eltanin 90 45.4 N51 29.7
09	95 44.4	333 22.9 . . 31.4	238 57.0 . . 46.9	327 17.4 . . 11.4	230 30.7 . . 50.4	Enif 33 46.0 N 9 56.8
10	110 46.8	348 22.2 30.9	253 58.0 47.4	342 19.3 11.2	245 33.1 50.4	Fomalhaut 15 22.8 S29 32.4
11	125 49.3	3 21.4 30.3	268 59.0 47.9	357 21.2 11.1	260 35.5 50.5	
12	140 51.8	18 20.7 N20 29.8	284 00.1 S15 48.3	12 23.1 N19 11.0	275 37.9 S14 50.5	Gacrux 172 00.3 S57 11.9
13	155 54.2	33 20.0 29.2	299 01.1 48.8	27 25.0 10.8	290 40.3 50.5	Gienah 175 51.7 S17 37.4
14	170 56.7	48 19.2 28.7	314 02.1 49.3	42 26.9 10.7	305 42.6 50.6	Hadar 148 46.8 S60 26.8
15	185 59.2	63 18.5 . . 28.1	329 03.2 . . 49.8	57 28.8 . . 10.6	320 45.0 . . 50.6	Hamal 327 59.7 N23 31.8
16	201 01.6	78 17.7 27.6	344 04.2 50.3	72 30.7 10.4	335 47.4 50.6	Kaus Aust. 83 42.4 S34 22.5
17	216 04.1	93 17.0 27.0	359 05.2 50.8	87 32.6 10.3	350 49.8 50.7	
18	231 06.5	108 16.2 N20 26.4	14 06.3 S15 51.3	102 34.5 N19 10.2	5 52.1 S14 50.7	Kochab 137 20.3 N74 06.1
19	246 09.0	123 15.5 25.9	29 07.3 51.8	117 36.4 10.0	20 54.5 50.7	Markab 13 37.2 N15 17.2
20	261 11.5	138 14.8 25.3	44 08.3 52.3	132 38.3 09.9	35 56.9 50.8	Menkar 314 14.2 N 4 08.8
21	276 13.9	153 14.0 . . 24.8	59 09.4 . . 52.8	147 40.2 . . 09.8	50 59.3 . . 50.8	Menkent 148 06.7 S36 26.5
22	291 16.4	168 13.3 24.2	74 10.4 53.3	162 42.1 09.7	66 01.6 50.9	Miaplacidus 221 40.3 S69 46.8
23	306 18.9	183 12.5 23.6	89 11.4 53.7	177 44.0 09.5	81 04.0 50.9	
13 00	321 21.3	198 11.8 N20 23.1	104 12.5 S15 54.2	192 45.9 N19 09.4	96 06.4 S14 50.9	Mirfak 308 39.2 N49 54.5
01	336 23.8	213 11.1 22.5	119 13.5 54.7	207 47.8 09.3	111 08.8 51.0	Nunki 75 57.0 S26 16.5
02	351 26.3	228 10.3 21.9	134 14.5 55.2	222 49.7 09.1	126 11.1 51.0	Peacock 53 17.4 S56 41.1
03	6 28.7	243 09.6 . . 21.4	149 15.6 . . 55.7	237 51.6 . . 09.0	141 13.5 . . 51.0	Póllux 243 27.1 N27 59.3
04	21 31.2	258 08.8 20.8	164 16.6 56.2	252 53.5 08.9	156 15.9 51.1	Procyon 244 59.2 N 5 11.1
05	36 33.6	273 08.1 20.2	179 17.6 56.7	267 55.4 08.7	171 18.3 51.1	
06	51 36.1	288 07.4 N20 19.6	194 18.7 S15 57.2	282 57.3 N19 08.6	186 20.6 S14 51.1	Rasalhague 96 05.5 N12 33.3
07	66 38.6	303 06.6 19.1	209 19.7 57.7	297 59.2 08.5	201 23.0 51.2	Régulus 207 43.0 N11 53.7
08	81 41.0	318 05.9 18.5	224 20.7 58.1	313 01.1 08.3	216 25.4 51.2	Rigel 281 11.4 S 8 11.1
09	96 43.5	333 05.1 . . 17.9	239 21.7 . . 58.6	328 03.1 . . 08.2	231 27.8 . . 51.3	Rigel Kent. 139 50.6 S60 53.8
10	111 46.0	348 04.4 17.4	254 22.8 59.1	343 05.0 08.1	246 30.1 51.3	Sabik 102 11.4 S15 44.4
11	126 48.4	3 03.7 16.8	269 23.8 15 59.6	358 06.9 07.9	261 32.5 51.3	
12	141 50.9	18 02.9 N20 16.2	284 24.8 S16 00.1	13 08.8 N19 07.8	276 34.9 S14 51.4	Schedar 349 39.1 N56 36.9
13	156 53.4	33 02.2 15.6	299 25.8 00.6	28 10.7 07.7	291 37.3 51.4	Shaula 96 20.6 S37 06.7
14	171 55.8	48 01.5 15.0	314 26.9 01.1	43 12.6 07.5	306 39.6 51.4	Sirius 258 33.3 S16 44.2
15	186 58.3	63 00.7 . . 14.5	329 27.9 . . 01.6	58 14.5 . . 07.4	321 42.0 . . 51.5	Spica 158 30.5 S11 14.2
16	202 00.8	78 00.0 13.9	344 28.9 02.1	73 16.4 07.3	336 44.4 51.5	Suhail 222 52.2 S43 29.6
17	217 03.2	92 59.3 13.3	359 29.9 02.6	88 18.3 07.2	351 46.7 51.5	
18	232 05.7	107 58.5 N20 12.7	14 31.0 S16 03.0	103 20.2 N19 07.0	6 49.1 S14 51.6	Vega 80 38.1 N38 48.2
19	247 08.1	122 57.8 12.1	29 32.0 03.5	118 22.1 06.9	21 51.5 51.6	Zuben'ubi 137 04.5 S16 06.0
20	262 10.6	137 57.1 11.5	44 33.0 04.0	133 24.0 06.8	36 53.9 51.7	
21	277 13.1	152 56.3 . . 11.0	59 34.0 . . 04.5	148 25.9 . . 06.6	51 56.2 . . 51.7	AHS Paso Mer.
22	292 15.5	167 55.6 10.4	74 35.1 05.0	163 27.8 06.5	66 58.6 51.7	Venus 238 07.5 10 47
23	307 18.0	182 54.9 09.8	89 36.1 05.5	178 29.7 06.4	82 01.0 51.8	Marte 143 25.4 17 04
						Júpiter 231 38.1 11 11
						Saturno 134 47.1 17 37
Paso Mer.	2 38.1	v -0.7 d 0.6	v 1.0 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0	

UT (HmGr)	SOL		LUNA							Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Naut.	Civil		11	12		13	14		
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m	
L U N E S	11 00	178 40.6	N15 21.0	356 40.2	6.2	S10 06.6	10.5	61.4	N 72	////	////	02 01	20 23	20 16	20 09	20 02	
	01	193 40.7	20.2	11 05.4	6.2	9 56.1	10.6	61.4	N 70	////	////	02 40	20 13	20 13	20 13	20 13	
	02	208 40.8	19.5	25 30.6	6.2	9 45.5	10.6	61.4	68	////	01 15	03 06	20 06	20 11	20 16	20 21	
	03	223 40.9	18.8	39 55.8	6.3	9 34.9	10.8	61.4	66	////	02 04	03 26	20 00	20 10	20 19	20 29	
	04	238 41.0	18.0	54 21.1	6.3	9 24.1	10.7	61.4	64	////	02 34	03 42	19 54	20 08	20 21	20 35	
	05	253 41.1	17.3	68 46.4	6.4	9 13.4	10.9	61.4	62	01 07	02 56	03 55	19 49	20 07	20 23	20 40	
	06	268 41.2	N15 16.5	83 11.8	6.4	S 9 02.5	10.9	61.4	60	01 51	03 13	04 07	19 45	20 06	20 25	20 45	
	07	283 41.3	15.8	97 37.2	6.5	8 51.6	11.0	61.4	N 58	02 18	03 28	04 16	19 42	20 05	20 27	20 49	
	08	298 41.4	15.1	112 02.7	6.5	8 40.6	11.0	61.4	56	02 39	03 40	04 25	19 39	20 04	20 28	20 53	
	09	313 41.5	14.3	126 28.2	6.6	8 29.6	11.1	61.4	54	02 56	03 51	04 32	19 36	20 03	20 29	20 56	
	10	328 41.6	13.6	140 53.8	6.6	8 18.5	11.1	61.4	52	03 10	04 00	04 39	19 33	20 02	20 31	20 59	
	11	343 41.7	12.8	155 19.4	6.7	8 07.4	11.2	61.4	50	03 22	04 08	04 45	19 30	20 02	20 32	21 02	
	12	358 41.8	N15 12.1	169 45.1	6.7	S 7 56.2	11.2	61.3	45	03 45	04 26	04 58	19 25	20 00	20 34	21 08	
	13	13 41.9	11.4	184 10.8	6.8	7 45.0	11.3	61.3	N 40	04 04	04 39	05 09	19 21	19 59	20 36	21 13	
	14	28 42.0	10.6	198 36.6	6.8	7 33.7	11.3	61.3	35	04 18	04 51	05 18	19 17	19 58	20 38	21 17	
	15	43 42.1	09.9	213 02.4	6.8	7 22.4	11.3	61.3	30	04 30	05 00	05 25	19 14	19 57	20 39	21 21	
	16	58 42.2	09.1	227 28.2	6.9	7 11.1	11.4	61.3	20	04 49	05 16	05 39	19 08	19 56	20 42	21 28	
	17	73 42.3	08.4	241 54.1	7.0	6 59.7	11.5	61.3	N 10	05 03	05 29	05 51	19 02	19 54	20 45	21 34	
	18	88 42.4	N15 07.6	256 20.1	7.0	S 6 48.2	11.5	61.3	0	05 15	05 40	06 02	18 58	19 53	20 47	21 39	
	19	103 42.5	06.9	270 46.1	7.0	6 36.7	11.5	61.3	S 10	05 26	05 51	06 12	18 53	19 52	20 49	21 45	
	20	118 42.6	06.1	285 12.1	7.1	6 25.2	11.6	61.2	20	05 35	06 01	06 24	18 47	19 50	20 52	21 51	
	21	133 42.7	05.4	299 38.2	7.1	6 13.6	11.6	61.2	30	05 44	06 12	06 37	18 42	19 49	20 55	21 58	
	22	148 42.8	04.6	314 04.3	7.2	6 02.0	11.6	61.2	35	05 48	06 18	06 44	18 38	19 48	20 56	22 02	
	23	163 42.9	03.9	328 30.5	7.2	5 50.4	11.6	61.2	40	05 52	06 24	06 52	18 34	19 47	20 58	22 07	
	M A R T E S	12 00	178 43.0	N15 03.2	342 56.7	7.3	S 5 38.8	11.7	61.2	S 50	06 01	06 40	07 14	18 24	19 45	21 03	22 19
01		193 43.2	02.4	357 23.0	7.3	5 27.1	11.8	61.2	52	06 03	06 43	07 19	18 22	19 44	21 05	22 22	
02		208 43.3	01.7	11 49.3	7.4	5 15.3	11.7	61.1	54	06 06	06 47	07 25	18 19	19 44	21 06	22 25	
03		223 43.4	00.9	26 15.7	7.4	5 03.6	11.8	61.1	56	06 08	06 52	07 32	18 16	19 43	21 07	22 29	
04		238 43.5	15 00.2	40 42.1	7.4	4 51.8	11.8	61.1	58	06 10	06 57	07 39	18 13	19 42	21 09	22 33	
05		253 43.6	14 59.4	55 08.5	7.5	4 40.0	11.8	61.1	S 60	06 13	07 02	07 48	18 09	19 41	21 11	22 38	
06		268 43.7	N14 58.7	69 35.0	7.6	S 4 28.2	11.8	61.1	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna		
07		283 43.8	57.9	84 01.6	7.6	4 16.4	11.9	61.0			Civil		Náut.		11	12	13
08		298 43.9	57.2	98 28.2	7.6	4 04.5	11.8	61.0							14		
09		313 44.0	56.4	112 54.8	7.7	3 52.7	11.9	61.0							h m	h m	h m
10		328 44.1	55.7	127 21.5	7.7	3 40.8	11.9	61.0							h m	h m	h m
11		343 44.2	54.9	141 48.2	7.7	3 28.9	11.9	61.0	N 72	22 02	////	////	04 19	06 26	08 27	10 25	
12		358 44.3	N14 54.1	156 14.9	7.9	S 3 17.0	12.0	60.9	N 70	21 26	////	////	04 35	06 32	08 26	10 17	
13		13 44.4	53.4	170 41.8	7.8	3 05.0	11.9	60.9	68	21 01	22 46	////	04 47	06 38	08 26	10 10	
14		28 44.5	52.6	185 08.6	7.9	2 53.1	12.0	60.9	66	20 41	22 01	////	04 57	06 42	08 25	10 05	
15		43 44.6	51.9	199 35.5	7.9	2 41.1	11.9	60.9	64	20 26	21 33	////	05 06	06 46	08 24	10 00	
16		58 44.8	51.1	214 02.4	8.0	2 29.2	12.0	60.8	62	20 13	21 11	22 55	05 13	06 49	08 24	09 56	
17		73 44.9	50.4	228 29.4	8.0	2 17.2	11.9	60.8	60	20 02	20 54	22 15	05 19	06 52	08 24	09 52	
18		88 45.0	N14 49.6	242 56.4	8.1	S 2 05.3	12.0	60.8	N 58	19 52	20 40	21 49	05 25	06 55	08 23	09 49	
19		103 45.1	48.9	257 23.5	8.1	1 53.3	11.9	60.8	56	19 44	20 28	21 28	05 30	06 57	08 23	09 46	
20		118 45.2	48.1	271 50.6	8.1	1 41.4	12.0	60.7	54	19 37	20 18	21 12	05 34	06 59	08 23	09 44	
21		133 45.3	47.4	286 17.7	8.2	1 29.4	12.0	60.7	52	19 30	20 09	20 59	05 38	07 01	08 22	09 41	
22		148 45.4	46.6	300 44.9	8.2	1 17.4	11.9	60.7	50	19 24	20 01	20 47	05 41	07 03	08 22	09 39	
23		163 45.5	45.8	315 12.1	8.3	1 05.5	12.0	60.6	45	19 11	19 44	20 24	05 49	07 06	08 22	09 35	
M I É R C O L E S		13 00	178 45.6	N14 45.1	329 39.4	8.3	S 0 53.5	11.9	60.6	N 40	19 01	19 30	20 06	05 55	07 09	08 21	09 31
	01	193 45.7	44.3	344 06.7	8.3	0 41.6	12.0	60.6	35	18 52	19 19	19 51	06 01	07 12	08 21	09 28	
	02	208 45.9	43.6	358 34.0	8.4	0 29.6	11.9	60.6	30	18 44	19 09	19 40	06 06	07 14	08 20	09 25	
	03	223 46.0	42.8	13 01.4	8.4	0 17.7	11.9	60.5	20	18 31	18 54	19 21	06 14	07 18	08 20	09 20	
	04	238 46.1	42.0	27 28.8	8.4	S 0 05.8	11.9	60.5	N 10	18 19	18 41	19 06	06 21	07 21	08 19	09 16	
	05	253 46.2	41.3	41 56.2	8.5	N 0 06.1	11.9	60.5	0	18 08	18 30	18 55	06 28	07 24	08 19	09 12	
	06	268 46.3	N14 40.5	56 23.7	8.5	N 0 18.0	11.9	60.4	S 10	17 58	18 19	18 45	06 34	07 27	08 18	09 08	
	07	283 46.4	39.8	70 51.2	8.6	0 29.9	11.8	60.4	20	17 47	18 09	18 35	06 41	07 30	08 18	09 04	
	08	298 46.5	39.0	85 18.8	8.6	0 41.7	11.9	60.4	30	17 34	17 59	18 27	06 49	07 34	08 17	08 59	
	09	313 46.6	38.2	99 46.4	8.6	0 53.6	11.8	60.3	35	17 27	17 53	18 23	06 54	07 36	08 16	08 56	
	10	328 46.7	37.5	114 14.0	8.7	1 05.4	11.8	60.3	40	17 18	17 46	18 18	06 59	07 38	08 16	08 53	
	11	343 46.9	36.7	128 41.7	8.7	1 17.2	11.8	60.3	45	17 09	17 39	18 14	07 04	07 41	08 15	08 49	
	12	358 47.0	N14 36.0	143 09.4	8.7	N 1 29.0	11.7	60.3	S 50	16 57	17 31	18 09	07 11	07 44	08 15	08 45	
	13	13 47.1	35.2	157 37.1	8.8	1 40.7	11.7	60.2	52	16 52	17 27	18 07	07 15	07 46	08 14	08 43	
	14	28 47.2	34.4	172 04.9	8.8	1 52.4	11.8	60.2	54	16 46	17 23	18 05	07 18	07 47	08 14	08 40	
	15	43 47.3	33.7	186 32.7	8.8	2 04.2	11.6	60.2	56	16 39	17 19	18 03	07 22	07 49	08 14	08 38	
	16	58 47.4	32.9	201 00.5	8.8	2 15.8	11.7	60.1	58	16 32	17 14	18 01	07 26	07 51	08 13	08 35	
	17	73 47.5	32.1	215 28.3	8.9	2 27.5	11.6	60.1	S 60	16 23	17 09	17 59	07 31	07 53	08 13	08 32	
	18	88 47.7	N14 31.4	229 56.2	9.0	N 2 39.1	11.6	60.1	SOL		LUNA						
	19	103 47.8	30.6	244 24.2	8.9	2 50.7	11.6	60.0	Día		Ec. Tiempo		Paso Mer.		Paso Mer.		
	20	118 47.9	29.8	258 52.1	9.0	3 02.3	11.5	60.0					Sup.		Inf.		
	21	133 48.0	29.1	273 20.1	9.0	3 13.8	11.5	59.9							Edad		
	22	148 48.1	28.3	287 48.1	9.0	3 25.3	11.4	59.9							Fase		
	23	163 48.2	27.5														

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.5	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
JUE						
14						
00	322 20.5	197 54.1 N20 09.2	104 37.1 S16 06.0	193 31.6 N19 06.2	97 03.3 S14 51.8	Acamar 315 17.7 S40 14.6
01	337 22.9	212 53.4 08.6	119 38.1 06.5	208 33.5 06.1	112 05.7 51.8	Achernar 335 26.0 S57 09.5
02	352 25.4	227 52.7 08.0	134 39.1 06.9	223 35.4 06.0	127 08.1 51.9	Acrux 173 08.7 S63 11.0
03	7 27.9	242 51.9 . . 07.4	149 40.2 . . 07.4	238 37.3 . . 05.8	142 10.5 . . 51.9	Adhara 255 12.2 S28 59.5
04	22 30.3	257 51.2 06.8	164 41.2 07.9	253 39.2 05.7	157 12.8 52.0	Aldebarán 290 48.5 N16 32.2
05	37 32.8	272 50.5 06.2	179 42.2 08.4	268 41.1 05.6	172 15.2 52.0	
06	52 35.2	287 49.7 N20 05.6	194 43.2 S16 08.9	283 43.0 N19 05.4	187 17.6 S14 52.0	Alioth 166 20.4 N55 53.1
07	67 37.7	302 49.0 05.0	209 44.2 09.4	298 44.9 05.3	202 19.9 52.1	Alkaid 152 58.5 N49 14.7
08	82 40.2	317 48.3 04.4	224 45.3 09.9	313 46.8 05.2	217 22.3 52.1	Al Na'ir 27 42.3 S46 53.1
09	97 42.6	332 47.5 . . 03.8	239 46.3 . . 10.4	328 48.8 . . 05.0	232 24.7 . . 52.1	Alnilam 275 45.7 S 1 11.6
10	112 45.1	347 46.8 03.2	254 47.3 10.9	343 50.7 04.9	247 27.1 52.2	Alphard 217 55.6 S 8 43.4
11	127 47.6	2 46.1 02.6	269 48.3 11.3	358 52.6 04.8	262 29.4 52.2	
12	142 50.0	17 45.4 N20 02.0	284 49.3 S16 11.8	13 54.5 N19 04.7	277 31.8 S14 52.3	Alphecca 126 10.3 N26 40.3
13	157 52.5	32 44.6 01.4	299 50.3 12.3	28 56.4 04.5	292 34.2 52.3	Alpheratz 357 42.3 N29 10.3
14	172 55.0	47 43.9 00.8	314 51.3 12.8	43 58.3 04.4	307 36.5 52.3	Altair 62 07.1 N 8 54.7
15	187 57.4	62 43.2 20 00.2	329 52.4 . . 13.3	59 00.2 . . 04.3	322 38.9 . . 52.4	Ankaa 353 14.6 S42 13.3
16	202 59.9	77 42.5 19 59.6	344 53.4 13.8	74 02.1 04.1	337 41.3 52.4	Antares 112 25.1 S26 27.7
17	218 02.4	92 41.7 59.0	359 54.4 14.3	89 04.0 04.0	352 43.6 52.4	
18	233 04.8	107 41.0 N19 58.4	14 55.4 S16 14.8	104 05.9 N19 03.9	7 46.0 S14 52.5	Arcturus 145 55.1 N19 06.6
19	248 07.3	122 40.3 57.8	29 56.4 15.2	119 07.8 03.7	22 48.4 52.5	Atria 107 25.9 S69 03.3
20	263 09.7	137 39.5 57.2	44 57.4 15.7	134 09.7 03.6	37 50.7 52.6	Avior 234 18.2 S59 33.4
21	278 12.2	152 38.8 . . 56.6	59 58.4 . . 16.2	149 11.6 . . 03.5	52 53.1 . . 52.6	Bellatrix 278 31.3 N 6 21.7
22	293 14.7	167 38.1 56.0	74 59.5 16.7	164 13.5 03.3	67 55.5 52.6	Betelgeuse 271 00.6 N 7 24.5
23	308 17.1	182 37.4 55.4	90 00.5 17.2	179 15.4 03.2	82 57.9 52.7	
VIE						
15						
00	323 19.6	197 36.6 N19 54.7	105 01.5 S16 17.7	194 17.3 N19 03.1	98 00.2 S14 52.7	Canopus 263 56.2 S52 42.1
01	338 22.1	212 35.9 54.1	120 02.5 18.2	209 19.2 02.9	113 02.6 52.7	Capella 280 33.4 N46 00.4
02	353 24.5	227 35.2 53.5	135 03.5 18.6	224 21.1 02.8	128 05.0 52.8	Deneb 49 30.4 N45 20.2
03	8 27.0	242 34.5 . . 52.9	150 04.5 . . 19.1	239 23.0 . . 02.7	143 07.3 . . 52.8	Denébola 182 33.1 N14 29.5
04	23 29.5	257 33.8 52.3	165 05.5 19.6	254 25.0 02.5	158 09.7 52.9	Diphda 348 54.9 S17 54.2
05	38 31.9	272 33.0 51.7	180 06.5 20.1	269 26.9 02.4	173 12.1 52.9	
06	53 34.4	287 32.3 N19 51.0	195 07.5 S16 20.6	284 28.8 N19 02.3	188 14.4 S14 52.9	Dubhe 193 51.4 N61 40.4
07	68 36.9	302 31.6 50.4	210 08.5 21.1	299 30.7 02.1	203 16.8 53.0	Elnath 278 11.8 N28 36.9
08	83 39.3	317 30.9 49.8	225 09.5 21.6	314 32.6 02.0	218 19.2 53.0	Eltanin 90 45.4 N51 29.7
09	98 41.8	332 30.1 . . 49.2	240 10.6 . . 22.0	329 34.5 . . 01.9	233 21.5 . . 53.1	Enif 33 46.0 N 9 56.8
10	113 44.2	347 29.4 48.6	255 11.6 22.5	344 36.4 01.7	248 23.9 53.1	Fomalhaut 15 22.8 S29 32.4
11	128 46.7	2 28.7 47.9	270 12.6 23.0	359 38.3 01.6	263 26.3 53.1	
12	143 49.2	17 28.0 N19 47.3	285 13.6 S16 23.5	14 40.2 N19 01.5	278 28.6 S14 53.2	Gacrux 172 00.3 S57 11.9
13	158 51.6	32 27.3 46.7	300 14.6 24.0	29 42.1 01.3	293 31.0 53.2	Gienah 175 51.7 S17 37.4
14	173 54.1	47 26.5 46.0	315 15.6 24.5	44 44.0 01.2	308 33.4 53.2	Hadar 148 46.8 S60 26.8
15	188 56.6	62 25.8 . . 45.4	330 16.6 . . 25.0	59 45.9 . . 01.1	323 35.7 . . 53.3	Hamal 327 59.7 N23 31.8
16	203 59.0	77 25.1 44.8	345 17.6 25.4	74 47.8 00.9	338 38.1 53.3	Kaus Aust. 83 42.5 S34 22.5
17	219 01.5	92 24.4 44.2	0 18.6 25.9	89 49.7 00.8	353 40.4 53.4	
18	234 04.0	107 23.7 N19 43.5	15 19.6 S16 26.4	104 51.6 N19 00.7	8 42.8 S14 53.4	Kochab 137 20.4 N74 06.1
19	249 06.4	122 23.0 42.9	30 20.6 26.9	119 53.5 00.6	23 45.2 53.4	Markab 13 37.2 N15 17.2
20	264 08.9	137 22.2 42.3	45 21.6 27.4	134 55.5 00.4	38 47.5 53.5	Menkar 314 14.2 N 4 08.8
21	279 11.3	152 21.5 . . 41.6	60 22.6 . . 27.9	149 57.4 . . 00.3	53 49.9 . . 53.5	Menkent 148 06.7 S36 26.5
22	294 13.8	167 20.8 41.0	75 23.6 28.4	164 59.3 00.2	68 52.3 53.6	Miaplacidus 221 40.3 S69 46.7
23	309 16.3	182 20.1 40.4	90 24.6 28.8	180 01.2 19 00.0	83 54.6 53.6	
SÁB						
16						
00	324 18.7	197 19.4 N19 39.7	105 25.6 S16 29.3	195 03.1 N18 59.9	98 57.0 S14 53.6	Mirfak 308 39.1 N49 54.5
01	339 21.2	212 18.7 39.1	120 26.6 29.8	210 05.0 59.8	113 59.4 53.7	Nunki 75 57.0 S26 16.5
02	354 23.7	227 17.9 38.4	135 27.6 30.3	225 06.9 59.6	129 01.7 53.7	Peacock 53 17.5 S56 41.1
03	9 26.1	242 17.2 . . 37.8	150 28.6 . . 30.8	240 08.8 . . 59.5	144 04.1 . . 53.8	Póllux 243 27.1 N27 59.3
04	24 28.6	257 16.5 37.2	165 29.6 31.3	255 10.7 59.4	159 06.5 53.8	Procyon 244 59.2 N 5 11.1
05	39 31.1	272 15.8 36.5	180 30.6 31.8	270 12.6 59.2	174 08.8 53.8	
06	54 33.5	287 15.1 N19 35.9	195 31.6 S16 32.2	285 14.5 N18 59.1	189 11.2 S14 53.9	Rasalhague 96 05.5 N12 33.3
07	69 36.0	302 14.4 35.2	210 32.6 32.7	300 16.4 59.0	204 13.5 53.9	Régulus 207 43.0 N11 53.7
08	84 38.5	317 13.7 34.6	225 33.6 33.2	315 18.3 58.8	219 15.9 53.9	Rigel 281 11.4 S 8 11.1
09	99 40.9	332 12.9 . . 33.9	240 34.6 . . 33.7	330 20.2 . . 58.7	234 18.3 . . 54.0	Rigel Kent. 139 50.7 S60 53.8
10	114 43.4	347 12.2 33.3	255 35.6 34.2	345 22.2 58.6	249 20.6 54.0	Sabik 102 11.4 S15 44.4
11	129 45.8	2 11.5 32.6	270 36.6 34.7	0 24.1 58.4	264 23.0 54.1	
12	144 48.3	17 10.8 N19 32.0	285 37.6 S16 35.1	15 26.0 N18 58.3	279 25.4 S14 54.1	Schedar 349 39.1 N56 36.9
13	159 50.8	32 10.1 31.3	300 38.6 35.6	30 27.9 58.2	294 27.7 54.1	Shaula 96 20.6 S37 06.7
14	174 53.2	47 09.4 30.7	315 39.6 36.1	45 29.8 58.0	309 30.1 54.2	Sirius 258 33.3 S16 44.2
15	189 55.7	62 08.7 . . 30.0	330 40.6 . . 36.6	60 31.7 . . 57.9	324 32.4 . . 54.2	Spica 158 30.5 S11 14.2
16	204 58.2	77 08.0 29.4	345 41.6 37.1	75 33.6 57.8	339 34.8 54.3	Suhail 222 52.2 S43 29.6
17	220 00.6	92 07.3 28.7	0 42.5 37.6	90 35.5 57.6	354 37.2 54.3	
18	235 03.1	107 06.5 N19 28.1	15 43.5 S16 38.0	105 37.4 N18 57.5	9 39.5 S14 54.3	Vega 80 38.1 N38 48.2
19	250 05.6	122 05.8 27.4	30 44.5 38.5	120 39.3 57.4	24 41.9 54.4	Zuben'ubi 137 04.5 S16 06.0
20	265 08.0	137 05.1 26.8	45 45.5 39.0	135 41.2 57.2	39 44.2 54.4	
21	280 10.5	152 04.4 . . 26.1	60 46.5 . . 39.5	150 43.1 . . 57.1	54 46.6 . . 54.5	AHS Paso Mer.
22	295 13.0	167 03.7 25.5	75 47.5 40.0	165 45.0 57.0	69 49.0 54.5	Venus 234 17.0 10 50
23	310 15.4	182 03.0 24.8	90 48.5 40.5	180 47.0 56.8	84 51.3 54.5	Marte 141 41.9 16 59
						Júpiter 230 57.7 11 01
						Saturno 134 40.6 17 25
Paso Mer.	2 26.3	v -0.7 d 0.6	v 1.0 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	14	15	16	17
J U E V E S	d h	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m
	14 00	178 48.4	N14 26.8	316 44.2	9.1 N	3 48.2	11.4	59.8	68	02 23	20 02	19 55	19 47	19 35
	01	193 48.5	26.0	331 12.3	9.1	3 59.6	11.3	59.8	68	01 42	20 13	20 14	20 16	20 22
	02	208 48.6	25.2	345 40.4	9.2	4 10.9	11.3	59.8	66	02 20	20 37	20 29	20 40	20 55
	03	223 48.7	24.5	0 08.6	9.2	4 22.2	11.3	59.7	64	02 46	20 31	20 35	20 50	21 09
	04	238 48.8	23.7	14 36.8	9.2	4 33.5	11.2	59.7	62	03 31	20 40	20 59	21 21	21 49
	05	253 48.9	22.9	29 05.0	9.2	4 44.7	11.2	59.7	60	04 05	20 45	21 06	21 31	22 02
	06	268 49.1	N14 22.2	43 33.2	9.3 N	4 55.9	11.1	59.6	58	04 29	20 49	21 13	21 40	22 12
	07	283 49.2	21.4	58 01.5	9.3	5 07.0	11.1	59.6	56	04 48	20 53	21 19	21 48	22 22
	08	298 49.3	20.6	72 29.8	9.3	5 18.1	11.1	59.5	54	05 04	20 56	21 24	21 55	22 30
	09	313 49.4	19.8	86 58.1	9.3	5 29.2	11.0	59.5	52	05 16	20 59	21 29	22 01	22 38
	10	328 49.5	19.1	101 26.4	9.4	5 40.2	10.9	59.5	50	05 28	21 03	21 33	22 07	22 45
	11	343 49.6	18.3	115 54.8	9.3	5 51.1	10.9	59.4	45	05 50	21 04	21 34	22 08	22 46
	12	358 49.8	N14 17.5	130 23.1	9.4 N	6 02.0	10.9	59.4	40	06 07	21 11	21 41	22 11	22 49
	13	13 49.9	16.8	144 51.5	9.5	6 12.9	10.8	59.4	35	06 21	21 17	21 47	22 17	22 55
	14	28 50.0	16.0	159 20.0	9.4	6 23.7	10.7	59.3	30	06 32	21 22	21 52	22 22	23 00
	15	43 50.1	15.2	173 48.4	9.5	6 34.4	10.7	59.3	20	06 50	21 30	21 60	21 90	22 18
	16	58 50.2	14.4	188 16.9	9.5	6 45.1	10.6	59.2	10	07 05	21 35	21 65	21 95	22 23
	17	73 50.4	13.7	202 45.4	9.5	6 55.7	10.6	59.2	0	07 15	21 40	21 70	22 00	22 38
	18	88 50.5	N14 12.9	217 13.9	9.5 N	7 06.3	10.6	59.2	10	07 25	21 45	21 75	22 05	22 43
	19	103 50.6	12.1	231 42.4	9.6	7 16.9	10.4	59.1	20	07 33	21 51	21 81	22 11	22 49
	20	118 50.7	11.3	246 11.0	9.6	7 27.3	10.4	59.1	30	07 41	21 58	21 88	22 18	22 56
	21	133 50.8	10.6	260 39.6	9.6	7 37.7	10.4	59.0	35	07 45	22 00	21 90	22 20	22 58
	22	148 51.0	09.8	275 08.2	9.6	7 48.1	10.3	59.0	40	07 49	22 04	21 94	22 24	23 02
	23	163 51.1	09.0	289 36.8	9.6	7 58.4	10.2	59.0	45	07 52	22 07	21 97	22 27	23 05
V I E R N E S	15 00	178 51.2	N14 08.2	304 05.4	9.7 N	8 08.6	10.2	58.9	50	07 08	22 19	23 31	24 40	00 40
	01	193 51.3	07.5	318 34.1	9.6	8 18.8	10.1	58.9	52	07 13	22 22	23 36	24 46	00 46
	02	208 51.4	06.7	333 02.7	9.7	8 28.9	10.1	58.8	54	07 19	22 25	23 41	24 52	00 52
	03	223 51.6	05.9	347 31.4	9.7	8 39.0	10.0	58.8	56	07 25	22 29	23 47	25 00	01 00
	04	238 51.7	05.1	2 00.1	9.8	8 49.0	9.9	58.8	58	07 32	22 33	23 53	25 08	01 08
	05	253 51.8	04.3	16 28.9	9.7	8 58.9	9.8	58.7	60	07 40	22 38	24 00	00 00	01 18
	06	268 51.9	N14 03.6	30 57.6	9.8 N	9 08.7	9.8	58.7	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna	
	07	283 52.1	02.8	45 26.4	9.7	9 18.5	9.8	58.7	Civil	Náut.	14	15	16	17
	08	298 52.2	02.0	59 55.1	9.8	9 28.3	9.6	58.6						
	09	313 52.3	01.2	74 23.9	9.8	9 37.9	9.6	58.6						
	10	328 52.4	00.4	88 52.7	9.9	9 47.5	9.5	58.5						
	11	343 52.6	13 59.7	103 21.6	9.8	9 57.0	9.5	58.5	N 72	21 40	22 10	23 21	24 32	00 43
	12	358 52.7	N13 58.9	117 50.4	9.8 N	10 06.5	9.4	58.5	N 70	21 09	22 19	23 30	24 41	00 52
	13	13 52.8	58.1	132 19.2	9.9	10 15.9	9.3	58.4	68	20 47	22 20	23 31	24 42	01 03
	14	28 52.9	57.3	146 48.1	9.9	10 25.2	9.2	58.4	66	20 29	22 44	23 55	25 06	01 14
	15	43 53.1	56.5	161 17.0	9.9	10 34.4	9.2	58.3	64	20 15	22 19	23 30	24 41	01 15
	16	58 53.2	55.7	175 45.9	9.9	10 43.6	9.1	58.3	62	20 04	22 08	23 19	24 30	01 16
	17	73 53.3	55.0	190 14.8	9.9	10 52.7	9.0	58.3	60	19 53	22 04	23 15	24 26	01 17
	18	88 53.4	N13 54.2	204 43.7	9.9 N	11 01.7	8.9	58.2	N 58	19 45	22 11	23 22	24 33	01 18
	19	103 53.6	53.4	219 12.6	10.0	11 10.6	8.9	58.2	56	19 37	22 20	23 31	24 42	01 19
	20	118 53.7	52.6	233 41.6	9.9	11 19.5	8.8	58.1	54	19 30	22 11	23 22	24 33	01 20
	21	133 53.8	51.8	248 10.5	10.0	11 28.3	8.7	58.1	52	19 24	22 02	23 13	24 24	01 21
	22	148 53.9	51.0	262 39.5	10.0	11 37.0	8.6	58.1	50	19 19	21 54	23 05	24 16	01 22
	23	163 54.1	50.3	277 08.5	10.0	11 45.6	8.6	58.0	45	19 07	21 45	23 06	24 17	01 23
	S Á B A D O	16 00	178 54.2	N13 49.5	291 37.5	10.0 N	11 54.2	8.5	58.0	N 40	18 57	19 26	20 37	21 48
01		193 54.3	48.7	306 06.5	10.0	12 02.7	8.4	57.9	35	18 49	19 15	20 26	21 37	01 25
02		208 54.4	47.9	320 35.5	10.1	12 11.1	8.3	57.9	30	18 41	19 06	20 17	21 28	01 26
03		223 54.6	47.1	335 04.6	10.0	12 19.4	8.3	57.9	20	18 29	18 52	19 19	20 30	01 27
04		238 54.7	46.3	349 33.6	10.1	12 27.7	8.1	57.8	N 10	18 18	18 40	19 05	20 16	01 28
05		253 54.8	45.5	4 02.7	10.0	12 35.8	8.1	57.8	0	18 08	18 29	18 54	19 12	01 29
06		268 55.0	N13 44.7	18 31.7	10.1 N	12 43.9	8.0	57.7	S 10	17 58	18 20	18 44	19 08	01 30
07		283 55.1	44.0	33 00.8	10.1	12 51.9	8.0	57.7	20	17 47	18 10	18 36	19 04	01 31
08		298 55.2	43.2	47 29.9	10.1	12 59.9	7.8	57.7	30	17 36	18 00	18 28	18 59	01 32
09		313 55.3	42.4	61 59.0	10.1	13 07.7	7.8	57.6	35	17 29	17 55	18 25	18 56	01 33
10		328 55.5	41.6	76 28.1	10.1	13 15.5	7.7	57.6	40	17 21	17 49	18 21	18 53	01 34
11		343 55.6	40.8	90 57.2	10.1	13 23.2	7.6	57.5	45	17 12	17 43	18 17	18 49	01 35
12		358 55.7	N13 40.0	105 26.3	10.2 N	13 30.8	7.5	57.5	S 50	17 01	17 35	18 13	18 45	01 36
13		13 55.9	39.2	119 55.5	10.1	13 38.3	7.4	57.5	52	16 56	17 32	18 12	18 43	01 37
14		28 56.0	38.4	134 24.6	10.2	13 45.7	7.3	57.4	54	16 51	17 28	18 10	18 40	01 38
15		43 56.1	37.6	148 53.8	10.2	13 53.0	7.3	57.4	56	16 45	17 24	18 08	18 38	01 39
16		58 56.2	36.8	163 23.0	10.1	14 00.3	7.2	57.4	58	16 38	17 20	18 06	18 35	01 40
17		73 56.4	36.0	177 52.1	10.2	14 07.5	7.1	57.3	S 60	16 30	17 15	18 04	18 32	01 41
18		88 56.5	N13 35.2	192 21.3	10.2 N	14 14.6	7.0	57.3	SOL		LUNA			
19		103 56.6	34.5	206 50.5	10.2	14 21.6	6.9	57.2	Día	Ec. Tiempo	Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad
20		118 56.8	33.7	221 19.7	10.3	14 28.5	6.8	57.2						Fase
21		133 56.9	32.9	235 49.0	10.2	14 35.3	6.7	57.2	00h	12h				
22		148 57.0	32.1	250 18.2	10.2	14 42.0	6.7	57.1	d	m s	m s	h m	h m	d %
23		163 57.2	31.3	264 47.4	10.3 N	14 48.7	6.5	57.1	14	04 47	04 41	12 05	02 59	15 26
		S/D 15.8	d 0.8	S/D	16.2	15.9	15.7		15	04 35	04 30	12 04	03 52	16 18
								16	04 24	04 17	12 04	04 43	17 09	

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.6	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
DOMINGO						
17 00	325 17.9	197 02.3 N19 24.1	105 49.5 S16 40.9	195 48.9 N18 56.7	99 53.7 S14 54.6	Acamar 315 17.7 S40 14.6
01	340 20.3	212 01.6 23.5	120 50.5 41.4	210 50.8 56.6	114 56.0 54.6	Achernar 335 26.0 S57 09.5
02	355 22.8	227 00.9 22.8	135 51.5 41.9	225 52.7 56.4	129 58.4 54.7	Acrux 173 08.7 S63 11.0
03	10 25.3	242 00.2 . . 22.1	150 52.5 . . 42.4	240 54.6 . . 56.3	145 00.8 . . 54.7	Adhara 255 12.2 S28 59.5
04	25 27.7	256 59.5 21.5	165 53.4 42.9	255 56.5 56.2	160 03.1 54.7	Aldebarán 290 48.5 N16 32.2
05	40 30.2	271 58.8 20.8	180 54.4 43.4	270 58.4 56.0	175 05.5 54.8	
06	55 32.7	286 58.1 N19 20.1	195 55.4 S16 43.8	286 00.3 N18 55.9	190 07.8 S14 54.8	Alioth 166 20.4 N55 53.1
07	70 35.1	301 57.4 19.5	210 56.4 44.3	301 02.2 55.8	205 10.2 54.9	Alkaid 152 58.5 N49 14.7
08	85 37.6	316 56.7 18.8	225 57.4 44.8	316 04.1 55.6	220 12.6 54.9	Al Na'ir 27 42.3 S46 53.2
09	100 40.1	331 56.0 . . 18.1	240 58.4 . . 45.3	331 06.0 . . 55.5	235 14.9 . . 54.9	Alnilam 275 45.7 S 1 11.6
10	115 42.5	346 55.3 17.5	255 59.4 45.8	346 08.0 55.4	250 17.3 55.0	Alphard 217 55.6 S 8 43.4
11	130 45.0	1 54.5 16.8	271 00.3 46.2	1 09.9 55.2	265 19.6 55.0	
12	145 47.4	16 53.8 N19 16.1	286 01.3 S16 46.7	16 11.8 N18 55.1	280 22.0 S14 55.1	Alphecca 126 10.3 N26 40.3
13	160 49.9	31 53.1 15.5	301 02.3 47.2	31 13.7 55.0	295 24.4 55.1	Alpheratz 357 42.3 N29 10.3
14	175 52.4	46 52.4 14.8	316 03.3 47.7	46 15.6 54.8	310 26.7 55.2	Altair 62 07.1 N 8 54.8
15	190 54.8	61 51.7 . . 14.1	331 04.3 . . 48.2	61 17.5 . . 54.7	325 29.1 . . 55.2	Ankaa 353 14.6 S42 13.3
16	205 57.3	76 51.0 13.4	346 05.3 48.7	76 19.4 54.6	340 31.4 55.2	Antares 112 25.1 S26 27.7
17	220 59.8	91 50.3 12.7	1 06.2 49.1	91 21.3 54.4	355 33.8 55.3	
18	236 02.2	106 49.6 N19 12.1	16 07.2 S16 49.6	106 23.2 N18 54.3	10 36.1 S14 55.3	Arcturus 145 55.1 N19 06.6
19	251 04.7	121 48.9 11.4	31 08.2 50.1	121 25.1 54.2	25 38.5 55.4	Atria 107 26.0 S69 03.3
20	266 07.2	136 48.2 10.7	46 09.2 50.6	136 27.0 54.0	40 40.9 55.4	Avior 234 18.2 S59 33.4
21	281 09.6	151 47.5 . . 10.0	61 10.2 . . 51.1	151 29.0 . . 53.9	55 43.2 . . 55.4	Bellatrix 278 31.3 N 6 21.7
22	296 12.1	166 46.8 09.3	76 11.2 51.5	166 30.9 53.8	70 45.6 55.5	Betelgeuse 271 00.6 N 7 24.5
23	311 14.6	181 46.1 08.7	91 12.1 52.0	181 32.8 53.6	85 47.9 55.5	
LUNES						
18 00	326 17.0	196 45.4 N19 08.0	106 13.1 S16 52.5	196 34.7 N18 53.5	100 50.3 S14 55.6	Canopus 263 56.1 S52 42.1
01	341 19.5	211 44.7 07.3	121 14.1 53.0	211 36.6 53.4	115 52.6 55.6	Capella 280 33.4 N46 00.4
02	356 21.9	226 44.0 06.6	136 15.1 53.5	226 38.5 53.2	130 55.0 55.6	Deneb 49 30.4 N45 20.3
03	11 24.4	241 43.4 . . 05.9	151 16.1 . . 53.9	241 40.4 . . 53.1	145 57.3 . . 55.7	Denébola 182 33.1 N14 29.5
04	26 26.9	256 42.7 05.2	166 17.0 54.4	256 42.3 53.0	160 59.7 55.7	Diphda 348 54.9 S17 54.2
05	41 29.3	271 42.0 04.5	181 18.0 54.9	271 44.2 52.8	176 02.1 55.8	
06	56 31.8	286 41.3 N19 03.9	196 19.0 S16 55.4	286 46.1 N18 52.7	191 04.4 S14 55.8	Dubhe 193 51.5 N61 40.4
07	71 34.3	301 40.6 03.2	211 20.0 55.9	301 48.1 52.6	206 06.8 55.8	Elnath 278 11.7 N28 36.9
08	86 36.7	316 39.9 02.5	226 20.9 56.3	316 50.0 52.4	221 09.1 55.9	Eltanin 90 45.5 N51 29.7
09	101 39.2	331 39.2 . . 01.8	241 21.9 . . 56.8	331 51.9 . . 52.3	236 11.5 . . 55.9	Enif 33 46.0 N 9 56.8
10	116 41.7	346 38.5 01.1	256 22.9 57.3	346 53.8 52.2	251 13.8 56.0	Fomalhaut 15 22.8 S29 32.4
11	131 44.1	1 37.8 19 00.4	271 23.9 57.8	1 55.7 52.0	266 16.2 56.0	
12	146 46.6	16 37.1 N18 59.7	286 24.8 S16 58.3	16 57.6 N18 51.9	281 18.5 S14 56.1	Gacrux 172 00.3 S57 11.9
13	161 49.1	31 36.4 59.0	301 25.8 58.7	31 59.5 51.8	296 20.9 56.1	Gienah 175 51.7 S17 37.4
14	176 51.5	46 35.7 58.3	316 26.8 59.2	47 01.4 51.6	311 23.3 56.1	Hadar 148 46.8 S60 26.7
15	191 54.0	61 35.0 . . 57.6	331 27.8 16 59.7	62 03.3 . . 51.5	326 25.6 . . 56.2	Hamal 327 59.7 N23 31.8
16	206 56.4	76 34.3 56.9	346 28.7 17 00.2	77 05.3 51.4	341 28.0 56.2	Kaus Aust. 83 42.5 S34 22.5
17	221 58.9	91 33.6 56.2	1 29.7 00.7	92 07.2 51.2	356 30.3 56.3	
18	237 01.4	106 32.9 N18 55.5	16 30.7 S17 01.1	107 09.1 N18 51.1	11 32.7 S14 56.3	Kochab 137 20.4 N74 06.1
19	252 03.8	121 32.2 54.8	31 31.6 01.6	122 11.0 51.0	26 35.0 56.3	Markab 13 37.2 N15 17.2
20	267 06.3	136 31.6 54.1	46 32.6 02.1	137 12.9 50.8	41 37.4 56.4	Menkar 314 14.1 N 4 08.8
21	282 08.8	151 30.9 . . 53.4	61 33.6 . . 02.6	152 14.8 . . 50.7	56 39.7 . . 56.4	Menkent 148 06.7 S36 26.5
22	297 11.2	166 30.2 52.7	76 34.6 03.1	167 16.7 50.6	71 42.1 56.5	Miaplacidus 221 40.3 S69 46.7
23	312 13.7	181 29.5 52.0	91 35.5 03.5	182 18.6 50.4	86 44.4 56.5	
MARTE						
19 00	327 16.2	196 28.8 N18 51.3	106 36.5 S17 04.0	197 20.5 N18 50.3	101 46.8 S14 56.6	Mirfak 308 39.1 N49 54.5
01	342 18.6	211 28.1 50.6	121 37.5 04.5	212 22.5 50.2	116 49.1 56.6	Nunki 75 57.0 S26 16.5
02	357 21.1	226 27.4 49.9	136 38.4 05.0	227 24.4 50.0	131 51.5 56.6	Peacock 53 17.5 S56 41.1
03	12 23.5	241 26.7 . . 49.2	151 39.4 . . 05.4	242 26.3 . . 49.9	146 53.8 . . 56.7	Póllux 243 27.1 N27 59.3
04	27 26.0	256 26.0 48.5	166 40.4 05.9	257 28.2 49.8	161 56.2 56.7	Procyon 244 59.2 N 5 11.1
05	42 28.5	271 25.4 47.7	181 41.3 06.4	272 30.1 49.6	176 58.6 56.8	
06	57 30.9	286 24.7 N18 47.0	196 42.3 S17 06.9	287 32.0 N18 49.5	192 00.9 S14 56.8	Rasalhague 96 05.5 N12 33.3
07	72 33.4	301 24.0 46.3	211 43.3 07.4	302 33.9 49.4	207 03.3 56.9	Régulus 207 43.0 N11 53.7
08	87 35.9	316 23.3 45.6	226 44.2 07.8	317 35.8 49.2	222 05.6 56.9	Rigel 281 11.4 S 8 11.1
09	102 38.3	331 22.6 . . 44.9	241 45.2 . . 08.3	332 37.8 . . 49.1	237 08.0 . . 56.9	Rigel Kent. 139 50.7 S60 53.8
10	117 40.8	346 21.9 44.2	256 46.2 08.8	347 39.7 49.0	252 10.3 57.0	Sabik 102 11.5 S15 44.4
11	132 43.3	1 21.2 43.5	271 47.1 09.3	2 41.6 48.8	267 12.7 57.0	
12	147 45.7	16 20.6 N18 42.7	286 48.1 S17 09.7	17 43.5 N18 48.7	282 15.0 S14 57.1	Schedar 349 39.1 N56 36.9
13	162 48.2	31 19.9 42.0	301 49.1 10.2	32 45.4 48.6	297 17.4 57.1	Shaula 96 20.6 S37 06.7
14	177 50.7	46 19.2 41.3	316 50.0 10.7	47 47.3 48.4	312 19.7 57.1	Sirius 258 33.2 S16 44.2
15	192 53.1	61 18.5 . . 40.6	331 51.0 . . 11.2	62 49.2 . . 48.3	327 22.1 . . 57.2	Spica 158 30.5 S11 14.2
16	207 55.6	76 17.8 39.9	346 52.0 11.7	77 51.1 48.2	342 24.4 57.2	Suhail 222 52.2 S43 29.6
17	222 58.0	91 17.1 39.1	1 52.9 12.1	92 53.1 48.0	357 26.8 57.3	
18	238 00.5	106 16.5 N18 38.4	16 53.9 S17 12.6	107 55.0 N18 47.9	12 29.1 S14 57.3	Vega 80 38.1 N38 48.3
19	253 03.0	121 15.8 37.7	31 54.8 13.1	122 56.9 47.8	27 31.5 57.4	Zuben'ubi 137 04.6 S16 06.0
20	268 05.4	136 15.1 37.0	46 55.8 13.6	137 58.8 47.6	42 33.8 57.4	
21	283 07.9	151 14.4 . . 36.2	61 56.8 . . 14.0	153 00.7 . . 47.5	57 36.2 . . 57.4	AHS Paso Mer.
22	298 10.4	166 13.7 35.5	76 57.7 14.5	168 02.6 47.4	72 38.5 57.5	Venus 230 28.4 10 53
23	313 12.8	181 13.1 34.8	91 58.7 15.0	183 04.5 47.2	87 40.9 57.5	Marte 139 56.1 16 54
						Júpiter 230 17.7 10 52
						Saturno 134 33.3 17 14
Paso Mer.	2 14.5	v -0.7 d 0.7	v 1.0 d 0.5	v 1.9 d 0.1	v 2.4 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	17	18	19	20		
<i>d</i> <i>h</i>	°	'	°	'	°	'	°	h	m	h	m	h	m	h	m	h	m
DOMINGO	17 00	178 57.3	N13 30.5	279 16.7	10.2	N14 55.2	6.5	57.1	N 72	///	///	02 43	19 35	□	□	□	
	01	193 57.4		293 45.9	10.3	15 01.7	6.4	57.0	N 70	///		03 11	20 22	20 37	21 11	22 13	
	02	208 57.6		308 15.2	10.3	15 08.1	6.3	57.0	68	///		03 31	20 53	21 18	21 58	22 55	
	03	223 57.7	28.1	322 44.5	10.3	15 14.4	6.2	56.9	66	///		03 47	21 16	21 46	22 28	23 24	
	04	238 57.8		337 13.8	10.3	15 20.6	6.1	56.9	64	01 03	02 58	04 01	21 34	22 07	22 51	23 46	
	05	253 58.0		351 43.1	10.3	15 26.7	6.1	56.9	62	01 50	03 16	04 12	21 49	22 24	23 09	24 03	
	06	268 58.1	N13 25.7	6 12.4	10.3	N15 32.8	5.9	56.8	60	02 19	03 31	04 21	22 02	22 39	23 24	24 18	
	07	283 58.2		20 41.7	10.3	15 38.7	5.8	56.8	N 58	02 40	03 43	04 29	22 12	22 51	23 37	24 30	
	08	298 58.4		35 11.0	10.4	15 44.5	5.8	56.8	56	02 57	03 54	04 36	22 22	23 02	23 48	24 41	
	09	313 58.5	23.3	49 40.4	10.3	15 50.3	5.7	56.7	54	03 11	04 03	04 43	22 30	23 11	23 58	24 50	
	10	328 58.6	22.5	64 09.7	10.4	15 56.0	5.5	56.7	52	03 23	04 11	04 49	22 38	23 19	24 06	00 06	
	11	343 58.8	21.7	78 39.1	10.3	16 01.5	5.5	56.7	50	03 33	04 18	04 54	22 45	23 27	24 14	00 14	
	12	358 58.9	N13 20.9	93 08.4	10.4	N16 07.0	5.4	56.6	45	03 54	04 33	05 05	22 59	23 43	24 31	00 31	
	13	13 59.0	20.1	107 37.8	10.4	16 12.4	5.3	56.6	N 40	04 11	04 45	05 14	23 11	23 56	24 44	00 44	
	14	28 59.2	19.3	122 07.2	10.4	16 17.7	5.2	56.6	35	04 24	04 55	05 22	23 22	24 07	00 07	00 56	
	15	43 59.3	18.5	136 36.6	10.4	16 22.9	5.2	56.5	30	04 34	05 04	05 29	23 31	24 17	00 17	01 06	
	16	58 59.4	17.7	151 06.0	10.4	16 28.1	5.0	56.5	20	04 51	05 18	05 41	23 46	24 34	00 34	01 23	
	17	73 59.6	16.9	165 35.4	10.5	16 33.1	4.9	56.5	N 10	05 04	05 29	05 51	24 00	00 00	00 49	01 38	
	18	88 59.7	N13 16.1	180 04.9	10.4	N16 38.0	4.8	56.4	0	05 15	05 39	06 00	24 13	00 13	01 03	01 52	
	19	103 59.8	15.3	194 34.3	10.5	16 42.8	4.8	56.4	S 10	05 23	05 48	06 10	24 26	00 26	01 17	02 07	
	20	119 00.0	14.5	209 03.8	10.4	16 47.6	4.6	56.4	20	05 31	05 57	06 20	24 40	00 40	01 32	02 22	
	21	134 00.1	13.7	223 33.2	10.5	16 52.2	4.6	56.3	30	05 38	06 06	06 31	24 55	00 55	01 49	02 39	
	22	149 00.3	12.9	238 02.7	10.5	16 56.8	4.5	56.3	35	05 42	06 11	06 37	00 07	01 05	01 59	02 49	
	23	164 00.4	12.1	252 32.2	10.5	17 01.3	4.3	56.3	40	05 45	06 17	06 44	00 16	01 15	02 10	03 01	
									45	05 48	06 22	06 53	00 27	01 28	02 24	03 15	
LUNES	18 00	179 00.5	N13 11.3	267 01.7	10.5	N17 05.6	4.3	56.2	S 50	05 51	06 29	07 03	00 40	01 43	02 40	03 31	
	01	194 00.7	10.5	281 31.2	10.5	17 09.9	4.2	56.2	52	05 53	06 32	07 07	00 46	01 50	02 48	03 39	
	02	209 00.8	09.7	296 00.7	10.5	17 14.1	4.1	56.2	54	05 54	06 36	07 12	00 52	01 58	02 57	03 48	
	03	224 00.9	08.9	310 30.2	10.6	17 18.2	4.0	56.1	56	05 56	06 39	07 18	01 00	02 07	03 06	03 58	
	04	239 01.1	08.1	324 59.8	10.6	17 22.2	3.9	56.1	58	05 57	06 43	07 24	01 08	02 17	03 17	04 09	
	05	254 01.2	07.2	339 29.4	10.5	17 26.1	3.8	56.1	S 60	05 58	06 47	07 31	01 18	02 28	03 30	04 22	
	06	269 01.4	N13 06.4	353 58.9	10.6	N17 29.9	3.7	56.0									
	07	284 01.5	05.6	8 28.5	10.6	17 33.6	3.6	56.0	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
	08	299 01.6	04.8	22 58.1	10.6	17 37.2	3.6	56.0			Civil	Náut.	17	18	19	20	
	09	314 01.8	04.0	37 27.7	10.6	17 40.8	3.4	55.9									
	10	329 01.9	03.2	51 57.3	10.7	17 44.2	3.3	55.9	N 72	h m	h m	h m	h m	h m	h m	h m	
	11	344 02.0	02.4	66 27.0	10.6	17 47.5	3.3	55.9	N 70	21 19	///	///	16 15	□	□	□	
	12	359 02.2	N13 01.6	80 56.6	10.7	N17 50.8	3.1	55.9	N 70	20 53	22 45	///	15 28	16 59	18 08	18 47	
	13	14 02.3	00.8	95 26.3	10.7	17 53.9	3.1	55.8	68	20 33	21 58	///	14 58	16 18	17 21	18 05	
	14	29 02.5	13 00.0	109 56.0	10.7	17 57.0	2.9	55.8	66	20 18	21 28	///	14 36	15 50	16 51	17 36	
	15	44 02.6	12 59.2	124 25.7	10.7	17 59.9	2.9	55.8	64	20 05	21 06	22 55	14 18	15 29	16 28	17 14	
	16	59 02.7	58.4	138 55.4	10.7	18 02.8	2.8	55.7	62	19 54	20 49	22 13	14 04	15 12	16 10	16 56	
	17	74 02.9	57.5	153 25.1	10.8	18 05.6	2.7	55.7	60	19 45	20 35	21 45	13 52	14 58	15 55	16 42	
	18	89 03.0	N12 56.7	167 54.9	10.7	N18 08.3	2.5	55.7	N 58	19 37	20 23	21 25	13 41	14 46	15 42	16 29	
	19	104 03.2	55.9	182 24.6	10.8	18 10.8	2.5	55.7	56	19 30	20 12	21 08	13 32	14 36	15 31	16 18	
	20	119 03.3	55.1	196 54.4	10.8	18 13.3	2.4	55.6	54	19 24	20 03	20 55	13 24	14 26	15 21	16 09	
	21	134 03.5	54.3	211 24.2	10.8	18 15.7	2.3	55.6	52	19 18	19 55	20 43	13 17	14 18	15 13	16 01	
	22	149 03.6	53.5	225 54.0	10.8	18 18.0	2.2	55.6	50	19 13	19 48	20 33	13 10	14 11	15 05	15 53	
	23	164 03.7	52.7	240 23.8	10.8	18 20.2	2.1	55.5	45	19 02	19 33	20 12	12 56	13 55	14 49	15 37	
	MARTES	19 00	179 03.9	N12 51.9	254 53.6	10.9	N18 22.3	2.0	55.5	N 40	18 53	19 21	19 56	12 45	13 42	14 35	15 23
01		194 04.0	51.1	269 23.5	10.9	18 24.3	2.0	55.5	35	18 45	19 12	19 43	12 35	13 31	14 24	15 12	
02		209 04.2	50.2	283 53.4	10.8	18 26.3	1.8	55.5	30	18 38	19 03	19 33	12 26	13 21	14 13	15 02	
03		224 04.3	49.4	298 23.2	11.0	18 28.1	1.7	55.4	20	18 27	18 49	19 16	12 11	13 05	13 56	14 45	
04		239 04.4	48.6	312 53.2	10.9	18 29.8	1.6	55.4	N 10	18 17	18 38	19 03	11 59	12 51	13 41	14 30	
05		254 04.6	47.8	327 23.1	10.9	18 31.4	1.6	55.4	0	18 07	18 28	18 53	11 46	12 37	13 27	14 16	
06		269 04.7	N12 47.0	341 53.0	11.0	N18 33.0	1.4	55.4	S 10	17 58	18 19	18 44	11 34	12 24	13 13	13 42	
07		284 04.9	46.2	356 23.0	11.0	18 34.4	1.4	55.3	20	17 48	18 11	18 37	11 22	12 09	12 58	13 07	
08		299 05.0	45.3	10 53.0	11.0	18 35.8	1.3	55.3	30	17 37	18 02	18 30	11 07	11 53	12 40	13 30	
09		314 05.2	44.5	25 23.0	11.0	18 37.1	1.1	55.3	35	17 31	17 57	18 27	10 58	11 43	12 30	13 20	
10		329 05.3	43.7	39 53.0	11.0	18 38.2	1.1	55.3	40	17 24	17 52	18 23	10 49	11 32	12 19	13 08	
11		344 05.5	42.9	54 23.0	11.1	18 39.3	1.0	55.2	45	17 16	17 46	18 20	10 37	11 19	12 05	12 54	
12		359 05.6	N12 42.1	68 53.1	11.1	N18 40.3	0.9	55.2	S 50	17 06	17 39	18 17	10 24	11 04	11 48	12 38	
13		14 05.7	41.3	83 23.2	11.1	18 41.2	0.8	55.2	52	17 01	17 36	18 16	10 17	10 56	11 41	12 30	
14		29 05.9	40.4	97 53.3	11.1	18 42.0	0.7	55.2	54	16 56	17 33	18 14	10 10	10 48	11 32	12 21	
15		44 06.0	39.6	112 23.4	11.1	18 42.7	0.6	55.1	56	16 50	17 29	18 13	10 02	10 39	11 22	12 12	
16		59 06.2	38.8	126 53.5	11.2	18 43.3	0.5	55.1	58	16 44	17 26	18 12	09 53	10 29	11 11	12 01	
17		74 06.3	38.0	141 23.7	11.2	18 43.8	0.4	55.1	S 60	16 37	17 21	18 10	09 43	10 17	10 58	11 48	
18		89 06.5	N12 37.2	155 53.9	11.2	N18 44.2	0.4	55.1									
19		104 06.6	36.4	170 24.1	11.2	18 44.6	0.2	55.1									
20		119 06.8	35.5	184 54.3	11.3	18 44.8	0.1	55.0									
21		134 06.9	34.7	199 24.6	11.2	18 44.9	0.1	55.0									
22		149 07.1	33.9	213 54.8	11.3	18 45.0	0.0	55.0									
23		164 07.2	33.1	228 25.1	11.3	N18 45.0	0.2	55.0									

UT (HmGr)	ARIES	VENUS -3.8	MARTE +0.6	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
2000	328 15.3	196 12.4 N18 34.1	106 59.6 S17 15.5	198 06.4 N18 47.1	102 43.2 S14 57.6	Acamar 315 17.7 S40 14.6
01	343 17.8	211 11.7 33.3	122 00.6 15.9	213 08.4 47.0	117 45.6 57.6	Achernar 335 25.9 S57 09.5
02	358 20.2	226 11.0 32.6	137 01.6 16.4	228 10.3 46.8	132 47.9 57.7	Acrux 173 08.7 S63 11.0
03	13 22.7	241 10.3 . . 31.9	152 02.5 . . 16.9	243 12.2 . . 46.7	147 50.3 . . 57.7	Adhara 255 12.1 S28 59.5
04	28 25.2	256 09.7 31.1	167 03.5 17.4	258 14.1 46.6	162 52.6 57.7	Aldebarán 290 48.5 N16 32.2
05	43 27.6	271 09.0 30.4	182 04.4 17.8	273 16.0 46.4	177 55.0 57.8	
06	58 30.1	286 08.3 N18 29.7	197 05.4 S17 18.3	288 17.9 N18 46.3	192 57.3 S14 57.8	Alioth 166 20.4 N55 53.1
07	73 32.5	301 07.6 28.9	212 06.3 18.8	303 19.8 46.2	207 59.6 57.9	Alkaid 152 58.6 N49 14.7
08	88 35.0	316 07.0 28.2	227 07.3 19.3	318 21.7 46.0	223 02.0 57.9	Al Na'ir 27 42.3 S46 53.2
09	103 37.5	331 06.3 . . 27.5	242 08.3 . . 19.7	333 23.7 . . 45.9	238 04.3 . . 58.0	Alnilam 275 45.7 S 1 11.6
10	118 39.9	346 05.6 26.7	257 09.2 20.2	348 25.6 45.8	253 06.7 58.0	Alphard 217 55.6 S 8 43.4
11	133 42.4	1 04.9 26.0	272 10.2 20.7	3 27.5 45.6	268 09.0 58.1	
12	148 44.9	16 04.3 N18 25.2	287 11.1 S17 21.2	18 29.4 N18 45.5	283 11.4 S14 58.1	Alphecca 126 10.3 N26 40.3
13	163 47.3	31 03.6 24.5	302 12.1 21.6	33 31.3 45.4	298 13.7 58.1	Alpheratz 357 42.3 N29 10.3
14	178 49.8	46 02.9 23.8	317 13.0 22.1	48 33.2 45.2	313 16.1 58.2	Altair 62 07.1 N 8 54.8
15	193 52.3	61 02.2 . . 23.0	332 14.0 . . 22.6	63 35.1 . . 45.1	328 18.4 . . 58.2	Ankaa 353 14.6 S42 13.3
16	208 54.7	76 01.6 22.3	347 14.9 23.1	78 37.1 45.0	343 20.8 58.3	Antares 112 25.2 S26 27.7
17	223 57.2	91 00.9 21.5	2 15.9 23.5	93 39.0 44.8	358 23.1 58.3	
18	238 59.7	106 00.2 N18 20.8	17 16.8 S17 24.0	108 40.9 N18 44.7	13 25.5 S14 58.4	Arcturus 145 55.1 N19 06.6
19	254 02.1	120 59.5 20.0	32 17.8 24.5	123 42.8 44.6	28 27.8 58.4	Atria 107 26.0 S69 03.3
20	269 04.6	135 58.9 19.3	47 18.7 25.0	138 44.7 44.4	43 30.2 58.4	Avior 234 18.2 S59 33.4
21	284 07.0	150 58.2 . . 18.5	62 19.7 . . 25.4	153 46.6 . . 44.3	58 32.5 . . 58.5	Bellatrix 278 31.3 N 6 21.7
22	299 09.5	165 57.5 17.8	77 20.6 25.9	168 48.5 44.2	73 34.8 58.5	Betelgeuse 271 00.6 N 7 24.5
23	314 12.0	180 56.9 17.0	92 21.6 26.4	183 50.5 44.0	88 37.2 58.6	
2100	329 14.4	195 56.2 N18 16.3	107 22.5 S17 26.9	198 52.4 N18 43.9	103 39.5 S14 58.6	Canopus 263 56.1 S52 42.1
01	344 16.9	210 55.5 15.5	122 23.5 27.3	213 54.3 43.8	118 41.9 58.7	Capella 280 33.4 N46 00.4
02	359 19.4	225 54.8 14.8	137 24.4 27.8	228 56.2 43.6	133 44.2 58.7	Deneb 49 30.4 N45 20.3
03	14 21.8	240 54.2 . . 14.0	152 25.4 . . 28.3	243 58.1 . . 43.5	148 46.6 . . 58.8	Denébola 182 33.1 N14 29.5
04	29 24.3	255 53.5 13.3	167 26.3 28.7	259 00.0 43.4	163 48.9 58.8	Diphda 348 54.8 S17 54.2
05	44 26.8	270 52.8 12.5	182 27.3 29.2	274 02.0 43.2	178 51.3 58.8	
06	59 29.2	285 52.2 N18 11.8	197 28.2 S17 29.7	289 03.9 N18 43.1	193 53.6 S14 58.9	Dubhe 193 51.5 N61 40.4
07	74 31.7	300 51.5 11.0	212 29.2 30.2	304 05.8 43.0	208 56.0 58.9	Elnath 278 11.7 N28 36.9
08	89 34.1	315 50.8 10.3	227 30.1 30.6	319 07.7 42.8	223 58.3 59.0	Eltanin 90 45.5 N51 29.7
09	104 36.6	330 50.2 . . 09.5	242 31.0 . . 31.1	334 09.6 . . 42.7	239 00.6 . . 59.0	Enif 33 46.0 N 9 56.8
10	119 39.1	345 49.5 08.7	257 32.0 31.6	349 11.5 42.6	254 03.0 59.1	Fomalhaut 15 22.8 S29 32.4
11	134 41.5	0 48.8 08.0	272 32.9 32.1	4 13.4 42.4	269 05.3 59.1	
12	149 44.0	15 48.2 N18 07.2	287 33.9 S17 32.5	19 15.4 N18 42.3	284 07.7 S14 59.2	Gacrux 172 00.3 S57 11.8
13	164 46.5	30 47.5 06.4	302 34.8 33.0	34 17.3 42.2	299 10.0 59.2	Gienah 175 51.7 S17 37.4
14	179 48.9	45 46.8 05.7	317 35.8 33.5	49 19.2 42.0	314 12.4 59.2	Hadar 148 46.9 S60 26.7
15	194 51.4	60 46.2 . . 04.9	332 36.7 . . 33.9	64 21.1 . . 41.9	329 14.7 . . 59.3	Hamal 327 59.6 N23 31.8
16	209 53.9	75 45.5 04.2	347 37.7 34.4	79 23.0 41.8	344 17.0 59.3	Kaus Aust. 83 42.5 S34 22.5
17	224 56.3	90 44.9 03.4	2 38.6 34.9	94 24.9 41.6	359 19.4 59.4	
18	239 58.8	105 44.2 N18 02.6	17 39.5 S17 35.4	109 26.9 N18 41.5	14 21.7 S14 59.4	Kochab 137 20.5 N74 06.1
19	255 01.3	120 43.5 01.9	32 40.5 35.8	124 28.8 41.4	29 24.1 59.5	Markab 13 37.2 N15 17.2
20	270 03.7	135 42.9 01.1	47 41.4 36.3	139 30.7 41.2	44 26.4 59.5	Menkar 314 14.1 N 4 08.8
21	285 06.2	150 42.2 18 00.3	62 42.4 . . 36.8	154 32.6 . . 41.1	59 28.8 . . 59.6	Menkent 148 06.7 S36 26.5
22	300 08.6	165 41.5 17 59.5	77 43.3 37.2	169 34.5 40.9	74 31.1 59.6	Miaplacidus 221 40.3 S69 46.7
23	315 11.1	180 40.9 58.8	92 44.2 37.7	184 36.4 40.8	89 33.4 59.6	
2200	330 13.6	195 40.2 N17 58.0	107 45.2 S17 38.2	199 38.4 N18 40.7	104 35.8 S14 59.7	Mirfak 308 39.1 N49 54.5
01	345 16.0	210 39.6 57.2	122 46.1 38.7	214 40.3 40.5	119 38.1 59.7	Nunki 75 57.0 S26 16.5
02	0 18.5	225 38.9 56.5	137 47.0 39.1	229 42.2 40.4	134 40.5 59.8	Peacock 53 17.5 S46 41.1
03	15 21.0	240 38.2 . . 55.7	152 48.0 . . 39.6	244 44.1 . . 40.3	149 42.8 . . 59.8	Póllux 243 27.1 N27 59.3
04	30 23.4	255 37.6 54.9	167 48.9 40.1	259 46.0 40.1	164 45.1 59.9	Procyon 244 59.1 N 5 11.1
05	45 25.9	270 36.9 54.1	182 49.9 40.5	274 47.9 40.0	179 47.5 14 59.9	
06	60 28.4	285 36.3 N17 53.4	197 50.8 S17 41.0	289 49.9 N18 39.9	194 49.8 S15 00.0	Rasalhague 96 05.5 N12 33.3
07	75 30.8	300 35.6 52.6	212 51.7 41.5	304 51.8 39.7	209 52.2 00.0	Régulus 207 43.0 N11 53.7
08	90 33.3	315 34.9 51.8	227 52.7 42.0	319 53.7 39.6	224 54.5 00.0	Rigel 281 11.4 S 8 11.1
09	105 35.8	330 34.3 . . 51.0	242 53.6 . . 42.4	334 55.6 . . 39.5	239 56.8 . . 00.1	Rigel Kent. 139 50.7 S60 53.8
10	120 38.2	345 33.6 50.2	257 54.5 42.9	349 57.5 39.3	254 59.2 00.1	Sabik 102 11.5 S15 44.4
11	135 40.7	0 33.0 49.5	272 55.5 43.4	4 59.4 39.2	270 01.5 00.2	
12	150 43.1	15 32.3 N17 48.7	287 56.4 S17 43.8	20 01.4 N18 39.1	285 03.9 S15 00.2	Schedar 349 39.0 N56 36.9
13	165 45.6	30 31.7 47.9	302 57.3 44.3	35 03.3 38.9	300 06.2 00.3	Shaula 96 20.6 S37 06.7
14	180 48.1	45 31.0 47.1	317 58.3 44.8	50 05.2 38.8	315 08.5 00.3	Sirius 258 33.2 S16 44.2
15	195 50.5	60 30.4 . . 46.3	332 59.2 . . 45.2	65 07.1 . . 38.7	330 10.9 . . 00.4	Spica 158 30.5 S11 14.2
16	210 53.0	75 29.7 45.5	348 00.1 45.7	80 09.0 38.5	345 13.2 00.4	Suhail 222 52.2 S43 29.5
17	225 55.5	90 29.1 44.7	3 01.1 46.2	95 10.9 38.4	0 15.6 00.5	
18	240 57.9	105 28.4 N17 44.0	18 02.0 S17 46.6	110 12.9 N18 38.3	15 17.9 S15 00.5	Vega 80 38.1 N38 48.3
19	256 00.4	120 27.7 43.2	33 02.9 47.1	125 14.8 38.1	30 20.2 00.5	Zuben'ubi 137 04.6 S16 06.0
20	271 02.9	135 27.1 42.4	48 03.9 47.6	140 16.7 38.0	45 22.6 00.6	
21	286 05.3	150 26.4 . . 41.6	63 04.8 . . 48.0	155 18.6 . . 37.9	60 24.9 . . 00.6	AHS Paso Mer.
22	301 07.8	165 25.8 40.8	78 05.7 48.5	170 20.5 37.7	75 27.3 00.7	Venus 226 41.8 10 57
23	316 10.2	180 25.1 40.0	93 06.6 49.0	185 22.5 37.6	90 29.6 00.7	Marte 138 08.1 16 49
						Júpiter 229 37.9 10 43
						Saturno 134 25.1 17 03
Paso Mer.	2 02.7	v -0.7 d 0.8	v 0.9 d 0.5	v 1.9 d 0.1	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	v	Dec	d		Ph	Náut.		Civil	20	21	22	23	
M I É R C O L E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	00	179 07.4	N12 32.2	242 55.4	11.4	N18 44.8	0.2 54.9	N 70	////	01 44	03 25	22 13	23 34	25 03	01 03	
	01	194 07.5	31.4	257 25.8	11.4	18 44.6	0.3 54.9	68	////	02 23	03 43	22 55	24 07	00 07	01 27	
	02	209 07.6	30.6	271 56.2	11.3	18 44.3	0.4 54.9	66	////	02 50	03 58	23 24	24 31	00 31	01 45	
	03	224 07.8	29.8	286 26.5	11.5	18 43.9	0.5 54.9	64	01 31	03 10	04 10	23 46	24 50	00 50	02 00	
	04	239 07.9	29.0	300 57.0	11.4	18 43.4	0.6 54.9	62	02 06	03 26	04 20	24 03	00 03	01 05	02 13	
	05	254 08.1	28.1	315 27.4	11.5	18 42.8	0.6 54.8	60	02 31	03 39	04 28	24 18	00 18	01 18	02 23	
	06	269 08.2	N12 27.3	329 57.9	11.5	N18 42.2	0.8 54.8	N 58	02 50	03 51	04 36	24 30	00 30	01 29	02 32	
	07	284 08.4	26.5	344 28.4	11.5	18 41.4	0.8 54.8	56	03 06	04 00	04 42	24 41	00 41	01 38	02 40	
	08	299 08.5	25.7	358 58.9	11.5	18 40.6	1.0 54.8	54	03 19	04 09	04 48	24 50	00 50	01 47	02 47	
	09	314 08.7	24.8	13 29.4	11.6	18 39.6	1.0 54.8	52	03 30	04 16	04 54	00 06	00 58	01 54	02 54	
	10	329 08.8	24.0	28 00.0	11.6	18 38.6	1.1 54.7	50	03 39	04 23	04 58	00 14	01 06	02 01	02 59	
	11	344 09.0	23.2	42 30.6	11.6	18 37.5	1.2 54.7	45	03 59	04 37	05 09	00 31	01 22	02 16	03 12	
	12	359 09.1	N12 22.4	57 01.2	11.6	N18 36.3	1.3 54.7	N 40	04 14	04 49	05 17	00 44	01 35	02 28	03 22	
	13	14 09.3	21.5	71 31.8	11.7	18 35.0	1.4 54.7	35	04 26	04 58	05 24	00 56	01 46	02 38	03 31	
	14	29 09.4	20.7	86 02.5	11.7	18 33.6	1.5 54.7	30	04 36	05 06	05 31	01 06	01 56	02 47	03 38	
	15	44 09.6	19.9	100 33.2	11.7	18 32.1	1.5 54.7	20	04 52	05 19	05 42	01 23	02 13	03 02	03 52	
	16	59 09.7	19.1	115 03.9	11.8	18 30.6	1.7 54.6	N 10	05 04	05 30	05 51	01 38	02 27	03 16	04 03	
	17	74 09.9	18.2	129 34.7	11.8	18 28.9	1.7 54.6	0	05 14	05 39	06 00	01 52	02 41	03 28	04 14	
	18	89 10.0	N12 17.4	144 05.5	11.8	N18 27.2	1.8 54.6	S 10	05 22	05 47	06 08	02 07	02 55	03 41	04 25	
	19	104 10.2	16.6	158 36.3	11.8	18 25.4	1.9 54.6	20	05 29	05 55	06 18	02 22	03 09	03 54	04 36	
	20	119 10.3	15.7	173 07.1	11.9	18 23.5	2.0 54.6	30	05 35	06 03	06 28	02 39	03 26	04 09	04 49	
	21	134 10.5	14.9	187 38.0	11.9	18 21.5	2.1 54.6	35	05 38	06 08	06 34	02 49	03 36	04 18	04 57	
	22	149 10.6	14.1	202 08.9	11.9	18 19.4	2.1 54.5	40	05 41	06 13	06 40	03 01	03 47	04 28	05 05	
	23	164 10.8	13.3	216 39.8	11.9	18 17.3	2.3 54.5	45	05 44	06 18	06 48	03 15	04 00	04 40	05 15	
J U E V E S	00	179 10.9	N12 12.4	231 10.7	12.0	N18 15.0	2.3 54.5	S 50	05 46	06 24	06 57	03 31	04 16	04 54	05 28	
	01	194 11.1	11.6	245 41.7	12.0	18 12.7	2.4 54.5	52	05 47	06 26	07 01	03 39	04 23	05 01	05 33	
	02	209 11.2	10.8	260 12.7	12.1	18 10.3	2.5 54.5	54	05 48	06 29	07 06	03 48	04 31	05 08	05 39	
	03	224 11.4	09.9	274 43.8	12.0	18 07.8	2.6 54.5	56	05 49	06 32	07 11	03 58	04 41	05 16	05 46	
	04	239 11.5	09.1	289 14.8	12.1	18 05.2	2.6 54.4	58	05 50	06 36	07 17	04 09	04 51	05 26	05 54	
	05	254 11.7	08.3	303 45.9	12.1	18 02.6	2.8 54.4	S 60	05 51	06 40	07 23	04 22	05 03	05 36	06 03	
	06	269 11.9	N12 07.4	318 17.0	12.2	N17 59.8	2.8 54.4	Lat.	Ocaso Sol	Crepúsculo	Civil	Náut.	Ocaso Luna			
	07	284 12.0	06.6	332 48.2	12.2	17 57.0	2.9 54.4						20	21	22	23
	08	299 12.2	05.8	347 19.4	12.2	17 54.1	3.0 54.4	N 72	h m	h m	h m	h m	h m	h m	h m	h m
	09	314 12.3	05.0	1 50.6	12.2	17 51.1	3.1 54.4										N 70	21 00	23 36	////	18 47	19 04	19 12	19 15
	10	329 12.5	04.1	16 21.8	12.3	17 48.0	3.1 54.4	68	20 37	22 15	////	18 05	18 31	18 47	18 57	
	11	344 12.6	03.3	30 53.1	12.3	17 44.9	3.3 54.4	66	20 06	21 13	23 40	17 36	18 07	18 28	18 43	
	12	359 12.8	N12 02.5	45 24.4	12.4	N17 41.6	3.3 54.3	64	19 54	20 53	22 29	17 14	17 48	18 12	18 31	
	13	14 12.9	01.6	59 55.8	12.3	17 38.3	3.4 54.3	62	19 45	20 38	21 55	16 56	17 32	17 59	18 21	
	14	29 13.1	12 00.8	74 27.1	12.4	17 34.9	3.5 54.3	60	19 36	20 25	21 32	16 42	17 19	17 48	18 12	
	15	44 13.2	11 59.9	88 58.5	12.5	17 31.4	3.5 54.3	N 58	19 29	20 14	21 14	16 29	17 08	17 39	18 05	
	16	59 13.4	59.1	103 30.0	12.4	17 27.9	3.6 54.3	56	19 23	20 04	20 58	16 18	16 58	17 30	17 58	
	17	74 13.5	58.3	118 01.4	12.5	17 24.3	3.8 54.3	54	19 17	19 56	20 46	16 09	16 49	17 23	17 52	
	18	89 13.7	N11 57.4	132 32.9	12.6	N17 20.5	3.7 54.3	52	19 12	19 49	20 35	16 01	16 41	17 16	17 46	
	19	104 13.9	56.6	147 04.5	12.5	17 16.8	3.9 54.3	50	19 07	19 42	20 25	15 53	16 34	17 10	17 41	
	20	119 14.0	55.8	161 36.0	12.6	17 12.9	3.9 54.2	45	18 57	19 28	20 06	15 37	16 19	16 57	17 31	
	21	134 14.2	54.9	176 07.6	12.6	17 09.0	4.1 54.2	N 40	18 49	19 17	19 51	15 23	16 07	16 46	17 22	
	22	149 14.3	54.1	190 39.2	12.7	17 04.9	4.1 54.2	35	18 41	19 08	19 39	15 12	15 56	16 37	17 14	
	23	164 14.5	53.3	205 10.9	12.7	17 00.8	4.1 54.2	30	18 35	19 00	19 29	15 02	15 47	16 29	17 07	
	V I E R N E S	00	179 14.6	N11 52.4	219 42.6	12.7	N16 56.7	4.3 54.2	20	18 24	18 47	19 14	14 45	15 31	16 15	16 56
01		194 14.8	51.6	234 14.3	12.7	16 52.4	4.3 54.2	N 10	18 15	18 37	19 02	14 30	15 17	16 02	16 45	
02		209 15.0	50.7	248 46.0	12.8	16 48.1	4.4 54.2	0	18 06	18 28	18 52	14 16	15 04	15 50	16 36	
03		224 15.1	49.9	263 17.8	12.8	16 43.7	4.5 54.2	S 10	17 58	18 19	18 44	14 02	14 51	15 39	16 26	
04		239 15.3	49.1	277 49.6	12.9	16 39.2	4.5 54.2	20	17 49	18 11	18 37	13 47	14 37	15 26	16 15	
05		254 15.4	48.2	292 21.5	12.8	16 34.7	4.6 54.2	30	17 39	18 03	18 31	13 30	14 20	15 12	16 03	
06		269 15.6	N11 47.4	306 53.3	12.9	N16 30.1	4.7 54.1	35	17 33	17 59	18 29	13 20	14 11	15 03	15 57	
07		284 15.7	46.6	321 25.2	13.0	16 25.4	4.8 54.1	40	17 27	17 54	18 26	13 08	14 00	14 54	15 49	
08		299 15.9	45.7	335 57.2	12.9	16 20.6	4.8 54.1	45	17 19	17 49	18 23	12 54	13 47	14 42	15 39	
09		314 16.1	44.9	350 29.1	13.1	16 15.8	4.9 54.1	S 50	17 10	17 43	18 21	12 38	13 32	14 29	15 28	
10		329 16.2	44.0	5 01.2	13.0	16 10.9	5.0 54.1	52	17 06	17 41	18 20	12 30	13 24	14 22	15 23	
11		344 16.4	43.2	19 33.2	13.1	16 05.9	5.0 54.1	54	17 01	17 38	18 19	12 21	13 16	14 15	15 17	
12		359 16.5	N11 42.3	34 05.3	13.1	N16 00.9	5.1 54.1	56	16 56	17 35	18 18	12 12	13 07	14 07	15 11	
13		14 16.7	41.5	48 37.4	13.1	15 55.8	5.2 54.1	58	16 51	17 31	18 17	12 01	12 57	13 58	15 03	
14		29 16.8	40.7	63 09.5	13.1	15 50.6	5.3 54.1	S 60	16 44	17 28	18 16	11 48	12 45	13 48	14 55	
15		44 17.0	39.8	77 41.6	13.2	15 45.3	5.3 54.1	Día	SOL		Paso Mer.	LUNA				
16		59 17.2	39.0	92 13.8	13.3	15 40.0	5.4 54.1		Ec. Tiempo			Paso Mer. Sup.	Paso Mer. Inf.	Edad	Fase	
17		74 17.3	38.1	106 46.1	13.2	15 34.6	5.4 54.1	d	m s	m s	h m	h m	h m	d	%	
18		89 17.5	N11 37.3	121 18.3	13.3	N15 29.2	5.5 54.1	20	03 31	03 24	12 03	08 04	20 28	25 22		
19		104 17.6	36.4	135 50.6	13.3	15 23.7	5.6 54.0	21	03 17	03 09	12 03	08 52	21 16	26 15		
20		119 17.8	35.6	150 22.9	13.4	15 18.1	5.7 54.0	22	03 02	02 54	12 03	09 39	22 02	27 9		
21		134 18.0	34.8	164 55.3	13.4	15 12.4	5.7 54.0									
22		149 18.1	33.9	179 27.7	13.4	15 06.7	5.8 54.0									
23		164 18.3	33.1	194 00.1	13.4	N15 00.9	5.8 54.0									
		S/D 15.8	d 0.8	S/D 14.9		14.8										

UT (HmGr)	ARIES	VENUS −3.9	MARTE +0.6	JÚPITER −1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
23	331 12.7	195 24.5 N17 39.2	108 07.6 S17 49.5	200 24.4 N18 37.5	105 31.9 S15 00.8	Acamar 315 17.6 S40 14.6
01	346 15.2	210 23.8 38.4	123 08.5 49.9	215 26.3 37.3	120 34.3 00.8	Achernar 335 25.9 S57 09.5
02	1 17.6	225 23.2 37.6	138 09.4 50.4	230 28.2 37.2	135 36.6 00.9	Acrux 173 08.8 S63 11.0
03	16 20.1	240 22.5 . . 36.8	153 10.4 . . 50.9	245 30.1 . . 37.1	150 38.9 . . 00.9	Adhara 255 12.1 S28 59.5
04	31 22.6	255 21.9 36.0	168 11.3 51.3	260 32.1 36.9	165 41.3 01.0	Aldebarán 290 48.5 N16 32.2
05	46 25.0	270 21.2 35.2	183 12.2 51.8	275 34.0 36.8	180 43.6 01.0	
06	61 27.5	285 20.6 N17 34.4	198 13.1 S17 52.3	290 35.9 N18 36.7	195 46.0 S15 01.0	Alioth 166 20.5 N55 53.1
07	76 30.0	300 19.9 33.6	213 14.1 52.7	305 37.8 36.5	210 48.3 01.1	Alkaid 152 58.6 N49 14.7
08	91 32.4	315 19.3 32.8	228 15.0 53.2	320 39.7 36.4	225 50.6 01.1	Al Na'ir 27 42.3 S46 53.2
09	106 34.9	330 18.6 . . 32.0	243 15.9 . . 53.7	335 41.6 . . 36.2	240 53.0 . . 01.2	Alnilam 275 45.7 S 1 11.6
10	121 37.4	345 18.0 31.2	258 16.8 54.1	350 43.6 36.1	255 55.3 01.2	Alphard 217 55.6 S 8 43.4
11	136 39.8	0 17.4 30.4	273 17.8 54.6	5 45.5 36.0	270 57.6 01.3	
12	151 42.3	15 16.7 N17 29.6	288 18.7 S17 55.1	20 47.4 N18 35.8	286 00.0 S15 01.3	Alphecca 126 10.4 N26 40.3
13	166 44.7	30 16.1 28.8	303 19.6 55.5	35 49.3 35.7	301 02.3 01.4	Alpheratz 357 42.3 N29 10.3
14	181 47.2	45 15.4 28.0	318 20.5 56.0	50 51.2 35.6	316 04.6 01.4	Altair 62 07.1 N 8 54.8
15	196 49.7	60 14.8 . . 27.2	333 21.4 . . 56.5	65 53.2 . . 35.4	331 07.0 . . 01.5	Ankaa 353 14.6 S42 13.3
16	211 52.1	75 14.1 26.4	348 22.4 56.9	80 55.1 35.3	346 09.3 01.5	Antares 112 25.2 S26 27.7
17	226 54.6	90 13.5 25.6	3 23.3 57.4	95 57.0 35.2	1 11.7 01.6	
18	241 57.1	105 12.8 N17 24.8	18 24.2 S17 57.9	110 58.9 N18 35.0	16 14.0 S15 01.6	Arcturus 145 55.1 N19 06.6
19	256 59.5	120 12.2 24.0	33 25.1 58.3	126 00.8 34.9	31 16.3 01.7	Atria 107 26.0 S69 03.3
20	272 02.0	135 11.6 23.2	48 26.0 58.8	141 02.8 34.8	46 18.7 01.7	Avior 234 18.2 S59 33.4
21	287 04.5	150 10.9 . . 22.3	63 27.0 . . 59.3	156 04.7 . . 34.6	61 21.0 . . 01.7	Bellatrix 278 31.2 N 6 21.7
22	302 06.9	165 10.3 21.5	78 27.9 17 59.7	171 06.6 34.5	76 23.3 01.8	Betelgeuse 271 00.6 N 7 24.5
23	317 09.4	180 09.6 20.7	93 28.8 18 00.2	186 08.5 34.4	91 25.7 01.8	
24	332 11.9	195 09.0 N17 19.9	108 29.7 S18 00.6	201 10.4 N18 34.2	106 28.0 S15 01.9	Canopus 263 56.1 S52 42.1
01	347 14.3	210 08.3 19.1	123 30.6 01.1	216 12.4 34.1	121 30.3 01.9	Capella 280 33.4 N46 00.4
02	2 16.8	225 07.7 18.3	138 31.6 01.6	231 14.3 34.0	136 32.7 02.0	Deneb 49 30.4 N45 20.3
03	17 19.2	240 07.1 . . 17.5	153 32.5 . . 02.0	246 16.2 . . 33.8	151 35.0 . . 02.0	Denébola 182 33.1 N14 29.5
04	32 21.7	255 06.4 16.6	168 33.4 02.5	261 18.1 33.7	166 37.3 02.1	Diphda 348 54.8 S17 54.2
05	47 24.2	270 05.8 15.8	183 34.3 03.0	276 20.0 33.6	181 39.7 02.1	
06	62 26.6	285 05.1 N17 15.0	198 35.2 S18 03.4	291 22.0 N18 33.4	196 42.0 S15 02.2	Dubhe 193 51.5 N61 40.4
07	77 29.1	300 04.5 14.2	213 36.1 03.9	306 23.9 33.3	211 44.3 02.2	Elnath 278 11.7 N28 36.9
08	92 31.6	315 03.9 13.4	228 37.1 04.4	321 25.8 33.2	226 46.7 02.3	Eltanin 90 45.5 N51 29.7
09	107 34.0	330 03.2 . . 12.5	243 38.0 . . 04.8	336 27.7 . . 33.0	241 49.0 . . 02.3	Enif 33 46.0 N 9 56.8
10	122 36.5	345 02.6 11.7	258 38.9 05.3	351 29.6 32.9	256 51.3 02.4	Fomalhaut 15 22.7 S29 32.4
11	137 39.0	0 02.0 10.9	273 39.8 05.8	6 31.6 32.8	271 53.7 02.4	
12	152 41.4	15 01.3 N17 10.1	288 40.7 S18 06.2	21 33.5 N18 32.6	286 56.0 S15 02.4	Gacrux 172 00.3 S57 11.8
13	167 43.9	30 00.7 09.2	303 41.6 06.7	36 35.4 32.5	301 58.3 02.5	Gienah 175 51.7 S17 37.4
14	182 46.3	45 00.1 08.4	318 42.5 07.1	51 37.3 32.3	317 00.7 02.5	Hadar 148 46.9 S60 26.7
15	197 48.8	59 59.4 . . 07.6	333 43.4 . . 07.6	66 39.3 . . 32.2	332 03.0 . . 02.6	Hamal 327 59.6 N23 31.8
16	212 51.3	74 58.8 06.8	348 44.4 08.1	81 41.2 32.1	347 05.3 02.6	Kaus Aust. 83 42.5 S34 22.5
17	227 53.7	89 58.1 05.9	3 45.3 08.5	96 43.1 31.9	2 07.7 02.7	
18	242 56.2	104 57.5 N17 05.1	18 46.2 S18 09.0	111 45.0 N18 31.8	17 10.0 S15 02.7	Kochab 137 20.6 N74 06.1
19	257 58.7	119 56.9 04.3	33 47.1 09.5	126 46.9 31.7	32 12.3 02.8	Markab 13 37.2 N15 17.2
20	273 01.1	134 56.2 03.5	48 48.0 09.9	141 48.9 31.5	47 14.7 02.8	Menkar 314 14.1 N 4 08.8
21	288 03.6	149 55.6 . . 02.6	63 48.9 . . 10.4	156 50.8 . . 31.4	62 17.0 . . 02.9	Menkent 148 06.7 S36 26.5
22	303 06.1	164 55.0 01.8	78 49.8 10.8	171 52.7 31.3	77 19.3 02.9	Miaplacidus 221 40.3 S69 46.7
23	318 08.5	179 54.4 01.0	93 50.7 11.3	186 54.6 31.1	92 21.6 03.0	
25	333 11.0	194 53.7 N17 00.1	108 51.6 S18 11.8	201 56.5 N18 31.0	107 24.0 S15 03.0	Mirfak 308 39.0 N49 54.5
01	348 13.5	209 53.1 16 59.3	123 52.5 12.2	216 58.5 30.9	122 26.3 03.1	Nunki 75 57.0 S26 16.5
02	3 15.9	224 52.5 58.4	138 53.4 12.7	232 00.4 30.7	137 28.6 03.1	Peacock 53 17.5 S56 41.1
03	18 18.4	239 51.8 . . 57.6	153 54.4 . . 13.2	247 02.3 . . 30.6	152 31.0 . . 03.2	Póllux 243 27.0 N27 59.3
04	33 20.8	254 51.2 56.8	168 55.3 13.6	262 04.2 30.5	167 33.3 03.2	Procyon 244 59.1 N 5 11.1
05	48 23.3	269 50.6 55.9	183 56.2 14.1	277 06.2 30.3	182 35.6 03.3	
06	63 25.8	284 49.9 N16 55.1	198 57.1 S18 14.5	292 08.1 N18 30.2	197 38.0 S15 03.3	Rasalhague 96 05.5 N12 33.3
07	78 28.2	299 49.3 54.3	213 58.0 15.0	307 10.0 30.1	212 40.3 03.3	Régulus 207 43.0 N11 53.7
08	93 30.7	314 48.7 53.4	228 58.9 15.5	322 11.9 29.9	227 42.6 03.4	Rigel 281 11.4 S 8 11.1
09	108 33.2	329 48.1 . . 52.6	243 59.8 . . 15.9	337 13.9 . . 29.8	242 45.0 . . 03.4	Rigel Kent. 139 50.7 S60 53.8
10	123 35.6	344 47.4 51.7	259 00.7 16.4	352 15.8 29.7	257 47.3 03.5	Sabik 102 11.5 S15 44.4
11	138 38.1	359 46.8 50.9	274 01.6 16.8	7 17.7 29.5	272 49.6 03.5	
12	153 40.6	14 46.2 N16 50.0	289 02.5 S18 17.3	22 19.6 N18 29.4	287 51.9 S15 03.6	Schedar 349 39.0 N56 37.0
13	168 43.0	29 45.6 49.2	304 03.4 17.8	37 21.5 29.2	302 54.3 03.6	Shaula 96 20.6 S37 06.7
14	183 45.5	44 44.9 48.4	319 04.3 18.2	52 23.5 29.1	317 56.6 03.7	Sirius 258 33.2 S16 44.2
15	198 48.0	59 44.3 . . 47.5	334 05.2 . . 18.7	67 25.4 . . 29.0	332 58.9 . . 03.7	Spica 158 30.6 S11 14.2
16	213 50.4	74 43.7 46.7	349 06.1 19.1	82 27.3 28.8	348 01.3 03.8	Suhail 222 52.2 S43 29.5
17	228 52.9	89 43.1 45.8	4 07.0 19.6	97 29.2 28.7	3 03.6 03.8	
18	243 55.3	104 42.4 N16 45.0	19 07.9 S18 20.1	112 31.2 N18 28.6	18 05.9 S15 03.9	Vega 80 38.1 N38 48.3
19	258 57.8	119 41.8 44.1	34 08.8 20.5	127 33.1 28.4	33 08.2 03.9	Zuben'ubi 137 04.6 S16 06.0
20	274 00.3	134 41.2 43.3	49 09.7 21.0	142 35.0 28.3	48 10.6 04.0	
21	289 02.7	149 40.6 . . 42.4	64 10.6 . . 21.4	157 36.9 . . 28.2	63 12.9 . . 04.0	AHS Paso Mer.
22	304 05.2	164 39.9 41.6	79 11.5 21.9	172 38.9 28.0	78 15.2 04.1	Venus 222 57.1 11 00
23	319 07.7	179 39.3 40.7	94 12.4 22.4	187 40.8 27.9	93 17.5 04.1	Marte 136 17.9 16 45
						Júpiter 228 58.6 10 34
						Saturno 134 16.1 16 52
Paso Mer.	h m					
	1 50.9	v −0.6 d 0.8	v 0.9 d 0.5	v 1.9 d 0.1	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	23	24	25	26
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m
S Á B A D O	N 72	179 18.5	N11 32.2	208 32.5	13.5	N14 55.1	6.0	54.0	N 70	01 13	03 19	00 30	02 11	03 49	05 24
	N 70	194 18.6	31.4	223 05.0	13.5	14 49.1	5.9	54.0	68	02 08	03 39	01 03	02 33	04 02	05 31
	01	209 18.8	30.5	237 37.5	13.5	14 43.2	6.1	54.0	66	03 03	04 08	01 45	03 03	04 22	05 41
	02	224 18.9	29.7	252 10.0	13.6	14 37.1	6.1	54.0	64	01 52	03 21	04 19	02 00	03 14	04 29
	03	239 19.1	28.8	266 42.6	13.6	14 31.0	6.1	54.0	62	02 21	03 36	04 28	02 13	03 23	04 35
	04	254 19.3	28.0	281 15.2	13.6	14 24.9	6.3	54.0	60	02 43	03 48	04 35	02 23	03 31	04 41
	05	269 19.4	N11 27.1	295 47.8	13.7	N14 18.6	6.3	54.0	N 58	03 00	03 58	04 42	02 32	03 38	04 46
	06	284 19.6	26.3	310 20.5	13.7	14 12.3	6.3	54.0	56	03 14	04 07	04 48	02 40	03 44	04 50
	07	299 19.7	25.5	324 53.2	13.7	14 06.0	6.4	54.0	54	03 26	04 15	04 54	02 47	03 50	04 54
	08	314 19.9	24.6	339 25.9	13.8	13 59.6	6.5	54.0	52	03 36	04 22	04 58	02 54	03 55	04 57
	09	329 20.1	23.8	353 58.7	13.7	13 53.1	6.5	54.0	50	03 45	04 28	05 03	02 59	03 59	05 00
	10	344 20.2	22.9	8 31.4	13.9	13 46.6	6.6	54.0	45	04 03	04 41	05 12	03 12	04 09	05 07
	11	359 20.4	N11 22.1	23 04.3	13.8	N13 40.0	6.7	54.0	N 40	04 18	04 52	05 20	03 22	04 17	05 13
	12	14 20.6	21.2	37 37.1	13.9	13 33.3	6.7	54.0	35	04 29	05 00	05 27	03 31	04 24	05 18
	13	29 20.7	20.4	52 10.0	13.9	13 26.6	6.7	54.0	30	04 38	05 08	05 32	03 38	04 30	05 22
	14	44 20.9	19.5	66 42.9	13.9	13 19.9	6.8	54.0	20	04 53	05 20	05 42	03 52	04 41	05 30
	15	59 21.1	18.7	81 15.8	13.9	13 13.1	6.9	54.0	N 10	05 05	05 30	05 51	04 03	04 50	05 36
	16	74 21.2	17.8	95 48.7	14.0	13 06.2	6.9	54.0	0	05 14	05 38	05 59	04 14	04 59	05 42
	17	89 21.4	N11 17.0	110 21.7	14.0	N12 59.3	7.0	54.0	S 10	05 21	05 46	06 07	04 25	05 07	05 48
	18	104 21.5	16.1	124 54.7	14.1	12 52.3	7.0	53.9	20	05 27	05 53	06 15	04 36	05 16	05 55
	19	119 21.7	15.3	139 27.8	14.0	12 45.3	7.1	53.9	30	05 32	06 00	06 25	04 49	05 27	06 02
	20	134 21.9	14.4	154 00.8	14.1	12 38.2	7.2	53.9	35	05 35	06 04	06 30	04 57	05 33	06 06
	21	149 22.0	13.5	168 33.9	14.1	12 31.0	7.2	53.9	40	05 37	06 08	06 36	05 05	05 39	06 11
	22	164 22.2	12.7	183 07.0	14.2	12 23.8	7.2	53.9	45	05 39	06 13	06 43	05 15	05 47	06 17
	23	164 22.2	12.7	183 07.0	14.2	12 23.8	7.2	53.9	45	05 39	06 13	06 43	05 15	05 47	06 17
D O M I N G O	S 50	179 22.4	N11 11.8	197 40.2	14.2	N12 16.6	7.3	53.9	S 50	06 18	06 51	05 28	05 57	06 23	06 48
	52	194 22.5	11.0	212 13.4	14.2	12 09.3	7.4	53.9	52	06 20	06 55	05 33	06 01	06 26	06 50
	01	209 22.7	10.1	226 46.6	14.2	12 01.9	7.4	53.9	54	06 23	06 59	05 39	06 06	06 30	06 51
	02	224 22.9	9.3	241 19.8	14.2	11 54.5	7.4	53.9	56	06 26	07 04	05 46	06 11	06 33	06 53
	03	239 23.0	08.4	255 53.0	14.3	11 47.1	7.5	53.9	58	06 28	07 09	05 54	06 17	06 37	06 56
	04	254 23.2	07.6	270 26.3	14.3	11 39.6	7.6	53.9	S 60	06 32	07 15	06 03	06 24	06 42	06 58
	05	269 23.4	N11 06.7	284 59.6	14.3	N11 32.0	7.6	53.9	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna		
	06	284 23.5	05.9	299 32.9	14.4	11 24.4	7.6	53.9			Civil	Náut.	23	24	25
	07	299 23.7	05.0	314 06.3	14.4	11 16.8	7.7	53.9					26		
	08	314 23.9	04.2	328 39.7	14.4	11 09.1	7.8	53.9							
	09	329 24.0	03.3	343 13.1	14.4	11 01.3	7.7	53.9							
	10	344 24.2	02.4	357 46.5	14.4	10 53.6	7.9	53.9	N 72	20 42	22 40	19 37	19 30	19 24	19 18
	11	359 24.4	N11 01.6	12 19.9	14.5	N10 45.7	7.9	53.9	N 70	20 22	21 51	19 15	19 16	19 15	19 15
	12	14 24.5	11 00.7	26 53.4	14.5	10 37.8	7.9	53.9	68	20 07	21 20	18 57	19 04	19 08	19 12
	13	29 24.7	10 59.9	41 26.9	14.5	10 29.9	7.9	53.9	66	19 54	20 58	22 51	18 43	18 54	19 02
	14	44 24.9	59.0	56 00.4	14.5	10 22.0	8.0	53.9	64	19 44	20 41	22 07	18 31	18 45	18 57
	15	59 25.0	58.2	70 33.9	14.6	10 14.0	8.1	53.9	62	19 35	20 27	21 40	18 21	18 38	18 53
	16	74 25.2	57.3	85 07.5	14.6	10 05.9	8.1	53.9	60	19 28	20 15	21 19	18 12	18 32	18 49
	17	89 25.4	N10 56.4	99 41.1	14.6	N 9 57.8	8.1	54.0	N 58	19 21	20 05	21 02	18 05	18 26	18 45
	18	104 25.6	55.6	114 14.7	14.6	9 49.7	8.2	54.0	56	19 15	19 56	20 49	17 58	18 21	18 42
	19	119 25.7	54.7	128 48.3	14.6	9 41.5	8.2	54.0	54	19 10	19 48	20 37	17 52	18 17	18 39
	20	134 25.9	53.9	143 21.9	14.7	9 33.3	8.3	54.0	52	19 05	19 42	20 27	17 46	18 13	18 37
	21	149 26.1	53.0	157 55.6	14.7	9 25.0	8.3	54.0	50	19 01	19 35	20 18	17 41	18 09	18 35
	22	164 26.2	52.1	172 29.3	14.7	9 16.7	8.3	54.0	45	18 52	19 23	20 00	17 31	18 01	18 30
	23	164 26.2	52.1	172 29.3	14.7	9 16.7	8.3	54.0	45	18 52	19 23	20 00	17 31	18 01	18 30
L U N E S	N 40	179 26.4	N10 51.3	187 03.0	14.7	N 9 08.4	8.4	54.0	N 40	19 12	19 46	17 22	17 55	18 25	18 55
	35	194 26.6	50.4	201 36.7	14.7	9 00.0	8.4	54.0	35	18 38	19 04	19 35	17 14	17 49	18 22
	30	209 26.7	49.6	216 10.4	14.8	8 51.6	8.5	54.0	30	18 32	18 57	19 26	17 07	17 44	18 18
	20	224 26.9	48.7	230 44.2	14.8	8 43.1	8.4	54.0	20	18 22	18 45	19 11	16 56	17 35	18 13
	N 10	239 27.1	47.8	245 18.0	14.8	8 34.7	8.6	54.0	N 10	18 14	18 35	19 00	16 45	17 27	18 08
	0	254 27.2	47.0	259 51.8	14.8	8 26.1	8.5	54.0	0	18 06	18 27	18 51	16 36	17 20	18 03
	S 10	269 27.4	N10 46.1	274 25.6	14.8	N 8 17.6	8.6	54.0	S 10	17 58	18 19	18 44	16 26	17 12	17 58
	20	284 27.6	45.3	288 59.4	14.8	8 09.0	8.7	54.0	20	17 50	18 12	18 38	16 15	17 04	17 53
	30	299 27.8	44.4	303 33.2	14.9	8 00.3	8.6	54.0	30	17 41	18 05	18 33	16 03	16 55	17 47
	35	314 27.9	43.5	318 07.1	14.9	7 51.7	8.7	54.0	35	17 35	18 01	18 31	15 57	16 50	17 44
	40	329 28.1	42.7	332 41.0	14.8	7 43.0	8.7	54.0	40	17 29	17 57	18 29	15 49	16 44	17 40
	45	344 28.3	41.8	347 14.8	14.9	7 34.3	8.8	54.0	45	17 23	17 53	18 27	15 39	16 37	17 35
	S 50	359 28.4	N10 40.9	1 48.7	15.0	N 7 25.5	8.8	54.0	S 50	17 14	17 47	18 25	15 28	16 29	17 30
	52	14 28.6	40.1	16 22.7	14.9	7 16.7	8.8	54.0	52	17 11	17 45	18 24	15 23	16 25	17 27
	54	29 28.8	39.2	30 56.6	14.9	7 07.9	8.9	54.0	54	17 06	17 43	18 24	15 17	16 20	17 25
	56	44 29.0	38.3	45 30.5	15.0	6 59.0	8.9	54.0	56	17 02	17 40	18 23	15 11	16 16	17 22
	58	59 29.1	37.5	60 04.5	14.9	6 50.1	8.9	54.0	58	16 57	17 37	18 23	15 03	16 10	17 18
	S 60	74 29.3	36.6	74 38.4	15.0	6 41.2	8.9	54.0	S 60	16 51	17 34	18 23	14 55	16 04	17 15
	18	89 29.5	N10 35.8	89 12.4	15.0	N 6 32.3	9.0	54.0	SOL		LUNA				
	19	104 29.7	34.9	103 46.4	15.0	6 23.3	9.0	54.0	Día	Ec. Tiempo	Paso Mer.	Paso Mer.	Mer. Inf.	Edad	Fase
	20	119 29.8	34.0	118 20.4	15.0	6 14.3	9.0	54.1	00 ^h	12 ^h	Mer.	Sup.			
	21	134 30.0	33.2	132 54.4	15.0	6 05.3	9.1	54.1	d	m s	m s	h m	h m	h m	d %
	22	149 30.2	32.3	147 28.4	15.0	5 56.2	9.0	54.1	23	02 47	02 39	12 03	10 25	22 47	28 4
	23	164 30.4	31.4	162 02.4	15.1	N 5 47.2	9.1	54.1	24	02 31	02 23	12 02	11 09	23 31	29 1
		S/D 15.8	<i>d</i> 0.9	S/D 14.7	14.7	14.7	14.7		25	02 15	02 07	12 02	11 53	24 14	30 0

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.6	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
26	00 334 10.1	194 38.7 N16 39.9	109 13.3 S18 22.8	202 42.7 N18 27.8	108 19.9 S15 04.2	Acamar 315 17.6 S40 14.6
	01 349 12.6	209 38.1 39.0	124 14.2 23.3	217 44.6 27.6	123 22.2 04.2	Achernar 335 25.9 S57 09.5
	02 4 15.1	224 37.5 38.1	139 15.1 23.7	232 46.6 27.5	138 24.5 04.3	Acrux 173 08.8 S63 11.0
	03 19 17.5	239 36.8 . . 37.3	154 16.0 . . 24.2	247 48.5 . . 27.4	153 26.9 . . 04.3	Adhara 255 12.1 S28 59.5
	04 34 20.0	254 36.2 36.4	169 16.9 24.7	262 50.4 27.2	168 29.2 04.4	Aldebarán 290 48.4 N16 32.2
	05 49 22.4	269 35.6 35.6	184 17.8 25.1	277 52.3 27.1	183 31.5 04.4	
	06 64 24.9	284 35.0 N16 34.7	199 18.7 S18 25.6	292 54.3 N18 27.0	198 33.8 S15 04.5	Alioth 166 20.5 N55 53.1
	07 79 27.4	299 34.4 33.8	214 19.6 26.0	307 56.2 26.8	213 36.2 04.5	Alkaid 152 58.6 N49 14.7
	08 94 29.8	314 33.7 33.0	229 20.5 26.5	322 58.1 26.7	228 38.5 04.6	Al Na'ir 62 07.2 N 8 54.8
	09 109 32.3	329 33.1 . . 32.1	244 21.4 . . 26.9	338 00.0 . . 26.6	243 40.8 . . 04.6	Alnilam 275 45.6 S 1 11.6
	10 124 34.8	344 32.5 31.3	259 22.2 27.4	353 02.0 26.4	258 43.1 04.7	Alphard 217 55.6 S 8 43.4
	11 139 37.2	359 31.9 30.4	274 23.1 27.9	8 03.9 26.3	273 45.5 04.7	
	12 154 39.7	14 31.3 N16 29.5	289 24.0 S18 28.3	23 05.8 N18 26.1	288 47.8 S15 04.8	Alphecca 126 10.4 N26 40.3
	13 169 42.2	29 30.7 28.7	304 24.9 28.8	38 07.7 26.0	303 50.1 04.8	Alpheratz 357 42.3 N29 10.4
	14 184 44.6	44 30.0 27.8	319 25.8 29.2	53 09.7 25.9	318 52.4 04.8	Altair 62 07.2 N 8 54.8
	15 199 47.1	59 29.4 . . 26.9	334 26.7 . . 29.7	68 11.6 . . 25.7	333 54.8 . . 04.9	Ankaa 353 14.6 S42 13.3
	16 214 49.6	74 28.8 26.1	349 27.6 30.1	83 13.5 25.6	348 57.1 04.9	Antares 112 25.2 S26 27.7
	17 229 52.0	89 28.2 25.2	4 28.5 30.6	98 15.4 25.5	3 59.4 05.0	
	18 244 54.5	104 27.6 N16 24.3	19 29.4 S18 31.1	113 17.4 N18 25.3	19 01.7 S15 05.0	Arcturus 145 55.1 N19 06.6
	19 259 56.9	119 27.0 23.5	34 30.3 31.5	128 19.3 25.2	34 04.1 05.1	Atria 107 26.1 S69 03.3
	20 274 59.4	134 26.4 22.6	49 31.2 32.0	143 21.2 25.1	49 06.4 05.1	Avior 234 18.2 S59 33.4
	21 290 01.9	149 25.7 . . 21.7	64 32.1 . . 32.4	158 23.1 . . 24.9	64 08.7 . . 05.2	Bellatrix 278 31.2 N 6 21.7
	22 305 04.3	164 25.1 20.9	79 32.9 32.9	173 25.1 24.8	79 11.0 05.2	Betelgeuse 271 00.5 N 7 24.5
	23 320 06.8	179 24.5 20.0	94 33.8 33.3	188 27.0 24.7	94 13.4 05.3	
27	00 335 09.3	194 23.9 N16 19.1	109 34.7 S18 33.8	203 28.9 N18 24.5	109 15.7 S15 05.3	Canopus 263 56.1 S52 42.1
	01 350 11.7	209 23.3 18.2	124 35.6 34.2	218 30.8 24.4	124 18.0 05.4	Capella 280 33.3 N46 00.4
	02 5 14.2	224 22.7 17.4	139 36.5 34.7	233 32.8 24.3	139 20.3 05.4	Deneb 49 30.4 N45 20.3
	03 20 16.7	239 22.1 . . 16.5	154 37.4 . . 35.2	248 34.7 . . 24.1	154 22.7 . . 05.5	Denébola 182 33.1 N14 29.5
	04 35 19.1	254 21.5 15.6	169 38.3 35.6	263 36.6 24.0	169 25.0 05.5	Diphda 348 54.8 S17 54.2
	05 50 21.6	269 20.9 14.7	184 39.1 36.1	278 38.5 23.9	184 27.3 05.6	
	06 65 24.0	284 20.2 N16 13.9	199 40.0 S18 36.5	293 40.5 N18 23.7	199 29.6 S15 05.6	Dubhe 193 51.5 N61 40.3
	07 80 26.5	299 19.6 13.0	214 40.9 37.0	308 42.4 23.6	214 31.9 05.7	Elnath 278 11.7 N28 36.9
	08 95 29.0	314 19.0 12.1	229 41.8 37.4	323 44.3 23.5	229 34.3 05.7	Eltanin 90 45.5 N51 29.7
	09 110 31.4	329 18.4 . . 11.2	244 42.7 . . 37.9	338 46.2 . . 23.3	244 36.6 . . 05.8	Enif 33 46.0 N 9 56.8
	10 125 33.9	344 17.8 10.3	259 43.6 38.3	353 48.2 23.2	259 38.9 05.8	Fomalhaut 15 22.7 S29 32.4
	11 140 36.4	359 17.2 09.5	274 44.5 38.8	8 50.1 23.0	274 41.2 05.9	
	12 155 38.8	14 16.6 N16 08.6	289 45.3 S18 39.2	23 52.0 N18 22.9	289 43.6 S15 05.9	Gacrux 172 00.3 S57 11.8
	13 170 41.3	29 16.0 07.7	304 46.2 39.7	38 54.0 22.8	304 45.9 06.0	Gienah 175 51.7 S17 37.4
	14 185 43.8	44 15.4 06.8	319 47.1 40.1	53 55.9 22.6	319 48.2 06.0	Hadar 148 46.9 S60 26.7
	15 200 46.2	59 14.8 . . 05.9	334 48.0 . . 40.6	68 57.8 . . 22.5	334 50.5 . . 06.1	Hamal 327 59.6 N23 31.8
	16 215 48.7	74 14.2 05.0	349 48.9 41.1	83 59.7 22.4	349 52.8 06.1	Kaus Aust. 83 42.5 S34 22.5
	17 230 51.2	89 13.6 04.1	4 49.7 41.5	99 01.7 22.2	4 55.2 06.2	
	18 245 53.6	104 13.0 N16 03.3	19 50.6 S18 42.0	114 03.6 N18 22.1	19 57.5 S15 06.2	Kochab 137 20.6 N74 06.1
	19 260 56.1	119 12.4 02.4	34 51.5 42.4	129 05.5 22.0	34 59.8 06.3	Markab 13 37.2 N15 17.2
	20 275 58.5	134 11.8 01.5	49 52.4 42.9	144 07.5 21.8	50 02.1 06.3	Menkar 314 14.1 N 4 08.8
	21 291 01.0	149 11.2 16 00.6	64 53.3 . . 43.3	159 09.4 . . 21.7	65 04.4 . . 06.4	Menkent 148 06.7 S36 26.5
	22 306 03.5	164 10.6 15 59.7	79 54.1 43.8	174 11.3 21.6	80 06.8 06.4	Miaplacidus 221 40.3 S69 46.7
	23 321 05.9	179 10.0 58.8	94 55.0 44.2	189 13.2 21.4	95 09.1 06.5	
28	00 336 08.4	194 09.4 N15 57.9	109 55.9 S18 44.7	204 15.2 N18 21.3	110 11.4 S15 06.5	Mirfak 308 39.0 N49 54.5
	01 351 10.9	209 08.8 57.0	124 56.8 45.1	219 17.1 21.2	125 13.7 06.6	Nunki 75 57.1 S26 16.5
	02 6 13.3	224 08.2 56.1	139 57.6 45.6	234 19.0 21.0	140 16.0 06.6	Peacock 53 17.5 S56 41.1
	03 21 15.8	239 07.6 . . 55.2	154 58.5 . . 46.0	249 20.9 . . 20.9	155 18.4 . . 06.7	Póllux 243 27.0 N27 59.3
	04 36 18.3	254 07.0 54.3	169 59.4 46.5	264 22.9 20.8	170 20.7 06.7	Procyon 244 59.1 N 5 11.1
	05 51 20.7	269 06.4 53.4	185 00.3 46.9	279 24.8 20.6	185 23.0 06.8	
	06 66 23.2	284 05.8 N15 52.5	200 01.2 S18 47.4	294 26.7 N18 20.5	200 25.3 S15 06.8	Rasalhague 96 05.6 N12 33.3
	07 81 25.6	299 05.2 51.6	215 02.0 47.8	309 28.7 20.3	215 27.6 06.9	Régulus 207 43.0 N11 53.7
	08 96 28.1	314 04.6 50.7	230 02.9 48.3	324 30.6 20.2	230 30.0 06.9	Rigel 281 11.3 S 8 11.1
	09 111 30.6	329 04.0 . . 49.8	245 03.8 . . 48.7	339 32.5 . . 20.1	245 32.3 . . 07.0	Rigel Kent. 139 50.8 S60 53.8
	10 126 33.0	344 03.4 48.9	260 04.6 49.2	354 34.5 19.9	260 34.6 07.0	Sabik 102 11.5 S15 44.4
	11 141 35.5	359 02.8 48.0	275 05.5 49.6	9 36.4 19.8	275 36.9 07.1	
	12 156 38.0	14 02.2 N15 47.1	290 06.4 S18 50.1	24 38.3 N18 19.7	290 39.2 S15 07.1	Schedar 349 39.0 N56 37.0
	13 171 40.4	29 01.6 46.2	305 07.3 50.5	39 40.2 19.5	305 41.6 07.2	Shaula 96 20.6 S37 06.7
	14 186 42.9	44 01.0 45.3	320 08.1 51.0	54 42.2 19.4	320 43.9 07.2	Sirius 258 33.2 S16 44.2
	15 201 45.4	59 00.4 . . 44.4	335 09.0 . . 51.4	69 44.1 . . 19.3	335 46.2 . . 07.3	Spica 158 30.6 S11 14.2
	16 216 47.8	73 59.8 43.5	350 09.9 51.9	84 46.0 19.1	350 48.5 07.3	Suhail 222 52.2 S43 29.5
	17 231 50.3	88 59.2 42.6	5 10.8 52.3	99 48.0 19.0	5 50.8 07.4	
	18 246 52.8	103 58.6 N15 41.7	20 11.6 S18 52.8	114 49.9 N18 18.9	20 53.1 S15 07.4	Vega 80 38.1 N38 48.3
	19 261 55.2	118 58.0 40.8	35 12.5 53.2	129 51.8 18.7	35 55.5 07.5	Zuben'ubi 137 04.6 S16 06.0
	20 276 57.7	133 57.4 39.9	50 13.4 53.7	144 53.7 18.6	50 57.8 07.5	
	21 292 00.1	148 56.8 . . 39.0	65 14.2 . . 54.1	159 55.7 . . 18.5	66 00.1 . . 07.6	AHS Paso Mer.
	22 307 02.6	163 56.2 38.1	80 15.1 54.6	174 57.6 18.3	81 02.4 07.6	Venus 219 14.6 h m 11 03
	23 322 05.1	178 55.6 37.2	95 16.0 55.0	189 59.5 18.2	96 04.7 07.7	Marte 134 25.5 16 41
						Júpiter 228 19.6 10 25
						Saturno 134 06.4 16 40
Paso Mer.	h m 1 39.1	v -0.6 d 0.9	v 0.9 d 0.5	v 1.9 d 0.1	v 2.3 d 0.0	

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	26		27	28	29	
M A R T E S	d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
	179 30.5	N10 30.6	176 36.5	15.0	N 5 38.1	9.2	54.1	N 72	01 48	03 35	05 24	06 59	08 34	10 12		
	01 194 30.7	29.7	191 10.5	15.1	5 28.9	9.1	54.1	N 70	02 29	03 53	05 31	07 00	08 29	10 01		
	02 209 30.9	28.8	205 44.6	15.0	5 19.8	9.2	54.1	68	02 56	04 07	05 37	07 00	08 25	09 51		
	03 224 31.0	28.0	220 18.6	15.1	5 10.6	9.2	54.1	66	03 33	04 18	05 41	07 01	08 22	09 44		
	04 239 31.2	27.1	234 52.7	15.1	5 01.4	9.2	54.1	64	02 10	03 32	04 28	05 45	07 02	08 19	09 38	
	05 254 31.4	26.2	249 26.8	15.0	4 52.2	9.3	54.1	62	02 35	03 45	04 36	05 48	07 02	08 17	09 32	
	06 269 31.6	N10 25.3	264 00.8	15.1	N 4 42.9	9.2	54.1	60	02 54	03 56	04 43	05 51	07 03	08 15	09 27	
	07 284 31.7	24.5	278 34.9	15.1	4 33.7	9.3	54.1	N 58	03 09	04 05	04 49	05 54	07 03	08 13	09 23	
	08 299 31.9	23.6	293 09.0	15.1	4 24.4	9.3	54.1	56	03 22	04 14	04 54	05 56	07 03	08 11	09 20	
	09 314 32.1	22.7	307 43.1	15.1	4 15.1	9.3	54.1	54	03 33	04 21	04 59	05 58	07 04	08 10	09 16	
	10 329 32.3	21.9	322 17.2	15.1	4 05.8	9.4	54.1	52	03 42	04 27	05 03	06 00	07 04	08 08	09 13	
	11 344 32.5	21.0	336 51.3	15.1	3 56.4	9.3	54.2	50	03 51	04 33	05 07	06 02	07 04	08 07	09 11	
	12 359 32.6	N10 20.1	351 25.4	15.1	N 3 47.1	9.4	54.2	45	04 08	04 45	05 16	06 06	07 05	08 04	09 05	
	13 14 32.8	19.3	5 59.5	15.1	3 37.7	9.4	54.2	N 40	04 21	04 55	05 23	06 09	07 05	08 02	09 00	
	14 29 33.0	18.4	20 33.6	15.1	3 28.3	9.4	54.2	35	04 32	05 03	05 29	06 12	07 06	08 00	08 56	
	15 44 33.2	17.5	35 07.7	15.1	3 18.9	9.4	54.2	30	04 41	05 10	05 34	06 14	07 06	07 59	08 52	
	16 59 33.3	16.6	49 41.8	15.1	3 09.5	9.5	54.2	20	04 54	05 21	05 43	06 18	07 07	07 56	08 46	
	17 74 33.5	15.8	64 15.9	15.1	3 00.0	9.4	54.2	N 10	05 05	05 30	05 51	06 22	07 07	07 53	08 40	
	18 89 33.7	N10 14.9	78 50.0	15.1	N 2 50.6	9.5	54.2	0	05 13	05 37	05 58	06 25	07 08	07 51	08 35	
	19 104 33.9	14.0	93 24.1	15.2	2 41.1	9.5	54.2	S 10	05 19	05 44	06 05	06 28	07 08	07 48	08 30	
	20 119 34.0	13.2	107 58.3	15.1	2 31.6	9.5	54.2	20	05 25	05 51	06 13	06 32	07 09	07 46	08 24	
	21 134 34.2	12.3	122 32.4	15.1	2 22.1	9.5	54.2	30	05 29	05 57	06 21	06 36	07 10	07 43	08 18	
	22 149 34.4	11.4	137 06.5	15.1	2 12.6	9.5	54.3	35	05 31	06 00	06 26	06 38	07 10	07 42	08 14	
	23 164 34.6	10.5	151 40.6	15.1	2 03.1	9.6	54.3	40	05 33	06 04	06 31	06 41	07 10	07 40	08 10	
M I É R C O L E S	27 00 179 34.8	N10 09.7	166 14.7	15.0	N 1 53.5	9.5	54.3	45	05 34	06 08	06 38	06 44	07 11	07 38	08 06	
	01 194 34.9	08.8	180 48.7	15.1	1 44.0	9.6	54.3	S 50	05 35	06 12	06 45	06 48	07 12	07 35	08 00	
	02 209 35.1	07.9	195 22.8	15.1	1 34.4	9.5	54.3	52	05 35	06 14	06 48	06 50	07 12	07 34	07 58	
	03 224 35.3	07.0	209 56.9	15.1	1 24.9	9.6	54.3	54	05 35	06 16	06 52	06 51	07 12	07 33	07 55	
	04 239 35.5	06.2	224 31.0	15.0	1 15.3	9.6	54.3	56	05 35	06 18	06 56	06 53	07 13	07 32	07 52	
	05 254 35.6	05.3	239 05.0	15.1	1 05.7	9.6	54.3	58	05 35	06 21	07 01	06 56	07 13	07 30	07 49	
	06 269 35.8	N10 04.4	253 39.1	15.1	N 0 56.1	9.6	54.3	S 60	05 35	06 23	07 06	06 58	07 13	07 29	07 45	
	07 284 36.0	03.5	268 13.2	15.0	0 46.5	9.6	54.3	Crepúsculo		Ocaso Luna		26	27	28	29	
	08 299 36.2	02.7	282 47.2	15.0	0 36.9	9.6	54.4	Lat.	Ocaso Sol	Civil	Náut.	h m	h m	h m	h m	h m
	09 314 36.4	01.8	297 21.2	15.1	0 27.3	9.6	54.4									
	10 329 36.5	00.9	311 55.3	15.0	0 17.7	9.6	54.4	N 72	h m	h m	h m	h m	h m	h m	h m	h m
	11 344 36.7	10 00.0	326 29.3	15.0	N 0 08.1	9.6	54.4	N 70	20 24	22 07	23 32	19 18	19 13	19 07	19 00	
	12 359 36.9	N 9 59.2	341 03.3	15.0	S 0 01.5	9.6	54.4	N 70	20 07	21 29	23 32	19 15	19 14	19 14	19 13	
	13 14 37.1	58.3	355 37.3	15.0	0 11.1	9.7	54.4	68	19 54	21 03	23 32	19 12	19 16	19 19	19 24	
	14 29 37.3	57.4	10 11.3	15.0	0 20.8	9.6	54.4	66	19 43	20 44	22 22	19 10	19 17	19 24	19 33	
	15 44 37.4	56.5	24 45.3	14.9	0 30.4	9.6	54.4	64	19 33	20 28	21 49	19 08	19 18	19 28	19 40	
	16 59 37.6	55.6	39 19.2	15.0	0 40.0	9.7	54.5	62	19 26	20 16	21 25	19 06	19 19	19 32	19 47	
	17 74 37.8	54.8	53 53.2	14.9	0 49.7	9.6	54.5	60	19 19	20 05	21 07	19 04	19 19	19 35	19 52	
	18 89 38.0	N 9 53.9	68 27.1	14.9	S 0 59.3	9.6	54.5	N 58	19 13	19 56	20 52	19 03	19 20	19 38	19 57	
	19 104 38.2	53.0	83 01.0	14.9	1 08.9	9.7	54.5	56	19 08	19 48	20 39	19 02	19 21	19 40	20 01	
	20 119 38.4	52.1	97 34.9	14.9	1 18.6	9.6	54.5	54	19 03	19 41	20 28	19 01	19 21	19 43	20 05	
	21 134 38.5	51.2	112 08.8	14.9	1 28.2	9.6	54.5	52	18 59	19 35	20 19	19 00	19 22	19 45	20 09	
	22 149 38.7	50.4	126 42.7	14.8	1 37.8	9.6	54.5	50	18 55	19 29	20 11	18 59	19 22	19 46	20 12	
	23 164 38.9	49.5	141 16.5	14.9	1 47.4	9.6	54.5	45	18 46	19 17	19 54	18 57	19 23	19 51	20 19	
J U E V E S	28 00 179 39.1	N 9 48.6	155 50.4	14.8	S 1 57.0	9.7	54.6	N 40	18 40	19 08	19 41	18 55	19 24	19 54	20 25	
	01 194 39.3	47.7	170 24.2	14.8	2 06.7	9.6	54.6	35	18 34	19 00	19 31	18 53	19 25	19 57	20 31	
	02 209 39.4	46.8	184 58.0	14.8	2 16.3	9.6	54.6	30	18 29	18 53	19 22	18 52	19 25	19 59	20 35	
	03 224 39.6	46.0	199 31.8	14.7	2 25.9	9.6	54.6	20	18 20	18 42	19 08	18 50	19 27	20 04	20 43	
	04 239 39.8	45.1	214 05.5	14.8	2 35.5	9.6	54.6	N 10	18 12	18 33	18 58	18 48	19 27	20 08	20 50	
	05 254 40.0	44.2	228 39.3	14.7	2 45.1	9.5	54.6	0	18 05	18 26	18 50	18 46	19 28	20 12	20 56	
	06 269 40.2	N 9 43.3	243 13.0	14.7	S 2 54.6	9.6	54.6	S 10	17 58	18 19	18 44	18 44	19 29	20 16	21 03	
	07 284 40.4	42.4	257 46.7	14.7	3 04.2	9.6	54.7	20	17 51	18 13	18 39	18 41	19 30	20 20	21 10	
	08 299 40.5	41.6	272 20.4	14.6	3 13.8	9.5	54.7	30	17 42	18 06	18 34	18 39	19 31	20 24	21 18	
	09 314 40.7	40.7	286 54.0	14.7	3 23.3	9.6	54.7	35	17 38	18 03	18 33	18 38	19 32	20 27	21 23	
	10 329 40.9	39.8	301 27.7	14.6	3 32.9	9.5	54.7	40	17 32	18 00	18 31	18 36	19 33	20 30	21 28	
	11 344 41.1	38.9	316 01.3	14.5	3 42.4	9.6	54.7	45	17 26	17 56	18 30	18 34	19 33	20 33	21 34	
	12 359 41.3	N 9 38.0	330 34.8	14.6	S 3 52.0	9.5	54.7	S 50	17 19	17 52	18 29	18 32	19 34	20 37	21 41	
	13 14 41.5	37.1	345 08.4	14.5	4 01.5	9.5	54.8	52	17 15	17 50	18 29	18 31	19 35	20 39	21 45	
	14 29 41.6	36.3	359 41.9	14.5	4 11.0	9.5	54.8	54	17 12	17 48	18 29	18 30	19 35	20 41	21 48	
	15 44 41.8	35.4	14 15.4	14.5	4 20.5	9.4	54.8	56	17 08	17 46	18 29	18 28	19 36	20 44	21 52	
	16 59 42.0	34.5	28 48.9	14.5	4 29.9	9.5	54.8	58	17 03	17 43	18 29	18 27	19 36	20 46	21 57	
	17 74 42.2	33.6	43 22.4	14.4	4 39.4	9.4	54.8	S 60	16 58	17 41	18 29	18 25	19 37	20 49	22 02	
	J U N I O	18 89 42.4	N 9 32.7	57 55.8	14.4	S 4 48.8	9.5	54.8	SOL		LUNA		Paso Mer.		Edad		Fase
19 104 42.6		31.8	72 29.2	14.3	4 58.3	9.4	54.8	Día	Ec. Tiempo		Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase	
20 119 42.8		30.9	87 02.5	14.4	5 07.7	9.4	54.9									
21 134 42.9		30.1	101 35.9	14.3	5 17.1	9.3	54.9	00h	12h							
22 149 43.1		29.2	116 09.2	14.3	5 26.4	9.4	54.									

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.6	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
29 00	337 07.5	193 55.1 N15 36.3	110 16.8 S18 55.5	205 01.5 N18 18.0	111 07.0 S15 07.7	Acamar 315 17.6 S40 14.6
01	352 10.0	208 54.5 35.4	125 17.7 55.9	220 03.4 17.9	126 09.4 07.8	Achernar 335 25.9 S57 09.5
02	7 12.5	223 53.9 34.4	140 18.6 56.4	235 05.3 17.8	141 11.7 07.9	Acrux 173 08.8 S63 10.9
03	22 14.9	238 53.3 . . 33.5	155 19.4 . . 56.8	250 07.3 . . 17.6	156 14.0 . . 07.9	Adhara 255 12.1 S28 59.5
04	37 17.4	253 52.7 32.6	170 20.3 57.3	265 09.2 17.5	171 16.3 08.0	Aldebarán 290 48.4 N16 32.2
05	52 19.9	268 52.1 31.7	185 21.2 57.7	280 11.1 17.4	186 18.6 08.0	
06	67 22.3	283 51.5 N15 30.8	200 22.0 S18 58.2	295 13.1 N18 17.2	201 20.9 S15 08.1	Alioth 166 20.5 N55 53.0
07	82 24.8	298 50.9 29.9	215 22.9 58.6	310 15.0 17.1	216 23.3 08.1	Alkaid 152 58.6 N49 14.7
08	97 27.2	313 50.3 29.0	230 23.8 59.0	325 16.9 17.0	231 25.6 08.2	Al Na'ir 27 42.3 S46 53.2
09	112 29.7	328 49.7 . . 28.0	245 24.6 . . 59.5	340 18.8 . . 16.8	246 27.9 . . 08.2	Alnilam 275 45.6 S 1 11.6
10	127 32.2	343 49.2 27.1	260 25.5 18 59.9	355 20.0 16.7	261 30.2 08.3	Alphard 217 55.6 S 8 43.4
11	142 34.6	358 48.6 26.2	275 26.4 19 00.4	10 22.7 16.6	276 32.5 08.3	
12	157 37.1	13 48.0 N15 25.3	290 27.2 S19 00.8	25 24.6 N18 16.4	291 34.8 S15 08.4	Alphecca 126 10.4 N26 40.3
13	172 39.6	28 47.4 24.4	305 28.1 01.3	40 26.6 16.3	306 37.2 08.4	Alpheratz 357 42.3 N29 10.4
14	187 42.0	43 46.8 23.4	320 28.9 01.7	55 28.5 16.2	321 39.5 08.5	Altair 62 07.2 N 8 54.8
15	202 44.5	58 46.2 . . 22.5	335 29.8 . . 02.2	70 30.4 . . 16.0	336 41.8 . . 08.5	Ankaa 353 14.6 S42 13.4
16	217 47.0	73 45.6 21.6	350 30.7 02.6	85 32.4 15.9	351 44.1 08.6	Antares 112 25.2 S26 27.7
17	232 49.4	88 45.1 20.7	5 31.5 03.1	100 34.3 15.8	6 46.4 08.6	
18	247 51.9	103 44.5 N15 19.7	20 32.4 S19 03.5	115 36.2 N18 15.6	21 48.7 S15 08.7	Arcturus 145 55.2 N19 06.6
19	262 54.4	118 43.9 18.8	35 33.2 04.0	130 38.2 15.5	36 51.0 08.7	Atria 107 26.1 S69 03.3
20	277 56.8	133 43.3 17.9	50 34.1 04.4	145 40.1 15.3	51 53.4 08.8	Avior 234 18.2 S59 33.4
21	292 59.3	148 42.7 . . 17.0	65 35.0 . . 04.8	160 42.0 . . 15.2	66 55.7 . . 08.8	Bellatrix 278 31.2 N 6 21.7
22	308 01.7	163 42.1 16.0	80 35.8 05.3	175 44.0 15.1	81 58.0 08.9	Betelgeuse 271 00.5 N 7 24.5
23	323 04.2	178 41.6 15.1	95 36.7 05.7	190 45.9 14.9	97 00.3 08.9	
30 00	338 06.7	193 41.0 N15 14.2	110 37.5 S19 06.2	205 47.8 N18 14.8	112 02.6 S15 09.0	Canopus 263 56.0 S52 42.1
01	353 09.1	208 40.4 13.2	125 38.4 06.6	220 49.8 14.7	127 04.9 09.0	Capella 280 33.3 N46 00.4
02	8 11.6	223 39.8 12.3	140 39.3 07.1	235 51.7 14.5	142 07.2 09.1	Deneb 49 30.5 N45 20.3
03	23 14.1	238 39.2 . . 11.4	155 40.1 . . 07.5	250 53.6 . . 14.4	157 09.5 . . 09.1	Denébola 182 33.1 N14 29.5
04	38 16.5	253 38.7 10.5	170 41.0 07.9	265 55.6 14.3	172 11.9 09.2	Diphda 348 54.8 S17 54.2
05	53 19.0	268 38.1 09.5	185 41.8 08.4	280 57.5 14.1	187 14.2 09.2	
06	68 21.5	283 37.5 N15 08.6	200 42.7 S19 08.8	295 59.4 N18 14.0	202 16.5 S15 09.3	Dubhe 193 51.5 N61 40.3
07	83 23.9	298 36.9 07.7	215 43.5 09.3	311 01.4 13.9	217 18.8 09.3	Elnath 278 11.7 N28 36.9
08	98 26.4	313 36.3 06.7	230 44.4 09.7	326 03.3 13.7	232 21.1 09.4	Eltanin 90 45.5 N51 29.7
09	113 28.9	328 35.8 . . 05.8	245 45.2 . . 10.2	341 05.2 . . 13.6	247 23.4 . . 09.5	Enif 33 46.0 N 9 56.8
10	128 31.3	343 35.2 04.8	260 46.1 10.6	356 07.2 13.5	262 25.7 09.5	Fomalhaut 15 22.7 S29 32.4
11	143 33.8	358 34.6 03.9	275 46.9 11.1	11 09.1 13.3	277 28.0 09.6	
12	158 36.2	13 34.0 N15 03.0	290 47.8 S19 11.5	26 11.0 N18 13.2	292 30.4 S15 09.6	Gacrux 172 00.4 S57 11.8
13	173 38.7	28 33.5 02.0	305 48.7 11.9	41 13.0 13.1	307 32.7 09.7	Gienah 175 51.7 S17 37.4
14	188 41.2	43 32.9 01.1	320 49.5 12.4	56 14.9 12.9	322 35.0 09.7	Hadar 148 47.0 S60 26.7
15	203 43.6	58 32.3 15 00.2	335 50.4 . . 12.8	71 16.8 . . 12.8	337 37.3 . . 09.8	Hamal 327 59.6 N23 31.8
16	218 46.1	73 31.7 14 59.2	350 51.2 13.3	86 18.8 12.6	352 39.6 09.8	Kaus Aust. 83 42.5 S34 22.5
17	233 48.6	88 31.2 58.3	5 52.1 13.7	101 20.7 12.5	7 41.9 09.9	
18	248 51.0	103 30.6 N14 57.3	20 52.9 S19 14.1	116 22.6 N18 12.4	22 44.2 S15 09.9	Kochab 137 20.7 N74 06.1
19	263 53.5	118 30.0 56.4	35 53.8 14.6	131 24.6 12.2	37 46.5 10.0	Markab 13 37.2 N15 17.2
20	278 56.0	133 29.4 55.4	50 54.6 15.0	146 26.5 12.1	52 48.8 10.0	Menkar 314 14.1 N 4 08.8
21	293 58.4	148 28.9 . . 54.5	65 55.5 . . 15.5	161 28.4 . . 12.0	67 51.2 . . 10.1	Menkent 148 06.8 S36 26.5
22	309 00.9	163 28.3 53.6	80 56.3 15.9	176 30.4 11.8	82 53.5 10.1	Miaplacidus 221 40.2 S69 46.7
23	324 03.3	178 27.7 52.6	95 57.2 16.3	191 32.3 11.7	97 55.8 10.2	
31 00	339 05.8	193 27.1 N14 51.7	110 58.0 S19 16.8	206 34.2 N18 11.6	112 58.1 S15 10.2	Mirfak 308 39.0 N49 54.5
01	354 08.3	208 26.6 50.7	125 58.8 17.2	221 36.2 11.4	128 00.4 10.3	Nunki 75 57.1 S26 16.5
02	9 10.7	223 26.0 49.8	140 59.7 17.7	236 38.1 11.3	143 02.7 10.3	Peacock 53 17.5 S56 41.1
03	24 13.2	238 25.4 . . 48.8	156 00.5 . . 18.1	251 40.0 . . 11.2	158 05.0 . . 10.4	Póllux 243 27.0 N27 59.3
04	39 15.7	253 24.9 47.9	171 01.4 18.5	266 42.0 11.0	173 07.3 10.4	Procyon 244 59.1 N 5 11.1
05	54 18.1	268 24.3 46.9	186 02.2 19.0	281 43.9 10.9	188 09.6 10.5	
06	69 20.6	283 23.7 N14 46.0	201 03.1 S19 19.4	296 45.8 N18 10.8	203 11.9 S15 10.6	Rasalhague 96 05.6 N12 33.3
07	84 23.1	298 23.2 45.0	216 03.9 19.9	311 47.8 10.6	218 14.2 10.6	Régulus 207 43.0 N11 53.7
08	99 25.5	313 22.6 44.1	231 04.8 20.3	326 49.7 10.5	233 16.6 10.7	Rigel 281 11.3 S 8 11.1
09	114 28.0	328 22.0 . . 43.1	246 05.6 . . 20.7	341 51.7 . . 10.3	248 18.9 . . 10.7	Rigel Kent. 139 50.8 S60 53.8
10	129 30.5	343 21.4 42.2	261 06.5 21.2	356 53.6 10.2	263 21.2 10.8	Sabik 102 11.5 S15 44.4
11	144 32.9	358 20.9 41.2	276 07.3 21.6	11 55.5 10.1	278 23.5 10.8	
12	159 35.4	13 20.3 N14 40.3	291 08.1 S19 22.1	26 57.5 N18 09.9	293 25.8 S15 10.9	Schedar 349 39.0 N56 37.0
13	174 37.8	28 19.7 39.3	306 09.0 22.5	41 59.4 09.8	308 28.1 10.9	Shaula 96 20.6 S37 06.7
14	189 40.3	43 19.2 38.3	321 09.8 22.9	57 01.3 09.7	323 30.4 11.0	Sirius 258 33.2 S16 44.2
15	204 42.8	58 18.6 . . 37.4	336 10.7 . . 23.4	72 03.3 . . 09.5	338 32.7 . . 11.0	Spica 158 30.6 S11 14.2
16	219 45.2	73 18.0 36.4	351 11.5 23.8	87 05.2 09.4	353 35.0 11.1	Suhail 222 52.2 S43 29.5
17	234 47.7	88 17.5 35.5	6 12.4 24.2	102 07.1 09.3	8 37.3 11.1	
18	249 50.2	103 16.9 N14 34.5	21 13.2 S19 24.7	117 09.1 N18 09.1	23 39.6 S15 11.2	Vega 80 38.2 N38 48.3
19	264 52.6	118 16.4 33.5	36 14.0 25.1	132 11.0 09.0	38 41.9 11.2	Zuben'ubi 137 04.6 S16 06.0
20	279 55.1	133 15.8 32.6	51 14.9 25.6	147 13.0 08.9	53 44.3 11.3	
21	294 57.6	148 15.2 . . 31.6	66 15.7 . . 26.0	162 14.9 . . 08.7	68 46.6 . . 11.3	AHS Paso Mer.
22	310 00.0	163 14.7 30.7	81 16.6 26.4	177 16.8 08.6	83 48.9 11.4	Venus 215 34.3 11 06
23	325 02.5	178 14.1 29.7	96 17.4 26.9	192 18.8 08.5	98 51.2 11.5	Marte 132 30.9 16 37
						Júpiter 227 41.1 10 15
						Saturno 133 55.9 16 29
Paso Mer.	1 27.3	v -0.6 d 0.9	v 0.9 d 0.4	v 1.9 d 0.1	v 2.3 d 0.1	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	29	30	31	1	
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m	
29 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	179	43.5	N 9	27.4	145	15.7	14.2	S 5	45.1	9.4	54.9	03 51	10 12	11 54	13 43	15 44
	194	43.7		26.5	159	48.9	14.2	5	54.5	9.3	55.0	04 06	10 01	11 35	13 12	14 50
	209	43.9		25.6	174	22.1	14.1	6	03.8	9.2	55.0	04 18	09 51	11 19	12 49	14 18
	224	44.1		24.7	188	55.2	14.1	6	13.0	9.3	55.0	04 28	09 44	11 07	12 31	13 54
	239	44.2		23.8	203	28.3	14.1	6	22.3	9.2	55.0	04 36	09 38	10 57	12 17	13 35
	254	44.4		23.0	218	01.4	14.0	6	31.5	9.2	55.0	04 44	09 32	10 48	12 05	13 20
	269	44.6	N 9	22.1	232	34.4	14.0	S 6	40.7	9.2	55.0	04 50	09 27	10 41	11 55	13 07
	284	44.8		21.2	247	07.4	14.0	6	49.9	9.2	55.1	05 04	09 23	10 35	11 46	12 57
	299	45.0		20.3	261	40.4	13.9	6	59.1	9.1	55.1	05 19	09 20	10 29	11 38	12 47
	314	45.2		19.4	276	13.3	13.9	7	08.2	9.1	55.1	05 36	09 16	10 24	11 32	12 39
	329	45.4		18.5	290	46.2	13.9	7	17.3	9.1	55.1	05 48	09 13	10 19	11 25	12 33
	344	45.6		17.6	305	19.1	13.8	7	26.4	9.1	55.1	05 57	09 11	10 15	11 20	12 24
	359	45.7	N 9	16.7	319	51.9	13.8	S 7	35.5	9.0	55.2	06 04	09 05	10 06	11 08	12 10
	14	45.9		15.8	334	24.7	13.7	7	44.5	9.0	55.2	06 10	09 00	09 58	10 58	11 58
	29	46.1		15.0	348	57.4	13.7	7	53.5	9.0	55.2	06 18	08 56	09 52	10 50	11 48
	44	46.3		14.1	3	30.1	13.6	8	02.5	8.9	55.2	06 27	08 52	09 46	10 42	11 39
	59	46.5		13.2	18	02.7	13.7	8	11.4	8.9	55.2	06 32	08 46	09 37	10 29	11 24
	74	46.7		12.3	32	35.4	13.5	8	20.3	8.9	55.3	06 39	08 40	09 28	10 18	11 11
	89	46.9	N 9	11.4	47	07.9	13.6	S 8	29.2	8.8	55.3	06 45	08 35	09 20	10 08	10 58
	104	47.1		10.5	61	40.5	13.4	8	38.0	8.9	55.3	06 51	08 30	09 12	09 58	10 46
	119	47.3		09.6	76	12.9	13.5	8	46.9	8.7	55.3	06 57	08 24	09 04	09 47	10 33
	134	47.4		08.7	90	45.4	13.4	8	55.6	8.8	55.3	07 04	08 18	08 55	09 34	10 18
	149	47.6		07.8	105	17.8	13.3	9	04.4	8.7	55.4	07 11	08 14	08 49	09 27	10 10
	164	47.8		06.9	119	50.1	13.3	9	13.1	8.7	55.4	07 18	08 10	08 43	09 19	10 00
	30 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	179	48.0	N 9	06.0	134	22.4	13.3	S 9	21.8	8.6	55.4	06 26	08 00	08 28	08 58	09 35
194		48.2		05.1	148	54.7	13.2	9	30.4	8.6	55.4	06 32	07 58	08 24	08 53	09 28
209		48.4		04.2	163	26.9	13.1	9	39.0	8.5	55.4	06 42	07 55	08 19	08 47	09 21
224		48.6		03.4	177	59.0	13.2	9	47.5	8.6	55.5	06 49	07 52	08 15	08 41	09 13
239		48.8		02.5	192	31.2	13.0	9	56.1	8.4	55.5	06 53	07 49	08 09	08 34	09 04
254		49.0		01.6	207	03.2	13.0	10	04.5	8.5	55.5	06 57	07 45	08 03	08 26	08 54
269		49.2	N 9	00.7	221	35.2	13.0	S 10	13.0	8.4	55.5	Ocaso Luna				
284		49.3	8 59.8	236	07.2	12.9	10	21.4	8.3	55.6	Ocaso Sol					
299		49.5		58.9	250	39.1	12.9	10	29.7	8.4	55.6	Crepúsculo				
314		49.7		58.0	265	11.0	12.8	10	38.1	8.2	55.6	Náut.				
329		49.9		57.1	279	42.8	12.8	10	46.3	8.3	55.6	29	30	31	1	
344		50.1		56.2	294	14.6	12.7	10	54.6	8.1	55.7					
359		50.3	N 8	55.3	308	46.3	12.7	S 11	02.7	8.2	55.7					
14		50.5		54.4	323	18.0	12.6	11	10.9	8.1	55.7					
29		50.7		53.5	337	49.6	12.5	11	19.0	8.0	55.7					
44		50.9		52.6	352	21.1	12.5	11	27.0	8.0	55.7					
59		51.1		51.7	6	52.6	12.5	11	35.0	8.0	55.8					
74		51.3		50.8	21	24.1	12.4	11	43.0	7.9	55.8					
89		51.5	N 8	49.9	35	55.5	12.3	S 11	50.9	7.8	55.8					
104		51.6		49.0	50	26.8	12.3	11	58.7	7.8	55.8					
119		51.8		48.1	64	58.1	12.2	12	06.5	7.7	55.9					
134		52.0		47.2	79	29.3	12.2	12	14.2	7.7	55.9					
149		52.2		46.3	94	00.5	12.1	12	21.9	7.7	55.9					
164		52.4		45.4	108	31.6	12.1	12	29.6	7.5	55.9					
31 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23		179	52.6	N 8	44.5	123	02.7	12.0	S 12	37.1	7.6	56.0	19 00	20 25	20 59	21 38	22 21
	194	52.8		43.6	137	33.7	11.9	12	44.7	7.4	56.0	18 53	20 31	21 07	21 47	22 31
	209	53.0		42.7	152	04.6	11.9	12	52.1	7.5	56.0	18 44	20 35	21 13	21 55	22 41
	224	53.2		41.8	166	35.5	11.8	12	59.6	7.3	56.0	18 39	20 43	21 24	22 08	22 56
	239	53.4		40.9	181	06.3	11.8	13	06.9	7.3	56.1	18 32	20 50	21 34	22 21	23 10
	254	53.6		40.0	195	37.1	11.7	13	14.2	7.3	56.1	18 25	20 56	21 43	22 32	23 23
	269	53.8	N 8	39.1	210	07.8	11.6	S 13	21.5	7.1	56.1	18 19	21 03	21 52	22 43	23 37
	284	54.0		38.2	224	38.4	11.6	13	28.6	7.2	56.2	18 13	21 10	22 02	22 55	23 51
	299	54.2		37.3	239	09.0	11.5	13	35.8	7.0	56.2	18 08	21 18	22 13	23 09	24 07
	314	54.4		36.4	253	39.5	11.5	13	42.8	7.0	56.2	18 05	21 23	22 19	23 17	24 16
	329	54.5		35.5	268	10.0	11.4	13	49.8	7.0	56.2	18 02	21 28	22 27	23 27	24 26
	344	54.7		34.6	282	40.4	11.3	13	56.8	6.8	56.3	17 59	21 34	22 35	23 37	24 39
	359	54.9	N 8	33.7	297	10.7	11.3	S 14	03.6	6.8	56.3	17 56	21 41	22 46	23 50	24 54
	14	55.1		32.8	311	41.0	11.2	14	10.4	6.8	56.3	17 54	21 45	22 51	23 57	25 01
	29	55.3		31.9	326	11.2	11.2	14	17.2	6.6	56.3	17 53	21 48	22 56	24 03	00 03
	44	55.5		31.0	340	41.4	11.0	14	23.8	6.7	56.4	17 51	21 52	23 02	24 11	00 11
	59	55.7		30.1	355	11.4	11.1	14	30.5	6.5	56.4	18 34	21 57	23 08	24 19	00 19
	74	55.9		29.2	9	41.5	10.9	14	37.0	6.5	56.4	18 35	22 02	23 16	24 29	00 29
	89	56.1	N 8	28.3	24	11.4	10.9	S 14	43.5	6.4	56.5	18 36				
	104	56.3		27.4	38	41.3	10.9	14	49.9	6.3	56.5					
	119	56.5		26.5	53	11.2	10.7	14	56.2	6.3	56.5					
	134	56.7		25.6	67	40.9	10.7	15	02.5	6.1	56.5					
	149	56.9		24.7	82	10.6	10.7	15	08.6	6.2	56.6					
	164	57.1		23.8	96	40.3	10.6	S 15	14.8	6.0	56.6					
		S/D	15.9	<i>d</i> 0.9	S/D	15.0	15.2	15.3								

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.7	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
LUNES								
1 00	340 05.0	193 13.5 N14 28.7	111 18.2 S19 27.3	207 20.7 N18 08.3	113 53.5 S15 11.5	Acamar	315 17.6 S40 14.6	
01	355 07.4	208 13.0 27.8	126 19.1 27.7	222 22.6 08.2	128 55.8 11.6	Achernar	335 25.8 S57 09.5	
02	10 09.9	223 12.4 26.8	141 19.9 28.2	237 24.6 08.0	143 58.1 11.6	Acrux	173 08.8 S63 10.9	
03	25 12.3	238 11.9 . . 25.8	156 20.7 . . 28.6	252 26.5 . . 07.9	159 00.4 . . 11.7	Adhara	255 12.1 S28 59.5	
04	40 14.8	253 11.3 24.9	171 21.6 29.0	267 28.4 07.8	174 02.7 11.7	Aldebarán	290 48.4 N16 32.2	
05	55 17.3	268 10.7 23.9	186 22.4 29.5	282 30.4 07.6	189 05.0 11.8			
06	70 19.7	283 10.2 N14 22.9	201 23.3 S19 29.9	297 32.3 N18 07.5	204 07.3 S15 11.8	Alioth	166 20.5 N55 53.0	
07	85 22.2	298 09.6 22.0	216 24.1 30.4	312 34.3 07.4	219 09.6 11.9	Alkaid	152 58.6 N49 14.7	
08	100 24.7	313 09.1 21.0	231 24.9 30.8	327 36.2 07.2	234 11.9 11.9	Al Na'ir	27 42.3 N 8 54.8	
09	115 27.1	328 08.5 . . 20.0	246 25.8 . . 31.2	342 38.1 . . 07.1	249 14.2 . . 12.0	Alnilam	275 45.6 S 1 11.6	
10	130 29.6	343 07.9 19.1	261 26.6 31.7	357 40.1 07.0	264 16.5 12.0	Alphard	217 55.6 S 8 43.3	
11	145 32.1	358 07.4 18.1	276 27.4 32.1	12 42.0 06.8	279 18.8 12.1			
12	160 34.5	13 06.8 N14 17.1	291 28.3 S19 32.5	27 44.0 N18 06.7	294 21.1 S15 12.2	Alphecca	126 10.4 N26 40.3	
13	175 37.0	28 06.3 16.1	306 29.1 33.0	42 45.9 06.6	309 23.4 12.2	Alpheratz	357 42.3 N29 10.4	
14	190 39.4	43 05.7 15.2	321 29.9 33.4	57 47.8 06.4	324 25.8 12.3	Altair	62 07.2 N 8 54.8	
15	205 41.9	58 05.2 . . 14.2	336 30.8 . . 33.8	72 49.8 . . 06.3	339 28.1 . . 12.3	Ankaa	353 14.5 S42 13.4	
16	220 44.4	73 04.6 13.2	351 31.6 34.3	87 51.7 06.2	354 30.4 12.4	Antares	112 25.2 S26 27.7	
17	235 46.8	88 04.0 12.2	6 32.4 34.7	102 53.6 06.0	9 32.7 12.4			
18	250 49.3	103 03.5 N14 11.3	21 33.2 S19 35.1	117 55.6 N18 05.9	24 35.0 S15 12.5	Arcturus	145 55.2 N19 06.6	
19	265 51.8	118 02.9 10.3	36 34.1 35.6	132 57.5 05.8	39 37.3 12.5	Atria	107 26.2 S69 03.3	
20	280 54.2	133 02.4 09.3	51 34.9 36.0	147 59.5 05.6	54 39.6 12.6	Avior	234 18.1 S59 33.3	
21	295 56.7	148 01.8 . . 08.3	66 35.7 . . 36.4	163 01.4 . . 05.5	69 41.9 . . 12.6	Bellatrix	278 31.2 N 6 21.7	
22	310 59.2	163 01.3 07.4	81 36.6 36.9	178 03.3 05.3	84 44.2 12.7	Betelgeuse	271 00.5 N 7 24.5	
23	326 01.6	178 00.7 06.4	96 37.4 37.3	193 05.3 05.2	99 46.5 12.7			
MARTES								
2 00	341 04.1	193 00.2 N14 05.4	111 38.2 S19 37.7	208 07.2 N18 05.1	114 48.8 S15 12.8	Canopus	263 56.0 S52 42.1	
01	356 06.6	207 59.6 04.4	126 39.1 38.1	223 09.2 04.9	129 51.1 12.9	Capella	280 33.3 N46 00.4	
02	11 09.0	222 59.1 03.4	141 39.9 38.6	238 11.1 04.8	144 53.4 12.9	Deneb	49 30.5 N45 20.3	
03	26 11.5	237 58.5 . . 02.5	156 40.7 . . 39.0	253 13.0 . . 04.7	159 55.7 . . 13.0	Denébola	182 33.1 N14 29.5	
04	41 13.9	252 58.0 01.5	171 41.5 39.4	268 15.0 04.5	174 58.0 13.0	Diphda	348 54.8 S17 54.2	
05	56 16.4	267 57.4 14 00.5	186 42.4 39.9	283 16.9 04.4	190 00.3 13.1			
06	71 18.9	282 56.9 N13 59.5	201 43.2 S19 40.3	298 18.9 N18 04.3	205 02.6 S15 13.1	Dubhe	193 51.5 N61 40.3	
07	86 21.3	297 56.3 58.5	216 44.0 40.7	313 20.8 04.1	220 04.9 13.2	Elnath	278 11.6 N28 36.9	
08	101 23.8	312 55.8 57.5	231 44.8 41.2	328 22.7 04.0	235 07.2 13.2	Eltanin	90 45.6 N51 29.7	
09	116 26.3	327 55.2 . . 56.6	246 45.7 . . 41.6	343 24.7 . . 03.9	250 09.5 . . 13.3	Enif	33 46.0 N 9 56.8	
10	131 28.7	342 54.7 55.6	261 46.5 42.0	358 26.6 03.7	265 11.8 13.3	Fomalhaut	15 22.7 S29 32.4	
11	146 31.2	357 54.1 54.6	276 47.3 42.5	13 28.6 03.6	280 14.1 13.4			
12	161 33.7	12 53.6 N13 53.6	291 48.1 S19 42.9	28 30.5 N18 03.5	295 16.4 S15 13.5	Gacrux	172 00.4 S57 11.8	
13	176 36.1	27 53.0 52.6	306 49.0 43.3	43 32.4 03.3	310 18.7 13.5	Gienah	175 51.7 S17 37.4	
14	191 38.6	42 52.5 51.6	321 49.8 43.7	58 34.4 03.2	325 21.0 13.6	Hadar	148 47.0 S60 26.7	
15	206 41.1	57 51.9 . . 50.6	336 50.6 . . 44.2	73 36.3 . . 03.1	340 23.3 . . 13.6	Hamal	327 59.6 N23 31.9	
16	221 43.5	72 51.4 49.6	351 51.4 44.6	88 38.3 02.9	355 25.6 13.7	Kaus Aust.	83 42.5 S34 22.5	
17	236 46.0	87 50.8 48.6	6 52.2 45.0	103 40.2 02.8	10 27.9 13.7			
18	251 48.4	102 50.3 N13 47.6	21 53.1 S19 45.5	118 42.1 N18 02.6	25 30.2 S15 13.8	Kochab	137 20.7 N74 06.1	
19	266 50.9	117 49.8 46.7	36 53.9 45.9	133 44.1 02.5	40 32.5 13.8	Markab	13 37.1 N15 17.3	
20	281 53.4	132 49.2 45.7	51 54.7 46.3	148 46.0 02.4	55 34.8 13.9	Menkar	314 14.0 N 4 08.8	
21	296 55.8	147 48.7 . . 44.7	66 55.5 . . 46.7	163 48.0 . . 02.2	70 37.1 . . 13.9	Menkent	148 06.8 S36 26.5	
22	311 58.3	162 48.1 43.7	81 56.4 47.2	178 49.9 02.1	85 39.4 14.0	Miaplacidus	221 40.2 S69 46.6	
23	327 00.8	177 47.6 42.7	96 57.2 47.6	193 51.9 02.0	100 41.7 14.1			
MIÉRCOLES								
3 00	342 03.2	192 47.0 N13 41.7	111 58.0 S19 48.0	208 53.8 N18 01.8	115 44.0 S15 14.1	Mirfak	308 38.9 N49 54.5	
01	357 05.7	207 46.5 40.7	126 58.8 48.5	223 55.7 01.7	130 46.3 14.2	Nunki	75 57.1 S26 16.5	
02	12 08.2	222 45.9 39.7	141 59.6 48.9	238 57.7 01.6	145 48.6 14.2	Peacock	53 17.5 S56 41.1	
03	27 10.6	237 45.4 . . 38.7	157 00.4 . . 49.3	253 59.6 . . 01.4	160 50.9 . . 14.3	Póllux	243 27.0 N27 59.2	
04	42 13.1	252 44.9 37.7	172 01.3 49.7	269 01.6 01.3	175 53.2 14.3	Procyon	244 59.1 N 5 11.1	
05	57 15.5	267 44.3 36.7	187 02.1 50.2	284 03.5 01.2	190 55.5 14.4			
06	72 18.0	282 43.8 N13 35.7	202 02.9 S19 50.6	299 05.4 N18 01.0	205 57.8 S15 14.4	Rasalhague	96 05.6 N12 33.3	
07	87 20.5	297 43.2 34.7	217 03.7 51.0	314 07.4 00.9	221 00.1 14.5	Régulus	207 43.0 N11 53.7	
08	102 22.9	312 42.7 33.7	232 04.5 51.4	329 09.3 00.8	236 02.4 14.6	Rigel	281 11.3 S 8 11.1	
09	117 25.4	327 42.2 . . 32.7	247 05.3 . . 51.9	344 11.3 . . 00.6	251 04.7 . . 14.6	Rigel Kent.	139 50.8 S60 53.8	
10	132 27.9	342 41.6 31.7	262 06.2 52.3	359 13.2 00.5	266 07.0 14.7	Sabik	102 11.5 S15 44.4	
11	147 30.3	357 41.1 30.7	277 07.0 52.7	14 15.2 00.3	281 09.3 14.7			
12	162 32.8	12 40.5 N13 29.7	292 07.8 S19 53.1	29 17.1 N18 00.2	296 11.6 S15 14.8	Schedar	349 39.0 N56 37.0	
13	177 35.3	27 40.0 28.7	307 08.6 53.6	44 19.0 18 00.1	311 13.9 14.8	Shaula	96 20.7 S37 06.7	
14	192 37.7	42 39.5 27.7	322 09.4 54.0	59 21.0 17 59.9	326 16.2 14.9	Sirius	258 33.1 S16 44.2	
15	207 40.2	57 38.9 . . 26.7	337 10.2 . . 54.4	74 22.9 . . 59.8	341 18.5 . . 14.9	Spica	158 30.6 S11 14.2	
16	222 42.7	72 38.4 25.6	352 11.0 54.8	89 24.9 59.7	356 20.8 15.0	Suhail	222 52.2 S43 29.5	
17	237 45.1	87 37.9 24.6	7 11.8 55.3	104 26.8 59.5	11 23.1 15.1			
18	252 47.6	102 37.3 N13 23.6	22 12.7 S19 55.7	119 28.8 N17 59.4	26 25.4 S15 15.1	Vega	80 38.2 N38 48.3	
19	267 50.0	117 36.8 22.6	37 13.5 56.1	134 30.7 59.3	41 27.7 15.2	Zuben'ubi	137 04.6 S16 06.0	
20	282 52.5	132 36.3 21.6	52 14.3 56.5	149 32.7 59.1	56 30.0 15.2			
21	297 55.0	147 35.7 . . 20.6	67 15.1 . . 57.0	164 34.6 . . 59.0	71 32.3 . . 15.3			
22	312 57.4	162 35.2 19.6	82 15.9 57.4	179 36.5 58.9	86 34.6 15.3	Venus	211 56.1 11 08	
23	327 59.9	177 34.7 18.6	97 16.7 57.8	194 38.5 58.7	101 36.9 15.4	Marte	130 34.1 16 33	
						Júpiter	227 03.1 10 06	
						Saturno	133 44.7 16 18	
Paso Mer.	h m						AHS	Paso Mer.
	1 15.5	v -0.5 d 1.0	v 0.8 d 0.4	v 1.9 d 0.1	v 2.3 d 0.1			

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		1	2	3	4	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
L U N E S	N 72	////							02 37		04 06	15 44	██	██	19 29	
	N 70	////							03 04	04 19	14 50	16 24	17 33	18 06		
	68	01 39	03 24	04 29	14 18	15 40	16 45	17 27								
	66	02 15	03 40	04 38	13 54	15 10	16 14	16 59								
	64	02 40	03 52	04 45	13 35	14 48	15 50	16 38								
	62	02 59	04 03	04 51	13 20	14 31	15 32	16 21								
	60	03 14	04 12	04 57	13 07	14 16	15 17	16 07								
	N 58	03 27	04 20	05 02	12 57	14 03	15 04	15 55								
	56	03 37	04 27	05 06	12 47	13 53	14 53	15 45								
	54	03 46	04 33	05 10	12 39	13 43	14 43	15 35								
	52	03 55	04 38	05 13	12 31	13 35	14 34	15 27								
	50	04 02	04 43	05 16	12 24	13 27	14 26	15 20								
	45	04 16	04 53	05 23	12 10	13 11	14 09	15 04								
	N 40	04 28	05 01	05 29	11 58	12 58	13 56	14 51								
	35	04 37	05 07	05 33	11 48	12 46	13 44	14 40								
	30	04 44	05 13	05 37	11 39	12 37	13 34	14 30								
	20	04 56	05 22	05 45	11 24	12 20	13 16	14 13								
	N 10	05 05	05 30	05 51	11 11	12 05	13 01	13 58								
	0	05 11	05 36	05 56	10 58	11 51	12 47	13 45								
	S 10	05 16	05 41	06 02	10 46	11 38	12 33	13 31								
	20	05 20	05 46	06 08	10 33	11 23	12 18	13 16								
	30	05 23	05 50	06 14	10 18	11 07	12 01	13 00								
	35	05 23	05 53	06 18	10 10	10 57	11 50	12 50								
	40	05 24	05 55	06 22	10 00	10 46	11 39	12 39								
	45	05 24	05 58	06 27	09 48	10 33	11 25	12 26								
S 50	05 23	06 00	06 33	09 35	10 18	11 09	12 10									
52	05 22	06 01	06 35	09 28	10 10	11 01	12 02									
54	05 22	06 03	06 38	09 21	10 02	10 53	11 54									
56	05 21	06 04	06 41	09 13	09 53	10 43	11 45									
58	05 20	06 05	06 45	09 04	09 43	10 32	11 34									
S 60	05 19	06 07	06 49	08 54	09 31	10 20	11 22									
M A R T E S	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna											
			Civil	Náut.	1	2	3	4								
	°	h m	h m	h m	h m	h m	h m	h m								
	N 72	19 50	21 16	////	18 29	██	██	20 35								
	N 70	19 38	20 51	23 17	19 23	19 41	20 29	21 58								
	68	19 28	20 32	22 13	19 57	20 26	21 18	22 36								
	66	19 19	20 17	21 40	20 21	20 56	21 49	23 03								
	64	19 12	20 04	21 16	20 40	21 18	22 12	23 24								
	62	19 06	19 54	20 58	20 55	21 36	22 30	23 41								
	60	19 01	19 45	20 43	21 09	21 51	22 46	23 54								
	N 58	18 56	19 38	20 31	21 20	22 03	22 59	24 06								
	56	18 52	19 31	20 20	21 30	22 14	23 10	24 17								
	54	18 49	19 26	20 11	21 38	22 24	23 19	24 26								
	52	18 45	19 20	20 03	21 46	22 32	23 28	24 34								
	50	18 42	19 16	19 56	21 53	22 40	23 36	24 41								
	45	18 36	19 06	19 42	22 08	22 57	23 53	24 56								
	N 40	18 30	18 58	19 31	22 21	23 10	24 06	00 06								
	35	18 26	18 51	19 22	22 31	23 22	24 18	00 18								
	30	18 22	18 46	19 14	22 41	23 32	24 28	00 28								
	20	18 15	18 37	19 03	22 56	23 49	24 45	00 45								
	N 10	18 09	18 30	18 54	23 10	24 04	00 04	01 00								
	0	18 03	18 24	18 48	23 23	24 18	00 18	01 14								
	S 10	17 58	18 19	18 43	23 37	24 32	00 32	01 28								
	20	17 52	18 14	18 40	23 51	24 47	00 47	01 43								
	30	17 46	18 10	18 37	24 07	00 07	01 04	02 01								
35	17 42	18 07	18 37	24 16	00 16	01 14	02 10									
40	17 38	18 05	18 36	24 26	00 26	01 25	02 22									
45	17 33	18 03	18 37	24 39	00 39	01 39	02 35									
S 50	17 28	18 00	18 38	24 54	00 54	01 55	02 51									
52	17 25	17 59	18 38	25 01	01 01	02 03	02 59									
54	17 22	17 58	18 39	00 03	01 09	02 11	03 07									
56	17 19	17 57	18 40	00 11	01 18	02 21	03 17									
58	17 16	17 55	18 41	00 19	01 28	02 32	03 28									
S 60	17 12	17 54	18 42	00 29	01 40	02 44	03 40									
M I É R C O L E S	SOL		LUNA													
	Día	Ec. Tiempo	Paso Mer.	Paso Mer.	Mer. Sup.	Mer. Inf.	Edad	Fase								
		00h	12h													
	d	m s	m s	h m	h m	h m	d	%								
	1	00 11	00 02	12 00	17 11	04 45	07 40									
	2	00 08	00 17	12 00	18 05	05 37	08 50									
	3	00 27	00 37	11 59	19 01	06 32	09 61									
	S/D	15.9	d 0.9	S/D	15.5	15.7	16.0									

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.7	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
d h	° /	° /	° /	° /	° /	° /
4 00	343 02.4	192 34.1 N13 17.6	112 17.5 S19 58.2	209 40.4 N17 58.6	116 39.2 S15 15.4	Acamar 315 17.5 S40 14.6
01	358 04.8	207 33.6 16.6	127 18.3 58.7	224 42.4 58.5	131 41.5 15.5	Achernar 335 25.8 S57 09.5
02	13 07.3	222 33.1 15.5	142 19.1 59.1	239 44.3 58.3	146 43.8 15.6	Acrux 173 08.8 S63 10.9
03	28 09.8	237 32.5 . . 14.5	157 19.9 . . 59.5	254 46.3 . . 58.2	161 46.1 . . 15.6	Adhara 255 12.0 S28 59.5
04	43 12.2	252 32.0 13.5	172 20.8 19 59.9	269 48.2 58.1	176 48.4 15.7	Aldebarán 290 48.4 N16 32.2
05	58 14.7	267 31.5 12.5	187 21.6 20 00.3	284 50.2 57.9	191 50.7 15.7	
06	73 17.2	282 30.9 N13 11.5	202 22.4 S20 00.8	299 52.1 N17 57.8	206 53.0 S15 15.8	Alioth 166 20.5 N55 53.0
07	88 19.6	297 30.4 10.5	217 23.2 01.2	314 54.0 57.6	221 55.3 15.8	Alkaid 152 58.6 N49 14.7
08	103 22.1	312 29.9 09.4	232 24.0 01.6	329 56.0 57.5	236 57.5 15.9	Al Na'ir 27 42.3 S46 53.2
09	118 24.5	327 29.3 . . 08.4	247 24.8 . . 02.0	344 57.9 . . 57.4	251 59.8 . . 15.9	Alnilam 275 45.6 S 1 11.6
10	133 27.0	342 28.8 07.4	262 25.6 02.5	359 59.9 57.2	267 02.1 16.0	Alphard 217 55.5 S 8 43.3
11	148 29.5	357 28.3 06.4	277 26.4 02.9	15 01.8 57.1	282 04.4 16.1	
12	163 31.9	12 27.7 N13 05.4	292 27.2 S20 03.3	30 03.8 N17 57.0	297 06.7 S15 16.1	Alphecca 126 10.4 N26 40.3
13	178 34.4	27 27.2 04.4	307 28.0 03.7	45 05.7 56.8	312 09.0 16.2	Alpheratz 357 42.2 N29 10.4
14	193 36.9	42 26.7 03.3	322 28.8 04.1	60 07.7 56.7	327 11.3 16.2	Altair 62 07.2 N 8 54.8
15	208 39.3	57 26.2 . . 02.3	337 29.6 . . 04.6	75 09.6 . . 56.6	342 13.6 . . 16.3	Ankaa 353 14.5 S42 13.4
16	223 41.8	72 25.6 01.3	352 30.4 05.0	90 11.6 56.4	357 15.9 16.3	Antares 112 25.2 S26 27.7
17	238 44.3	87 25.1 13 00.3	7 31.2 05.4	105 13.5 56.3	12 18.2 16.4	
18	253 46.7	102 24.6 N12 59.2	22 32.0 S20 05.8	120 15.4 N17 56.2	27 20.5 S15 16.5	Arcturus 145 55.2 N19 06.6
19	268 49.2	117 24.1 58.2	37 32.8 06.2	135 17.4 56.0	42 22.8 16.5	Atria 107 26.2 S69 03.3
20	283 51.7	132 23.5 57.2	52 33.6 06.6	150 19.3 55.9	57 25.1 16.6	Avior 234 18.1 S59 33.3
21	298 54.1	147 23.0 . . 56.2	67 34.4 . . 07.1	165 21.3 . . 55.8	72 27.4 . . 16.6	Bellatrix 278 31.1 N 6 21.7
22	313 56.6	162 22.5 55.1	82 35.2 07.5	180 23.2 55.6	87 29.7 16.7	Betelgeuse 271 00.5 N 7 24.5
23	328 59.0	177 21.9 54.1	97 36.0 07.9	195 25.2 55.5	102 32.0 16.7	
5 00	344 01.5	192 21.4 N12 53.1	112 36.8 S20 08.3	210 27.1 N17 55.4	117 34.3 S15 16.8	Canopus 263 56.0 S52 42.1
01	359 04.0	207 20.9 52.1	127 37.6 08.7	225 29.1 55.2	132 36.5 16.8	Capella 280 33.2 N46 00.4
02	14 06.4	222 20.4 51.0	142 38.4 09.2	240 31.0 55.1	147 38.8 16.9	Deneb 49 30.5 N45 20.3
03	29 08.9	237 19.9 . . 50.0	157 39.2 . . 09.6	255 33.0 . . 55.0	162 41.1 . . 17.0	Denébola 182 33.1 N14 29.5
04	44 11.4	252 19.3 49.0	172 40.0 10.0	270 34.9 54.8	177 43.4 17.0	Diphda 348 54.8 S17 54.2
05	59 13.8	267 18.8 47.9	187 40.8 10.4	285 36.9 54.7	192 45.7 17.1	
06	74 16.3	282 18.3 N12 46.9	202 41.6 S20 10.8	300 38.8 N17 54.5	207 48.0 S15 17.1	Dubhe 193 51.4 N61 40.3
07	89 18.8	297 17.8 45.9	217 42.4 11.2	315 40.8 54.4	222 50.3 17.2	Elnath 278 11.6 N28 36.9
08	104 21.2	312 17.2 44.8	232 43.2 11.7	330 42.7 54.3	237 52.6 17.2	Eltanin 90 45.6 N51 29.7
09	119 23.7	327 16.7 . . 43.8	247 44.0 . . 12.1	345 44.7 . . 54.1	252 54.9 . . 17.3	Enif 33 46.0 N 9 56.8
10	134 26.1	342 16.2 42.8	262 44.8 12.5	0 46.6 54.0	267 57.2 17.4	Fomalhaut 15 22.7 S29 32.5
11	149 28.6	357 15.7 41.7	277 45.6 12.9	15 48.5 53.9	282 59.5 17.4	
12	164 31.1	12 15.2 N12 40.7	292 46.4 S20 13.3	30 50.5 N17 53.7	298 01.8 S15 17.5	Gacrux 172 00.4 S57 11.8
13	179 33.5	27 14.6 39.7	307 47.2 13.7	45 52.4 53.6	313 04.1 17.5	Gienah 175 51.7 S17 37.3
14	194 36.0	42 14.1 38.6	322 48.0 14.2	60 54.4 53.5	328 06.3 17.6	Hadar 148 47.0 S60 26.7
15	209 38.5	57 13.6 . . 37.6	337 48.8 . . 14.6	75 56.3 . . 53.3	343 08.6 . . 17.6	Hamal 327 59.5 N23 31.9
16	224 40.9	72 13.1 36.6	352 49.6 15.0	90 58.3 53.2	358 10.9 17.7	Kaus Aust. 83 42.5 S34 22.5
17	239 43.4	87 12.6 35.5	7 50.4 15.4	106 00.2 53.1	13 13.2 17.8	
18	254 45.9	102 12.0 N12 34.5	22 51.2 S20 15.8	121 02.2 N17 52.9	28 15.5 S15 17.8	Kochab 137 20.8 N74 06.1
19	269 48.3	117 11.5 33.5	37 51.9 16.2	136 04.1 52.8	43 17.8 17.9	Markab 13 37.1 N15 17.3
20	284 50.8	132 11.0 32.4	52 52.7 16.6	151 06.1 52.7	58 20.1 17.9	Menkar 314 14.0 N 4 08.8
21	299 53.3	147 10.5 . . 31.4	67 53.5 . . 17.1	166 08.0 . . 52.5	73 22.4 . . 18.0	Menkent 148 06.8 S36 26.5
22	314 55.7	162 10.0 30.3	82 54.3 17.5	181 10.0 52.4	88 24.7 18.0	Miaplacidus 221 40.2 S69 46.6
23	329 58.2	177 09.5 29.3	97 55.1 17.9	196 11.9 52.3	103 27.0 18.1	
6 00	345 00.6	192 08.9 N12 28.2	112 55.9 S20 18.3	211 13.9 N17 52.1	118 29.3 S15 18.2	Mirfak 308 38.9 N49 54.5
01	0 03.1	207 08.4 27.2	127 56.7 18.7	226 15.8 52.0	133 31.5 18.2	Nunki 75 57.1 S26 16.5
02	15 05.6	222 07.9 26.2	142 57.5 19.1	241 17.8 51.9	148 33.8 18.3	Peacock 53 17.5 S56 41.1
03	30 08.0	237 07.4 . . 25.1	157 58.3 . . 19.5	256 19.7 . . 51.7	163 36.1 . . 18.3	Póllux 243 27.0 N27 59.2
04	45 10.5	252 06.9 24.1	172 59.1 20.0	271 21.7 51.6	178 38.4 18.4	Procyon 244 59.1 N 5 11.1
05	60 13.0	267 06.4 23.0	187 59.9 20.4	286 23.6 51.4	193 40.7 18.4	
06	75 15.4	282 05.9 N12 22.0	203 00.6 S20 20.8	301 25.6 N17 51.3	208 43.0 S15 18.5	Rasalhague 96 05.6 N12 33.3
07	90 17.9	297 05.3 20.9	218 01.4 21.2	316 27.5 51.2	223 45.3 18.6	Régulus 207 42.9 N11 53.7
08	105 20.4	312 04.8 19.9	233 02.2 21.6	331 29.5 51.0	238 47.6 18.6	Rigel 281 11.3 S 8 11.1
09	120 22.8	327 04.3 . . 18.8	248 03.0 . . 22.0	346 31.4 . . 50.9	253 49.9 . . 18.7	Rigel Kent. 139 50.8 S60 53.8
10	135 25.3	342 03.8 17.8	263 03.8 22.4	1 33.4 50.8	268 52.2 18.7	Sabik 102 11.5 S15 44.4
11	150 27.8	357 03.3 16.7	278 04.6 22.8	16 35.3 50.6	283 54.4 18.8	
12	165 30.2	12 02.8 N12 15.7	293 05.4 S20 23.2	31 37.3 N17 50.5	298 56.7 S15 18.8	Schedar 349 38.9 N56 37.0
13	180 32.7	27 02.3 14.6	308 06.1 23.7	46 39.2 50.4	313 59.0 18.9	Shaula 96 20.7 S37 06.7
14	195 35.1	42 01.8 13.6	323 06.9 24.1	61 41.2 50.2	329 01.3 19.0	Sirius 258 33.1 S16 44.2
15	210 37.6	57 01.3 . . 12.5	338 07.7 . . 24.5	76 43.1 . . 50.1	344 03.6 . . 19.0	Spica 158 30.6 S11 14.2
16	225 40.1	72 00.7 11.5	353 08.5 24.9	91 45.1 50.0	359 05.9 19.1	Suhail 222 52.2 S43 29.5
17	240 42.5	87 00.2 10.4	8 09.3 25.3	106 47.0 49.8	14 08.2 19.1	
18	255 45.0	101 59.7 N12 09.4	23 10.1 S20 25.7	121 49.0 N17 49.7	29 10.5 S15 19.2	Vega 80 38.2 N38 48.3
19	270 47.5	116 59.2 08.3	38 10.9 26.1	136 50.9 49.6	44 12.7 19.2	Zuben'ubi 137 04.6 S16 06.0
20	285 49.9	131 58.7 07.3	53 11.6 26.5	151 52.9 49.4	59 15.0 19.3	
21	300 52.4	146 58.2 . . 06.2	68 12.4 . . 26.9	166 54.8 . . 49.3	74 17.3 . . 19.4	AHS Paso Mer.
22	315 54.9	161 57.7 05.2	83 13.2 27.3	181 56.8 49.2	89 19.6 19.4	Venus 208 19.9 11 11
23	330 57.3	176 57.2 04.1	98 14.0 27.7	196 58.7 49.0	104 21.9 19.5	Marte 128 35.3 16 29
	h m					Júpiter 226 25.6 9 57
Paso Mer.	1 03.7	v -0.5 d 1.0	v 0.8 d 0.4	v 1.9 d 0.1	v 2.3 d 0.1	Saturno 133 32.7 16 07

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		4	5	6	7
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m
J U E V E S	N 72	///	02 57	04 20	19 29	18 57	18 46	18 38							
	N 70	01 15	03 20	04 31	18 06	18 18	18 23	18 25							
	68	02 03	03 37	04 40	17 27	17 51	18 05	18 14							
	66	02 32	03 51	04 48	16 59	17 30	17 50	18 05							
	64	02 53	04 02	04 54	16 38	17 13	17 38	17 57							
	62	03 10	04 12	04 59	16 21	16 59	17 28	17 51							
	60	03 23	04 20	05 04	16 07	16 48	17 19	17 45							
	N 58	03 35	04 27	05 08	15 55	16 37	17 12	17 40							
	56	03 45	04 33	05 12	15 45	16 28	17 05	17 36							
	54	03 53	04 38	05 15	15 35	16 21	16 59	17 32							
	52	04 00	04 43	05 18	15 27	16 13	16 53	17 28							
	50	04 07	04 47	05 21	15 20	16 07	16 48	17 25							
	45	04 20	04 56	05 26	15 04	15 53	16 37	17 17							
	N 40	04 31	05 04	05 31	14 51	15 42	16 28	17 11							
	35	04 39	05 10	05 35	14 40	15 32	16 21	17 06							
	30	04 46	05 15	05 39	14 30	15 23	16 14	17 01							
	20	04 57	05 23	05 45	14 13	15 08	16 02	16 53							
	N 10	05 05	05 29	05 51	13 58	14 55	15 51	16 46							
	0	05 10	05 35	05 55	13 45	14 43	15 42	16 39							
	S 10	05 15	05 39	06 00	13 31	14 31	15 32	16 33							
	20	05 18	05 43	06 05	13 16	14 18	15 21	16 25							
	30	05 19	05 47	06 11	13 00	14 03	15 09	16 17							
	35	05 19	05 49	06 14	12 50	13 54	15 03	16 13							
	40	05 19	05 50	06 17	12 39	13 44	14 55	16 07							
	45	05 18	05 52	06 21	12 26	13 33	14 45	16 01							
S 50	05 17	05 54	06 26	12 10	13 19	14 34	15 54								
52	05 16	05 55	06 28	12 02	13 12	14 29	15 50								
54	05 15	05 56	06 31	11 54	13 05	14 23	15 46								
56	05 13	05 56	06 34	11 45	12 57	14 17	15 42								
S 60	05 12	05 57	06 36	11 34	12 47	14 10	15 37								
58	05 10	05 58	06 40	11 22	12 37	14 02	15 32								
V I E R N E S	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna										
			Civil	Náut.	4	5	6	7							
	N 72	h m	h m	h m	h m	h m	h m	h m							
	19 34	20 55	///	20 35	23 10	25 23	01 23								
	N 70	19 23	20 33	22 31	21 58	23 48	25 45	01 45							
	68	19 15	20 17	21 49	22 36	24 14	00 14	02 02							
	66	19 08	20 04	21 21	23 03	24 34	00 34	02 15							
	64	19 02	19 53	21 01	23 24	24 50	00 50	02 26							
	62	18 56	19 44	20 45	23 41	25 04	01 04	02 35							
	60	18 52	19 36	20 32	23 54	25 15	01 15	02 43							
	N 58	18 48	19 29	20 20	24 06	00 06	01 25	02 50							
	56	18 44	19 23	20 11	24 17	00 17	01 33	02 56							
	54	18 41	19 18	20 03	24 26	00 26	01 41	03 02							
	52	18 38	19 13	19 56	24 34	00 34	01 47	03 07							
	50	18 36	19 09	19 49	24 41	00 41	01 53	03 11							
	45	18 30	19 00	19 36	24 56	00 56	02 06	03 21							
	N 40	18 25	18 53	19 26	00 06	01 09	02 17	03 28							
	35	18 21	18 47	19 17	00 18	01 20	02 26	03 36							
	30	18 18	18 42	19 11	00 28	01 29	02 34	03 42							
	20	18 12	18 34	19 00	00 45	01 45	02 48	03 52							
	N 10	18 07	18 28	18 53	01 00	01 59	03 00	04 01							
	0	18 02	18 23	18 47	01 14	02 12	03 11	04 09							
	S 10	17 57	18 18	18 43	01 28	02 26	03 22	04 17							
	20	17 52	18 15	18 40	01 43	02 39	03 34	04 26							
	30	17 47	18 11	18 39	02 01	02 55	03 47	04 36							
35	17 44	18 09	18 39	02 10	03 04	03 55	04 42								
40	17 41	18 08	18 39	02 22	03 15	04 04	04 48								
45	17 37	18 06	18 40	02 35	03 27	04 14	04 56								
S 50	17 32	18 04	18 42	02 51	03 42	04 26	05 05								
52	17 30	18 04	18 43	02 59	03 49	04 32	05 09								
54	17 27	18 03	18 44	03 07	03 56	04 38	05 13								
56	17 25	18 02	18 45	03 17	04 05	04 45	05 18								
58	17 22	18 01	18 47	03 28	04 14	04 52	05 24								
S 60	17 19	18 01	18 49	03 40	04 25	05 01	05 30								
S Á B A D O	SOL					LUNA									
	Día	Ec. Tiempo		Paso Mer.		Paso Mer.									
		00 ^h	12 ^h		Sup.	Inf.	Edad	Fase							
	d	m s	m s	h m	h m	h m	d	%							
	4	00 47	00 57	11 59	19 59	07 29	10 72								
	5	01 07	01 17	11 59	20 57	08 28	11 82								
	6	01 27	01 37	11 58	21 55	09 26	12 90								
	S/D 15.9	<i>d</i> 0.9	S/D 16.2	16.4	16.6										

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.7	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
DOM								
00	345 59.8	191 56.7 N12 03.1	113 14.8 S20 28.2	212 00.7 N17 48.9	119 24.2 S15 19.5	Acamar	315 17.5 S40 14.6	
01	1 02.2	206 56.2 02.0	128 15.5 28.6	227 02.7 48.8	134 26.5 19.6	Achernar	335 25.8 S57 09.5	
02	16 04.7	221 55.7 12 00.9	143 16.3 29.0	242 04.6 48.6	149 28.8 19.7	Acrux	173 08.8 S63 10.9	
03	31 07.2	236 55.2 11 59.9	158 17.1 . . 29.4	257 06.6 . . 48.5	164 31.0 . . 19.7	Adhara	255 12.0 S28 59.5	
04	46 09.6	251 54.7 58.8	173 17.9 29.8	272 08.5 48.4	179 33.3 19.8	Aldebarán	290 48.4 N16 32.2	
05	61 12.1	266 54.2 57.8	188 18.7 30.2	287 10.5 48.2	194 35.6 19.8			
06	76 14.6	281 53.7 N11 56.7	203 19.4 S20 30.6	302 12.4 N17 48.1	209 37.9 S15 19.9	Alioth	166 20.5 N55 53.0	
07	91 17.0	296 53.1 55.7	218 20.2 31.0	317 14.4 47.9	224 40.2 19.9	Alkaid	152 58.6 N49 14.7	
08	106 19.5	311 52.6 54.6	233 21.0 31.4	332 16.3 47.8	239 42.5 20.0	Al Na'ir	27 42.3 S46 53.2	
09	121 22.0	326 52.1 . . 53.5	248 21.8 . . 31.8	347 18.3 . . 47.7	254 44.8 . . 20.1	Alnilam	275 45.6 S 1 11.6	
10	136 24.4	341 51.6 52.5	263 22.6 32.2	2 20.2 47.5	269 47.0 20.1	Alphard	217 55.5 S 8 43.3	
11	151 26.9	356 51.1 51.4	278 23.3 32.6	17 22.2 47.4	284 49.3 20.2			
12	166 29.4	11 50.6 N11 50.3	293 24.1 S20 33.0	32 24.1 N17 47.3	299 51.6 S15 20.2	Alphecca	126 10.4 N26 40.3	
13	181 31.8	26 50.1 49.3	308 24.9 33.4	47 26.1 47.1	314 53.9 20.3	Alpheratz	357 42.2 N29 10.4	
14	196 34.3	41 49.6 48.2	323 25.7 33.8	62 28.0 47.0	329 56.2 20.4	Altair	62 07.2 N 8 54.8	
15	211 36.7	56 49.1 . . 47.1	338 26.4 . . 34.3	77 30.0 . . 46.9	344 58.5 . . 20.4	Ankaa	353 14.5 S42 13.4	
16	226 39.2	71 48.6 46.1	353 27.2 34.7	92 31.9 46.7	0 00.8 20.5	Antares	112 25.2 S26 27.7	
17	241 41.7	86 48.1 45.0	8 28.0 35.1	107 33.9 46.6	15 03.0 20.5			
18	256 44.1	101 47.6 N11 43.9	23 28.8 S20 35.5	122 35.9 N17 46.5	30 05.3 S15 20.6	Arcturus	145 55.2 N19 06.6	
19	271 46.6	116 47.1 42.9	38 29.5 35.9	137 37.8 46.3	45 07.6 20.6	Atria	107 26.2 S69 03.3	
20	286 49.1	131 46.6 41.8	53 30.3 36.3	152 39.8 46.2	60 09.9 20.7	Avior	234 18.1 S59 33.3	
21	301 51.5	146 46.1 . . 40.7	68 31.1 . . 36.7	167 41.7 . . 46.1	75 12.2 . . 20.8	Bellatrix	278 31.1 N 6 21.7	
22	316 54.0	161 45.6 39.7	83 31.8 37.1	182 43.7 45.9	90 14.5 20.8	Betelgeuse	271 00.5 N 7 24.5	
23	331 56.5	176 45.1 38.6	98 32.6 37.5	197 45.6 45.8	105 16.7 20.9			
LUN								
00	346 58.9	191 44.6 N11 37.5	113 33.4 S20 37.9	212 47.6 N17 45.7	120 19.0 S15 20.9	Canopus	263 55.9 S52 42.1	
01	2 01.4	206 44.1 36.5	128 34.2 38.3	227 49.5 45.5	135 21.3 21.0	Capella	280 33.2 N46 00.4	
02	17 03.9	221 43.6 35.4	143 34.9 38.7	242 51.5 45.4	150 23.6 21.1	Deneb	49 30.5 N45 20.4	
03	32 06.3	236 43.1 . . 34.3	158 35.7 . . 39.1	257 53.4 . . 45.3	165 25.9 . . 21.1	Denébola	182 33.1 N14 29.5	
04	47 08.8	251 42.6 33.3	173 36.5 39.5	272 55.4 45.1	180 28.2 21.2	Diphda	348 54.8 S17 54.2	
05	62 11.2	266 42.1 32.2	188 37.2 39.9	287 57.4 45.0	195 30.4 21.2			
06	77 13.7	281 41.6 N11 31.1	203 38.0 S20 40.3	302 59.3 N17 44.9	210 32.7 S15 21.3	Dubhe	193 51.4 N61 40.3	
07	92 16.2	296 41.1 30.0	218 38.8 40.7	318 01.3 44.7	225 35.0 21.3	Elnath	278 11.6 N28 37.0	
08	107 18.6	311 40.7 29.0	233 39.6 41.1	333 03.2 44.6	240 37.3 21.4	Eltanin	90 45.6 N51 29.7	
09	122 21.1	326 40.2 . . 27.9	248 40.3 . . 41.5	348 05.2 . . 44.5	255 39.6 . . 21.5	Enif	33 46.0 N 9 56.8	
10	137 23.6	341 39.7 26.8	263 41.1 41.9	3 07.1 44.3	270 41.9 21.5	Fomalhaut	15 22.7 S29 32.5	
11	152 26.0	356 39.2 25.7	278 41.9 42.3	18 09.1 44.2	285 44.1 21.6			
12	167 28.5	11 38.7 N11 24.7	293 42.6 S20 42.7	33 11.0 N17 44.0	300 46.4 S15 21.6	Gacrux	172 00.4 S57 11.8	
13	182 31.0	26 38.2 23.6	308 43.4 43.1	48 13.0 43.9	315 48.7 21.7	Gienah	175 51.7 S17 37.3	
14	197 33.4	41 37.7 22.5	323 44.2 43.5	63 15.0 43.8	330 51.0 21.8	Hadar	148 47.0 S60 26.7	
15	212 35.9	56 37.2 . . 21.4	338 44.9 . . 43.9	78 16.9 . . 43.6	345 53.3 . . 21.8	Hamal	327 59.5 N23 31.9	
16	227 38.3	71 36.7 20.3	353 45.7 44.3	93 18.9 43.5	0 55.6 21.9	Kaus Aust.	83 42.5 S34 22.5	
17	242 40.8	86 36.2 19.3	8 46.5 44.7	108 20.8 43.4	15 57.8 21.9			
18	257 43.3	101 35.7 N11 18.2	23 47.2 S20 45.1	123 22.8 N17 43.2	31 00.1 S15 22.0	Kochab	137 20.8 N74 06.1	
19	272 45.7	116 35.2 17.1	38 48.0 45.5	138 24.7 43.1	46 02.4 22.1	Markab	13 37.1 N15 17.3	
20	287 48.2	131 34.7 16.0	53 48.8 45.9	153 26.7 43.0	61 04.7 22.1	Menkar	314 14.0 N 4 08.8	
21	302 50.7	146 34.2 . . 14.9	68 49.5 . . 46.3	168 28.7 . . 42.8	76 07.0 . . 22.2	Menkent	148 06.8 S36 26.5	
22	317 53.1	161 33.7 13.9	83 50.3 46.7	183 30.6 42.7	91 09.2 22.2	Miaplacidus	221 40.2 S69 46.6	
23	332 55.6	176 33.3 12.8	98 51.0 47.1	198 32.6 42.6	106 11.5 22.3			
MAR								
00	347 58.1	191 32.8 N11 11.7	113 51.8 S20 47.5	213 34.5 N17 42.4	121 13.8 S15 22.4	Mirfak	308 38.9 N49 54.5	
01	3 00.5	206 32.3 10.6	128 52.6 47.9	228 36.5 42.3	136 16.1 22.4	Nunki	75 57.1 S26 16.5	
02	18 03.0	221 31.8 09.5	143 53.3 48.3	243 38.4 42.2	151 18.4 22.5	Peacock	53 17.5 S56 41.2	
03	33 05.5	236 31.3 . . 08.4	158 54.1 . . 48.7	258 40.4 . . 42.0	166 20.6 . . 22.5	Póllux	243 26.9 N27 59.2	
04	48 07.9	251 30.8 07.4	173 54.9 49.1	273 42.4 41.9	181 22.9 22.6	Procyon	244 59.0 N 5 11.1	
05	63 10.4	266 30.3 06.3	188 55.6 49.5	288 44.3 41.8	196 25.2 22.7			
06	78 12.8	281 29.8 N11 05.2	203 56.4 S20 49.9	303 46.3 N17 41.6	211 27.5 S15 22.7	Rasalhague	96 05.6 N12 33.3	
07	93 15.3	296 29.3 04.1	218 57.1 50.3	318 48.2 41.5	226 29.8 22.8	Régulus	207 42.9 N11 53.7	
08	108 17.8	311 28.9 03.0	233 57.9 50.7	333 50.2 41.4	241 32.0 22.8	Rigel	281 11.3 S 8 11.1	
09	123 20.2	326 28.4 . . 01.9	248 58.7 . . 51.1	348 52.1 . . 41.2	256 34.3 . . 22.9	Rigel Kent.	139 50.9 S60 53.8	
10	138 22.7	341 27.9 11 00.8	263 59.4 51.5	3 54.1 41.1	271 36.6 22.9	Sabik	102 11.5 S15 44.4	
11	153 25.2	356 27.4 10 59.7	279 00.2 51.9	18 56.1 41.0	286 38.9 23.0			
12	168 27.6	11 26.9 N10 58.6	294 00.9 S20 52.3	33 58.0 N17 40.8	301 41.2 S15 23.1	Schedar	349 38.9 N56 37.0	
13	183 30.1	26 26.4 57.6	309 01.7 52.6	49 00.0 40.7	316 43.4 23.1	Shaula	96 20.7 S37 06.7	
14	198 32.6	41 25.9 56.5	324 02.4 53.0	64 01.9 40.6	331 45.7 23.2	Sirius	258 33.1 S16 44.2	
15	213 35.0	56 25.5 . . 55.4	339 03.2 . . 53.4	79 03.9 . . 40.4	346 48.0 . . 23.2	Spica	158 30.6 S11 14.2	
16	228 37.5	71 25.0 54.3	354 04.0 53.8	94 05.9 40.3	1 50.3 23.3	Suhail	222 52.2 S43 29.5	
17	243 39.9	86 24.5 53.2	9 04.7 54.2	109 07.8 40.2	16 52.6 23.4			
18	258 42.4	101 24.0 N10 52.1	24 05.5 S20 54.6	124 09.8 N17 40.0	31 54.8 S15 23.4	Vega	80 38.2 N38 48.3	
19	273 44.9	116 23.5 51.0	39 06.2 55.0	139 11.7 39.9	46 57.1 23.5	Zuben'ubi	137 04.6 S16 06.0	
20	288 47.3	131 23.0 49.9	54 07.0 55.4	154 13.7 39.8	61 59.4 23.5			
21	303 49.8	146 22.6 . . 48.8	69 07.7 . . 55.8	169 15.7 . . 39.6	77 01.7 . . 23.6			
22	318 52.3	161 22.1 47.7	84 08.5 56.2	184 17.6 39.5	92 03.9 23.7			
23	333 54.7	176 21.6 46.6	99 09.2 56.6	199 19.6 39.4	107 06.2 23.7			
Paso Mer.	h m							
	0 51.9	v -0.5 d 1.1	v 0.8 d 0.4	v 2.0 d 0.1	v 2.3 d 0.1			
						AHS	Paso Mer.	
						° /	h m	
						Venus	204 45.7 11 13	
						Marte	126 34.5 16 25	
						Júpiter	225 48.7 9 48	
						Saturno	133 20.1 15 56	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna									
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	7	8	9	10					
<i>d</i> <i>h</i>	°	'	°	'	°	'	°	'	'	h	m	h	m	h	m	h	m			
DOMINGO	180	26.9	N 6	10.4	29	56.5	6.3	S 11	50.6	9.5	61.0	N 72	00	33	03	16	04	34		
	01	195	27.1	09.5	44	21.8	6.3	11	41.1	9.5	61.0	N 70	01	47	03	35	04	44		
	02	210	27.3	08.6	58	47.1	6.3	11	31.6	9.7	61.0	68	02	22	03	50	04	51		
	03	225	27.6	07.6	73	12.4	6.3	11	21.9	9.7	61.0	66	02	47	04	02	04	57		
	04	240	27.8	06.7	87	37.7	6.3	11	12.2	9.7	61.0	64	03	05	04	12	05	03		
	05	255	28.0	05.7	102	03.0	6.4	11	02.5	9.9	61.0	62	03	20	04	20	05	07		
	06	270	28.2	N 6	04.8	116	28.4	6.4	S 10	52.6	9.9	61.1	60	03	33	04	28	05	11	
	07	285	28.4	03.9	130	53.8	6.4	10	42.7	10.1	61.1	N 58	03	43	04	34	05	14		
	08	300	28.6	02.9	145	19.2	6.5	10	32.6	10.1	61.1	56	03	52	04	39	05	18		
	09	315	28.8	02.0	159	44.7	6.5	10	22.5	10.1	61.1	54	03	59	04	44	05	20		
	10	330	29.1	01.1	174	10.2	6.5	10	12.4	10.3	61.1	52	04	06	04	48	05	23		
	11	345	29.3	6 00.1	188	35.7	6.5	10	02.1	10.3	61.1	50	04	12	04	52	05	25		
	12	0	29.5	N 5	59.2	203	01.2	6.5	S 9	51.8	10.4	61.1	45	04	25	05	00	05	30	
	13	15	29.7	58.3	217	26.7	6.6	9	41.4	10.4	61.1	N 40	04	34	05	07	05	34		
	14	30	29.9	57.3	231	52.3	6.6	9	31.0	10.5	61.1	35	04	42	05	12	05	38		
	15	45	30.1	56.4	246	17.9	6.7	9	20.5	10.6	61.1	30	04	48	05	17	05	41		
	16	60	30.3	55.5	260	43.6	6.6	9	09.9	10.7	61.1	20	04	58	05	24	05	46		
	17	75	30.6	54.5	275	09.2	6.7	8	59.2	10.7	61.2	N 10	05	05	05	29	05	50		
	18	90	30.8	N 5	53.6	289	34.9	6.8	S 8	48.5	10.7	61.2	0	05	10	05	34	05	54	
	19	105	31.0	52.6	304	00.7	6.7	8	37.8	10.9	61.2	S 10	05	13	05	37	05	58		
	20	120	31.2	51.7	318	26.4	6.8	8	26.9	10.9	61.2	20	05	15	05	40	06	03		
	21	135	31.4	50.8	332	52.2	6.8	8	16.0	10.9	61.2	30	05	16	05	43	06	07		
	22	150	31.6	49.8	347	18.0	6.8	8	05.1	11.0	61.2	35	05	15	05	44	06	10		
	23	165	31.8	48.9	1	43.8	6.9	7	54.1	11.1	61.2	40	05	14	05	46	06	13		
	LUNES	180	32.1	N 5	48.0	16	09.7	6.9	S 7	43.0	11.1	61.2	45	05	13	05	47	06	16	
01		195	32.3	47.0	30	35.6	6.9	7	31.9	11.1	61.2	S 50	05	10	05	48	06	20		
02		210	32.5	46.1	45	01.5	6.9	7	20.8	11.3	61.2	52	05	09	05	48	06	22		
03		225	32.7	45.1	59	27.4	7.0	7	09.5	11.2	61.2	54	05	08	05	48	06	24		
04		240	32.9	44.2	73	53.4	7.0	6	58.3	11.3	61.2	56	05	06	05	49	06	26		
05		255	33.1	43.3	88	19.4	7.0	6	47.0	11.4	61.2	58	05	04	05	49	06	28		
06		270	33.4	N 5	42.3	102	45.4	7.1	S 6	35.6	11.4	61.2	S 60	05	01	05	49	06	31	
07		285	33.6	41.4	117	11.5	7.1	6	24.2	11.4	61.2	Lat.	Ocaso Sol		Crepúsculo		Ocaso Luna			
08		300	33.8	40.5	131	37.6	7.1	6	12.8	11.5	61.2	Civil	Náut.		7	8	9	10		
09		315	34.0	39.5	146	03.7	7.1	6	01.3	11.5	61.2	h m		h m		h m	h m	h m	h m	
10		330	34.2	38.6	160	29.8	7.2	5	49.8	11.5	61.2	N 72	19	18	20	35	23	00		
11		345	34.4	37.6	174	56.0	7.2	5	38.3	11.6	61.2	N 70	19	09	20	17	22	01		
12		0	34.7	N 5	36.7	189	22.2	7.2	S 5	26.7	11.7	61.2	68	19	02	20	02	21	28	
13		15	34.9	35.8	203	48.4	7.3	5	15.0	11.6	61.2	66	18	56	19	51	21	05		
14		30	35.1	34.8	218	14.7	7.3	5	03.4	11.7	61.2	64	18	51	19	41	20	47		
15		45	35.3	33.9	232	41.0	7.3	4	51.7	11.7	61.1	62	18	47	19	33	20	32		
16		60	35.5	32.9	247	07.3	7.3	4	40.0	11.8	61.1	60	18	43	19	26	20	20		
17		75	35.7	32.0	261	33.6	7.4	4	28.2	11.7	61.1	N 58	18	40	19	20	20	10		
18		90	36.0	N 5	31.1	276	00.0	7.4	S 4	16.5	11.8	61.1	56	18	37	19	15	20	02	
19		105	36.2	30.1	290	26.4	7.4	4	04.7	11.9	61.1	54	18	34	19	10	19	54		
20		120	36.4	29.2	304	52.8	7.5	3	52.8	11.8	61.1	52	18	31	19	06	19	48		
21		135	36.6	28.2	319	19.3	7.5	3	41.0	11.9	61.1	50	18	29	19	02	19	42		
22		150	36.8	27.3	333	45.8	7.5	3	29.1	11.8	61.1	45	18	25	18	54	19	30		
23		165	37.0	26.3	348	12.3	7.5	3	17.3	11.9	61.1	N 40	18	21	18	48	19	20		
MARTES		01	195	37.5	24.5	17	05.4	7.5	2	53.5	12.0	61.1	35	18	17	18	43	19	13	
	02	210	37.7	23.5	31	31.9	7.6	2	41.5	11.9	61.0	30	18	14	18	38	19	07		
	03	225	37.9	22.6	45	58.5	7.7	2	29.6	12.0	61.0	20	18	09	18	31	18	57		
	04	240	38.1	21.6	60	25.2	7.6	2	17.6	11.9	61.0	N 10	18	05	18	26	18	51		
	05	255	38.3	20.7	74	51.8	7.7	2	05.7	12.0	61.0	0	18	01	18	22	18	46		
	06	270	38.6	N 5	19.7	89	18.5	7.7	S 1	53.7	12.0	61.0	S 10	17	57	18	18	43		
	07	285	38.8	18.8	103	45.2	7.8	1	41.7	12.0	61.0	20	17	53	18	15	18	41		
	08	300	39.0	17.9	118	12.0	7.7	1	29.7	11.9	61.0	30	17	49	18	13	18	40		
	09	315	39.2	16.9	132	38.7	7.8	1	17.8	12.0	60.9	35	17	46	18	12	18	41		
	10	330	39.4	16.0	147	05.5	7.8	1	05.8	12.0	60.9	40	17	43	18	10	18	42		
	11	345	39.7	15.0	161	32.3	7.9	0	53.8	12.0	60.9	45	17	40	18	10	18	44		
	12	0	39.9	N 5	14.1	175	59.2	7.8	S 0	41.8	12.0	60.9	S 50	17	36	18	09	18	46	
	13	15	40.1	13.1	190	26.0	7.9	0	29.8	11.9	60.9	52	17	35	18	08	18	47		
	14	30	40.3	12.2	204	52.9	7.9	0	17.9	12.0	60.9	54	17	33	18	08	18	49		
	15	45	40.5	11.3	219	19.8	8.0	S 0	05.9	12.0	60.8	56	17	31	18	08	18	51		
	16	60	40.7	10.3	233	46.8	7.9	N 0	06.1	11.9	60.8	58	17	28	18	08	18	53		
	17	75	41.0	09.4	248	13.7	8.0	0	18.0	12.0	60.8	S 60	17	26	18	07	18	56		
	18	90	41.2	N 5	08.4	262	40.7	8.0	N 0	30.0	11.9	60.8	SOL		LUNA					
	19	105	41.4	07.5	277	07.7	8.0	0	41.9	11.9	60.8	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
	20	120	41.6	06.5	291	34.7	8.0	0	53.8	11.9	60.7	00h	12h		Mer.	Sup.	Inf.			
	21	135	41.8	05.6	306	01.7	8.1	1	05.7	11.9	60.7	d	m	s	m	s	h	m	h	m
	22	150	42.1	04.6	320	28.8	8.1	1	17.6	11.9	60.7	7	01	47	01	57	11	58	22	53
	23	165	42.3	03.7	334	55.9	8.1	N 1	29.5	11.8	60.7	8	02	08	02	18	11	58	23	49
		S/D	15.9	<i>d</i> 0.9	S/D	16.7			16.7		16.6	9	02	29	02	39	11	57	24	44



UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.7	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
10 00	348 57.2	191 21.1 N10 45.5	114 10.0 S20 57.0	214 21.5 N17 39.2	122 08.5 S15 23.8	Acamar 315 17.5 S40 14.6
01	3 59.7	206 20.6 44.4	129 10.7 57.4	229 23.5 39.1	137 10.8 23.8	Achernar 335 25.8 S57 09.5
02	19 02.1	221 20.1 43.3	144 11.5 57.8	244 25.5 39.0	152 13.1 23.9	Acrux 173 08.8 S63 10.9
03	34 04.6	236 19.7 . . 42.2	159 12.3 . . 58.2	259 27.4 . . 38.8	167 15.3 . . 24.0	Adhara 255 12.0 S28 59.5
04	49 07.1	251 19.2 41.1	174 13.0 58.5	274 29.4 38.7	182 17.6 24.0	Aldebarán 290 48.3 N16 32.2
05	64 09.5	266 18.7 40.0	189 13.8 58.9	289 31.3 38.6	197 19.9 24.1	
06	79 12.0	281 18.2 N10 38.9	204 14.5 S20 59.3	304 33.3 N17 38.4	212 22.2 S15 24.1	Alioth 166 20.5 N55 53.0
07	94 14.4	296 17.7 37.8	219 15.3 20 59.7	319 35.3 38.3	227 24.4 24.2	Alkaid 152 58.7 N49 14.7
08	109 16.9	311 17.3 36.7	234 16.0 21 00.1	334 37.2 38.1	242 26.7 24.3	Al Na'ir 27 42.3 S46 53.2
09	124 19.4	326 16.8 . . 35.6	249 16.8 . . 00.5	349 39.2 . . 38.0	257 29.0 . . 24.3	Alnilam 275 45.5 S 1 11.6
10	139 21.8	341 16.3 34.5	264 17.5 00.9	4 41.1 37.9	272 31.3 24.4	Alphard 217 55.5 S 8 43.3
11	154 24.3	356 15.8 33.4	279 18.3 01.3	19 43.1 37.7	287 33.5 24.4	
12	169 26.8	11 15.3 N10 32.3	294 19.0 S21 01.7	34 45.1 N17 37.6	302 35.8 S15 24.5	Alphecca 126 10.4 N26 40.3
13	184 29.2	26 14.9 31.2	309 19.8 02.1	49 47.0 37.5	317 38.1 24.6	Alpheratz 357 42.2 N29 10.4
14	199 31.7	41 14.4 30.1	324 20.5 02.4	64 49.0 37.3	332 40.4 24.6	Altair 62 07.2 N 8 54.8
15	214 34.2	56 13.9 . . 29.0	339 21.2 . . 02.8	79 50.9 . . 37.2	347 42.7 . . 24.7	Ankaa 353 14.5 S42 13.4
16	229 36.6	71 13.4 27.9	354 22.0 03.2	94 52.9 37.1	2 44.9 24.7	Antares 112 25.3 S26 27.7
17	244 39.1	86 13.0 26.8	9 22.7 03.6	109 54.9 36.9	17 47.2 24.8	
18	259 41.5	101 12.5 N10 25.7	24 23.5 S21 04.0	124 56.8 N17 36.8	32 49.5 S15 24.9	Arcturus 145 55.2 N19 06.6
19	274 44.0	116 12.0 24.6	39 24.2 04.4	139 58.8 36.7	47 51.8 24.9	Atria 107 26.3 S69 03.3
20	289 46.5	131 11.5 23.5	54 25.0 04.8	155 00.8 36.5	62 54.0 25.0	Avior 234 18.1 S59 33.3
21	304 48.9	146 11.1 . . 22.4	69 25.7 . . 05.2	170 02.7 . . 36.4	77 56.3 . . 25.1	Bellatrix 278 31.1 N 6 21.7
22	319 51.4	161 10.6 21.3	84 26.5 05.5	185 04.7 36.3	92 58.6 25.1	Betelgeuse 271 00.4 N 7 24.5
23	334 53.9	176 10.1 20.2	99 27.2 05.9	200 06.6 36.1	108 00.9 25.2	
11 00	349 56.3	191 09.6 N10 19.1	114 28.0 S21 06.3	215 08.6 N17 36.0	123 03.1 S15 25.2	Canopus 263 55.9 S52 42.1
01	4 58.8	206 09.2 18.0	129 28.7 06.7	230 10.6 35.9	138 05.4 25.3	Capella 280 33.2 N46 00.4
02	20 01.3	221 08.7 16.8	144 29.4 07.1	245 12.5 35.7	153 07.7 25.4	Deneb 49 30.5 N45 20.4
03	35 03.7	236 08.2 . . 15.7	159 30.2 . . 07.5	260 14.5 . . 35.6	168 10.0 . . 25.4	Denébola 182 33.1 N14 29.5
04	50 06.2	251 07.7 14.6	174 30.9 07.9	275 16.5 35.5	183 12.2 25.5	Diphda 348 54.7 S17 54.2
05	65 08.7	266 07.3 13.5	189 31.7 08.2	290 18.4 35.3	198 14.5 25.5	
06	80 11.1	281 06.8 N10 12.4	204 32.4 S21 08.6	305 20.4 N17 35.2	213 16.8 S15 25.6	Dubhe 193 51.4 N61 40.3
07	95 13.6	296 06.3 11.3	219 33.2 09.0	320 22.4 35.1	228 19.0 25.7	Elnath 278 11.6 N28 37.0
08	110 16.0	311 05.8 10.2	234 33.9 09.4	335 24.3 34.9	243 21.3 25.7	Eltanin 90 45.6 N51 29.7
09	125 18.5	326 05.4 . . 09.1	249 34.6 . . 09.8	350 26.3 . . 34.8	258 23.6 . . 25.8	Enif 33 46.0 N 9 56.8
10	140 21.0	341 04.9 08.0	264 35.4 10.2	5 28.2 34.7	273 25.9 25.8	Fomalhaut 15 22.7 S29 32.5
11	155 23.4	356 04.4 06.8	279 36.1 10.6	20 30.2 34.5	288 28.1 25.9	
12	170 25.9	11 04.0 N10 05.7	294 36.9 S21 10.9	35 32.2 N17 34.4	303 30.4 S15 26.0	Gacrux 172 00.4 S57 11.8
13	185 28.4	26 03.5 04.6	309 37.6 11.3	50 34.1 34.3	318 32.7 26.0	Gienah 175 51.7 S17 37.3
14	200 30.8	41 03.0 03.5	324 38.3 11.7	65 36.1 34.1	333 35.0 26.1	Hadar 148 47.0 S60 26.7
15	215 33.3	56 02.5 . . 02.4	339 39.1 . . 12.1	80 38.1 . . 34.0	348 37.2 . . 26.1	Hamal 327 59.5 N23 31.9
16	230 35.8	71 02.1 01.3	354 39.8 12.5	95 40.0 33.9	3 39.5 26.2	Kaus Aust. 83 42.6 S34 22.5
17	245 38.2	86 01.6 10 00.1	9 40.6 12.9	110 42.0 33.7	18 41.8 26.3	
18	260 40.7	101 01.1 N 9 59.0	24 41.3 S21 13.2	125 44.0 N17 33.6	33 44.1 S15 26.3	Kochab 137 20.9 N74 06.1
19	275 43.2	116 00.7 57.9	39 42.0 13.6	140 45.9 33.5	48 46.3 26.4	Markab 13 37.1 N15 17.3
20	290 45.6	131 00.2 56.8	54 42.8 14.0	155 47.9 33.3	63 48.6 26.5	Menkar 314 14.0 N 4 08.8
21	305 48.1	145 59.7 . . 55.7	69 43.5 . . 14.4	170 49.9 . . 33.2	78 50.9 . . 26.5	Menkent 148 06.8 S36 26.5
22	320 50.5	160 59.3 54.6	84 44.2 14.8	185 51.8 33.1	93 53.1 26.6	Miaplacidus 221 40.2 S69 46.6
23	335 53.0	175 58.8 53.4	99 45.0 15.1	200 53.8 32.9	108 55.4 26.6	
12 00	350 55.5	190 58.3 N 9 52.3	114 45.7 S21 15.5	215 55.8 N17 32.8	123 57.7 S15 26.7	Mirfak 308 38.8 N49 54.5
01	5 57.9	205 57.9 51.2	129 46.4 15.9	230 57.7 32.7	139 00.0 26.8	Nunki 75 57.1 S26 16.5
02	21 00.4	220 57.4 50.1	144 47.2 16.3	245 59.7 32.5	154 02.2 26.8	Peacock 53 17.5 S56 41.2
03	36 02.9	235 56.9 . . 48.9	159 47.9 . . 16.7	261 01.6 . . 32.4	169 04.5 . . 26.9	Póllux 243 26.9 N27 59.2
04	51 05.3	250 56.5 47.8	174 48.6 17.0	276 03.6 32.3	184 06.8 26.9	Procyon 244 59.0 N 5 11.1
05	66 07.8	265 56.0 46.7	189 49.4 17.4	291 05.6 32.1	199 09.0 27.0	
06	81 10.3	280 55.5 N 9 45.6	204 50.1 S21 17.8	306 07.5 N17 32.0	214 11.3 S15 27.1	Rasalhague 96 05.6 N12 33.3
07	96 12.7	295 55.1 44.5	219 50.8 18.2	321 09.5 31.9	229 13.6 27.1	Régulus 207 42.9 N11 53.7
08	111 15.2	310 54.6 43.3	234 51.6 18.6	336 11.5 31.7	244 15.9 27.2	Rigel 281 11.2 S 8 11.1
09	126 17.6	325 54.1 . . 42.2	249 52.3 . . 18.9	351 13.4 . . 31.6	259 18.1 . . 27.2	Rigel Kent. 139 50.9 S60 53.8
10	141 20.1	340 53.7 41.1	264 53.0 19.3	6 15.4 31.5	274 20.4 27.3	Sabik 102 11.6 S15 44.4
11	156 22.6	355 53.2 40.0	279 53.8 19.7	21 17.4 31.3	289 22.7 27.4	
12	171 25.0	10 52.7 N 9 38.8	294 54.5 S21 20.1	36 19.3 N17 31.2	304 24.9 S15 27.4	Schedar 349 38.9 N56 37.1
13	186 27.5	25 52.3 37.7	309 55.2 20.5	51 21.3 31.1	319 27.2 27.5	Shaula 96 20.7 S37 06.7
14	201 30.0	40 51.8 36.6	324 56.0 20.8	66 23.3 30.9	334 29.5 27.6	Sirius 258 33.1 S16 44.2
15	216 32.4	55 51.4 . . 35.4	339 56.7 . . 21.2	81 25.3 . . 30.8	349 31.7 . . 27.6	Spica 158 30.6 S11 14.2
16	231 34.9	70 50.9 34.3	354 57.4 21.6	96 27.2 30.7	4 34.0 27.7	Suhail 222 52.1 S43 29.5
17	246 37.4	85 50.4 33.2	9 58.2 22.0	111 29.2 30.5	19 36.3 27.7	
18	261 39.8	100 50.0 N 9 32.1	24 58.9 S21 22.3	126 31.2 N17 30.4	34 38.6 S15 27.8	Vega 80 38.2 N38 48.3
19	276 42.3	115 49.5 30.9	39 59.6 22.7	141 33.1 30.3	49 40.8 27.9	Zuben'ubi 137 04.6 S16 06.0
20	291 44.8	130 49.0 29.8	55 00.3 23.1	156 35.1 30.1	64 43.1 27.9	
21	306 47.2	145 48.6 . . 28.7	70 01.1 . . 23.5	171 37.1 . . 30.0	79 45.4 . . 28.0	AHS Paso Mer.
22	321 49.7	160 48.1 27.5	85 01.8 23.8	186 39.0 29.9	94 47.6 28.0	Venus 201 13.3 h m 11 16
23	336 52.1	175 47.7 26.4	100 02.5 24.2	201 41.0 29.7	109 49.9 28.1	Marte 124 31.6 h m 16 21
						Júpiter 225 12.3 h m 9 38
						Saturno 133 06.8 h m 15 45
Paso Mer.	0 40.1	v -0.5 d 1.1	v 0.7 d 0.4	v 2.0 d 0.1	v 2.3 d 0.1	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		10	11	12	13
^{d h}	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m
1000	180 42.5	N 5 02.8	349 23.0	8.1	N 1 41.3	11.9	60.6	N 72	01 26	03 33	04 48	18 19	18 13	18 06	17 58
	01 195 42.7	01.8	3 50.1	8.2	1 53.2	11.8	60.6	N 70	02 11	03 49	04 56	18 26	18 27	18 30	18 35
	02 210 42.9	5 00.9	18 17.3	8.1	2 05.0	11.8	60.6	68	02 40	04 02	05 02	18 32	18 39	18 48	19 01
	03 225 43.2	4 59.9	32 44.4	8.2	2 16.8	11.7	60.6	66	03 01	04 13	05 07	18 37	18 48	19 02	19 21
	04 240 43.4	59.0	47 11.6	8.2	2 28.5	11.8	60.6	64	03 17	04 21	05 11	18 41	18 56	19 14	19 38
	05 255 43.6	58.0	61 38.8	8.3	2 40.3	11.7	60.5	62	03 30	04 29	05 15	18 45	19 03	19 25	19 51
	06 270 43.8	N 4 57.1	76 06.1	8.2	N 2 52.0	11.7	60.5	60	03 41	04 35	05 18	18 48	19 09	19 33	20 02
	07 285 44.0	56.1	90 33.3	8.3	3 03.7	11.6	60.5	N 58	03 51	04 41	05 21	18 51	19 14	19 41	20 12
	08 300 44.2	55.2	105 00.6	8.3	3 15.3	11.6	60.4	56	03 59	04 45	05 23	18 53	19 19	19 48	20 21
	09 315 44.5	54.2	119 27.9	8.3	3 26.9	11.6	60.4	54	04 06	04 50	05 26	18 55	19 24	19 54	20 29
M I É R C O L E S	10 315 44.5	53.2	133 55.2	8.3	3 38.5	11.6	60.4	52	04 12	04 53	05 28	18 57	19 27	20 00	20 36
	11 330 44.7	53.3	148 22.5	8.3	3 50.1	11.5	60.4	50	04 17	04 57	05 30	18 59	19 31	20 05	20 42
	12 345 44.9	52.3	162 49.8	8.4	4 01.6	11.5	60.3	45	04 29	05 04	05 34	19 03	19 39	20 16	20 56
	13 15 45.3	50.4	177 17.2	8.4	4 13.1	11.4	60.3	N 40	04 37	05 10	05 37	19 07	19 45	20 25	21 07
	14 30 45.6	49.5	191 44.6	8.4	4 24.5	11.4	60.3	35	04 44	05 14	05 40	19 10	19 51	20 33	21 17
	15 45 45.8	48.6	206 12.0	8.4	4 35.9	11.4	60.3	30	04 50	05 18	05 42	19 13	19 56	20 40	21 25
	16 60 46.0	47.6	220 39.4	8.4	4 47.3	11.3	60.2	20	04 59	05 24	05 47	19 17	20 04	20 52	21 40
	17 75 46.2	46.7	235 06.8	8.5	4 58.6	11.3	60.2	N 10	05 05	05 29	05 50	19 21	20 12	21 02	21 53
	18 90 46.4	N 4 45.7	249 34.3	8.4	N 5 09.9	11.2	60.2	0	05 09	05 33	05 53	19 25	20 19	21 12	22 05
	19 105 46.7	44.8	264 01.7	8.5	5 21.1	11.2	60.1	S 10	05 11	05 36	05 57	19 29	20 26	21 22	22 17
J U E V E S	20 120 46.9	43.8	278 29.2	8.5	5 32.3	11.1	60.1	20	05 12	05 38	06 00	19 34	20 34	21 33	22 30
	21 135 47.1	42.9	292 56.7	8.5	5 43.4	11.1	60.1	30	05 12	05 40	06 03	19 39	20 43	21 45	22 45
	22 150 47.3	41.9	307 24.2	8.5	5 54.5	11.1	60.0	35	05 11	05 40	06 05	19 42	20 48	21 52	22 53
	23 165 47.5	41.0	321 51.7	8.6	6 05.6	10.9	60.0	40	05 09	05 41	06 08	19 45	20 54	22 01	23 03
	00 180 47.8	N 4 40.0	336 19.3	8.5	N 6 16.5	11.0	60.0	45	05 07	05 41	06 10	19 49	21 01	22 10	23 15
	01 195 48.0	39.1	350 46.8	8.6	6 27.5	10.9	59.9	S 50	05 04	05 41	06 13	19 53	21 09	22 22	23 29
	02 210 48.2	38.1	5 14.4	8.6	6 38.4	10.8	59.9	52	05 02	05 41	06 15	19 55	21 13	22 27	23 36
	03 225 48.4	37.2	19 42.0	8.6	6 49.2	10.8	59.9	54	05 00	05 41	06 16	19 58	21 17	22 33	23 43
	04 240 48.6	36.2	34 09.6	8.6	7 00.0	10.7	59.8	56	04 58	05 41	06 18	20 00	21 22	22 40	23 52
	05 255 48.9	35.3	48 37.2	8.6	7 10.7	10.7	59.8	58	04 55	05 41	06 20	20 03	21 27	22 47	24 01
V I E R N E S	06 270 49.1	N 4 34.3	63 04.8	8.7	N 7 21.4	10.6	59.8	S 60	04 52	05 40	06 22	20 06	21 33	22 56	24 12
	07 285 49.3	33.4	77 32.5	8.6	7 32.0	10.6	59.7	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	08 300 49.5	32.4	92 00.1	8.7	7 42.6	10.5	59.7		Civil	Náut.	10	11	12	13	
	09 315 49.7	31.5	106 27.8	8.7	7 53.1	10.4	59.7								
	10 330 50.0	30.5	120 55.5	8.7	8 03.5	10.4	59.6	N 72	19 02	20 16	22 17	07 36	09 36	11 34	13 32
	11 345 50.2	29.6	135 23.2	8.7	8 13.9	10.3	59.6	N 70	18 55	20 01	21 36	07 32	09 23	11 12	12 56
	12 15 50.6	27.7	164 18.7	8.7	8 34.4	10.2	59.5	68	18 49	19 48	21 09	07 28	09 13	10 55	12 31
	13 30 50.9	26.7	178 46.4	8.7	8 44.6	10.1	59.5	66	18 44	19 38	20 49	07 25	09 05	10 41	12 12
	14 45 51.1	25.8	193 14.1	8.8	8 54.7	10.0	59.5	64	18 40	19 30	20 33	07 23	08 59	10 30	11 56
	15 60 51.3	24.8	207 41.9	8.8	9 04.7	10.0	59.4	62	18 37	19 23	20 20	07 21	08 53	10 21	11 43
1200	16 75 51.5	23.9	222 09.7	8.8	9 14.7	9.9	59.4	60	18 34	19 16	20 10	07 19	08 48	10 13	11 32
	18 90 51.7	N 4 22.9	236 37.5	8.8	N 9 24.6	9.9	59.3	N 58	18 31	19 11	20 01	07 17	08 43	10 06	11 23
	19 105 52.0	22.0	251 05.3	8.8	9 34.5	9.7	59.3	56	18 29	19 07	19 53	07 16	08 39	09 59	11 14
	20 120 52.2	21.0	265 33.1	8.8	9 44.2	9.7	59.3	54	18 26	19 02	19 46	07 14	08 36	09 54	11 07
	21 135 52.4	20.1	280 00.9	8.9	9 53.9	9.7	59.2	52	18 24	18 59	19 40	07 13	08 33	09 49	11 00
	22 150 52.6	19.1	294 28.8	8.8	10 03.6	9.5	59.2	50	18 23	18 55	19 35	07 12	08 30	09 44	10 54
	23 165 52.8	18.2	308 56.6	8.9	10 13.1	9.5	59.2	45	18 19	18 48	19 24	07 10	08 23	09 34	10 42
	00 180 53.1	N 4 17.2	323 24.5	8.9	N 10 22.6	9.4	59.1	N 40	18 16	18 43	19 15	07 08	08 18	09 26	10 31
	01 195 53.3	16.2	337 52.4	8.9	10 32.0	9.3	59.1	35	18 13	18 38	19 08	07 06	08 14	09 19	10 22
	02 210 53.5	15.3	352 20.3	8.9	10 41.3	9.3	59.0	30	18 11	18 35	19 03	07 04	08 10	09 13	10 14
V I E R N E S	03 225 53.7	14.3	6 48.2	8.9	10 50.6	9.1	59.0	20	18 07	18 29	18 54	07 02	08 03	09 02	10 00
	04 240 53.9	13.4	21 16.1	8.9	10 59.7	9.1	59.0	N 10	18 03	18 24	18 49	06 59	07 57	08 53	09 48
	05 255 54.2	12.4	35 44.0	9.0	11 08.8	9.1	58.9	0	18 00	18 21	18 45	06 57	07 51	08 44	09 37
	06 270 54.4	N 4 11.5	50 12.0	8.9	N 11 17.9	8.9	58.9	S 10	17 57	18 18	18 42	06 55	07 45	08 36	09 26
	07 285 54.6	10.5	64 39.9	9.0	11 26.8	8.8	58.8	20	17 54	18 16	18 41	06 52	07 39	08 27	09 14
	08 300 54.8	09.6	79 07.9	9.0	11 35.6	8.8	58.8	30	17 50	18 14	18 42	06 50	07 33	08 16	09 01
	09 315 55.1	08.6	93 35.9	9.0	11 44.4	8.7	58.8	35	17 48	18 14	18 43	06 48	07 29	08 10	08 53
	10 330 55.3	07.7	108 03.9	9.0	11 53.1	8.6	58.7	40	17 46	18 13	18 45	06 46	07 24	08 03	08 44
	11 345 55.5	06.7	122 31.9	9.0	12 01.7	8.6	58.7	45	17 44	18 13	18 47	06 44	07 19	07 55	08 34
	12 0 55.7	N 4 05.8	136 59.9	9.0	N 12 10.3	8.4	58.6	S 50	17 41	18 13	18 51	06 42	07 13	07 46	08 21
1200	13 15 55.9	04.8	151 27.9	9.1	12 18.7	8.4	58.6	52	17 39	18 13	18 52	06 41	07 10	07 41	08 15
	14 30 56.2	03.9	165 56.0	9.0	12 27.1	8.3	58.6	54	17 38	18 13	18 54	06 39	07 07	07 36	08 09
	15 45 56.4	02.9	180 24.0	9.1	12 35.4	8.2	58.5	56	17 36	18 14	18 57	06 38	07 03	07 31	08 02
	16 60 56.6	01.9	194 52.1	9.1	12 43.6	8.1	58.5	58	17 35	18 14	19 00	06 36	07 00	07 25	07 54
	17 75 56.8	01.0	209 20.2	9.0	12 51.7	8.0	58.4	S 60	17 33	18 14	19 03	06 35	06 55	07 18	07 45
	18 90 57.0	N 4 00.0	223 48.2	9.1	N 12 59.7	7.9	58.4								
	19 105 57.3	3 59.1	238 16.3	9.2	13 07.6	7.9	58.4								
	20 120 57.5	58.1	252 44.5	9.1	13 15.5	7.7	58.3	Día	SOL			LUNA			
	21 135 57.7	57.2	267 12.6	9.1	13 23.2	7.7	58.3		Ec. Tiempo	Paso Mer.		Paso Mer.	Edad	Fase	
	22 150 57.9	56.2	281 40.7	9.2	13 30.9	7.6	58.3		00h	12h		Sup.	Inf.		
23 165 58.2	55.3	296 08.9	9.1	N 13 38.5	7.5	58.2									
	S/D 15.9	<i>d</i> 1.0	S/D	16.4	16.2	16.0		^d 10	^{m s} 02 50	^{m s} 03 00	^{h m} 11 57	^{h m} 00 44	^{h m} 13 11	^{d %} 16 97	
							11</								

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.7	JÚPITER -1.8	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
13 00	351 54.6	190 47.2 N 9 25.3	115 03.2 S21 24.6	216 43.0 N17 29.6	124 52.2 S15 28.2	Acamar 315 17.5 S40 14.6
01	6 57.1	205 46.7 24.1	130 04.0 25.0	231 44.9 29.5	139 54.4 28.2	Achernar 335 25.7 S57 09.6
02	21 59.5	220 46.3 23.0	145 04.7 25.3	246 46.9 29.3	154 56.7 28.3	Acrux 173 08.8 S63 10.9
03	37 02.0	235 45.8 . . 21.9	160 05.4 . . 25.7	261 48.9 . . 29.2	169 59.0 . . 28.4	Adhara 255 12.0 S28 59.5
04	52 04.5	250 45.4 20.7	175 06.1 26.1	276 50.8 29.1	185 01.2 28.4	Aldebarán 290 48.3 N16 32.2
05	67 06.9	265 44.9 19.6	190 06.9 26.5	291 52.8 28.9	200 03.5 28.5	
06	82 09.4	280 44.4 N 9 18.5	205 07.6 S21 26.8	306 54.8 N17 28.8	215 05.8 S15 28.5	Alioth 166 20.5 N55 53.0
07	97 11.9	295 44.0 17.3	220 08.3 27.2	321 56.7 28.7	230 08.0 28.6	Alkaid 152 58.7 N49 14.7
08	112 14.3	310 43.5 16.2	235 09.0 27.6	336 58.7 28.5	245 10.3 28.7	Al Na'ir 27 42.3 S46 53.2
09	127 16.8	325 43.1 . . 15.1	250 09.8 . . 28.0	352 00.7 . . 28.4	260 12.6 . . 28.7	Alnilam 275 45.5 S 1 11.6
10	142 19.2	340 42.6 13.9	265 10.5 28.3	7 02.7 28.3	275 14.8 28.8	Alphard 217 55.5 S 8 43.3
11	157 21.7	355 42.2 12.8	280 11.2 28.7	22 04.6 28.1	290 17.1 28.9	
12	172 24.2	10 41.7 N 9 11.7	295 11.9 S21 29.1	37 06.6 N17 28.0	305 19.4 S15 28.9	Alphecca 126 10.5 N26 40.3
13	187 26.6	25 41.2 10.5	310 12.6 29.4	52 08.6 27.9	320 21.6 29.0	Alpheratz 357 42.2 N29 10.4
14	202 29.1	40 40.8 09.4	325 13.4 29.8	67 10.5 27.7	335 23.9 29.0	Altair 62 07.2 N 8 54.8
15	217 31.6	55 40.3 . . 08.2	340 14.1 . . 30.2	82 12.5 . . 27.6	350 26.2 . . 29.1	Ankaa 353 14.5 S42 13.4
16	232 34.0	70 39.9 07.1	355 14.8 30.6	97 14.5 27.5	5 28.4 29.2	Antares 112 25.3 S26 27.7
17	247 36.5	85 39.4 06.0	10 15.5 30.9	112 16.4 27.3	20 30.7 29.2	
18	262 39.0	100 39.0 N 9 04.8	25 16.2 S21 31.3	127 18.4 N17 27.2	35 33.0 S15 29.3	Arcturus 145 55.2 N19 06.6
19	277 41.4	115 38.5 03.7	40 17.0 31.7	142 20.4 27.1	50 35.2 29.4	Atria 107 26.3 S69 03.3
20	292 43.9	130 38.1 02.5	55 17.7 32.0	157 22.4 26.9	65 37.5 29.4	Avior 234 18.0 S59 33.3
21	307 46.4	145 37.6 . . 01.4	70 18.4 . . 32.4	172 24.3 . . 26.8	80 39.8 . . 29.5	Bellatrix 278 31.1 N 6 21.7
22	322 48.8	160 37.2 9 00.3	85 19.1 32.8	187 26.3 26.7	95 42.0 29.5	Betelgeuse 271 00.4 N 7 24.5
23	337 51.3	175 36.7 8 59.1	100 19.8 33.1	202 28.3 26.5	110 44.3 29.6	
14 00	352 53.7	190 36.2 N 8 58.0	115 20.6 S21 33.5	217 30.2 N17 26.4	125 46.6 S15 29.7	Canopus 263 55.9 S52 42.1
01	7 56.2	205 35.8 56.8	130 21.3 33.9	232 32.2 26.3	140 48.8 29.7	Capella 280 33.1 N46 00.4
02	22 58.7	220 35.3 55.7	145 22.0 34.3	247 34.2 26.1	155 51.1 29.8	Deneb 49 30.5 N45 20.4
03	38 01.1	235 34.9 . . 54.5	160 22.7 . . 34.6	262 36.2 . . 26.0	170 53.4 . . 29.9	Denébola 182 33.1 N14 29.5
04	53 03.6	250 34.4 53.4	175 23.4 35.0	277 38.1 25.9	185 55.6 29.9	Diphda 348 54.7 S17 54.2
05	68 06.1	265 34.0 52.3	190 24.1 35.4	292 40.1 25.7	200 57.9 30.0	
06	83 08.5	280 33.5 N 8 51.1	205 24.8 S21 35.7	307 42.1 N17 25.6	216 00.2 S15 30.0	Dubhe 193 51.4 N61 40.3
07	98 11.0	295 33.1 50.0	220 25.6 36.1	322 44.0 25.5	231 02.4 30.1	Elnath 278 11.5 N28 37.0
08	113 13.5	310 32.6 48.8	235 26.3 36.5	337 46.0 25.3	246 04.7 30.2	Eltanin 90 45.7 N51 29.7
09	128 15.9	325 32.2 . . 47.7	250 27.0 . . 36.8	352 48.0 . . 25.2	261 07.0 . . 30.2	Enif 33 46.0 N 9 56.8
10	143 18.4	340 31.7 46.5	265 27.7 37.2	7 50.0 25.1	276 09.2 30.3	Fomalhaut 15 22.7 S29 32.5
11	158 20.9	355 31.3 45.4	280 28.4 37.6	22 51.9 24.9	291 11.5 30.4	
12	173 23.3	10 30.8 N 8 44.2	295 29.1 S21 37.9	37 53.9 N17 24.8	306 13.8 S15 30.4	Gacrux 172 00.4 S57 11.7
13	188 25.8	25 30.4 43.1	310 29.8 38.3	52 55.9 24.7	321 16.0 30.5	Gienah 175 51.7 S17 37.3
14	203 28.2	40 29.9 41.9	325 30.6 38.7	67 57.9 24.5	336 18.3 30.5	Hadar 148 47.0 S60 26.7
15	218 30.7	55 29.5 . . 40.8	340 31.3 . . 39.0	82 59.8 . . 24.4	351 20.5 . . 30.6	Hamal 327 59.5 N23 31.9
16	233 33.2	70 29.0 39.6	355 32.0 39.4	98 01.8 24.3	6 22.8 30.7	Kaus Aust. 83 42.6 S34 22.5
17	248 35.6	85 28.6 38.5	10 32.7 39.8	113 03.8 24.1	21 25.1 30.7	
18	263 38.1	100 28.1 N 8 37.3	25 33.4 S21 40.1	128 05.8 N17 24.0	36 27.3 S15 30.8	Kochab 137 20.9 N74 06.1
19	278 40.6	115 27.7 36.2	40 34.1 40.5	143 07.7 23.9	51 29.6 30.9	Markab 13 37.1 N15 17.3
20	293 43.0	130 27.2 35.0	55 34.8 40.8	158 09.7 23.8	66 31.9 30.9	Menkar 314 14.0 N 4 08.8
21	308 45.5	145 26.8 . . 33.9	70 35.5 . . 41.2	173 11.7 . . 23.6	81 34.1 . . 31.0	Menkent 148 06.8 S36 26.5
22	323 48.0	160 26.3 32.7	85 36.2 41.6	188 13.6 23.5	96 36.4 31.0	Miaplacidus 221 40.1 S69 46.6
23	338 50.4	175 25.9 31.6	100 36.9 41.9	203 15.6 23.4	111 38.7 31.1	
15 00	353 52.9	190 25.4 N 8 30.4	115 37.7 S21 42.3	218 17.6 N17 23.2	126 40.9 S15 31.2	Mirfak 308 38.8 N49 54.5
01	8 55.3	205 25.0 29.3	130 38.4 42.7	233 19.6 23.1	141 43.2 31.2	Nunki 75 57.1 S26 16.5
02	23 57.8	220 24.6 28.1	145 39.1 43.0	248 21.5 23.0	156 45.4 31.3	Peacock 53 17.5 S56 41.2
03	39 00.3	235 24.1 . . 27.0	160 39.8 . . 43.4	263 23.5 . . 22.8	171 47.7 . . 31.4	Póllux 243 26.9 N27 59.2
04	54 02.7	250 23.7 25.8	175 40.5 43.7	278 25.5 22.7	186 50.0 31.4	Procyon 244 59.0 N 5 11.1
05	69 05.2	265 23.2 24.7	190 41.2 44.1	293 27.5 22.6	201 52.2 31.5	
06	84 07.7	280 22.8 N 8 23.5	205 41.9 S21 44.5	308 29.4 N17 22.4	216 54.5 S15 31.6	Rasalhague 96 05.6 N12 33.3
07	99 10.1	295 22.3 22.3	220 42.6 44.8	323 31.4 22.3	231 56.8 31.6	Régulus 207 42.9 N11 53.7
08	114 12.6	310 21.9 21.2	235 43.3 45.2	338 33.4 22.2	246 59.0 31.7	Rigel 281 11.2 S 8 11.1
09	129 15.1	325 21.4 . . 20.0	250 44.0 . . 45.6	353 35.4 . . 22.0	262 01.3 . . 31.7	Rigel Kent. 139 50.9 S60 53.8
10	144 17.5	340 21.0 18.9	265 44.7 45.9	8 37.3 21.9	277 03.5 31.8	Sabik 102 11.6 S15 44.3
11	159 20.0	355 20.5 17.7	280 45.4 46.3	23 39.3 21.8	292 05.8 31.9	
12	174 22.5	10 20.1 N 8 16.6	295 46.1 S21 46.6	38 41.3 N17 21.6	307 08.1 S15 31.9	Schedar 349 38.9 N56 37.1
13	189 24.9	25 19.7 15.4	310 46.8 47.0	53 43.3 21.5	322 10.3 32.0	Shaula 96 20.7 S37 06.7
14	204 27.4	40 19.2 14.2	325 47.5 47.3	68 45.3 21.4	337 12.6 32.1	Sirius 258 33.1 S16 44.2
15	219 29.8	55 18.8 . . 13.1	340 48.2 . . 47.7	83 47.2 . . 21.2	352 14.8 . . 32.1	Spica 158 30.6 S11 14.1
16	234 32.3	70 18.3 11.9	355 48.9 48.1	98 49.2 21.1	7 17.1 32.2	Suhail 222 52.1 S43 29.5
17	249 34.8	85 17.9 10.8	10 49.6 48.4	113 51.2 21.0	22 19.4 32.3	
18	264 37.2	100 17.4 N 8 09.6	25 50.3 S21 48.8	128 53.2 N17 20.8	37 21.6 S15 32.3	Vega 80 38.2 N38 48.3
19	279 39.7	115 17.0 08.4	40 51.0 49.1	143 55.1 20.7	52 23.9 32.4	Zuben'ubi 137 04.7 S16 06.0
20	294 42.2	130 16.6 07.3	55 51.7 49.5	158 57.1 20.6	67 26.1 32.4	
21	309 44.6	145 16.1 . . 06.1	70 52.4 . . 49.9	173 59.1 . . 20.4	82 28.4 . . 32.5	AHS Paso Mer.
22	324 47.1	160 15.7 05.0	85 53.1 50.2	189 01.1 20.3	97 30.7 32.6	Venus 197 42.5 11 18
23	339 49.6	175 15.2 03.8	100 53.8 50.6	204 03.0 20.2	112 32.9 32.6	Marte 122 26.8 16 18
						Júpiter 224 36.5 9 29
						Saturno 132 52.8 15 35
Paso Mer.	0 28.3	v -0.5 d 1.1	v 0.7 d 0.4	v 2.0 d 0.1	v 2.3 d 0.1	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		13	14	15	16	
d h ° / ° /	° / ° /	° / ° /	° / ° /	° / ° /	° / ° /	° / ° /	° / ° /	° h m h m	h m h m	h m h m	h m h m	h m h m	h m h m	h m h m	h m h m	
13 S Á B A D O	N 72	01 58	03 49	05 02	17 58	17 44										
	N 70	02 32	04 03	05 08	18 35	18 47	19 14	20 06								
	68	02 56	04 14	05 12	19 01	19 23	19 57	20 49								
	66	03 14	04 23	05 16	19 21	19 48	20 26	21 18								
	64	03 28	04 31	05 20	19 38	20 08	20 49	21 40								
	62	03 40	04 37	05 23	19 51	20 24	21 06	21 58								
	60	03 50	04 43	05 25	20 02	20 38	21 21	22 12								
	N 58	03 58	04 47	05 27	20 12	20 49	21 33	22 25								
	56	04 06	04 51	05 29	20 21	21 00	21 44	22 35								
	54	04 12	04 55	05 31	20 29	21 09	21 54	22 45								
S O D O	52	04 17	04 58	05 33	20 36	21 17	22 02	22 53								
	50	04 22	05 01	05 34	20 42	21 24	22 10	23 01								
	45	04 33	05 08	05 37	20 56	21 39	22 26	23 17								
	N 40	04 40	05 13	05 40	21 07	21 52	22 40	23 30								
	35	04 47	05 17	05 42	21 17	22 03	22 51	23 41								
	30	04 52	05 20	05 44	21 25	22 12	23 01	23 51								
	20	04 59	05 25	05 47	21 40	22 29	23 18	24 08								
	N 10	05 04	05 29	05 50	21 53	22 43	23 33	24 23								
	0	05 08	05 32	05 52	22 05	22 56	23 47	24 37								
	S 10	05 09	05 34	05 55	22 17	23 10	24 01	00 01								
D O M I N G O	20	05 10	05 35	05 57	22 30	23 24	24 16	00 16								
	30	05 08	05 36	06 00	22 45	23 41	24 34	00 34								
	35	05 07	05 36	06 01	22 53	23 51	24 44	00 44								
	40	05 05	05 36	06 03	23 03	24 02	00 02	00 55								
	45	05 01	05 35	06 05	23 15	24 15	00 15	01 09								
	S 50	04 57	05 35	06 07	23 29	24 31	00 31	01 25								
	52	04 55	05 34	06 08	23 36	24 38	00 38	01 33								
	54	04 53	05 34	06 09	23 43	24 46	00 46	01 42								
	56	04 50	05 33	06 10	23 52	24 56	00 56	01 51								
	58	04 47	05 32	06 11	24 01	00 01	01 06	02 02								
L U N E S	S 60	04 43	05 31	06 13	24 12	00 12	01 19	02 15								
	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna											
			Civil	Náut.	13	14	15	16								
	N 72	h m	h m	h m	h m	h m	h m	h m								
	N 70	18 41	19 45	21 14	12 56	14 33	15 53	16 44								
	68	18 37	19 34	20 51	12 31	13 58	15 09	16 01								
	66	18 33	19 26	20 34	12 12	13 33	14 40	15 31								
	64	18 30	19 18	20 20	11 56	13 13	14 18	15 09								
	62	18 27	19 12	20 09	11 43	12 57	14 00	14 52								
	60	18 25	19 07	19 59	11 32	12 44	13 46	14 37								
15 L U N E S	N 58	18 23	19 02	19 51	11 23	12 32	13 33	14 25								
	56	18 21	18 58	19 44	11 14	12 23	13 23	14 14								
	54	18 19	18 55	19 38	11 07	12 14	13 13	14 04								
	52	18 17	18 52	19 32	11 00	12 06	13 05	13 56								
	50	18 16	18 49	19 27	10 54	11 59	12 57	13 48								
	45	18 13	18 43	19 18	10 42	11 44	12 41	13 32								
	N 40	18 11	18 38	19 10	10 31	11 32	12 28	13 19								
	35	18 09	18 34	19 04	10 22	11 21	12 16	13 07								
	30	18 07	18 31	18 59	10 14	11 12	12 07	12 57								
	20	18 04	18 26	18 52	10 00	10 56	11 50	12 40								
16 L U N E S	N 10	18 01	18 22	18 47	09 48	10 43	11 35	12 25								
	0	17 59	18 20	18 44	09 37	10 30	11 21	12 11								
	S 10	17 57	18 18	18 42	09 26	10 17	11 07	11 57								
	20	17 54	18 16	18 42	09 14	10 03	10 52	11 42								
	30	17 52	18 16	18 43	09 01	09 47	10 35	11 25								
	35	17 50	18 16	18 45	08 53	09 38	10 25	11 15								
	40	17 49	18 16	18 47	08 44	09 28	10 14	11 03								
	45	17 47	18 17	18 51	08 34	09 15	10 01	10 50								
	S 50	17 45	18 17	18 55	08 21	09 01	09 45	10 33								
	52	17 44	18 18	18 57	08 15	08 54	09 37	10 26								
17 L U N E S	54	17 43	18 19	19 00	08 09	08 46	09 29	10 17								
	56	17 42	18 19	19 03	08 02	08 37	09 19	10 07								
	58	17 41	18 20	19 06	07 54	08 28	09 08	09 56								
	S 60	17 40	18 21	19 10	07 45	08 17	08 56	09 43								
	SOL		LUNA		Paso Mer.		Edad		Fase							
	Día	Ec. Tiempo	Paso Mer.		Paso Mer.		Edad		Fase							
		00 ^h	12 ^h													
	d	m s	m s	h m		h m		h m		%						
	13	03 53	04 04	11 56		03 25		15 51		19 76						
	14	04 14	04 25	11 56		04 17		16 43		20 66						
15	04 36	04 47	11 55		05 09		17 34		21 56							
	S/D 15.9	<i>d</i> 1.0	S/D	15.7	15.5	15.2										

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.7	JÚPITER -1.9	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
16 00	354 52.0	190 14.8 N 8 02.6	115 54.5 S21 50.9	219 05.0 N17 20.0	127 35.2 S15 32.7	Acamar 315 17.5 S40 14.6
01	9 54.5	205 14.4 01.5	130 55.2 51.3	234 07.0 19.9	142 37.5 32.8	Achernar 335 25.7 S57 09.6
02	24 57.0	220 13.9 8 00.3	145 55.9 51.6	249 09.0 19.8	157 39.7 32.8	Acrux 173 08.8 S63 10.9
03	39 59.4	235 13.5 7 59.1	160 56.6 . . 52.0	264 11.0 . . 19.6	172 42.0 . . 32.9	Adhara 255 12.0 S28 59.5
04	55 01.9	250 13.0 58.0	175 57.3 52.3	279 12.9 19.5	187 44.2 33.0	Aldebarán 290 48.3 N16 32.2
05	70 04.3	265 12.6 56.8	190 58.0 52.7	294 14.9 19.4	202 46.5 33.0	
06	85 06.8	280 12.2 N 7 55.6	205 58.7 S21 53.1	309 16.9 N17 19.3	217 48.7 S15 33.1	Alioth 166 20.6 N55 53.0
07	100 09.3	295 11.7 54.5	220 59.4 53.4	324 18.9 19.1	232 51.0 33.1	Alkaid 152 58.7 N49 14.7
08	115 11.7	310 11.3 53.3	236 00.1 53.8	339 20.8 19.0	247 53.3 33.2	Al Na'ir 27 42.3 N 8 54.8
09	130 14.2	325 10.8 . . 52.1	251 00.8 . . 54.1	354 22.8 . . 18.9	262 55.5 . . 33.3	Alnilam 275 45.5 S 1 11.6
10	145 16.7	340 10.4 51.0	266 01.5 54.5	9 24.8 18.7	277 57.8 33.3	Alphard 217 55.5 S 8 43.3
11	160 19.1	355 10.0 49.8	281 02.2 54.8	24 26.8 18.6	293 00.0 33.4	
12	175 21.6	10 09.5 N 7 48.6	296 02.9 S21 55.2	39 28.8 N17 18.5	308 02.3 S15 33.5	Alphecca 126 10.5 N26 40.3
13	190 24.1	25 09.1 47.5	311 03.6 55.5	54 30.7 18.3	323 04.6 33.5	Alpheratz 357 42.2 N29 10.4
14	205 26.5	40 08.6 46.3	326 04.3 55.9	69 32.7 18.2	338 06.8 33.6	Altair 62 07.2 N 8 54.8
15	220 29.0	55 08.2 . . 45.1	341 05.0 . . 56.2	84 34.7 . . 18.1	353 09.1 . . 33.7	Ankaa 353 14.5 S42 13.4
16	235 31.5	70 07.8 44.0	356 05.7 56.6	99 36.7 17.9	8 11.3 33.7	Antares 112 25.3 S26 27.7
17	250 33.9	85 07.3 42.8	11 06.4 56.9	114 38.7 17.8	23 13.6 33.8	
18	265 36.4	100 06.9 N 7 41.6	26 07.0 S21 57.3	129 40.6 N17 17.7	38 15.8 S15 33.8	Arcturus 145 55.2 N19 06.6
19	280 38.8	115 06.5 40.5	41 07.7 57.6	144 42.6 17.5	53 18.1 33.9	Atria 107 26.4 S69 03.3
20	295 41.3	130 06.0 39.3	56 08.4 58.0	159 44.6 17.4	68 20.4 34.0	Avior 234 18.0 S59 33.3
21	310 43.8	145 05.6 . . 38.1	71 09.1 . . 58.3	174 46.6 . . 17.3	83 22.6 . . 34.0	Bellatrix 278 31.1 N 6 21.7
22	325 46.2	160 05.2 36.9	86 09.8 58.7	189 48.6 17.1	98 24.9 34.1	Betelgeuse 271 00.4 N 7 24.5
23	340 48.7	175 04.7 35.8	101 10.5 59.1	204 50.5 17.0	113 27.1 34.2	
17 00	355 51.2	190 04.3 N 7 34.6	116 11.2 S21 59.4	219 52.5 N17 16.9	128 29.4 S15 34.2	Canopus 263 55.9 S52 42.1
01	10 53.6	205 03.9 33.4	131 11.9 21 59.8	234 54.5 16.7	143 31.6 34.3	Capella 280 33.1 N46 00.4
02	25 56.1	220 03.4 32.3	146 12.6 22 00.1	249 56.5 16.6	158 33.9 34.4	Deneb 49 30.5 N45 20.4
03	40 58.6	235 03.0 . . 31.1	161 13.3 . . 00.4	264 58.5 . . 16.5	173 36.2 . . 34.4	Denébola 182 33.1 N14 29.5
04	56 01.0	250 02.5 29.9	176 13.9 00.8	280 00.4 16.3	188 38.4 34.5	Diphda 348 54.7 S17 54.2
05	71 03.5	265 02.1 28.7	191 14.6 01.1	295 02.4 16.2	203 40.7 34.6	
06	86 05.9	280 01.7 N 7 27.6	206 15.3 S22 01.5	310 04.4 N17 16.1	218 42.9 S15 34.6	Dubhe 193 51.4 N61 40.2
07	101 08.4	295 01.2 26.4	221 16.0 01.8	325 06.4 16.0	233 45.2 34.7	Elnath 278 11.5 N28 37.0
08	116 10.9	310 00.8 25.2	236 16.7 02.2	340 08.4 15.8	248 47.4 34.7	Eltanin 90 45.7 N51 29.7
09	131 13.3	325 00.4 . . 24.0	251 17.4 . . 02.5	355 10.3 . . 15.7	263 49.7 . . 34.8	Enif 33 46.0 N 9 56.9
10	146 15.8	339 59.9 22.9	266 18.1 02.9	10 12.3 15.6	278 52.0 34.9	Fomalhaut 15 22.7 S29 32.5
11	161 18.3	354 59.5 21.7	281 18.8 03.2	25 14.3 15.4	293 54.2 34.9	
12	176 20.7	9 59.1 N 7 20.5	296 19.4 S22 03.6	40 16.3 N17 15.3	308 56.5 S15 35.0	Gacrux 172 00.4 S57 11.7
13	191 23.2	24 58.7 19.3	311 20.1 03.9	55 18.3 15.2	323 58.7 35.1	Gienah 175 51.7 S17 37.3
14	206 25.7	39 58.2 18.1	326 20.8 04.3	70 20.3 15.0	339 01.0 35.1	Hadar 148 47.1 S60 26.7
15	221 28.1	54 57.8 . . 17.0	341 21.5 . . 04.6	85 22.2 . . 14.9	354 03.2 . . 35.2	Hamal 327 59.5 N23 31.9
16	236 30.6	69 57.4 15.8	356 22.2 05.0	100 24.2 14.8	9 05.5 35.3	Kaus Aust. 83 42.6 S34 22.5
17	251 33.1	84 56.9 14.6	11 22.9 05.3	115 26.2 14.6	24 07.7 35.3	
18	266 35.5	99 56.5 N 7 13.4	26 23.5 S22 05.7	130 28.2 N17 14.5	39 10.0 S15 35.4	Kochab 137 21.0 N74 06.0
19	281 38.0	114 56.1 12.3	41 24.2 06.0	145 30.2 14.4	54 12.3 35.5	Markab 13 37.1 N15 17.3
20	296 40.4	129 55.6 11.1	56 24.9 06.3	160 32.2 14.2	69 14.5 35.5	Menkar 314 13.9 N 4 08.8
21	311 42.9	144 55.2 . . 09.9	71 25.6 . . 06.7	175 34.1 . . 14.1	84 16.8 . . 35.6	Menkent 148 06.8 S36 26.5
22	326 45.4	159 54.8 08.7	86 26.3 07.0	190 36.1 14.0	99 19.0 35.7	Miaplacidus 221 40.1 S69 46.6
23	341 47.8	174 54.3 07.5	101 27.0 07.4	205 38.1 13.9	114 21.3 35.7	
18 00	356 50.3	189 53.9 N 7 06.4	116 27.6 S22 07.7	220 40.1 N17 13.7	129 23.5 S15 35.8	Mirfak 308 38.8 N49 54.6
01	11 52.8	204 53.5 05.2	131 28.3 08.1	235 42.1 13.6	144 25.8 35.8	Nunki 75 57.1 S26 16.5
02	26 55.2	219 53.1 04.0	146 29.0 08.4	250 44.1 13.5	159 28.0 35.9	Peacock 53 17.6 S56 41.2
03	41 57.7	234 52.6 . . 02.8	161 29.7 . . 08.7	265 46.0 . . 13.3	174 30.3 . . 36.0	Póllux 243 26.9 N27 59.2
04	57 00.2	249 52.2 01.6	176 30.4 09.1	280 48.0 13.2	189 32.5 36.0	Procyon 244 59.0 N 5 11.1
05	72 02.6	264 51.8 7 00.4	191 31.0 09.4	295 50.0 13.1	204 34.8 36.1	
06	87 05.1	279 51.3 N 6 59.3	206 31.7 S22 09.8	310 52.0 N17 12.9	219 37.1 S15 36.2	Rasalhague 96 05.7 N12 33.3
07	102 07.6	294 50.9 58.1	221 32.4 10.1	325 54.0 12.8	234 39.3 36.2	Régulus 207 42.9 N11 53.7
08	117 10.0	309 50.5 56.9	236 33.1 10.5	340 56.0 12.7	249 41.6 36.3	Rigel 281 11.2 S 8 11.1
09	132 12.5	324 50.1 . . 55.7	251 33.8 . . 10.8	355 58.0 . . 12.5	264 43.8 . . 36.4	Rigel Kent. 139 50.9 S60 53.7
10	147 14.9	339 49.6 54.5	266 34.4 11.1	10 59.9 12.4	279 46.1 36.4	Sabik 102 11.6 S15 44.3
11	162 17.4	354 49.2 53.3	281 35.1 11.5	26 01.9 12.3	294 48.3 36.5	
12	177 19.9	9 48.8 N 6 52.1	296 35.8 S22 11.8	41 03.9 N17 12.1	309 50.6 S15 36.6	Schedar 349 38.9 N56 37.1
13	192 22.3	24 48.3 51.0	311 36.5 12.2	56 05.9 12.0	324 52.8 36.6	Shaula 96 20.7 S37 06.7
14	207 24.8	39 47.9 49.8	326 37.1 12.5	71 07.9 11.9	339 55.1 36.7	Sirius 258 33.0 S16 44.2
15	222 27.3	54 47.5 . . 48.6	341 37.8 . . 12.8	86 09.9 . . 11.8	354 57.3 . . 36.8	Spica 158 30.6 S11 14.1
16	237 29.7	69 47.1 47.4	356 38.5 13.2	101 11.8 11.6	9 59.6 36.8	Suhail 222 52.1 S43 29.4
17	252 32.2	84 46.6 46.2	11 39.2 13.5	116 13.8 11.5	25 01.8 36.9	
18	267 34.7	99 46.2 N 6 45.0	26 39.8 S22 13.9	131 15.8 N17 11.4	40 04.1 S15 37.0	Vega 80 38.3 N38 48.3
19	282 37.1	114 45.8 43.8	41 40.5 14.2	146 17.8 11.2	55 06.3 37.0	Zuben'ubi 137 04.7 S16 06.0
20	297 39.6	129 45.4 42.7	56 41.2 14.5	161 19.8 11.1	70 08.6 37.1	
21	312 42.0	144 44.9 . . 41.5	71 41.9 . . 14.9	176 21.8 . . 11.0	85 10.8 . . 37.2	AHS Paso Mer.
22	327 44.5	159 44.5 40.3	86 42.5 15.2	191 23.8 10.8	100 13.1 37.2	Venus 194 13.1 11 20
23	342 47.0	174 44.1 39.1	101 43.2 15.5	206 25.8 10.7	115 15.3 37.3	Marte 120 20.0 16 15
						Júpiter 224 01.4 9 19
						Saturno 132 38.2 15 24
Paso Mer.	0 16.5	v -0.4 d 1.2	v 0.7 d 0.3	v 2.0 d 0.1	v 2.3 d 0.1	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	16	17	18	19	
d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m	
M A R T E S	16 00	181 14.4 N	2 45.2	273 12.6 10.8	N18 33.5	0.4	55.6	N 72	02 23	04 04	05 16		20 18	22 09	23 51	
	01	196 14.6	44.3	287 42.4 10.7	18 33.9	0.4	55.5	N 70	02 50	04 16	05 20	20 06	21 21	22 47	24 16	
	02	211 14.9	43.3	302 12.1 10.8	18 34.3	0.2	55.5	68	03 11	04 26	05 23	20 49	21 57	23 14	24 35	
	03	226 15.1	42.3	316 41.9 10.8	18 34.5	0.2	55.5	66	03 26	04 33	05 26	21 18	22 22	23 34	24 50	
	04	241 15.3	41.4	331 11.7 10.9	18 34.7	0.0	55.5	64	03 39	04 40	05 28	21 40	22 41	23 50	25 02	
	05	256 15.5	40.4	345 41.6 10.9	18 34.7	0.0	55.4	62	03 50	04 45	05 30	21 58	22 57	24 03	00 03	
	06	271 15.8 N	2 39.4	0 11.5 10.9	N18 34.7	0.1	55.4	60	03 58	04 50	05 32	22 12	23 10	24 14	00 14	
	07	286 16.0	38.5	14 41.4 10.9	18 34.6	0.2	55.4	N 58	04 06	04 54	05 34	22 25	23 22	24 24	00 24	
	08	301 16.2	37.5	29 11.3 11.0	18 34.4	0.3	55.4	56	04 12	04 58	05 35	22 35	23 32	24 32	00 32	
	09	316 16.4	36.6	43 41.3 11.0	18 34.1	0.4	55.3	54	04 18	05 01	05 36	22 45	23 40	24 40	00 40	
	10	331 16.7	35.6	58 11.3 11.1	18 33.7	0.5	55.3	52	04 23	05 04	05 38	22 53	23 48	24 46	00 46	
	11	346 16.9	34.6	72 41.4 11.1	18 33.2	0.6	55.3	50	04 27	05 06	05 39	23 01	23 55	24 53	00 53	
	12	1 17.1 N	2 33.7	87 11.5 11.1	N18 32.6	0.7	55.3	45	04 36	05 11	05 41	23 17	24 10	00 10	01 06	
	13	16 17.3	32.7	101 41.6 11.1	18 31.9	0.7	55.2	N 40	04 44	05 15	05 43	23 30	24 22	00 22	01 16	
	14	31 17.5	31.7	116 11.7 11.2	18 31.2	0.9	55.2	35	04 49	05 19	05 44	23 41	24 33	00 33	01 26	
	15	46 17.8	30.8	130 41.9 11.2	18 30.3	0.9	55.2	30	04 54	05 22	05 45	23 51	24 42	00 42	01 34	
	16	61 18.0	29.8	145 12.1 11.3	18 29.4	1.1	55.1	20	05 00	05 26	05 48	24 08	00 08	00 58	01 47	
	17	76 18.2	28.8	159 42.4 11.3	18 28.3	1.1	55.1	N 10	05 04	05 29	05 50	24 23	00 23	01 12	02 00	
	18	91 18.4 N	2 27.9	174 12.7 11.3	N18 27.2	1.2	55.1	0	05 07	05 31	05 51	24 37	00 37	01 25	02 11	
	19	106 18.7	26.9	188 43.0 11.4	18 26.0	1.3	55.1	S 10	05 07	05 32	05 53	00 01	00 50	01 37	02 22	
	20	121 18.9	25.9	203 13.4 11.3	18 24.7	1.4	55.1	20	05 07	05 32	05 54	00 16	01 05	01 51	02 34	
	21	136 19.1	25.0	217 43.7 11.5	18 23.3	1.5	55.0	30	05 04	05 32	05 56	00 34	01 22	02 07	02 48	
	22	151 19.3	24.0	232 14.2 11.4	18 21.8	1.5	55.0	35	05 02	05 32	05 57	00 44	01 32	02 16	02 56	
	23	166 19.6	23.1	246 44.6 11.5	18 20.3	1.7	55.0	40	05 00	05 31	05 58	00 55	01 43	02 26	03 05	
	M I É R C O L E S	17 00	181 19.8 N	2 22.1	261 15.1 11.6	N18 18.6	1.7	55.0	45	04 56	05 30	05 59	01 09	01 56	02 39	03 16
01		196 20.0	21.1	275 45.7 11.5	18 16.9	1.9	54.9	S 50	04 51	05 28	06 00	01 25	02 13	02 53	03 28	
02		211 20.2	20.2	290 16.2 11.6	18 15.0	1.9	54.9	52	04 48	05 27	06 01	01 33	02 20	03 00	03 34	
03		226 20.4	19.2	304 46.8 11.7	18 13.1	2.0	54.9	54	04 45	05 26	06 01	01 42	02 29	03 08	03 41	
04		241 20.7	18.2	319 17.5 11.7	18 11.1	2.1	54.9	56	04 42	05 25	06 02	01 51	02 38	03 16	03 48	
05		256 20.9	17.3	333 48.2 11.7	18 09.0	2.2	54.9	58	04 38	05 24	06 03	02 02	02 49	03 26	03 56	
06		271 21.1 N	2 16.3	348 18.9 11.7	N18 06.8	2.2	54.8	S 60	04 33	05 22	06 04	02 15	03 01	03 37	04 06	
07		286 21.3	15.3	2 49.6 11.8	18 04.6	2.4	54.8	Lat.	Ocaso Sol	Civil	Náut.	Ocaso Luna				
08		301 21.6	14.4	17 20.4 11.8	18 02.2	2.4	54.8					16	17	18	19	
09		316 21.8	13.4	31 51.2 11.9	17 59.8	2.5	54.8	N 72	h m	h m	h m	h m	h m	h m	h m	h m
10		331 22.0	12.4	46 22.1 11.9	17 57.3	2.6	54.7									
11		346 22.2	11.5	60 53.0 11.9	17 54.7	2.7	54.7	N 70	18 31	19 41	21 20		18 13	17 58	17 50	
12		1 22.5 N	2 10.5	75 23.9 12.0	N17 52.0	2.7	54.7	N 68	18 27	19 30	20 54	16 44	17 09	17 20	17 25	
13		16 22.7	09.5	89 54.9 12.0	17 49.3	2.9	54.7	66	18 24	19 21	20 35	16 01	16 33	16 53	17 05	
14		31 22.9	08.6	104 25.9 12.0	17 46.4	2.9	54.7	64	18 21	19 13	20 19	15 31	16 08	16 32	16 49	
15		46 23.1	07.6	118 56.9 12.1	17 43.5	3.0	54.7	62	18 19	19 07	20 07	15 09	15 48	16 16	16 37	
16		61 23.3	06.6	133 28.0 12.1	17 40.5	3.1	54.6	60	18 17	19 02	19 57	14 52	15 32	16 02	16 26	
17		76 23.6	05.7	147 59.1 12.2	17 37.4	3.1	54.6	60	18 15	18 57	19 49	14 37	15 18	15 50	16 16	
18		91 23.8 N	2 04.7	162 30.3 12.2	N17 34.3	3.3	54.6	N 58	18 14	18 54	19 41	14 25	15 07	15 40	16 08	
19		106 24.0	03.7	177 01.5 12.2	17 31.0	3.3	54.6	56	18 13	18 50	19 35	14 14	14 56	15 32	16 01	
20		121 24.2	02.8	191 32.7 12.3	17 27.7	3.4	54.6	54	18 12	18 47	19 30	14 04	14 48	15 24	15 54	
21		136 24.5	01.8	206 04.0 12.3	17 24.3	3.5	54.5	52	18 10	18 44	19 25	13 56	14 40	15 17	15 48	
22		151 24.7	2 00.8	220 35.3 12.3	17 20.8	3.5	54.5	50	18 10	18 42	19 20	13 48	14 32	15 10	15 43	
23		166 24.9	1 59.9	235 06.6 12.4	17 17.3	3.7	54.5	45	18 07	18 37	19 12	13 32	14 17	14 57	15 32	
J U E V E S		18 00	181 25.1 N	1 58.9	249 38.0 12.4	N17 13.6	3.7	54.5	N 40	18 06	18 33	19 05	13 19	14 04	14 45	15 22
	01	196 25.4	57.9	264 09.4 12.4	17 09.9	3.8	54.5	35	18 04	18 30	18 59	13 07	13 53	14 36	15 14	
	02	211 25.6	57.0	278 40.8 12.5	17 06.1	3.9	54.5	30	18 03	18 27	18 55	12 57	13 44	14 27	15 07	
	03	226 25.8	56.0	293 12.3 12.5	17 02.2	3.9	54.5	20	18 01	18 23	18 49	12 40	13 28	14 12	14 54	
	04	241 26.0	55.0	307 43.8 12.6	16 58.3	4.0	54.4	N 10	17 59	18 20	18 45	12 25	13 13	13 59	14 43	
	05	256 26.2	54.1	322 15.4 12.6	16 54.3	4.1	54.4	0	17 58	18 18	18 42	12 11	13 00	13 47	14 33	
	06	271 26.5 N	1 53.1	336 47.0 12.6	N16 50.2	4.2	54.4	S 10	17 56	18 17	18 42	11 57	12 46	13 35	14 22	
	07	286 26.7	52.1	351 18.6 12.7	16 46.0	4.3	54.4	20	17 55	18 17	18 42	11 42	12 32	13 22	14 11	
	08	301 26.9	51.2	5 50.3 12.7	16 41.7	4.3	54.4	30	17 53	18 17	18 45	11 25	12 16	13 07	13 59	
	09	316 27.1	50.2	20 22.0 12.7	16 37.4	4.4	54.4	35	17 53	18 18	18 47	11 15	12 06	12 58	13 51	
	10	331 27.4	49.2	34 53.7 12.8	16 33.0	4.4	54.4	40	17 52	18 19	18 50	11 03	11 55	12 48	13 43	
	11	346 27.6	48.2	49 25.5 12.8	16 28.6	4.6	54.3	45	17 51	18 20	18 54	10 50	11 42	12 36	13 33	
	12	1 27.8 N	1 47.3	63 57.3 12.9	N16 24.0	4.6	54.3	S 50	17 50	18 22	19 00	10 33	11 26	12 22	13 21	
	13	16 28.0	46.3	78 29.2 12.8	16 19.4	4.7	54.3	52	17 49	18 23	19 02	10 26	11 19	12 16	13 15	
	14	31 28.2	45.3	93 01.0 13.0	16 14.7	4.7	54.3	54	17 49	18 24	19 05	10 17	11 10	12 08	13 09	
	15	46 28.5	44.4	107 33.0 12.9	16 10.0	4.8	54.3	56	17 48	18 25	19 09	10 07	11 01	12 00	13 02	
	16	61 28.7	43.4	122 04.9 13.0	16 05.2	4.9	54.3	58	17 47	18 26	19 13	09 56	10 51	11 51	12 54	
	17	76 28.9	42.4	136 36.9 13.0	16 00.3	5.0	54.3	S 60	17 47	18 28	19 17	09 43	10 38	11 40	12 45	
	18	91 29.1 N	1 41.5	151 08.9 13.1	N15 55.3	5.0	54.3	Día	SOL		Paso Mer.	LUNA				
	19	106 29.4	40.5	165 41.0 13.1	15 50.3	5.1	54.3		Ec. Tiempo	Paso Mer.		Paso Mer. Sup.	Mer. Inf.	Edad	Fase	
	20	121 29.6	39.5	180 13.1 13.1	15 45.2	5.2	54.2	00h	12h		h m	h m	h m	d	%	
	21	136 29.8	38.6	194 45.2 13.2	15 40.0	5.2	54.2	d	m s	m s						h m
	22	151 30.0	37.6	209 17.4 13.2	15 34.8	5.4	54.2	16	04 57	05 08	11 55	05 59	18 24	22 46		
	23	166 30.3	36.6													

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.7	JÚPITER -1.9	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
19 00	357 49.4	189 43.7 N 6 37.9	116 43.9 S22 15.9	221 27.7 N17 10.6	130 17.6 S15 37.3	Acamar 315 17.4 S40 14.6
01	12 51.9	204 43.2 36.7	131 44.5 16.2	236 29.7 10.4	145 19.8 37.4	Achernar 335 25.7 S57 09.6
02	27 54.4	219 42.8 35.5	146 45.2 16.6	251 31.7 10.3	160 22.1 37.5	Acrux 173 08.9 S63 10.8
03	42 56.8	234 42.4 . . 34.3	161 45.9 . . 16.9	266 33.7 . . 10.2	175 24.3 . . 37.5	Adhara 255 11.9 S28 59.5
04	57 59.3	249 42.0 33.1	176 46.6 17.2	281 35.7 10.1	190 26.6 37.6	Aldebarán 290 48.3 N16 32.2
05	73 01.8	264 41.5 31.9	191 47.2 17.6	296 37.7 09.9	205 28.9 37.7	
06	88 04.2	279 41.1 N 6 30.8	206 47.9 S22 17.9	311 39.7 N17 09.8	220 31.1 S15 37.7	Alioth 166 20.6 N55 52.9
07	103 06.7	294 40.7 29.6	221 48.6 18.2	326 41.7 09.7	235 33.4 37.8	Alkaid 152 58.7 N49 14.6
08	118 09.2	309 40.3 28.4	236 49.2 18.6	341 43.6 09.5	250 35.6 37.9	Al Na'ir 27 42.3 S46 53.3
09	133 11.6	324 39.9 . . 27.2	251 49.9 . . 18.9	356 45.6 . . 09.4	265 37.9 . . 37.9	Alnilam 275 45.5 S 1 11.6
10	148 14.1	339 39.4 26.0	266 50.6 19.2	11 47.6 09.3	280 40.1 38.0	Alphard 217 55.5 S 8 43.3
11	163 16.5	354 39.0 24.8	281 51.2 19.6	26 49.6 09.1	295 42.4 38.1	
12	178 19.0	9 38.6 N 6 23.6	296 51.9 S22 19.9	41 51.6 N17 09.0	310 44.6 S15 38.1	Alphecca 126 10.5 N26 40.3
13	193 21.5	24 38.2 22.4	311 52.6 20.2	56 53.6 08.9	325 46.9 38.2	Alpheratz 357 42.2 N29 10.4
14	208 23.9	39 37.7 21.2	326 53.2 20.6	71 55.6 08.7	340 49.1 38.3	Altair 62 07.2 N 8 54.8
15	223 26.4	54 37.3 . . 20.0	341 53.9 . . 20.9	86 57.6 . . 08.6	355 51.4 . . 38.3	Ankaa 353 14.5 S42 13.4
16	238 28.9	69 36.9 18.8	356 54.6 21.2	101 59.6 08.5	10 53.6 38.4	Antares 112 25.3 S26 27.7
17	253 31.3	84 36.5 17.6	11 55.2 21.6	117 01.5 08.4	25 55.9 38.5	
18	268 33.8	99 36.1 N 6 16.4	26 55.9 S22 21.9	132 03.5 N17 08.2	40 58.1 S15 38.5	Arcturus 145 55.2 N19 06.6
19	283 36.3	114 35.6 15.2	41 56.6 22.2	147 05.5 08.1	56 00.4 38.6	Atria 107 26.4 S69 03.3
20	298 38.7	129 35.2 14.0	56 57.2 22.6	162 07.5 08.0	71 02.6 38.7	Avior 234 18.0 S59 33.3
21	313 41.2	144 34.8 . . 12.8	71 57.9 . . 22.9	177 09.5 . . 07.8	86 04.8 . . 38.7	Bellatrix 278 31.0 N 6 21.7
22	328 43.7	159 34.4 11.6	86 58.6 23.2	192 11.5 07.7	101 07.1 38.8	Betelgeuse 271 00.4 N 7 24.5
23	343 46.1	174 34.0 10.4	101 59.2 23.5	207 13.5 07.6	116 09.3 38.9	
20 00	358 48.6	189 33.5 N 6 09.3	116 59.9 S22 23.9	222 15.5 N17 07.4	131 11.6 S15 38.9	Canopus 263 55.8 S52 42.1
01	13 51.0	204 33.1 08.1	132 00.6 24.2	237 17.5 07.3	146 13.8 39.0	Capella 280 33.1 N46 00.4
02	28 53.5	219 32.7 06.9	147 01.2 24.5	252 19.5 07.2	161 16.1 39.1	Deneb 49 30.5 N45 20.4
03	43 56.0	234 32.3 . . 05.7	162 01.9 . . 24.9	267 21.4 . . 07.1	176 18.3 . . 39.1	Denébola 182 33.1 N14 29.5
04	58 58.4	249 31.9 04.5	177 02.5 25.2	282 23.4 06.9	191 20.6 39.2	Diphda 348 54.7 S17 54.2
05	74 00.9	264 31.4 03.3	192 03.2 25.5	297 25.4 06.8	206 22.8 39.3	
06	89 03.4	279 31.0 N 6 02.1	207 03.9 S22 25.8	312 27.4 N17 06.7	221 25.1 S15 39.3	Dubhe 193 51.4 N61 40.2
07	104 05.8	294 30.6 6 00.9	222 04.5 26.2	327 29.4 06.5	236 27.3 39.4	Elnath 278 11.5 N28 37.0
08	119 08.3	309 30.2 5 59.7	237 05.2 26.5	342 31.4 06.4	251 29.6 39.5	Eltanin 90 45.7 N51 29.7
09	134 10.8	324 29.8 . . 58.5	252 05.8 . . 26.8	357 33.4 . . 06.3	266 31.8 . . 39.5	Enif 33 46.0 N 9 56.9
10	149 13.2	339 29.4 57.3	267 06.5 27.2	12 35.4 06.1	281 34.1 39.6	Fomalhaut 15 22.7 S29 32.5
11	164 15.7	354 28.9 56.1	282 07.2 27.5	27 37.4 06.0	296 36.3 39.6	
12	179 18.1	9 28.5 N 5 54.9	297 07.8 S22 27.8	42 39.4 N17 05.9	311 38.6 S15 39.7	Gacrux 172 00.4 S57 11.7
13	194 20.6	24 28.1 53.7	312 08.5 28.1	57 41.4 05.7	326 40.8 39.8	Gienah 175 51.7 S17 37.3
14	209 23.1	39 27.7 52.5	327 09.1 28.5	72 43.3 05.6	341 43.1 39.8	Hadar 148 47.1 S60 26.6
15	224 25.5	54 27.3 . . 51.3	342 09.8 . . 28.8	87 45.3 . . 05.5	356 45.3 . . 39.9	Hamal 327 59.5 N23 31.9
16	239 28.0	69 26.9 50.1	357 10.5 29.1	102 47.3 05.4	11 47.6 40.0	Kaus Aust. 83 42.6 S34 22.5
17	254 30.5	84 26.4 48.8	12 11.1 29.4	117 49.3 05.2	26 49.8 40.0	
18	269 32.9	99 26.0 N 5 47.6	27 11.8 S22 29.8	132 51.3 N17 05.1	41 52.1 S15 40.1	Kochab 137 21.0 N74 06.0
19	284 35.4	114 25.6 46.4	42 12.4 30.1	147 53.3 05.0	56 54.3 40.2	Markab 13 37.1 N15 17.3
20	299 37.9	129 25.2 45.2	57 13.1 30.4	162 55.3 04.8	71 56.5 40.2	Menkar 314 13.9 N 4 08.9
21	314 40.3	144 24.8 . . 44.0	72 13.7 . . 30.7	177 57.3 . . 04.7	86 58.8 . . 40.3	Menkent 148 06.8 S36 26.5
22	329 42.8	159 24.4 42.8	87 14.4 31.1	192 59.3 04.6	102 01.0 40.4	Miaplacidus 221 40.1 S69 46.6
23	344 45.3	174 23.9 41.6	102 15.1 31.4	208 01.3 04.5	117 03.3 40.4	
21 00	359 47.7	189 23.5 N 5 40.4	117 15.7 S22 31.7	223 03.3 N17 04.3	132 05.5 S15 40.5	Mirfak 308 38.8 N49 54.6
01	14 50.2	204 23.1 39.2	132 16.4 32.0	238 05.3 04.2	147 07.8 40.6	Nunki 75 57.1 S26 16.5
02	29 52.6	219 22.7 38.0	147 17.0 32.4	253 07.3 04.1	162 10.0 40.6	Peacock 53 17.6 S56 41.2
03	44 55.1	234 22.3 . . 36.8	162 17.7 . . 32.7	268 09.3 . . 03.9	177 12.3 . . 40.7	Póllux 243 26.9 N27 59.2
04	59 57.6	249 21.9 35.6	177 18.3 33.0	283 11.3 03.8	192 14.5 40.8	Procyon 244 59.0 N 5 11.1
05	75 00.0	264 21.5 34.4	192 19.0 33.3	298 13.3 03.7	207 16.8 40.8	
06	90 02.5	279 21.0 N 5 33.2	207 19.6 S22 33.6	313 15.2 N17 03.5	222 19.0 S15 40.9	Rasalhague 96 05.7 N12 33.3
07	105 05.0	294 20.6 32.0	222 20.3 34.0	328 17.2 03.4	237 21.3 41.0	Régulus 207 42.9 N11 53.7
08	120 07.4	309 20.2 30.8	237 20.9 34.3	343 19.2 03.3	252 23.5 41.0	Rigel 281 11.2 S 8 11.1
09	135 09.9	324 19.8 . . 29.6	252 21.6 . . 34.6	358 21.2 . . 03.2	267 25.7 . . 41.1	Rigel Kent. 139 50.9 S60 53.7
10	150 12.4	339 19.4 28.4	267 22.2 34.9	13 23.2 03.0	282 28.0 41.2	Sabik 102 11.6 S15 44.3
11	165 14.8	354 19.0 27.2	282 22.9 35.2	28 25.2 02.9	297 30.2 41.2	
12	180 17.3	9 18.6 N 5 25.9	297 23.5 S22 35.6	43 27.2 N17 02.8	312 32.5 S15 41.3	Schedar 349 38.9 N56 37.1
13	195 19.7	24 18.1 24.7	312 24.2 35.9	58 29.2 02.6	327 34.7 41.4	Shaula 96 20.8 S37 06.7
14	210 22.2	39 17.7 23.5	327 24.8 36.2	73 31.2 02.5	342 37.0 41.4	Sirius 258 33.0 S16 44.2
15	225 24.7	54 17.3 . . 22.3	342 25.5 . . 36.5	88 33.2 . . 02.4	357 39.2 . . 41.5	Spica 158 30.6 S11 14.1
16	240 27.1	69 16.9 21.1	357 26.1 36.8	103 35.2 02.2	12 41.5 41.6	Suhail 222 52.1 S43 29.4
17	255 29.6	84 16.5 19.9	12 26.8 37.1	118 37.2 02.1	27 43.7 41.6	
18	270 32.1	99 16.1 N 5 18.7	27 27.4 S22 37.5	133 39.2 N17 02.0	42 45.9 S15 41.7	Vega 80 38.3 N38 48.3
19	285 34.5	114 15.7 17.5	42 28.1 37.8	148 41.2 01.9	57 48.2 41.8	Zuben'ubi 137 04.7 S16 06.0
20	300 37.0	129 15.3 16.3	57 28.7 38.1	163 43.2 01.7	72 50.4 41.8	
21	315 39.5	144 14.8 . . 15.1	72 29.4 . . 38.4	178 45.2 . . 01.6	87 52.7 . . 41.9	AHS Paso Mer.
22	330 41.9	159 14.4 13.8	87 30.0 38.7	193 47.2 01.5	102 54.9 42.0	Venus 190 45.0 11 22
23	345 44.4	174 14.0 12.6	102 30.7 39.0	208 49.2 01.3	117 57.2 42.0	Marte 118 11.3 16 11
						Júpiter 223 26.9 9 10
						Saturno 132 23.0 15 13
Paso Mer.	0 04.7	v -0.4 d 1.2	v 0.7 d 0.3	v 2.0 d 0.1	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	19	20	21	22
<i>d h</i>	° /	° /	° /		° /			h m	h m	h m	h m	h m	h m	h m	h m
1900	181 30.5	N 1 35.7	238 21.8	13.3	N15 24.1	5.5 54.2	N 72	02 44	04 19	05 29	23 51	25 29	01 29	03 05	
	196 30.7		252 54.1	13.3	15 18.6	5.5 54.2	N 70	03 07	04 29	05 31	24 16	00 16	01 45	03 14	
	211 30.9		267 26.4	13.3	15 13.1	5.5 54.2	68	03 25	04 37	05 34	24 35	00 35	01 58	03 21	
	226 31.1	32.8	281 58.7	13.4	15 07.6	5.7 54.2	66	03 38	04 43	05 35	24 50	00 50	02 08	03 27	
	241 31.4		296 31.1	13.4	15 01.9	5.7 54.2	64	03 49	04 49	05 37	25 02	01 02	02 16	03 32	
	256 31.6		311 03.5	13.4	14 56.2	5.7 54.2	62	03 59	04 53	05 38	00 03	01 12	02 24	03 36	
	271 31.8	N 1 29.8	325 35.9	13.5	N14 50.5	5.9 54.2	60	04 06	04 57	05 39	00 14	01 21	02 30	03 40	
	286 32.0		340 08.4	13.5	14 44.6	5.9 54.1	N 58	04 13	05 01	05 40	00 24	01 29	02 35	03 43	
	301 32.3		354 40.9	13.5	14 38.7	5.9 54.1	56	04 19	05 04	05 41	00 32	01 35	02 40	03 46	
	316 32.5	27.9	9 13.4	13.6	14 32.8	6.0 54.1	54	04 24	05 06	05 42	00 40	01 41	02 45	03 49	
VIERNES	331 32.7	26.0	23 46.0	13.6	14 26.8	6.1 54.1	52	04 28	05 09	05 42	00 46	01 47	02 49	03 52	
	346 32.9	25.0	38 18.6	13.6	14 20.7	6.2 54.1	50	04 32	05 11	05 43	00 53	01 52	02 52	03 54	
	1 33.1	N 1 24.0	52 51.2	13.7	N14 14.5	6.2 54.1	45	04 40	05 15	05 44	01 06	02 02	03 00	03 58	
	16 33.4	23.1	67 23.9	13.6	14 08.3	6.2 54.1	N 40	04 47	05 18	05 45	01 16	02 11	03 07	04 02	
	31 33.6	22.1	81 56.5	13.8	14 02.1	6.3 54.1	35	04 51	05 21	05 46	01 26	02 19	03 12	04 06	
	46 33.8	21.1	96 29.3	13.7	13 55.8	6.4 54.1	30	04 55	05 23	05 47	01 34	02 25	03 17	04 09	
	61 34.0	20.1	111 02.0	13.8	13 49.4	6.5 54.1	20	05 01	05 26	05 48	01 47	02 37	03 26	04 14	
	76 34.3	19.2	125 34.8	13.8	13 42.9	6.5 54.1	N 10	05 04	05 28	05 49	02 00	02 47	03 33	04 19	
	91 34.5	N 1 18.2	140 07.6	13.9	N13 36.4	6.5 54.1	0	05 06	05 30	05 50	02 11	02 56	03 40	04 23	
	106 34.7	17.2	154 40.5	13.8	13 29.9	6.6 54.1	S 10	05 06	05 30	05 51	02 22	03 05	03 47	04 27	
2000	121 34.9	16.3	169 13.3	13.9	13 23.3	6.7 54.1	20	05 04	05 30	05 52	02 34	03 15	03 54	04 32	
	136 35.1	15.3	183 46.2	14.0	13 16.6	6.7 54.1	30	05 01	05 28	05 52	02 48	03 26	04 03	04 37	
	151 35.4	14.3	198 19.2	13.9	13 09.9	6.8 54.1	35	04 58	05 27	05 53	02 56	03 33	04 07	04 40	
	166 35.6	13.4	212 52.1	14.0	13 03.1	6.8 54.1	40	04 54	05 26	05 53	03 05	03 40	04 13	04 43	
	181 35.8	N 1 12.4	227 25.1	14.0	N12 56.3	6.9 54.1	45	04 50	05 24	05 53	03 16	03 49	04 19	04 47	
	196 36.0	11.4	241 58.1	14.1	12 49.4	7.0 54.0	S 50	04 44	05 21	05 54	03 28	03 59	04 27	04 52	
	211 36.3	10.4	256 31.2	14.0	12 42.4	7.0 54.0	52	04 41	05 20	05 54	03 34	04 04	04 30	04 54	
	226 36.5	9.5	271 04.2	14.1	12 35.4	7.0 54.0	54	04 37	05 19	05 54	03 41	04 09	04 34	04 56	
	241 36.7	8.5	285 37.3	14.2	12 28.4	7.1 54.0	56	04 33	05 17	05 54	03 48	04 15	04 38	04 59	
	256 36.9	7.5	300 10.5	14.1	12 21.3	7.2 54.0	S 60	04 29	05 15	05 54	03 56	04 22	04 43	05 02	
SÁBADO	271 37.1	N 1 06.6	314 43.6	14.2	N12 14.1	7.2 54.0	58	04 24	05 13	05 55	04 06	04 29	04 48	05 05	
	286 37.4	05.6	329 16.8	14.2	12 06.9	7.2 54.0	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
	301 37.6	04.6	343 50.0	14.2	11 59.7	7.3 54.0	Civil	Náut.	19	20	21	22			
	316 37.8	03.7	358 23.2	14.3	11 52.4	7.4 54.0									
	331 38.0	02.7	12 56.5	14.3	11 45.0	7.4 54.0	N 72	18 15	19 24	20 57	17 50	17 44	17 38	17 33	
	346 38.2	01.7	27 29.7	14.2	11 37.6	7.5 54.0	N 70	18 13	19 15	20 35	17 25	17 27	17 27	17 27	
	1 38.5	N 1 00.7	42 03.0	14.4	N11 30.1	7.5 54.0	68	18 11	19 07	20 19	17 05	17 13	17 19	17 23	
	16 38.7	0 59.8	56 36.4	14.3	11 22.6	7.5 54.0	66	18 10	19 01	20 06	16 49	17 02	17 12	17 20	
	31 38.9	58.8	71 09.7	14.4	11 15.1	7.6 54.0	64	18 08	18 56	19 55	16 37	16 52	17 05	17 17	
	46 39.1	57.8	85 43.1	14.4	11 07.5	7.7 54.0	62	18 07	18 52	19 46	16 26	16 44	17 00	17 14	
DOMINGO	61 39.4	56.9	100 16.5	14.4	10 59.8	7.7 54.0	60	18 06	18 48	19 38	16 16	16 37	16 55	17 12	
	76 39.6	55.9	114 49.9	14.4	10 52.1	7.7 54.0	N 58	18 05	18 45	19 32	16 08	16 31	16 51	17 09	
	91 39.8	N 0 54.9	129 23.3	14.5	N10 44.4	7.8 54.0	56	18 05	18 42	19 26	16 01	16 26	16 48	17 08	
	106 40.0	53.9	143 56.8	14.5	10 36.6	7.9 54.0	54	18 04	18 39	19 21	15 54	16 21	16 44	17 06	
	121 40.2	53.0	158 30.3	14.5	10 28.7	7.8 54.0	52	18 03	18 37	19 17	15 48	16 16	16 41	17 04	
	136 40.5	52.0	173 03.8	14.5	10 20.9	8.0 54.0	50	18 03	18 35	19 13	15 43	16 12	16 38	17 03	
	151 40.7	51.0	187 37.3	14.5	10 12.9	7.9 54.0	45	18 02	18 31	19 06	15 32	16 03	16 32	17 00	
	166 40.9	50.1	202 10.8	14.6	10 05.0	8.0 54.0	N 40	18 01	18 28	18 59	15 22	15 56	16 27	16 57	
	181 41.1	N 0 49.1	216 44.4	14.6	N 9 57.0	8.1 54.0	35	18 00	18 25	18 55	15 14	15 49	16 23	16 55	
	196 41.3	48.1	231 18.0	14.5	9 48.9	8.1 54.0	30	17 59	18 23	18 51	15 07	15 44	16 19	16 53	
2100	211 41.6	47.1	245 51.5	14.7	9 40.8	8.1 54.0	20	17 58	18 20	18 46	14 54	15 34	16 12	16 50	
	226 41.8	46.2	260 25.2	14.6	9 32.7	8.2 54.0	N 10	17 57	18 18	18 43	14 43	15 25	16 06	16 47	
	241 42.0	45.2	274 58.8	14.6	9 24.5	8.2 54.0	0	17 57	18 17	18 41	14 33	15 17	16 01	16 44	
	256 42.2	44.2	289 32.4	14.7	9 16.3	8.3 54.1	S 10	17 56	18 17	18 41	14 22	15 09	15 55	16 41	
	271 42.4	N 0 43.3	304 06.1	14.7	N 9 08.0	8.3 54.1	20	17 56	18 18	18 43	14 11	15 00	15 49	16 38	
	286 42.7	42.3	318 39.8	14.7	8 59.7	8.3 54.1	30	17 55	18 19	18 47	13 59	14 50	15 42	16 34	
	301 42.9	41.3	333 13.5	14.7	8 51.4	8.4 54.1	35	17 55	18 20	18 50	13 51	14 44	15 38	16 32	
	316 43.1	40.3	347 47.2	14.7	8 43.0	8.4 54.1	40	17 55	18 22	18 53	13 43	14 38	15 33	16 30	
	331 43.3	39.4	2 20.9	14.8	8 34.6	8.4 54.1	45	17 54	18 24	18 58	13 33	14 30	15 28	16 27	
	346 43.6	38.4	16 54.7	14.7	8 26.2	8.5 54.1	S 50	17 54	18 26	19 04	13 21	14 21	15 22	16 24	
2200	1 43.8	N 0 37.4	31 28.4	14.8	N 8 17.7	8.5 54.1	52	17 54	18 28	19 07	13 15	14 16	15 19	16 22	
	16 44.0	36.5	46 02.2	14.8	8 09.2	8.6 54.1	54	17 54	18 29	19 11	13 09	14 12	15 16	16 20	
	31 44.2	35.5	60 36.0	14.8	8 00.6	8.6 54.1	56	17 54	18 31	19 15	13 02	14 06	15 12	16 18	
	46 44.4	34.5	75 09.8	14.8	7 52.0	8.6 54.1	58	17 54	18 33	19 20	12 54	14 00	15 08	16 16	
	61 44.7	33.5	89 43.6	14.8	7 43.4	8.7 54.1	S 60	17 54	18 35	19 25	12 45	13 54	15 03	16 14	
	76 44.9	32.6	104 17.4	14.9	7 34.7	8.7 54.1	SOL		LUNA						
	91 45.1	N 0 31.6	118 51.3	14.8	N 7 26.0	8.7 54.1	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
	106 45.3	30.6	133 25.1	14.9	7 17.3	8.7 54.1	00h	12h		Paso Mer.	Sup.	Inf.			
	121 45.5	29.6	147 59.0	14.8	7 08.6	8.8 54.1									
	136 45.8	28.7	162 32.8	14.9	6 59.8	8.8 54.1	d	m s	m s	h m	h m	h m	d %		
2300	151 46.0	27.7	177 06.7	14.9	6 51.0	8.9 54.1	19 20	06 01	06 12	11 54	08 22	20 44	25 19		
	166 46.2	26.7	191 40.6	14.9	N 6 42.1	8.9 54.1	20 21	06 23	06 33	11 53	09 07	21 29	26 13		
	S/D 16.0	<i>d</i> 1.0	S/D 14.7		14.7			21	06 44	06 55	11 53	09 50	22 12	27 7	

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.8	JÚPITER -1.9	SATURNO +0.6	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
22 00	0 46.9	189 13.6 N 5 11.4	117 31.3 S22 39.4	223 51.2 N17 01.2	132 59.4 S15 42.1	Acamar 315 17.4 S40 14.6
01	15 49.3	204 13.2 10.2	132 32.0 39.7	238 53.2 01.1	148 01.6 42.2	Achernar 335 25.7 S57 09.6
02	30 51.8	219 12.8 09.0	147 32.6 40.0	253 55.2 01.0	163 03.9 42.2	Acrux 173 08.9 S63 10.8
03	45 54.2	234 12.4 . . 07.8	162 33.2 . . 40.3	268 57.2 . . 00.8	178 06.1 . . 42.3	Adhara 255 11.9 S28 59.4
04	60 56.7	249 12.0 06.6	177 33.9 40.6	283 59.2 00.7	193 08.4 42.4	Aldebarán 290 48.3 N16 32.2
05	75 59.2	264 11.6 05.4	192 34.5 40.9	299 01.2 00.6	208 10.6 42.4	
06	91 01.6	279 11.1 N 5 04.1	207 35.2 S22 41.3	314 03.2 N17 00.4	223 12.9 S15 42.5	Alioth 166 20.6 N55 52.9
07	106 04.1	294 10.7 02.9	222 35.8 41.6	329 05.2 00.3	238 15.1 42.6	Alkaid 152 58.7 N49 14.6
08	121 06.6	309 10.3 01.7	237 36.5 41.9	344 07.2 00.2	253 17.3 42.6	Al Na'ir 62 07.2 N 8 54.8
09	136 09.0	324 09.9 5 00.5	252 37.1 . . 42.2	359 09.2 17 00.1	268 19.6 . . 42.7	Alnilam 275 45.4 S 1 11.6
10	151 11.5	339 09.5 4 59.3	267 37.8 42.5	14 11.2 16 59.9	283 21.8 42.8	Alphard 217 55.5 S 8 43.3
11	166 14.0	354 09.1 58.1	282 38.4 42.8	29 13.1 59.8	298 24.1 42.8	
12	181 16.4	9 08.7 N 4 56.9	297 39.0 S22 43.1	44 15.1 N16 59.7	313 26.3 S15 42.9	Alphecca 126 10.5 N26 40.3
13	196 18.9	24 08.3 55.6	312 39.7 43.4	59 17.1 59.5	328 28.6 43.0	Alpheratz 357 42.2 N29 10.5
14	211 21.4	39 07.9 54.4	327 40.3 43.8	74 19.1 59.4	343 30.8 43.1	Altair 27 42.3 S46 53.3
15	226 23.8	54 07.5 . . 53.2	342 41.0 . . 44.1	89 21.1 . . 59.3	358 33.0 . . 43.1	Ankaa 353 14.5 S42 13.4
16	241 26.3	69 07.1 52.0	357 41.6 44.4	104 23.1 59.1	13 35.3 43.2	Antares 112 25.3 S26 27.7
17	256 28.7	84 06.6 50.8	12 42.2 44.7	119 25.1 59.0	28 37.5 43.3	
18	271 31.2	99 06.2 N 4 49.6	27 42.9 S22 45.0	134 27.1 N16 58.9	43 39.8 S15 43.3	Arcturus 145 55.2 N19 06.6
19	286 33.7	114 05.8 48.4	42 43.5 45.3	149 29.1 58.8	58 42.0 43.4	Atria 107 26.4 S69 03.3
20	301 36.1	129 05.4 47.1	57 44.2 45.6	164 31.1 58.6	73 44.2 43.5	Avior 234 18.0 S59 33.3
21	316 38.6	144 05.0 . . 45.9	72 44.8 . . 45.9	179 33.1 . . 58.5	88 46.5 . . 43.5	Bellatrix 278 31.0 N 6 21.7
22	331 41.1	159 04.6 44.7	87 45.4 46.2	194 35.1 58.4	103 48.7 43.6	Betelgeuse 271 00.3 N 7 24.5
23	346 43.5	174 04.2 43.5	102 46.1 46.5	209 37.1 58.2	118 51.0 43.7	
23 00	1 46.0	189 03.8 N 4 42.3	117 46.7 S22 46.9	224 39.1 N16 58.1	133 53.2 S15 43.7	Canopus 263 55.8 S52 42.1
01	16 48.5	204 03.4 41.0	132 47.3 47.2	239 41.1 58.0	148 55.4 43.8	Capella 280 33.1 N46 00.4
02	31 50.9	219 03.0 39.8	147 48.0 47.5	254 43.1 57.9	163 57.7 43.9	Deneb 49 30.6 N45 20.4
03	46 53.4	234 02.6 . . 38.6	162 48.6 . . 47.8	269 45.1 . . 57.7	178 59.9 . . 43.9	Denébola 182 33.1 N14 29.5
04	61 55.8	249 02.2 37.4	177 49.3 48.1	284 47.2 57.6	194 02.2 44.0	Diphda 348 54.7 S17 54.2
05	76 58.3	264 01.8 36.2	192 49.9 48.4	299 49.2 57.5	209 04.4 44.1	
06	92 00.8	279 01.3 N 4 35.0	207 50.5 S22 48.7	314 51.2 N16 57.3	224 06.7 S15 44.1	Dubhe 193 51.4 N61 40.2
07	107 03.2	294 00.9 33.7	222 51.2 49.0	329 53.2 57.2	239 08.9 44.2	Elnath 278 11.5 N28 37.0
08	122 05.7	309 00.5 32.5	237 51.8 49.3	344 55.2 57.1	254 11.1 44.3	Eltanin 90 45.8 N51 29.7
09	137 08.2	324 00.1 . . 31.3	252 52.4 . . 49.6	359 57.2 . . 57.0	269 13.4 . . 44.3	Enif 33 46.0 N 9 56.9
10	152 10.6	338 59.7 30.1	267 53.1 49.9	14 59.2 56.8	284 15.6 44.4	Fomalhaut 15 22.7 S29 32.5
11	167 13.1	353 59.3 28.9	282 53.7 50.2	30 01.2 56.7	299 17.8 44.5	
12	182 15.6	8 58.9 N 4 27.6	297 54.3 S22 50.5	45 03.2 N16 56.6	314 20.1 S15 44.5	Gacrux 172 00.4 S57 11.7
13	197 18.0	23 58.5 26.4	312 55.0 50.8	60 05.2 56.4	329 22.3 44.6	Gienah 175 51.7 S17 37.3
14	212 20.5	38 58.1 25.2	327 55.6 51.1	75 07.2 56.3	344 24.6 44.7	Hadar 148 47.1 S60 26.6
15	227 23.0	53 57.7 . . 24.0	342 56.2 . . 51.4	90 09.2 . . 56.2	359 26.8 . . 44.7	Hamal 327 59.5 N23 31.9
16	242 25.4	68 57.3 22.7	357 56.9 51.7	105 11.2 56.1	14 29.0 44.8	Kaus Aust. 83 42.6 S34 22.5
17	257 27.9	83 56.9 21.5	12 57.5 52.0	120 13.2 55.9	29 31.3 44.9	
18	272 30.3	98 56.5 N 4 20.3	27 58.1 S22 52.4	135 15.2 N16 55.8	44 33.5 S15 44.9	Kochab 137 21.1 N74 06.0
19	287 32.8	113 56.1 19.1	42 58.8 52.7	150 17.2 55.7	59 35.8 45.0	Markab 13 37.1 N15 17.3
20	302 35.3	128 55.7 17.9	57 59.4 53.0	165 19.2 55.6	74 38.0 45.1	Menkar 314 13.9 N 4 08.9
21	317 37.7	143 55.3 . . 16.6	73 00.0 . . 53.3	180 21.2 . . 55.4	89 40.2 . . 45.1	Menkent 148 06.8 S36 26.5
22	332 40.2	158 54.9 15.4	88 00.6 53.6	195 23.2 55.3	104 42.5 45.2	Miaplacidus 221 40.0 S69 46.6
23	347 42.7	173 54.5 14.2	103 01.3 53.9	210 25.2 55.2	119 44.7 45.3	
24 00	2 45.1	188 54.1 N 4 13.0	118 01.9 S22 54.2	225 27.2 N16 55.0	134 47.0 S15 45.3	Mirfak 308 38.7 N49 54.6
01	17 47.6	203 53.6 11.7	133 02.5 54.5	240 29.2 54.9	149 49.2 45.4	Nunki 75 57.2 S26 16.5
02	32 50.1	218 53.2 10.5	148 03.2 54.8	255 31.2 54.8	164 51.4 45.5	Peacock 53 17.6 S56 41.2
03	47 52.5	233 52.8 . . 09.3	163 03.8 . . 55.1	270 33.2 . . 54.7	179 53.7 . . 45.6	Póllux 243 26.8 N27 59.2
04	62 55.0	248 52.4 08.1	178 04.4 55.4	285 35.2 54.5	194 55.9 45.6	Procyon 244 59.0 N 5 11.1
05	77 57.4	263 52.0 06.8	193 05.0 55.7	300 37.2 54.4	209 58.1 45.7	
06	92 59.9	278 51.6 N 4 05.6	208 05.7 S22 56.0	315 39.2 N16 54.3	225 00.4 S15 45.8	Rasalhague 96 05.7 N12 33.3
07	108 02.4	293 51.2 04.4	223 06.3 56.3	330 41.2 54.1	240 02.6 45.8	Régulus 207 42.9 N11 53.7
08	123 04.8	308 50.8 03.2	238 06.9 56.6	345 43.2 54.0	255 04.9 45.9	Rigel 281 11.2 S 8 11.1
09	138 07.3	323 50.4 . . 01.9	253 07.5 . . 56.9	0 45.3 . . 53.9	270 07.1 . . 46.0	Rigel Kent. 139 51.0 S60 53.7
10	153 09.8	338 50.0 4 00.7	268 08.2 57.2	15 47.3 53.8	285 09.3 46.0	Sabik 102 11.6 S15 44.3
11	168 12.2	353 49.6 3 59.5	283 08.8 57.5	30 49.3 53.6	300 11.6 46.1	
12	183 14.7	8 49.2 N 3 58.3	298 09.4 S22 57.7	45 51.3 N16 53.5	315 13.8 S15 46.2	Schedar 349 38.9 N56 37.1
13	198 17.2	23 48.8 57.0	313 10.0 58.0	60 53.3 53.4	330 16.0 46.2	Shaula 96 20.8 S37 06.7
14	213 19.6	38 48.4 55.8	328 10.7 58.3	75 55.3 53.3	345 18.3 46.3	Sirius 258 33.0 S16 44.2
15	228 22.1	53 48.0 . . 54.6	343 11.3 . . 58.6	90 57.3 . . 53.1	0 20.5 . . 46.4	Spica 158 30.6 S11 14.1
16	243 24.6	68 47.6 53.4	358 11.9 58.9	105 59.3 53.0	15 22.7 46.4	Suhail 222 52.1 S43 29.4
17	258 27.0	83 47.2 52.1	13 12.5 59.2	121 01.3 52.9	30 25.0 46.5	
18	273 29.5	98 46.8 N 3 50.9	28 13.2 S22 59.5	136 03.3 N16 52.7	45 27.2 S15 46.6	Vega 80 38.3 N38 48.3
19	288 31.9	113 46.4 49.7	43 13.8 22 59.8	151 05.3 52.6	60 29.5 46.6	Zuben'ubi 137 04.7 S16 06.0
20	303 34.4	128 46.0 48.4	58 14.4 23 00.1	166 07.3 52.5	75 31.7 46.7	
21	318 36.9	143 45.6 . . 47.2	73 15.0 . . 00.4	181 09.3 . . 52.4	90 33.9 . . 46.8	AHS Paso Mer.
22	333 39.3	158 45.2 46.0	88 15.7 00.7	196 11.3 52.2	105 36.2 46.8	Venus 187 17.8 11 24
23	348 41.8	173 44.8 44.8	103 16.3 01.0	211 13.3 52.1	120 38.4 46.9	Marte 116 00.7 16 08
						Júpiter 222 53.2 9 00
						Saturno 132 07.2 15 02
Paso Mer. 23 49.0	v -0.4 d 1.2		v 0.6 d 0.3	v 2.0 d 0.1	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>ν</i>	Dec	<i>d</i>		Ph	Náut.		Civil	22	23	24	25		
L U N E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	h m	
	00	181 46.4	N 0 25.8	206 14.5	14.9	N 6 33.2	8.9 54.1	N 70	03 04	04 34	05 42	03 05	04 40	06 15	07 52		
	01	196 46.6	24.8	220 48.4	14.9	6 24.3	8.9 54.2	68	03 23	04 42	05 43	03 14	04 43	06 12	07 43		
	02	211 46.9	23.8	235 22.3	14.9	6 15.4	9.0 54.2	66	03 38	04 48	05 44	03 21	04 45	06 10	07 36		
	03	226 47.1	22.8	249 56.2	15.0	6 06.4	9.0 54.2	64	03 50	04 53	05 45	03 27	04 47	06 08	07 30		
	04	241 47.3	21.9	264 30.2	14.9	5 57.4	9.0 54.2	62	03 59	04 58	05 45	03 32	04 49	06 06	07 25		
	05	256 47.5	20.9	279 04.1	14.9	5 48.4	9.1 54.2	60	04 08	05 01	05 46	03 36	04 50	06 05	07 20		
	06	271 47.7	N 0 19.9	293 38.0	15.0	N 5 39.3	9.0 54.2	N 58	04 14	05 05	05 46	03 40	04 51	06 03	07 16		
	07	286 48.0	19.0	308 12.0	14.9	5 30.3	9.1 54.2	56	04 20	05 07	05 47	03 43	04 52	06 02	07 13		
	08	301 48.2	18.0	322 45.9	14.9	5 21.2	9.2 54.2	54	04 25	05 10	05 47	03 46	04 53	06 01	07 10		
	09	316 48.4	17.0	337 19.8	15.0	5 12.0	9.1 54.2	52	04 30	05 12	05 47	03 49	04 54	06 00	07 07		
	10	331 48.6	16.0	351 53.8	15.0	5 02.9	9.2 54.2	50	04 34	05 14	05 47	03 52	04 55	06 00	07 05		
	11	346 48.8	15.1	6 27.8	14.9	4 53.7	9.2 54.2	45	04 37	05 15	05 48	03 54	04 56	05 59	07 03		
	12	1 49.1	N 0 14.1	21 01.7	15.0	N 4 44.5	9.2 54.2	N 40	04 44	05 19	05 48	03 58	04 57	05 57	06 58		
	13	16 49.3	13.1	35 35.7	14.9	4 35.3	9.3 54.2	35	04 50	05 21	05 48	04 02	04 59	05 56	06 54		
	14	31 49.5	12.1	50 09.6	15.0	4 26.0	9.2 54.3	30	04 54	05 23	05 49	04 06	05 00	05 55	06 50		
	15	46 49.7	11.2	64 43.6	15.0	4 16.8	9.3 54.3	20	04 57	05 25	05 49	04 09	05 01	05 54	06 47		
	16	61 49.9	10.2	79 17.6	14.9	4 07.5	9.3 54.3	N 10	05 01	05 27	05 49	04 14	05 03	05 52	06 42		
	17	76 50.1	09.2	93 51.5	15.0	3 58.2	9.3 54.3	0	05 04	05 28	05 49	04 19	05 04	05 51	06 38		
	18	91 50.4	N 0 08.3	108 25.5	14.9	N 3 48.9	9.4 54.3	S 10	05 04	05 28	05 49	04 23	05 06	05 49	06 33		
	19	106 50.6	07.3	122 59.4	15.0	3 39.5	9.4 54.3	20	05 01	05 27	05 49	04 27	05 09	05 46	06 25		
	20	121 50.8	06.3	137 33.4	15.0	3 30.1	9.3 54.3	30	04 57	05 25	05 49	04 32	05 11	05 45	06 20		
	21	136 51.0	05.3	152 07.4	14.9	3 20.8	9.4 54.3	35	04 54	05 23	05 48	04 40	05 12	05 44	06 17		
	22	151 51.2	04.4	166 41.3	15.0	3 11.4	9.5 54.3	40	04 49	05 21	05 48	04 43	05 13	05 43	06 13		
	23	166 51.5	03.4	181 15.3	14.9	3 01.9	9.4 54.3	45	04 44	05 18	05 48	04 47	05 15	05 42	06 10		
M A R T E S	2300	181 51.7	N 0 02.4	195 49.2	15.0	N 2 52.5	9.4 54.3	S 50	04 37	05 15	05 47	04 52	05 16	05 40	06 05		
	01	196 51.9	01.4	210 23.2	14.9	2 43.1	9.5 54.4	52	04 33	05 13	05 47	04 54	05 17	05 40	06 03		
	02	211 52.1	N 00.5	224 57.1	14.9	2 33.6	9.5 54.4	54	04 29	05 11	05 47	04 56	05 18	05 39	06 01		
	03	226 52.3	S 00.5	239 31.0	15.0	2 24.1	9.5 54.4	56	04 25	05 09	05 46	04 59	05 19	05 38	05 58		
	04	241 52.6	01.5	254 05.0	14.9	2 14.6	9.5 54.4	58	04 20	05 07	05 46	05 02	05 20	05 37	05 56		
	05	256 52.8	02.5	268 38.9	14.9	2 05.1	9.5 54.4	S 60	04 14	05 04	05 45	05 05	05 21	05 36	05 53		
	06	271 53.0	S 03.4	283 12.8	14.9	N 1 55.6	9.5 54.4	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna						
	07	286 53.2	04.4	297 46.7	14.9	1 46.1	9.6 54.4			Civil	Náut.	22	23	24	25		
	08	301 53.4	05.4	312 20.6	14.9	1 36.5	9.5 54.4										
	09	316 53.6	06.3	326 54.5	14.9	1 27.0	9.6 54.4										
	10	331 53.9	07.3	341 28.4	14.9	1 17.4	9.6 54.5	N 72	h m	h m	h m	h m	h m	h m	h m	h m	
	11	346 54.1	08.3	356 02.3	14.8	1 07.8	9.5 54.5	N 70	18 00	19 08	20 37	17 33	17 27	17 22	17 16		
	12	1 54.3	S 09.3	10 36.1	14.9	N 0 58.3	9.6 54.5	N 68	17 59	19 00	20 18	17 27	17 27	17 27	17 27	17 27	
	13	16 54.5	10.2	25 10.0	14.8	0 48.7	9.6 54.5	66	17 59	18 54	20 04	17 23	17 27	17 31	17 36		
	14	31 54.7	11.2	39 43.8	14.9	0 39.1	9.6 54.5	64	17 58	18 49	19 52	17 20	17 27	17 35	17 43		
	15	46 55.0	12.2	54 17.7	14.8	0 29.5	9.6 54.5	62	17 58	18 45	19 43	17 17	17 27	17 38	17 49		
	16	61 55.2	13.2	68 51.5	14.8	0 19.9	9.6 54.5	60	17 58	18 42	19 35	17 14	17 27	17 40	17 55		
	17	76 55.4	14.1	83 25.3	14.8	0 10.3	9.7 54.5	60	17 57	18 39	19 28	17 12	17 27	17 43	18 00		
	18	91 55.6	S 015.1	97 59.1	14.7	N 0 00.6	9.6 54.6	N 58	17 57	18 36	19 23	17 09	17 27	17 45	18 04		
	19	106 55.8	16.1	112 32.8	14.8	S 0 09.0	9.6 54.6	56	17 57	18 34	19 18	17 08	17 27	17 47	18 08		
	20	121 56.0	17.1	127 06.6	14.8	0 18.6	9.7 54.6	54	17 57	18 32	19 14	17 06	17 27	17 48	18 11		
	21	136 56.3	18.0	141 40.4	14.7	0 28.3	9.6 54.6	52	17 56	18 30	19 10	17 04	17 27	17 50	18 14		
	22	151 56.5	19.0	156 14.1	14.7	0 37.9	9.6 54.6	50	17 56	18 28	19 06	17 03	17 27	17 51	18 17		
	23	166 56.7	20.0	170 47.8	14.7	0 47.5	9.7 54.6	45	17 56	18 25	19 00	17 00	17 27	17 54	18 23		
	M I É R C O L E S	2400	181 56.9	S 0 20.9	185 21.5	14.7	S 0 57.2	9.6 54.6	N 40	17 56	18 23	18 54	16 57	17 27	17 57	18 28	
01		196 57.1	21.9	199 55.2	14.7	1 06.8	9.6 54.6	35	17 56	18 21	18 50	16 55	17 27	17 59	18 33		
02		211 57.4	22.9	214 28.9	14.6	1 16.4	9.7 54.7	30	17 56	18 19	18 47	16 53	17 27	18 01	18 36		
03		226 57.6	23.9	229 02.5	14.6	1 26.1	9.6 54.7	20	17 55	18 17	18 43	16 50	17 27	18 04	18 43		
04		241 57.8	24.8	243 36.1	14.6	1 35.7	9.7 54.7	N 10	17 56	18 16	18 41	16 47	17 27	18 07	18 49		
05		256 58.0	25.8	258 09.7	14.6	1 45.4	9.6 54.7	0	17 56	18 16	18 40	16 44	17 27	18 10	18 55		
06		271 58.2	S 0 26.8	272 43.3	14.6	S 1 55.0	9.6 54.7	S 10	17 56	18 17	18 41	16 41	17 27	18 13	19 01		
07		286 58.4	27.8	287 16.9	14.6	2 04.6	9.6 54.7	20	17 56	18 18	18 44	16 38	17 27	18 16	19 07		
08		301 58.7	28.7	301 50.5	14.5	2 14.2	9.7 54.7	30	17 57	18 21	18 48	16 34	17 26	18 19	19 13		
09		316 58.9	29.7	316 24.0	14.5	2 23.9	9.6 54.8	35	17 57	18 22	18 52	16 32	17 26	18 21	19 17		
10		331 59.1	30.7	330 57.5	14.5	2 33.5	9.6 54.8	40	17 57	18 25	18 56	16 30	17 26	18 24	19 22		
11		346 59.3	31.7	345 31.0	14.4	2 43.1	9.6 54.8	45	17 58	18 27	19 02	16 27	17 26	18 26	19 27		
12		1 59.5	S 0 32.6	0 04.4	14.5	S 2 52.7	9.6 54.8	S 50	17 59	18 31	19 09	16 24	17 26	18 29	19 33		
13		16 59.7	33.6	14 37.9	14.4	3 02.3	9.6 54.8	52	17 59	18 33	19 13	16 22	17 26	18 31	19 36		
14		32 00.0	34.6	29 11.3	14.4	3 11.9	9.6 54.8	54	17 59	18 35	19 17	16 20	17 26	18 32	19 40		
15		47 00.2	35.6	43 44.7	14.3	3 21.5	9.5 54.8	56	18 00	18 37	19 21	16 18	17 26	18 34	19 43		
16		62 00.4	36.5	58 18.0	14.4	3 31.0	9.6 54.9	58	18 00	18 40	19 27	16 16	17 26	18 36	19 47		
17		77 00.6	37.5	72 51.4	14.3	3 40.6	9.5 54.9	S 60	18 01	18 42	19 33	16 14	17 26	18 38	19 51		
18		92 00.8	S 0 38.5	87 24.7	14.3	S 3 50.1	9.6 54.9										
19		107 01.0	39.4	101 58.0	14.2	3 59.7	9.5 54.9										
20		122 01.3	40.4	116 31.2	14.3	4 09.2	9.5 54.9										

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.8	JÚPITER -1.9	SATURNO+0.6	ESTRELLAS		
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	AHGr	AHS	Dec
2500	3 44.3	188 44.4 N 3 43.5	118 16.9 S23 01.3	226 15.4 N16 52.0	135 40.6 S15 47.0	Acamar	315 17.4	S40 14.6
	01 18 46.7	203 44.0 42.3	133 17.5 01.6	241 17.4 51.8	150 42.9 47.1	Achernar	335 25.7	S57 09.6
	02 33 49.2	218 43.6 41.1	148 18.1 01.9	256 19.4 51.7	165 45.1 47.1	Acrux	173 08.9	S63 10.8
	03 48 51.7	233 43.2 39.8	163 18.8 02.2	271 21.4 51.6	180 47.3 47.2	Adhara	255 11.9	S28 59.4
	04 63 54.1	248 42.8 38.6	178 19.4 02.5	286 23.4 51.5	195 49.6 47.3	Aldebarán	290 48.2	N16 32.2
J U E V E S	05 78 56.6	263 42.4 37.4	193 20.0 02.8	301 25.4 51.3	210 51.8 47.3			
	06 93 59.0	278 42.0 N 3 36.1	208 20.6 S23 03.0	316 27.4 N16 51.2	225 54.0 S15 47.4	Alioth	166 20.6	N55 52.9
	07 109 01.5	293 41.6 34.9	223 21.2 03.3	331 29.4 51.1	240 56.3 47.5	Alkaid	152 58.7	N49 14.6
	08 124 04.0	308 41.2 33.7	238 21.8 03.6	346 31.4 51.0	255 58.5 47.5	Al Na'ir	27 42.3	S46 53.3
	09 139 06.4	323 40.8 32.5	253 22.5 03.9	1 33.4 50.8	271 00.8 47.6	Anilam	275 45.4	S 1 11.6
	10 154 08.9	338 40.4 31.2	268 23.1 04.2	16 35.4 50.7	286 03.0 47.7	Alphard	217 55.5	S 8 43.3
	11 169 11.4	353 40.0 30.0	283 23.7 04.5	31 37.4 50.6	301 05.2 47.7			
	12 184 13.8	8 39.6 N 3 28.8	298 24.3 S23 04.8	46 39.5 N16 50.5	316 07.5 S15 47.8	Alphecca	126 10.5	N26 40.3
	13 199 16.3	23 39.2 27.5	313 24.9 05.1	61 41.5 50.3	331 09.7 47.9	Alpheratz	357 42.2	N29 10.5
	14 214 18.8	38 38.8 26.3	328 25.5 05.4	76 43.5 50.2	346 11.9 47.9	Altair	62 07.3	N 8 54.8
	15 229 21.2	53 38.4 25.1	343 26.2 05.7	91 45.5 50.1	1 14.2 48.0	Ankaa	353 14.5	S42 13.4
	16 244 23.7	68 38.0 23.8	358 26.8 05.9	106 47.5 49.9	16 16.4 48.1	Antares	112 25.3	S26 27.7
	17 259 26.2	83 37.6 22.6	13 27.4 06.2	121 49.5 49.8	31 18.6 48.1			
	18 274 28.6	98 37.2 N 3 21.4	28 28.0 S23 06.5	136 51.5 N16 49.7	46 20.9 S15 48.2	Arcturus	145 55.2	N19 06.6
	19 289 31.1	113 36.8 20.1	43 28.6 06.8	151 53.5 49.6	61 23.1 48.3	Atria	107 26.5	S69 03.3
	20 304 33.5	128 36.4 18.9	58 29.2 07.1	166 55.5 49.4	76 25.3 48.4	Avior	234 17.9	S59 33.3
	21 319 36.0	143 36.0 17.7	73 29.8 07.4	181 57.6 49.3	91 27.6 48.4	Bellatrix	278 31.0	N 6 21.7
	22 334 38.5	158 35.6 16.4	88 30.5 07.7	196 59.6 49.2	106 29.8 48.5	Betelgeuse	271 00.3	N 7 24.5
	23 349 40.9	173 35.2 15.2	103 31.1 08.0	212 01.6 49.1	121 32.0 48.6			
	2600	4 43.4	188 34.8 N 3 14.0	118 31.7 S23 08.2	227 03.6 N16 48.9	136 34.3 S15 48.6	Canopus	263 55.8	S52 42.1
01 19 45.9		203 34.4 12.7	133 32.3 08.5	242 05.6 48.8	151 36.5 48.7	Capella	280 33.0	N46 00.4
02 34 48.3		218 34.0 11.5	148 32.9 08.8	257 07.6 48.7	166 38.7 48.8	Deneb	49 30.6	N45 20.4
03 49 50.8		233 33.6 10.3	163 33.5 09.1	272 09.6 48.5	181 41.0 48.8	Denebola	182 33.1	N14 29.5
04 64 53.3		248 33.2 09.0	178 34.1 09.4	287 11.6 48.4	196 43.2 48.9	Diphda	348 54.7	S17 54.2
05 79 55.7		263 32.8 07.8	193 34.7 09.7	302 13.6 48.3	211 45.4 49.0			
06 94 58.2		278 32.4 N 3 06.6	208 35.4 S23 09.9	317 15.7 N16 48.2	226 47.7 S15 49.0	Dubhe	193 51.4	N61 40.2
07 110 00.6		293 32.0 05.3	223 36.0 10.2	332 17.7 48.0	241 49.9 49.1	Elnath	278 11.4	N28 37.0
08 125 03.3		308 31.6 04.1	238 36.6 10.5	347 19.7 47.9	256 52.1 49.2	Eltanin	90 45.8	N51 29.7
09 140 05.6		323 31.2 02.9	253 37.2 10.8	2 21.7 47.8	271 54.4 49.2	Enif	33 46.0	N 9 56.9
10 155 08.0		338 30.8 01.6	268 37.8 11.1	17 23.7 47.7	286 56.6 49.3	Fomalhaut	15 22.7	S29 32.5
11 170 10.5		353 30.4 00.4	283 38.4 11.4	32 25.7 47.5	301 58.8 49.4			
12 185 13.0		8 30.0 N 2 59.1	298 39.0 S23 11.6	47 27.7 N16 47.4	317 01.0 S15 49.5	Gacrux	172 00.4	S57 11.7
13 200 15.4		23 29.6 57.9	313 39.6 11.9	62 29.8 47.3	332 03.3 49.5	Gienah	175 51.7	S17 37.3
14 215 17.9		38 29.2 56.7	328 40.2 12.2	77 31.8 47.2	347 05.5 49.6	Hadar	148 47.1	S60 26.6
15 230 20.4		53 28.8 55.4	343 40.8 12.5	92 33.8 47.0	2 07.7 49.7	Hamal	327 59.4	N23 31.9
16 245 22.8		68 28.4 54.2	358 41.4 12.8	107 35.8 46.9	17 10.0 49.7	Kaus Aust.	83 42.6	S34 22.5
17 260 25.3		83 28.0 53.0	13 42.0 13.0	122 37.8 46.8	32 12.2 49.8			
18 275 27.8		98 27.6 N 2 51.7	28 42.7 S23 13.3	137 39.8 N16 46.7	47 14.4 S15 49.9	Kochab	137 21.1	N74 06.0
19 290 30.2		113 27.2 50.5	43 43.3 13.6	152 41.8 46.5	62 16.7 49.9	Markab	13 37.1	N15 17.3
20 305 32.7	128 26.8 49.3	58 43.9 13.9	167 43.9 46.4	77 18.9 50.0	Menkar	314 13.9	N 4 08.9	
21 320 35.1	143 26.5 48.0	73 44.5 14.2	182 45.9 46.3	92 21.1 50.1	Menkent	148 06.8	S 3 46.2	
22 335 37.6	158 26.1 46.8	88 45.1 14.4	197 47.9 46.1	107 23.4 50.1	Miaplacidus	221 40.0	S69 46.5	
23 350 40.1	173 25.7 45.5	103 45.7 14.7	212 49.9 46.0	122 25.6 50.2				
2700	5 42.5	188 25.3 N 2 44.3	118 46.3 S23 15.0	227 51.9 N16 45.9	137 27.8 S15 50.3	Mirfak	308 38.7	N49 54.4
	01 20 45.0	203 24.9 43.1	133 46.9 15.3	242 53.9 45.8	152 30.0 50.4	Nunki	75 57.2	S26 16.5
	02 35 47.5	218 24.5 41.8	148 47.5 15.6	257 55.9 45.6	167 32.3 50.4	Peacock	53 17.6	S56 41.2
	03 50 49.9	233 24.1 40.6	163 48.1 15.8	272 58.0 45.5	182 34.5 50.5	Póllux	243 26.8	N27 59.2
	04 65 52.4	248 23.7 39.3	178 48.7 16.1	288 00.0 45.4	197 36.7 50.6	Procyon	244 58.9	N 5 11.1
	05 80 54.9	263 23.3 38.1	193 49.3 16.4	303 02.0 45.3	212 39.0 50.6			
	06 95 57.3	278 22.9 N 2 36.9	208 49.9 S23 16.7	318 04.0 N16 45.1	227 41.2 S15 50.7	Rasalhague	96 05.7	N12 33.3
	07 110 59.8	293 22.5 35.6	223 50.5 16.9	333 06.0 45.0	242 43.4 50.8	Régulus	207 42.9	N11 53.7
	08 126 02.3	308 22.1 34.4	238 51.1 17.2	348 08.0 44.9	257 45.7 50.8	Rigel	281 11.1	S 8 11.1
	09 141 04.7	323 21.7 33.2	253 51.7 17.5	3 10.1 44.8	272 47.9 50.9	Rigel Kent.	139 51.0	S60 53.7
	10 156 07.2	338 21.3 31.9	268 52.3 17.8	18 12.1 44.6	287 50.1 51.0	Sabik	102 11.6	S15 44.3
	11 171 09.6	353 20.9 30.7	283 52.9 18.0	33 14.1 44.5	302 52.3 51.0			
	12 186 12.1	8 20.5 N 2 29.4	298 53.5 S23 18.3	48 16.1 N16 44.4	317 54.6 S15 51.1	Schedar	349 38.9	N56 37.1
	13 201 14.6	23 20.1 28.2	313 54.1 18.6	63 18.1 44.3	332 56.8 51.2	Shaula	96 20.8	S37 06.7
	14 216 17.0	38 19.7 27.0	328 54.7 18.9	78 20.1 44.1	347 59.0 51.3	Sirius	258 33.0	S16 44.2
	15 231 19.5	53 19.3 25.7	343 55.3 19.1	93 22.2 44.0	3 01.3 51.3	Spica	158 30.6	N11 14.1
	16 246 22.0	68 18.9 24.5	358 55.9 19.4	108 24.2 43.9	18 03.5 51.4	Suhail	222 52.1	S43 29.4
	17 261 24.4	83 18.5 23.2	13 56.5 19.7	123 26.2 43.8	33 05.7 51.5			
	18 276 26.9	98 18.1 N 2 22.0	28 57.1 S23 19.9	138 28.2 N16 43.6	48 08.0 S15 51.5	Vega	80 38.3	N38 48.3
	19 291 29.4	113 17.7 20.7	43 57.7 20.2	153 30.2 43.5	63 10.2 51.6	Zuben'ubi	137 04.7	S16 06.0
20 306 31.8	128 17.4 19.5	58 58.3 20.5	168 32.3 43.4	78 12.4 51.7				
21 321 34.3	143 17.0 18.3	73 58.9 20.8	183 34.3 43.3	93 14.6 51.7		AHS	Paso Mer.	
22 336 36.7	158 16.6 17.0	88 59.5 21.0	198 36.3 43.1	108 16.9 51.8	Venus	183 51.4	h m	
23 351 39.2	173 16.2 15.8	104 00.1 21.3	213 38.3 43.0	123 19.1 51.9	Marte	113 48.3	16 05	
					Júpiter	222 20.2	8 51	
					Saturno	131 50.9	14 52	
Paso Mer. 23 37.2	v -0.4 d 1.2		v 0.6 d 0.3	v 2.0 d 0.1	v 2.2 d 0.1			

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>ν</i>	Dec	<i>d</i>		Ph	Náut.		Civil	25	26	27	28
J U E V E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m
	00	182 02.1	S 0 44.3	174 44.0	14.1	S 4 47.2	9.4 55.0	N 70	03 21	04 48	05 56	07 52	09 33	11 20	13 15
	01	197 02.3	45.3	189 17.1	14.1	4 56.6	9.5 55.0	68	03 38	04 54	05 55	07 43	09 17	10 53	12 31
	02	212 02.6	46.3	203 50.2	14.0	5 06.1	9.4 55.0	66	03 50	04 59	05 55	07 36	09 04	10 33	12 02
	03	227 02.8	47.2	218 23.2	14.1	5 15.5	9.4 55.0	64	04 01	05 03	05 54	07 30	08 53	10 18	11 41
	04	242 03.0	48.2	232 56.3	14.0	5 24.9	9.4 55.0	62	04 09	05 06	05 54	07 25	08 44	10 05	11 24
	05	257 03.2	49.2	247 29.3	13.9	5 34.3	9.3 55.1	60	04 16	05 09	05 54	07 20	08 37	09 54	11 09
	06	272 03.4	S 0 50.2	262 02.2	13.9	S 5 43.6	9.4 55.1	N 58	04 22	05 12	05 53	07 16	08 30	09 45	10 58
	07	287 03.6	51.1	276 35.1	13.9	5 53.0	9.3 55.1	56	04 27	05 14	05 53	07 13	08 25	09 37	10 47
	08	302 03.8	52.1	291 08.0	13.9	6 02.3	9.3 55.1	54	04 32	05 16	05 53	07 10	08 20	09 29	10 38
	09	317 04.1	53.1	305 40.9	13.8	6 11.6	9.3 55.1	52	04 36	05 17	05 53	07 07	08 15	09 23	10 30
	10	332 04.3	54.1	320 13.7	13.8	6 20.9	9.2 55.1	50	04 39	05 19	05 52	07 05	08 11	09 17	10 23
	11	347 04.5	55.0	334 46.5	13.8	6 30.1	9.3 55.2	45	04 42	05 20	05 52	07 03	08 07	09 12	10 17
	12	2 04.7	S 0 56.0	349 19.3	13.7	S 6 39.4	9.2 55.2	N 40	04 48	05 22	05 52	06 58	07 59	09 01	10 03
	13	17 04.9	57.0	3 52.0	13.7	6 48.6	9.1 55.2	35	04 53	05 24	05 51	06 54	07 53	08 52	09 52
	14	32 05.1	58.0	18 24.7	13.6	6 57.7	9.2 55.2	30	04 56	05 26	05 51	06 50	07 47	08 44	09 43
	15	47 05.3	58.9	32 57.3	13.6	7 06.9	9.1 55.2	20	04 59	05 27	05 50	06 47	07 42	08 38	09 34
	16	62 05.6	0 59.9	47 29.9	13.6	7 16.0	9.1 55.2	N 10	05 02	05 28	05 50	06 42	07 33	08 26	09 20
	17	77 05.8	1 00.9	62 02.5	13.5	7 25.1	9.1 55.3	0	05 04	05 28	05 49	06 38	07 26	08 16	09 07
	18	92 06.0	S 1 01.8	76 35.0	13.5	S 7 34.2	9.1 55.3	S 10	05 03	05 27	05 48	06 33	07 19	08 06	08 56
	19	107 06.2	02.8	91 07.5	13.5	7 43.3	9.0 55.3	20	05 02	05 26	05 47	06 29	07 12	07 57	08 44
	20	122 06.4	03.8	105 40.0	13.4	7 52.3	9.0 55.3	30	04 59	05 24	05 46	06 25	07 04	07 46	08 32
	21	137 06.6	04.8	120 12.4	13.3	8 01.3	8.9 55.3	35	04 53	05 21	05 45	06 20	06 56	07 35	08 17
	22	152 06.9	05.7	134 44.7	13.4	8 10.2	8.9 55.4	40	04 49	05 19	05 44	06 17	06 51	07 28	08 09
	23	167 07.1	06.7	149 17.1	13.3	8 19.1	8.9 55.4	45	04 44	05 16	05 43	06 13	06 46	07 21	08 00
V I E R N E S	00	182 07.3	S 1 07.7	163 49.4	13.2	S 8 28.0	8.9 55.4	S 50	04 38	05 13	05 42	06 10	06 39	07 12	07 49
	01	197 07.5	08.7	178 21.6	13.2	8 36.9	8.8 55.4	52	04 30	05 08	05 40	06 05	06 32	07 02	07 36
	02	212 07.7	09.6	192 53.8	13.2	8 45.7	8.8 55.4	54	04 26	05 06	05 40	06 03	06 28	06 57	07 30
	03	227 07.9	10.6	207 26.0	13.1	8 54.5	8.7 55.4	56	04 21	05 04	05 39	06 01	06 25	06 52	07 24
	04	242 08.1	11.6	221 58.1	13.1	9 03.2	8.8 55.5	58	04 16	05 01	05 38	05 58	06 20	06 46	07 16
	05	257 08.4	12.6	236 30.2	13.1	9 12.0	8.6 55.5	S 60	04 11	04 58	05 37	05 56	06 16	06 39	07 08
	06	272 08.6	S 1 13.5	251 02.3	13.0	S 9 20.6	8.7 55.5	Ocaso Sol		Crepúsculo		Ocaso Luna			
	07	287 08.8	14.5	265 34.3	12.9	9 29.3	8.6 55.5	Lat.				25	26	27	28
	08	302 09.0	15.5	280 06.2	12.9	9 37.9	8.5 55.5			Civil	Náut.				
	09	317 09.2	16.5	294 38.1	12.9	9 46.4	8.6 55.6					h m	h m	h m	h m
	10	332 09.4	17.4	309 10.0	12.8	9 55.0	8.4 55.6	N 72	h m	h m	h m	h m	h m	h m	h m
	11	347 09.6	18.4	323 41.8	12.8	10 03.4	8.5 55.6	17	45	18 52	20 17	17 16	17 10	17 02	16 51
	12	2 09.8	S 1 19.4	338 13.6	12.7	S 10 11.9	8.4 55.6	N 70	17 45	18 52	20 02	17 27	17 27	17 30	17 35
	13	17 10.1	20.3	352 45.3	12.7	10 20.3	8.3 55.6	68	17 46	18 41	19 49	17 36	17 42	17 51	18 05
	14	32 10.3	21.3	7 17.0	12.6	10 28.6	8.3 55.7	66	17 47	18 38	19 39	17 43	17 53	18 07	18 27
	15	47 10.5	22.3	21 48.6	12.6	10 36.9	8.3 55.7	64	17 47	18 34	19 31	17 49	18 03	18 21	18 45
	16	62 10.7	23.3	36 20.2	12.5	10 45.2	8.2 55.7	62	17 48	18 32	19 24	17 55	18 12	18 32	18 59
	17	77 10.9	24.2	50 51.7	12.5	10 53.4	8.2 55.7	60	17 48	18 29	19 19	18 00	18 19	18 42	19 12
	18	92 11.1	S 1 25.2	65 23.2	12.5	S 11 01.6	8.1 55.7	N 58	17 48	18 27	19 14	18 04	18 25	18 51	19 22
	19	107 11.3	26.2	79 54.7	12.4	11 09.7	8.1 55.7	56	17 49	18 26	19 09	18 08	18 31	18 58	19 32
	20	122 11.5	27.2	94 26.1	12.3	11 17.8	8.0 55.8	54	17 49	18 24	19 06	18 11	18 36	19 05	19 40
	21	137 11.8	28.1	108 57.4	12.3	11 25.8	8.0 55.8	52	17 49	18 23	19 02	18 14	18 41	19 11	19 47
	22	152 12.0	29.1	123 28.7	12.2	11 33.8	7.9 55.8	50	17 50	18 22	19 00	18 17	18 45	19 17	19 54
	23	167 12.2	30.1	137 59.9	12.2	11 41.7	7.9 55.8	45	17 50	18 20	18 54	18 23	18 54	19 29	20 08
	S Á B A D O	00	182 12.4	S 1 31.1	152 31.1	12.2	S 11 49.6	7.8 55.8	N 40	17 51	18 18	18 49	18 28	19 02	19 39	20 20
01		197 12.6	32.0	167 02.3	12.1	11 57.4	7.8 55.9	35	17 51	18 17	18 46	18 33	19 08	19 47	20 30
02		212 12.8	33.0	181 33.4	12.0	12 05.2	7.7 55.9	30	17 52	18 16	18 43	18 36	19 14	19 55	20 39
03		227 13.0	34.0	196 04.4	12.0	12 12.9	7.6 55.9	20	17 53	18 15	18 40	18 43	19 24	20 08	20 54
04		242 13.2	34.9	210 35.4	12.0	12 20.5	7.6 55.9	N 10	17 54	18 15	18 39	18 49	19 33	20 19	21 08
05		257 13.5	35.9	225 06.4	11.9	12 28.1	7.6 55.9	0	17 55	18 15	18 39	18 55	19 41	20 30	21 20
06		272 13.7	S 1 36.9	239 37.3	11.8	S 12 35.7	7.5 56.0	S 10	17 56	18 17	18 41	19 01	19 50	20 40	21 33
07		287 13.9	37.9	254 08.1	11.8	12 43.2	7.4 56.0	20	17 57	18 19	18 45	19 07	19 58	20 52	21 46
08		302 14.1	38.8	268 38.9	11.7	12 50.6	7.4 56.0	30	17 58	18 22	18 50	19 13	20 09	21 05	22 01
09		317 14.3	39.8	283 09.6	11.7	12 58.0	7.3 56.0	35	17 59	18 25	18 54	19 17	20 14	21 12	22 10
10		332 14.5	40.8	297 40.3	11.6	13 05.3	7.3 56.1	40	18 00	18 27	18 59	19 22	20 21	21 21	22 21
11		347 14.7	41.8	312 10.9	11.6	13 12.6	7.2 56.1	45	18 00	18 27	18 59	19 22	20 21	21 21	22 21
12		2 14.9	S 1 42.7	326 41.5	11.5	S 13 19.8	7.1 56.1	S 50	18 02	18 31	19 06	19 27	20 29	21 31	22 32
13		17 15.2	43.7	341 12.0	11.5	13 26.9	7.1 56.1	52	18 03	18 36	19 14	19 33	20 38	21 43	22 47
14		32 15.4	44.7	355 42.5	11.4	13 34.0	7.0 56.1	54	18 04	18 38	19 18	19 36	20 43	21 49	22 54
15		47 15.6	45.7	10 12.9	11.4	13 41.0	6.9 56.2	56	18 05	18 40	19 23	19 40	20 47	21 55	23 01
16		62 15.8	46.6	24 43.3	11.3	13 47.9	6.9 56.2	58	18 06	18 43	19 28	19 43	20 53	22 02	23 10
17		77 16.0	47.6	39 13.6	11.3	13 54.8	6.8 56.2	60	18 07	18 46	19 34	19 47	20 59	22 10	23 19
18		92 16.2	S 1 48.6	53 43.9	11.2	S 14 01.6	6.7 56.2	S 60	18 08	18 50	19 41	19 51	21 05	22 19	23 30
19		107 16.4	49.5	68 14.1	11.1	14 08.3	6.7 56.2	SOL		LUNA					
20		122 16.6	50.5	82 44.2	11.1	14 15.0	6.6 56.3	Día				Paso Mer.		Edad	
21		137 16.8	51.5	97 14.3	11.1	14 21.6	6.6 56.3		Ec. Tiempo	Paso Mer.		Sup.	Inf.		Fase
22		152 17.0	52.5	111 44.4	11.0	14 28.2	6.4 56.3	d	00h	12h					
23		167 17.3	53.4	126 14.4	10.9	S14 34.6	6.4 56.3	25	m s	m s	h m	h m	h m	d	%
		<													

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.8	JÚPITER -1.9	SATURNO +0.6	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
28 00	6 41.7	188 15.8 N 2 14.5	119 00.7 S23 21.6	228 40.3 N16 42.9	138 21.3 S15 51.9	Acamar 315 17.4 S40 14.6
01	21 44.1	203 15.4 13.3	134 01.3 21.8	243 42.3 42.8	153 23.6 52.0	Achernar 335 25.7 S57 09.6
02	36 46.6	218 15.0 12.1	149 01.9 22.1	258 44.4 42.6	168 25.8 52.1	Acrux 173 08.9 S63 10.8
03	51 49.1	233 14.6 . . 10.8	164 02.5 . . 22.4	273 46.4 . . 42.5	183 28.0 . . 52.2	Adhara 255 11.9 S28 59.4
04	66 51.5	248 14.2 09.6	179 03.1 22.6	288 48.4 42.4	198 30.2 52.2	Aldebarán 290 48.2 N16 32.2
05	81 54.0	263 13.8 08.3	194 03.7 22.9	303 50.4 42.3	213 32.5 52.3	
06	96 56.5	278 13.4 N 2 07.1	209 04.3 S23 23.2	318 52.4 N16 42.1	228 34.7 S15 52.4	Alioth 166 20.6 N55 52.9
07	111 58.9	293 13.0 05.8	224 04.9 23.5	333 54.5 42.0	243 36.9 52.4	Alkaid 152 58.7 N49 14.6
08	127 01.4	308 12.6 04.6	239 05.4 23.7	348 56.5 41.9	258 39.1 52.5	Al Na'ir 27 42.3 S46 53.3
09	142 03.9	323 12.2 . . 03.4	254 06.0 . . 24.0	3 58.5 . . 41.8	273 41.4 . . 52.6	Alnilam 275 45.4 S 1 11.6
10	157 06.3	338 11.8 02.1	269 06.6 24.3	19 00.5 41.6	288 43.6 52.6	Alphard 217 55.4 S 8 43.3
11	172 08.8	353 11.4 2 00.9	284 07.2 24.5	34 02.5 41.5	303 45.8 52.7	
12	187 11.2	8 11.0 N 1 59.6	299 07.8 S23 24.8	49 04.6 N16 41.4	318 48.1 S15 52.8	Alphecca 126 10.5 N26 40.3
13	202 13.7	23 10.7 58.4	314 08.4 25.0	64 06.6 41.3	333 50.3 52.9	Alpheratz 357 42.2 N29 10.5
14	217 16.2	38 10.3 57.1	329 09.0 25.3	79 08.6 41.1	348 52.5 52.9	Altair 62 07.3 N 8 54.8
15	232 18.6	53 09.9 . . 55.9	344 09.6 . . 25.6	94 10.6 . . 41.0	3 54.7 . . 53.0	Ankaa 353 14.5 S42 13.4
16	247 21.1	68 09.5 54.7	359 10.2 25.8	109 12.7 40.9	18 57.0 53.1	Antares 112 25.3 S26 27.7
17	262 23.6	83 09.1 53.4	14 10.8 26.1	124 14.7 40.8	33 59.2 53.1	
18	277 26.0	98 08.7 N 1 52.2	29 11.4 S23 26.4	139 16.7 N16 40.6	49 01.4 S15 53.2	Arcturus 145 55.3 N19 06.6
19	292 28.5	113 08.3 50.9	44 12.0 26.6	154 18.7 40.5	64 03.6 53.3	Atria 107 26.5 S69 03.3
20	307 31.0	128 07.9 49.7	59 12.5 26.9	169 20.7 40.4	79 05.9 53.3	Avior 234 17.9 S59 33.3
21	322 33.4	143 07.5 . . 48.4	74 13.1 . . 27.2	184 22.8 . . 40.3	94 08.1 . . 53.4	Bellatrix 278 31.0 N 6 21.7
22	337 35.9	158 07.1 47.2	89 13.7 27.4	199 24.8 40.1	109 10.3 53.5	Betelgeuse 271 00.3 N 7 24.5
23	352 38.3	173 06.7 45.9	104 14.3 27.7	214 26.8 40.0	124 12.5 53.6	
29 00	7 40.8	188 06.3 N 1 44.7	119 14.9 S23 27.9	229 28.8 N16 39.9	139 14.8 S15 53.6	Canopus 263 55.7 S52 42.1
01	22 43.3	203 05.9 43.4	134 15.5 28.2	244 30.9 39.8	154 17.0 53.7	Capella 280 33.0 N46 00.4
02	37 45.7	218 05.5 42.2	149 16.1 28.5	259 32.9 39.6	169 19.2 53.8	Deneb 49 30.6 N45 20.4
03	52 48.2	233 05.1 . . 41.0	164 16.7 . . 28.7	274 34.9 . . 39.5	184 21.4 . . 53.8	Denébola 182 33.1 N14 29.5
04	67 50.7	248 04.8 39.7	179 17.2 29.0	289 36.9 39.4	199 23.7 53.9	Diphda 348 54.7 S17 54.2
05	82 53.1	263 04.4 38.5	194 17.8 29.3	304 39.0 39.3	214 25.9 54.0	
06	97 55.6	278 04.0 N 1 37.2	209 18.4 S23 29.5	319 41.0 N16 39.1	229 28.1 S15 54.0	Dubhe 193 51.4 N61 40.2
07	112 58.1	293 03.6 36.0	224 19.0 29.8	334 43.0 39.0	244 30.3 54.1	Elnath 278 11.4 N28 37.0
08	128 00.5	308 03.2 34.7	239 19.6 30.0	349 45.0 38.9	259 32.6 54.2	Eltanin 90 45.8 N51 29.7
09	143 03.0	323 02.8 . . 33.5	254 20.2 . . 30.3	4 47.1 . . 38.8	274 34.8 . . 54.3	Enif 33 46.0 N 9 56.9
10	158 05.5	338 02.4 32.2	269 20.8 30.5	19 49.1 38.6	289 37.0 54.3	Fomalhaut 15 22.7 S29 32.5
11	173 07.9	353 02.0 31.0	284 21.3 30.8	34 51.1 38.5	304 39.2 54.4	
12	188 10.4	8 01.6 N 1 29.7	299 21.9 S23 31.1	49 53.1 N16 38.4	319 41.5 S15 54.5	Gacrux 172 00.4 S57 11.7
13	203 12.8	23 01.2 28.5	314 22.5 31.3	64 55.1 38.3	334 43.7 54.5	Gienah 175 51.7 S17 37.3
14	218 15.3	38 00.8 27.2	329 23.1 31.6	79 57.2 38.1	349 45.9 54.6	Hadar 148 47.1 S60 26.6
15	233 17.8	53 00.4 . . 26.0	344 23.7 . . 31.8	94 59.2 . . 38.0	4 48.1 . . 54.7	Hamal 327 59.4 N23 31.9
16	248 20.2	68 00.0 24.8	359 24.3 32.1	110 01.2 37.9	19 50.4 54.7	Kaus Aust. 83 42.7 S34 22.5
17	263 22.7	82 59.7 23.5	14 24.9 32.3	125 03.3 37.8	34 52.6 54.8	
18	278 25.2	97 59.3 N 1 22.3	29 25.4 S23 32.6	140 05.3 N16 37.7	49 54.8 S15 54.9	Kochab 137 21.1 N74 06.0
19	293 27.6	112 58.9 21.0	44 26.0 32.9	155 07.3 37.5	64 57.0 55.0	Markab 13 37.1 N15 17.3
20	308 30.1	127 58.5 19.8	59 26.6 33.1	170 09.3 37.4	79 59.3 55.0	Menkar 314 13.9 N 4 08.9
21	323 32.6	142 58.1 . . 18.5	74 27.2 . . 33.4	185 11.4 . . 37.3	95 01.5 . . 55.1	Menkent 148 06.8 S36 26.4
22	338 35.0	157 57.7 17.3	89 27.8 33.6	200 13.4 37.2	110 03.7 55.2	Miaplacidus 221 40.0 S69 46.5
23	353 37.5	172 57.3 16.0	104 28.3 33.9	215 15.4 37.0	125 05.9 55.2	
30 00	8 40.0	187 56.9 N 1 14.8	119 28.9 S23 34.1	230 17.4 N16 36.9	140 08.2 S15 55.3	Mirfak 308 38.7 N49 54.6
01	23 42.4	202 56.5 13.5	134 29.5 34.4	245 19.5 36.8	155 10.4 55.4	Nunki 75 57.2 S26 16.5
02	38 44.9	217 56.1 12.3	149 30.1 34.6	260 21.5 36.7	170 12.6 55.4	Peacock 53 17.6 S56 41.2
03	53 47.3	232 55.7 . . 11.0	164 30.7 . . 34.9	275 23.5 . . 36.5	185 14.8 . . 55.5	Póllux 243 26.8 N27 59.2
04	68 49.8	247 55.3 09.8	179 31.2 35.1	290 25.5 36.4	200 17.0 55.6	Procyon 244 58.9 N 5 11.1
05	83 52.3	262 54.9 08.5	194 31.8 35.4	305 27.6 36.3	215 19.3 55.7	
06	98 54.7	277 54.6 N 1 07.3	209 32.4 S23 35.6	320 29.6 N16 36.2	230 21.5 S15 55.7	Rasalhague 96 05.7 N12 33.3
07	113 57.2	292 54.2 06.0	224 33.0 35.9	335 31.6 36.0	245 23.7 55.8	Régulus 207 42.9 N11 53.7
08	128 59.7	307 53.8 04.8	239 33.6 36.1	350 33.7 35.9	260 25.9 55.9	Rigel 281 11.1 S 8 11.1
09	144 02.1	322 53.4 . . 03.5	254 34.1 . . 36.4	5 35.7 . . 35.8	275 28.2 . . 55.9	Rigel Kent. 139 51.0 S60 53.7
10	159 04.6	337 53.0 02.3	269 34.7 36.6	20 37.7 35.7	290 30.4 56.0	Sabik 102 11.6 S15 44.3
11	174 07.1	352 52.6 1 01.0	284 35.3 36.9	35 39.7 35.6	305 32.6 56.1	
12	189 09.5	7 52.2 N 0 59.8	299 35.9 S23 37.1	50 41.8 N16 35.4	320 34.8 S15 56.2	Schedar 349 38.8 N56 37.2
13	204 12.0	22 51.8 58.5	314 36.4 37.4	65 43.8 35.3	335 37.1 56.2	Shaula 96 20.8 S37 06.7
14	219 14.5	37 51.4 57.3	329 37.0 37.6	80 45.8 35.2	350 39.3 56.3	Sirius 258 33.0 S16 44.2
15	234 16.9	52 51.0 . . 56.0	344 37.6 . . 37.9	95 47.9 . . 35.1	5 41.5 . . 56.4	Spica 158 30.6 S11 14.1
16	249 19.4	67 50.6 54.8	359 38.2 38.1	110 49.9 34.9	20 43.7 56.4	Suhail 222 52.0 S43 29.4
17	264 21.8	82 50.2 53.5	14 38.7 38.4	125 51.9 34.8	35 45.9 56.5	
18	279 24.3	97 49.9 N 0 52.3	29 39.3 S23 38.6	140 54.0 N16 34.7	50 48.2 S15 56.6	Vega 80 38.3 N38 48.3
19	294 26.8	112 49.5 51.0	44 39.9 38.9	155 56.0 34.6	65 50.4 56.6	Zuben'ubi 137 04.7 S16 06.0
20	309 29.2	127 49.1 49.8	59 40.5 39.1	170 58.0 34.4	80 52.6 56.7	
21	324 31.7	142 48.7 . . 48.5	74 41.0 . . 39.4	186 00.0 . . 34.3	95 54.8 . . 56.8	AHS Paso Mer.
22	339 34.2	157 48.3 47.3	89 41.6 39.6	201 02.1 34.2	110 57.0 56.9	Venus 180 25.5 11 28
23	354 36.6	172 47.9 46.0	104 42.2 39.9	216 04.1 34.1	125 59.3 56.9	Marte 111 34.1 16 02
						Júpiter 221 48.0 8 41
						Saturno 131 34.0 14 41

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph	Náut.		Civil	28		29	30	1			
^d ^h	°	'	°	'	°	'	°	'	h	m	h	m	h	m	h	m	h	m
DOMINGO	N 72	03 38	05 02	06 09	13 15	15 43	■	■										
	N 70	03 52	05 06	06 07	12 31	14 06	15 23	16 07										
	68	04 03	05 10	06 05	12 02	13 26	14 36	15 24										
	66	04 11	05 13	06 04	11 41	12 59	14 05	14 56										
	64	04 19	05 15	06 02	11 24	12 38	13 42	14 34										
	62	04 25	05 17	06 01	11 09	12 21	13 24	14 16										
	60	04 30	05 19	06 00	10 58	12 07	13 09	14 02										
	N 58	04 34	05 20	05 59	10 47	11 55	12 56	13 50										
	56	04 38	05 22	05 59	10 38	11 44	12 45	13 39										
	54	04 41	05 23	05 58	10 30	11 35	12 36	13 29										
	52	04 44	05 24	05 57	10 23	11 27	12 27	13 21										
	50	04 47	05 24	05 57	10 17	11 20	12 19	13 13										
	45	04 52	05 26	05 55	10 03	11 04	12 03	12 57										
	N 40	04 56	05 27	05 54	09 52	10 52	11 49	12 44										
	35	04 58	05 28	05 53	09 43	10 41	11 38	12 32										
	30	05 00	05 28	05 52	09 34	10 31	11 28	12 22										
	20	05 03	05 28	05 50	09 20	10 15	11 10	12 05										
	N 10	05 03	05 28	05 49	09 07	10 01	10 55	11 51										
	0	05 02	05 26	05 47	08 56	09 47	10 41	11 37										
	S 10	05 00	05 24	05 45	08 44	09 34	10 27	11 23										
	20	04 56	05 21	05 43	08 32	09 20	10 12	11 08										
	30	04 49	05 17	05 41	08 17	09 04	09 55	10 51										
	35	04 45	05 14	05 40	08 09	08 55	09 45	10 41										
	40	04 39	05 11	05 38	08 00	08 44	09 34	10 30										
	45	04 32	05 07	05 36	07 49	08 32	09 21	10 17										
S 50	04 23	05 01	05 34	07 36	08 17	09 05	10 01											
52	04 18	04 59	05 33	07 30	08 10	08 57	09 53											
54	04 13	04 56	05 32	07 24	08 02	08 49	09 45											
56	04 08	04 53	05 30	07 16	07 53	08 39	09 35											
58	04 01	04 49	05 29	07 08	07 43	08 28	09 24											
S 60	03 54	04 45	05 27	06 58	07 32	08 16	09 12											
LUNES	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna													
			Civil	Náut.	28	29	30	1										
	N 72	17 29	18 36	19 59	16 51	16 12	15 23	16 07										
	N 70	17 32	18 32	19 46	17 35	17 50	18 25	19 38										
	68	17 34	18 29	19 35	18 05	18 30	19 13	20 20										
	66	17 35	18 26	19 27	18 27	18 57	19 43	20 48										
	64	17 37	18 24	19 20	18 45	19 19	20 06	21 10										
	62	17 38	18 22	19 14	18 59	19 36	20 24	21 27										
	60	17 39	18 20	19 09	19 12	19 50	20 39	21 42										
	N 58	17 40	18 19	19 05	19 22	20 02	20 52	21 54										
	56	17 41	18 18	19 01	19 32	20 13	21 03	22 04										
	54	17 42	18 17	18 58	19 40	20 22	21 13	22 14										
	52	17 42	18 16	18 55	19 47	20 30	21 22	22 22										
	50	17 43	18 15	18 53	19 54	20 38	21 29	22 29										
	45	17 45	18 14	18 48	20 08	20 54	21 46	22 45										
	N 40	17 46	18 13	18 44	20 20	21 07	22 00	22 58										
	35	17 47	18 12	18 42	20 30	21 18	22 11	23 09										
	30	17 48	18 12	18 40	20 39	21 28	22 21	23 19										
	20	17 50	18 12	18 38	20 54	21 45	22 39	23 36										
	N 10	17 52	18 13	18 37	21 08	21 59	22 54	23 50										
	0	17 54	18 14	18 38	21 20	22 13	23 08	24 04										
	S 10	17 55	18 16	18 41	21 33	22 27	23 22	24 17										
	20	17 58	18 20	18 45	21 46	22 41	23 37	24 31										
	30	18 00	18 24	18 52	22 01	22 58	23 54	24 48										
	35	18 02	18 27	18 57	22 10	23 08	24 04	00 04										
40	18 03	18 30	19 02	22 21	23 19	24 15	00 15											
45	18 05	18 35	19 10	22 32	23 32	24 29	00 29											
S 50	18 08	18 40	19 19	22 47	23 48	24 45	00 45											
52	18 09	18 43	19 24	22 54	23 56	24 53	00 53											
54	18 10	18 46	19 29	23 01	24 04	00 04	01 01											
56	18 12	18 49	19 35	23 10	24 13	00 13	01 11											
58	18 13	18 53	19 41	23 19	24 24	00 24	01 21											
S 60	18 15	18 57	19 49	23 30	24 36	00 36	01 34											
MARTES	SOL			LUNA														
	Día	Ec. Tiempo		Paso Mer.	Paso Mer. Sup.		Inf.	Edad	Fase									
		00 ^h	12 ^h															
	d	m s	m s	h m	h m	h m	d	%										
	28	09 09	09 20	11 51	15 08	02 42	04 17											
	29	09 30	09 39	11 50	16 00	03 34	05 26											
	30	09 49	09 59	11 50	16 54	04 27	06 36											
	S/D	16.0	<i>d</i> 1.0	S/D	15.4	15.6	15.7											

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.8	JÚPITER -1.9	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° ' "	° ' "	° ' "	° ' "	° ' "		° ' "	° ' "
100	9 39.1	187 47.5 N 0 44.8	119 42.8 S23 40.1	231 06.1 N16 34.0	141 01.5 S15 57.0	Acamar	315 17.4	S40 14.6
01	24 41.6	202 47.1 43.5	134 43.3 40.4	246 08.2 33.8	156 03.7 57.1	Achernar	335 25.6	S57 09.6
02	39 44.0	217 46.7 42.3	149 43.9 40.6	261 10.2 33.7	171 05.9 57.1	Acrux	173 08.8	S63 10.8
03	54 46.5	232 46.3 . . 41.0	164 44.5 . . 40.9	276 12.2 . . 33.6	186 08.2 . . 57.2	Adhara	255 11.9	S28 59.5
04	69 48.9	247 45.9 39.8	179 45.1 41.1	291 14.3 33.5	201 10.4 57.3	Aldebarán	290 48.2	N16 32.2
05	84 51.4	262 45.6 38.5	194 45.6 41.3	306 16.3 33.3	216 12.6 57.4			
06	99 53.9	277 45.2 N 0 37.3	209 46.2 S23 41.6	321 18.3 N16 33.2	231 14.8 S15 57.4	Alioth	166 20.6	N55 52.9
07	114 56.3	292 44.8 36.0	224 46.8 41.8	336 20.4 33.1	246 17.0 57.5	Alkaid	152 58.7	N49 14.6
08	129 58.8	307 44.4 34.8	239 47.3 42.1	351 22.4 33.0	261 19.3 57.6	Al Na'ir	27 42.3	S46 53.3
09	145 01.3	322 44.0 . . 33.5	254 47.9 . . 42.3	6 24.4 . . 32.9	276 21.5 . . 57.6	Alnilam	275 45.4	S 1 11.6
10	160 03.7	337 43.6 32.3	269 48.5 42.6	21 26.5 32.7	291 23.7 57.7	Alphard	217 55.4	S 8 43.3
11	175 06.2	352 43.2 31.0	284 49.1 42.8	36 28.5 32.6	306 25.9 57.8			
12	190 08.7	7 42.8 N 0 29.8	299 49.6 S23 43.0	51 30.5 N16 32.5	321 28.1 S15 57.9	Alphecca	126 10.5	N26 40.3
13	205 11.1	22 42.4 28.5	314 50.2 43.3	66 32.6 32.4	336 30.4 57.9	Alpheratz	357 42.2	N29 10.5
14	220 13.6	37 42.0 27.3	329 50.8 43.5	81 34.6 32.2	351 32.6 58.0	Altair	62 07.3	N 8 54.8
15	235 16.1	52 41.6 . . 26.0	344 51.3 . . 43.8	96 36.6 . . 32.1	6 34.8 . . 58.1	Ankaa	353 14.5	S42 13.4
16	250 18.5	67 41.2 24.8	359 51.9 44.0	111 38.7 32.0	21 37.0 58.1	Antares	112 25.4	S26 27.7
17	265 21.0	82 40.9 23.5	14 52.5 44.2	126 40.7 31.9	36 39.2 58.2			
18	280 23.4	97 40.5 N 0 22.3	29 53.0 S23 44.5	141 42.7 N16 31.8	51 41.5 S15 58.3	Arcturus	145 55.3	N19 06.6
19	295 25.9	112 40.1 21.0	44 53.6 44.7	156 44.8 31.6	66 43.7 58.3	Atria	107 26.6	S69 03.3
20	310 28.4	127 39.7 19.8	59 54.2 44.9	171 46.8 31.5	81 45.9 58.4	Avior	234 17.9	S59 33.3
21	325 30.8	142 39.3 . . 18.5	74 54.7 . . 45.2	186 48.8 . . 31.4	96 48.1 . . 58.5	Bellatrix	278 31.0	N 6 21.7
22	340 33.3	157 38.9 17.3	89 55.3 45.4	201 50.9 31.3	111 50.3 58.6	Betelgeuse	271 00.3	N 7 24.5
23	355 35.8	172 38.5 16.0	104 55.9 45.7	216 52.9 31.1	126 52.5 58.6			
200	10 38.2	187 38.1 N 0 14.8	119 56.4 S23 45.9	231 54.9 N16 31.0	141 54.8 S15 58.7	Canopus	263 55.7	S52 42.1
01	25 40.7	202 37.7 13.5	134 57.0 46.1	246 57.0 30.9	156 57.0 58.8	Capella	280 33.0	N46 00.4
02	40 43.2	217 37.3 12.3	149 57.6 46.4	261 59.0 30.8	171 59.2 58.8	Deneb	49 30.6	N45 20.4
03	55 45.6	232 36.9 . . 11.0	164 58.1 . . 46.6	277 01.0 . . 30.7	187 01.4 . . 58.9	Denébola	182 33.1	N14 29.4
04	70 48.1	247 36.6 09.8	179 58.7 46.8	292 03.1 30.5	202 03.6 59.0	Diphda	348 54.7	S17 54.2
05	85 50.6	262 36.2 08.5	194 59.3 47.1	307 05.1 30.4	217 05.9 59.1			
06	100 53.0	277 35.8 N 0 07.3	209 59.8 S23 47.3	322 07.1 N16 30.3	232 08.1 S15 59.1	Dubhe	193 51.4	N61 40.2
07	115 55.5	292 35.4 06.0	225 00.4 47.5	337 09.2 30.2	247 10.3 59.2	Elnath	278 11.4	N28 37.0
08	130 57.9	307 35.0 04.8	240 00.9 47.8	352 11.2 30.0	262 12.5 59.3	Eltanin	90 45.8	N51 29.7
09	146 00.4	322 34.6 . . 03.5	255 01.5 . . 48.0	7 13.3 . . 29.9	277 14.7 . . 59.3	Enif	33 46.0	N 9 56.9
10	161 02.9	337 34.2 02.2	270 02.1 48.2	22 15.3 29.8	292 16.9 59.4	Fomalhaut	15 22.7	S29 32.5
11	176 05.3	352 33.8 N 01.0	285 02.6 48.5	37 17.3 29.7	307 19.2 59.5			
12	191 07.8	7 33.4 S 0 00.3	300 03.2 S23 48.7	52 19.4 N16 29.6	322 21.4 S15 59.6	Gacrux	172 00.4	S57 11.7
13	206 10.3	22 33.0 01.5	315 03.8 48.9	67 21.4 29.4	337 23.6 59.6	Gienah	175 51.7	S17 37.3
14	221 12.7	37 32.6 02.8	330 04.3 49.2	82 23.4 29.3	352 25.8 59.7	Hadar	148 47.1	S60 26.6
15	236 15.2	52 32.3 . . 04.0	345 04.9 . . 49.4	97 25.5 . . 29.2	7 28.0 . . 59.8	Hamal	327 59.4	N23 31.9
16	251 17.7	67 31.9 05.3	0 05.4 49.6	112 27.5 29.1	22 30.3 59.8	Kaus Aust.	83 42.7	S34 22.5
17	266 20.1	82 31.5 06.5	15 06.0 49.9	127 29.6 29.0	37 32.5 15 59.9			
18	281 22.6	97 31.1 S 0 07.8	30 06.6 S23 50.1	142 31.6 N16 28.8	52 34.7 S16 00.0	Kochab	137 21.2	N74 06.0
19	296 25.1	112 30.7 09.0	45 07.1 50.3	157 33.6 28.7	67 36.9 00.1	Markab	13 37.1	N15 17.3
20	311 27.5	127 30.3 10.3	60 07.7 50.6	172 35.7 28.6	82 39.1 00.1	Menkar	314 13.9	N 4 08.9
21	326 30.0	142 29.9 . . 11.5	75 08.2 . . 50.8	187 37.7 . . 28.5	97 41.3 . . 00.2	Menkent	148 06.8	S36 26.4
22	341 32.4	157 29.5 12.8	90 08.8 51.0	202 39.7 28.3	112 43.6 00.3	Miaplacidus	221 39.9	S69 46.5
23	356 34.9	172 29.1 14.0	105 09.4 51.2	217 41.8 28.2	127 45.8 00.3			
300	11 37.4	187 28.7 S 0 15.3	120 09.9 S23 51.5	232 43.8 N16 28.1	142 48.0 S16 00.4	Mirfak	308 38.7	N49 54.6
01	26 39.8	202 28.3 16.5	135 10.5 51.7	247 45.9 28.0	157 50.2 00.5	Nunki	75 57.2	S26 16.5
02	41 42.3	217 27.9 17.8	150 11.0 51.9	262 47.9 27.9	172 52.4 00.6	Peacock	53 17.7	S56 41.2
03	56 44.8	232 27.6 . . 19.1	165 11.6 . . 52.2	277 49.9 . . 27.7	187 54.6 . . 00.6	Póllux	243 26.8	N27 59.2
04	71 47.2	247 27.2 20.3	180 12.1 52.4	292 52.0 27.6	202 56.9 00.7	Procyon	244 58.9	N 5 11.1
05	86 49.7	262 26.8 21.6	195 12.7 52.6	307 54.0 27.5	217 59.1 00.8			
06	101 52.2	277 26.4 S 0 22.8	210 13.3 S23 52.8	322 56.1 N16 27.4	233 01.3 S16 00.8	Rasalhague	96 05.7	N12 33.3
07	116 54.6	292 26.0 24.1	225 13.8 53.1	337 58.1 27.3	248 03.5 00.9	Régulus	207 42.8	N11 53.7
08	131 57.1	307 25.6 25.3	240 14.4 53.3	353 00.1 27.1	263 05.7 01.0	Rigel	281 11.1	S 8 11.1
09	146 59.5	322 25.2 . . 26.6	255 14.9 . . 53.5	8 02.2 . . 27.0	278 07.9 . . 01.1	Rigel Kent.	139 51.0	S60 53.7
10	162 02.0	337 24.8 27.8	270 15.5 53.7	23 04.2 26.9	293 10.2 01.1	Sabik	102 11.6	S15 44.3
11	177 04.5	352 24.4 29.1	285 16.0 54.0	38 06.3 26.8	308 12.4 01.2			
12	192 06.9	7 24.0 S 0 30.3	300 16.6 S23 54.2	53 08.3 N16 26.7	323 14.6 S16 01.3	Schedar	349 38.8	N56 37.2
13	207 09.4	22 23.6 31.6	315 17.1 54.4	68 10.3 26.5	338 16.8 01.3	Shaula	96 20.8	S37 06.7
14	222 11.9	37 23.2 32.8	330 17.7 54.6	83 12.4 26.4	353 19.0 01.4	Sirius	258 32.9	S16 44.2
15	237 14.3	52 22.9 . . 34.1	345 18.3 . . 54.9	98 14.4 . . 26.3	8 21.2 . . 01.5	Spica	158 30.6	S11 14.1
16	252 16.8	67 22.5 35.3	0 18.8 55.1	113 16.5 26.2	23 23.4 01.6	Suhail	222 52.0	S43 29.4
17	267 19.3	82 22.1 36.6	15 19.4 55.3	128 18.5 26.1	38 25.7 01.6			
18	282 21.7	97 21.7 S 0 37.9	30 19.9 S23 55.5	143 20.6 N16 25.9	53 27.9 S16 01.7	Vega	80 38.4	N38 48.3
19	297 24.2	112 21.3 39.1	45 20.5 55.7	158 22.6 25.8	68 30.1 01.8	Zuben'ubi	137 04.7	S16 06.0
20	312 26.7	127 20.9 40.4	60 21.0 56.0	173 24.6 25.7	83 32.3 01.8			
21	327 29.1	142 20.5 . . 41.6	75 21.6 . . 56.2	188 26.7 . . 25.6	98 34.5 . . 01.9			
22	342 31.6	157 20.1 42.9	90 22.1 56.4	203 28.7 25.5	113 36.7 02.0	Venus	176 59.9	h m 11 30
23	357 34.0	172 19.7 44.1	105 22.7 56.6	218 30.8 25.3	128 38.9 02.1	Marte	109 18.2	16 00
	h m					Júpiter	221 16.7	8 31
Paso Mer. 23 13.6	v -0.4 d 1.3		v 0.6 d 0.2	v 2.0 d 0.1	v 2.2 d 0.1	Saturno	131 16.5	14 30

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		1	2	3	4	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
M I É R C O L E S	100	182 32.4	S 3 04.4	102 27.2	7.6	S18 30.4	0.5 58.1	N 72	03 54	05 15	06 23	16 07	16 25	16 32	16 35	
	01	197 32.6	05.3	116 53.8	7.5	18 29.9	0.7 58.1	N 68	04 05	05 20	06 19	16 07	16 25	16 32	16 35	
	02	212 32.8	06.3	131 20.3	7.6	18 29.2	0.8 58.2	66	04 14	05 28	06 16	15 24	15 54	16 11	16 21	
	03	227 33.0	07.3	145 46.9	7.5	18 28.4	0.9 58.2	64	04 22	05 22	06 13	14 56	15 30	15 54	16 10	
	04	242 33.2	08.2	160 13.4	7.5	18 27.5	1.0 58.2	62	04 28	05 24	06 11	14 34	15 12	15 40	16 01	
	05	257 33.4	09.2	174 39.9	7.4	18 26.5	1.2 58.2	60	04 33	05 25	06 09	14 16	14 57	15 28	15 53	
	06	272 33.6	S 3 10.2	189 06.3	7.5	S18 25.3	1.2 58.3	N 58	04 37	05 26	06 07	14 02	14 45	15 18	15 45	
	07	287 33.8	11.1	203 32.8	7.4	18 24.1	1.4 58.3	56	04 41	05 27	06 06	13 50	14 34	15 10	15 39	
	08	302 34.0	12.1	217 59.2	7.4	18 22.7	1.4 58.3	54	04 44	05 28	06 05	13 39	14 24	15 02	15 34	
	09	317 34.2	13.1	232 25.6	7.4	18 22.7	1.4 58.3	54	04 47	05 28	06 03	13 29	14 16	14 55	15 29	
	10	332 34.4	14.1	246 52.0	7.3	18 21.3	1.6 58.3	52	04 49	05 29	06 02	13 21	14 08	14 49	15 24	
	11	347 34.6	15.0	261 18.3	7.3	18 19.7	1.7 58.4	50	04 51	05 29	06 01	13 13	14 01	14 43	15 20	
	12	2 34.8	S 3 16.0	275 44.6	7.3	18 18.0	1.9 58.4	45	04 56	05 30	05 59	12 57	13 47	14 31	15 11	
	13	17 35.0	17.0	290 11.0	7.2	18 16.1	1.9 58.4	N 40	04 59	05 30	05 57	12 44	13 34	14 21	15 04	
	14	32 35.2	17.9	304 37.3	7.2	18 14.2	2.0 58.4	35	05 01	05 30	05 55	12 32	13 24	14 12	14 57	
	15	47 35.4	18.9	319 03.5	7.2	18 12.2	2.2 58.5	30	05 02	05 30	05 54	12 22	13 15	14 05	14 52	
	16	62 35.6	19.9	333 29.8	7.2	18 10.0	2.3 58.5	20	05 04	05 29	05 51	12 05	12 59	13 52	14 42	
	17	77 35.8	20.8	347 56.0	7.2	18 07.7	2.4 58.5	N 10	05 03	05 28	05 49	11 51	12 46	13 40	14 33	
	18	92 36.0	S 3 21.8	2 22.3	7.3	18 05.3	2.5 58.6	0	05 01	05 25	05 46	11 37	12 33	13 29	14 25	
	19	107 36.2	22.8	16 48.5	7.2	S18 02.8	2.6 58.6	S 10	04 58	05 23	05 44	11 23	12 20	13 19	14 17	
	20	122 36.4	23.7	31 14.7	7.2	18 00.2	2.8 58.6	20	04 53	05 19	05 41	11 08	12 07	13 07	14 09	
	21	137 36.6	24.7	45 40.9	7.2	17 57.4	2.8 58.6	30	04 45	05 13	05 37	10 51	11 51	12 54	13 59	
	22	152 36.8	25.7	60 07.1	7.2	17 54.6	3.0 58.7	35	04 40	05 10	05 35	10 41	11 42	12 46	13 53	
	23	167 37.0	26.7	74 33.2	7.1	17 51.6	3.1 58.7	40	04 34	05 06	05 33	10 30	11 31	12 37	13 46	
	24					17 48.5	3.2 58.7	45	04 26	05 01	05 30	10 17	11 19	12 27	13 39	
J U E V E S	200	182 37.2	S 3 27.6	88 59.4	7.1	S17 45.3	3.3 58.7	S 50	04 16	04 55	05 27	10 01	11 04	12 15	13 30	
	01	197 37.4	28.6	103 25.5	7.2	17 42.0	3.4 58.8	52	04 11	04 52	05 26	09 53	10 57	12 09	13 25	
	02	212 37.6	29.6	117 51.7	7.1	17 38.6	3.5 58.8	54	04 05	04 48	05 24	09 45	10 50	12 03	13 21	
	03	227 37.8	30.5	132 17.8	7.1	17 35.1	3.7 58.8	56	03 59	04 45	05 22	09 35	10 41	11 56	13 16	
	04	242 38.0	31.5	146 43.9	7.1	17 31.4	3.7 58.8	58	03 52	04 40	05 20	09 24	10 31	11 47	13 10	
	05	257 38.2	32.5	161 10.0	7.1	17 27.7	3.9 58.9	S 60	03 43	04 36	05 18	09 12	10 20	11 38	13 03	
	06	272 38.4	S 3 33.4	175 36.1	7.1	S17 23.8	4.0 58.9	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
	07	287 38.6	34.4	190 02.2	7.1	17 19.8	4.1 58.9			Civil	Náut.	1	2	3	4	
	08	302 38.8	35.4	204 28.3	7.1	17 15.7	4.2 58.9									
	09	317 39.0	36.3	218 54.4	7.1	17 11.5	4.4 59.0									
	10	332 39.2	37.3	233 20.5	7.0	17 07.1	4.4 59.0	N 72	h m	h m	h m	h m	h m	h m	h m	
	11	347 39.4	38.3	247 46.5	7.1	17 02.7	4.6 59.0	N 70	17 14	18 21	19 42	20 31	22 41	24 45	25 45	
	12	2 39.6	S 3 39.2	262 12.6	7.1	S16 58.1	4.6 59.0	N 68	17 18	18 18	19 31	19 38	21 18	23 08	25 01	
	13	17 39.8	40.2	276 38.7	7.1	16 53.5	4.8 59.1	68	17 21	18 16	19 22	20 20	21 48	23 28	25 13	
	14	32 40.0	41.2	291 04.8	7.0	16 48.7	4.9 59.1	66	17 24	18 15	19 15	20 48	22 11	23 44	25 23	
	15	47 40.2	42.1	305 30.8	7.1	16 43.8	5.0 59.1	64	17 26	18 13	19 09	21 10	22 28	23 57	25 31	
	16	62 40.4	43.1	319 56.9	7.1	16 38.8	5.1 59.1	62	17 28	18 12	19 04	21 27	22 43	24 08	00 08	
	17	77 40.6	44.1	334 23.0	7.0	16 33.7	5.2 59.2	60	17 30	18 11	19 00	21 42	22 55	24 17	00 17	
	18	92 40.8	S 3 45.0	348 49.0	7.1	S16 28.5	5.4 59.2	N 58	17 32	18 11	18 56	21 54	23 06	24 25	00 25	
	19	107 41.0	46.0	3 15.1	7.1	16 23.1	5.4 59.2	56	17 33	18 10	18 53	22 04	23 15	24 32	00 32	
	20	122 41.2	47.0	17 41.2	7.1	16 17.7	5.5 59.2	54	17 34	18 09	18 50	22 14	23 23	24 39	00 39	
	21	137 41.4	47.9	32 07.3	7.1	16 12.2	5.7 59.3	52	17 36	18 09	18 48	22 22	23 30	24 44	00 44	
	22	152 41.6	48.9	46 33.4	7.0	16 06.5	5.8 59.3	50	17 37	18 09	18 46	22 29	23 37	24 50	00 50	
	23	167 41.8	49.9	60 59.4	7.1	16 00.7	5.8 59.3	45	17 39	18 08	18 42	22 45	23 51	25 01	01 01	
	V I E R N E S	300	182 42.0	S 3 50.8	75 25.5	7.1	S15 54.9	6.0 59.3	N 40	17 41	18 08	18 39	22 58	24 02	00 02	01 10
01		197 42.1	51.8	89 51.6	7.1	15 48.9	6.1 59.4	35	17 43	18 08	18 37	23 09	24 12	00 12	01 18	
02		212 42.3	52.8	104 17.7	7.1	15 42.8	6.2 59.4	30	17 44	18 08	18 36	23 19	24 21	00 21	01 24	
03		227 42.5	53.7	118 43.8	7.1	15 36.6	6.3 59.4	20	17 47	18 09	18 35	23 36	24 35	00 35	01 36	
04		242 42.7	54.7	133 09.9	7.2	15 30.3	6.4 59.4	N 10	17 50	18 11	18 35	23 50	24 48	00 48	01 47	
05		257 42.9	55.7	147 36.1	7.1	15 23.9	6.5 59.5	0	17 53	18 13	18 37	24 04	00 04	01 00	01 56	
06		272 43.1	S 3 56.6	162 02.2	7.1	S15 17.4	6.6 59.5	S 10	17 55	18 16	18 41	24 17	00 17	01 12	02 06	
07		287 43.3	57.6	176 28.3	7.2	15 10.8	6.7 59.5	20	17 58	18 20	18 46	24 31	00 31	01 24	02 16	
08		302 43.5	58.6	190 54.5	7.1	15 04.1	6.8 59.5	30	18 02	18 26	18 54	24 48	00 48	01 39	02 27	
09		317 43.7	59.5	205 20.6	7.2	14 57.3	6.9 59.5	35	18 04	18 29	18 59	00 04	00 57	01 47	02 34	
10		332 43.9	60.5	219 46.8	7.2	14 50.4	7.0 59.6	40	18 06	18 34	19 06	00 15	01 08	01 56	02 41	
11		347 44.1	61.5	234 13.0	7.1	14 43.4	7.1 59.6	45	18 09	18 39	19 14	00 29	01 21	02 07	02 50	
12		2 44.3	S 4 02.4	248 39.1	7.2	S14 36.3	7.2 59.6	S 50	18 12	18 45	19 24	00 45	01 36	02 21	03 00	
13		17 44.5	03.4	263 05.3	7.2	14 29.1	7.3 59.6	52	18 14	18 48	19 29	00 53	01 43	02 27	03 05	
14		32 44.7	04.4	277 31.5	7.2	14 21.8	7.4 59.7	54	18 16	18 52	19 35	01 01	01 51	02 34	03 10	
15		47 44.9	05.3	291 57.7	7.3	14 14.4	7.5 59.7	56	18 18	18 55	19 42	01 11	02 00	02 41	03 16	
16		62 45.1	06.3	306 24.0	7.2	14 06.9	7.6 59.7	58	18 20	19 00	19 49	01 21	02 10	02 50	03 22	
17		77 45.3	07.3	320 50.2	7.3	13 59.3	7.7 59.7	S 60	18 22	19 05	19 58	01 34	02 21	02 59	03 30	
18		92 45.5	S 4 08.2	335 16.5	7.2	S13 51.6	7.8 59.7		SOL		LUNA					
19		107 45.7	09.2	349 42.7	7.3	13 43.8	7.9 59.8	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
20		122 45.9	10.1	4 09.0	7.3	13 35.9	7.9 59.8		00h	12h		Sup.	Inf.			
21		137 46.1	11.1	18 35.3	7.3	13 28.0	8.1 59.8	d	m s	m s	h m	h m	h m	d	%	
22		152 46.3	12.1	33 01.6	7.3	13 19.9	8.2 59.8	1	10 09	10 19	11 50	17 50	05 22	07 47		
23		167 46.4	13.0	47 27.9	7.3	S13 11.7	8.2 59.8	2	10 28	10 38	11 49	18 46	06 18	08 58		
								3	10 47	10 57	11 49	19 43	07 15	09 69		
									</							

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.8	JÚPITER -1.9	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
4 00	12 36.5	187 19.3 S 0 45.4	120 23.2 S23 56.8	233 32.8 N16 25.2	143 41.2 S16 02.1	Acamar	315 17.4 S40 14.6	
01	27 39.0	202 18.9 46.6	135 23.8 57.1	248 34.9 25.1	158 43.4 02.2	Achernar	335 25.6 S57 09.6	
02	42 41.4	217 18.5 47.9	150 24.3 57.3	263 36.9 25.0	173 45.6 02.3	Acrux	173 08.8 S63 10.8	
03	57 43.9	232 18.2 . . 49.1	165 24.9 . . 57.5	278 38.9 . . 24.9	188 47.8 . . 02.3	Adhara	255 11.8 S28 59.5	
04	72 46.4	247 17.8 50.4	180 25.4 57.7	293 41.0 24.7	203 50.0 02.4	Aldebarán	290 48.2 N16 32.2	
05	87 48.8	262 17.4 51.6	195 26.0 57.9	308 43.0 24.6	218 52.2 02.5			
06	102 51.3	277 17.0 S 0 52.9	210 26.5 S23 58.2	323 45.1 N16 24.5	233 54.4 S16 02.6	Alioth	166 20.6 N55 52.9	
07	117 53.8	292 16.6 54.2	225 27.1 58.4	338 47.1 24.4	248 56.7 02.6	Alkaid	152 58.7 N49 14.6	
08	132 56.2	307 16.2 55.4	240 27.6 58.6	353 49.2 24.3	263 58.9 02.7	Al Na'ir	27 42.3 S46 53.3	
09	147 58.7	322 15.8 . . 56.7	255 28.2 . . 58.8	8 51.2 . . 24.1	279 01.1 . . 02.8	Alnilam	275 45.4 S 1 11.6	
10	163 01.2	337 15.4 57.9	270 28.7 59.0	23 53.3 24.0	294 03.3 02.8	Alphard	217 55.4 S 8 43.3	
11	178 03.6	352 15.0 0 59.2	285 29.3 59.2	38 55.3 23.9	309 05.5 02.9			
12	193 06.1	7 14.6 S 1 00.4	300 29.8 S23 59.5	53 57.4 N16 23.8	324 07.7 S16 03.0	Alphecca	126 10.5 N26 40.2	
13	208 08.5	22 14.2 01.7	315 30.4 59.7	68 59.4 23.7	339 09.9 03.1	Alpheratz	357 42.2 N29 10.5	
14	223 11.0	37 13.8 02.9	330 30.9 23 59.9	84 01.4 23.5	354 12.2 03.1	Altair	62 07.3 N 8 54.8	
15	238 13.5	52 13.4 . . 04.2	345 31.5 24 00.1	99 03.5 . . 23.4	9 14.4 . . 03.2	Ankaa	353 14.5 S42 13.5	
16	253 15.9	67 13.0 05.4	0 32.0 00.3	114 05.5 23.3	24 16.6 03.3	Antares	112 25.4 S26 27.7	
17	268 18.4	82 12.7 06.7	15 32.6 00.5	129 07.6 23.2	39 18.8 03.4			
18	283 20.9	97 12.3 S 1 07.9	30 33.1 S24 00.7	144 09.6 N16 23.1	54 21.0 S16 03.4	Arcturus	145 55.3 N19 06.6	
19	298 23.3	112 11.9 09.2	45 33.7 01.0	159 11.7 22.9	69 23.2 03.5	Atria	107 26.6 S69 03.2	
20	313 25.8	127 11.5 10.5	60 34.2 01.2	174 13.7 22.8	84 25.4 03.6	Avior	234 17.8 S59 33.2	
21	328 28.3	142 11.1 . . 11.7	75 34.7 . . 01.4	189 15.8 . . 22.7	99 27.6 . . 03.6	Bellatrix	278 30.9 N 6 21.7	
22	343 30.7	157 10.7 13.0	90 35.3 01.6	204 17.8 22.6	114 29.9 03.7	Betelgeuse	271 00.3 N 7 24.5	
23	358 33.2	172 10.3 14.2	105 35.8 01.8	219 19.9 22.5	129 32.1 03.8			
5 00	13 35.6	187 09.9 S 1 15.5	120 36.4 S24 02.0	234 21.9 N16 22.3	144 34.3 S16 03.9	Canopus	263 55.7 S52 42.1	
01	28 38.1	202 09.5 16.7	135 36.9 02.2	249 24.0 22.2	159 36.5 03.9	Capella	280 32.9 N46 00.4	
02	43 40.6	217 09.1 18.0	150 37.5 02.4	264 26.0 22.1	174 38.7 04.0	Deneb	49 30.6 N45 20.4	
03	58 43.0	232 08.7 . . 19.2	165 38.0 . . 02.6	279 28.1 . . 22.0	189 40.9 . . 04.1	Denébola	182 33.1 N14 29.4	
04	73 45.5	247 08.3 20.5	180 38.6 02.8	294 30.1 21.9	204 43.1 04.1	Diphda	348 54.7 S17 54.2	
05	88 48.0	262 07.9 21.7	195 39.1 03.1	309 32.2 21.7	219 45.3 04.2			
06	103 50.4	277 07.5 S 1 23.0	210 39.6 S24 03.3	324 34.2 N16 21.6	234 47.6 S16 04.3	Dubhe	193 51.3 N61 40.1	
07	118 52.9	292 07.2 24.3	225 40.2 03.5	339 36.2 21.5	249 49.8 04.4	Elnath	278 11.4 N28 37.0	
08	133 55.4	307 06.8 25.5	240 40.7 03.7	354 38.3 21.4	264 52.0 04.4	Eltanin	90 45.9 N51 29.7	
09	148 57.8	322 06.4 . . 26.8	255 41.3 . . 03.9	9 40.3 . . 21.3	279 54.2 . . 04.5	Enif	33 46.0 N 9 56.9	
10	164 00.3	337 06.0 28.0	270 41.8 04.1	24 42.4 21.2	294 56.4 04.6	Fomalhaut	15 22.7 S29 32.5	
11	179 02.8	352 05.6 29.3	285 42.3 04.3	39 44.4 21.0	309 58.6 04.6			
12	194 05.2	7 05.2 S 1 30.5	300 42.9 S24 04.5	54 46.5 N16 20.9	325 00.8 S16 04.7	Gacrux	172 00.4 S57 11.7	
13	209 07.7	22 04.8 31.8	315 43.4 04.7	69 48.5 20.8	340 03.0 04.8	Gienah	175 51.7 S17 37.3	
14	224 10.1	37 04.4 33.0	330 44.0 04.9	84 50.6 20.7	355 05.2 04.9	Hadar	148 47.1 S60 26.6	
15	239 12.6	52 04.0 . . 34.3	345 44.5 . . 05.1	99 52.6 . . 20.6	10 07.5 . . 04.9	Hamal	327 59.4 N23 31.9	
16	254 15.1	67 03.6 35.5	0 45.1 05.3	114 54.7 20.4	25 09.7 05.0	Kaus Aust.	83 42.7 S34 22.5	
17	269 17.5	82 03.2 36.8	15 45.6 05.5	129 56.7 20.3	40 11.9 05.1			
18	284 20.0	97 02.8 S 1 38.0	30 46.1 S24 05.7	144 58.8 N16 20.2	55 14.1 S16 05.2	Kochab	137 21.2 N74 06.0	
19	299 22.5	112 02.4 39.3	45 46.7 05.9	160 00.9 20.1	70 16.3 05.2	Markab	13 37.1 N15 17.3	
20	314 24.9	127 02.0 40.6	60 47.2 06.1	175 02.9 20.0	85 18.5 05.3	Menkar	314 13.8 N 4 08.9	
21	329 27.4	142 01.6 . . 41.8	75 47.7 . . 06.3	190 05.0 . . 19.9	100 20.7 . . 05.4	Menkent	148 06.9 S36 26.4	
22	344 29.9	157 01.2 43.1	90 48.3 06.5	205 07.0 19.7	115 22.9 05.4	Miaplacidus	221 39.9 S69 46.5	
23	359 32.3	172 00.8 44.3	105 48.8 06.8	220 09.1 19.6	130 25.1 05.5			
6 00	14 34.8	187 00.5 S 1 45.6	120 49.4 S24 07.0	235 11.1 N16 19.5	145 27.4 S16 05.6	Mirfak	308 38.6 N49 54.6	
01	29 37.2	202 00.1 46.8	135 49.9 07.2	250 13.2 19.4	160 29.6 05.7	Nunki	75 57.2 S26 16.5	
02	44 39.7	216 59.7 48.1	150 50.4 07.4	265 15.2 19.3	175 31.8 05.7	Peacock	53 17.7 S56 41.2	
03	59 42.2	231 59.3 . . 49.3	165 51.0 . . 07.6	280 17.3 . . 19.1	190 34.0 . . 05.8	Póllux	243 26.8 N27 59.2	
04	74 44.6	246 58.9 50.6	180 51.5 07.8	295 19.3 19.0	205 36.2 05.9	Procyon	244 58.9 N 5 11.1	
05	89 47.1	261 58.5 51.8	195 52.0 08.0	310 21.4 18.9	220 38.4 05.9			
06	104 49.6	276 58.1 S 1 53.1	210 52.6 S24 08.2	325 23.4 N16 18.8	235 40.6 S16 06.0	Rasalhague	96 05.7 N12 33.3	
07	119 52.0	291 57.7 54.3	225 53.1 08.4	340 25.5 18.7	250 42.8 06.1	Régulus	207 42.8 N11 53.7	
08	134 54.5	306 57.3 55.6	240 53.7 08.6	355 27.5 18.6	265 45.0 06.2	Rigel	281 11.1 S 8 11.1	
09	149 57.0	321 56.9 . . 56.8	255 54.2 . . 08.8	10 29.6 . . 18.4	280 47.2 . . 06.2	Rigel Kent.	139 51.0 S60 53.7	
10	164 59.4	336 56.5 58.1	270 54.7 09.0	25 31.6 18.3	295 49.5 06.3	Sabik	102 11.7 S15 44.3	
11	180 01.9	351 56.1 1 59.4	285 55.3 09.1	40 33.7 18.2	310 51.7 06.4			
12	195 04.4	6 55.7 S 2 00.6	300 55.8 S24 09.3	55 35.7 N16 18.1	325 53.9 S16 06.5	Schedar	349 38.8 N56 37.2	
13	210 06.8	21 55.3 01.9	315 56.3 09.5	70 37.8 18.0	340 56.1 06.5	Shaula	96 20.8 S37 06.7	
14	225 09.3	36 54.9 03.1	330 56.9 09.7	85 39.9 17.8	355 58.3 06.6	Sirius	258 32.9 S16 44.2	
15	240 11.7	51 54.5 . . 04.4	345 57.4 . . 09.9	100 41.9 . . 17.7	11 00.5 . . 06.7	Spica	158 30.6 S11 14.1	
16	255 14.2	66 54.1 05.6	0 57.9 10.1	115 44.0 17.6	26 02.7 06.7	Suhail	222 52.0 S43 29.4	
17	270 16.7	81 53.7 06.9	15 58.5 10.3	130 46.0 17.5	41 04.9 06.8			
18	285 19.1	96 53.3 S 2 08.1	30 59.0 S24 10.5	145 48.1 N16 17.4	56 07.1 S16 06.9	Vega	80 38.4 N38 48.3	
19	300 21.6	111 52.9 09.4	45 59.5 10.7	160 50.1 17.3	71 09.3 07.0	Zuben'ubi	137 04.7 S16 06.0	
20	315 24.1	126 52.5 10.6	61 00.1 10.9	175 52.2 17.1	86 11.5 07.0			
21	330 26.5	141 52.1 . . 11.9	76 00.6 . . 11.1	190 54.2 . . 17.0	101 13.8 . . 07.1	AHS Paso Mer.		
22	345 29.0	156 51.8 13.1	91 01.1 11.3	205 56.3 16.9	116 16.0 07.2	Venus	173 34.3 11 32	
23	0 31.5	171 51.4 14.4	106 01.6 11.5	220 58.4 16.8	131 18.2 07.3	Marte	107 00.7 15 57	
						Júpiter	220 46.3 8 21	
						Saturno	130 58.6 14 20	
h m								
Paso Mer. 23 01.8	v -0.4 d 1.3		v 0.5 d 0.2	v 2.0 d 0.1	v 2.2 d 0.1			

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		4	5	6	7
d h	° /	° /	° /		° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m
S Á B A D O	4 00	182 46.6 S	4 14.0	61 54.2	7.4	S13 03.5	8.3 59.9	N 72	04 08	05 29	06 36	16 52	16 46	16 40	16 34
	01	197 46.8	15.0	76 20.6	7.3	12 55.2	8.5 59.9	N 70	04 18	05 30	06 31	16 35	16 37	16 37	16 38
	02	212 47.0	15.9	90 46.9	7.4	12 46.7	8.5 59.9	68	04 26	05 31	06 27	16 21	16 29	16 35	16 41
	03	227 47.2	16.9	105 13.3	7.4	12 38.2	8.6 59.9	66	04 32	05 32	06 23	16 10	16 23	16 33	16 43
	04	242 47.4	17.9	119 39.7	7.4	12 29.6	8.7 59.9	64	04 37	05 32	06 20	16 01	16 17	16 32	16 45
	05	257 47.6	18.8	134 06.1	7.4	12 20.9	8.7 60.0	62	04 41	05 33	06 17	15 53	16 13	16 30	16 47
	06	272 47.8 S	4 19.8	148 32.5	7.5	S12 12.2	8.9 60.0	60	04 45	05 33	06 15	15 45	16 08	16 29	16 49
	07	287 48.0	20.8	162 59.0	7.4	12 03.3	8.9 60.0	N 58	04 48	05 33	06 13	15 39	16 05	16 28	16 51
	08	302 48.2	21.7	177 25.4	7.5	11 54.4	9.0 60.0	56	04 50	05 34	06 11	15 34	16 02	16 27	16 52
	09	317 48.4	22.7	191 51.9	7.5	11 45.4	9.1 60.0	54	04 53	05 34	06 09	15 29	15 59	16 26	16 53
	10	332 48.6	23.6	206 18.4	7.5	11 36.3	9.2 60.1	52	04 54	05 34	06 07	15 24	15 56	16 25	16 54
	11	347 48.8	24.6	220 44.9	7.5	11 27.1	9.3 60.1	50	04 56	05 34	06 06	15 20	15 54	16 25	16 55
	12	2 49.0 S	4 25.6	235 11.4	7.5	S11 17.8	9.3 60.1	45	04 59	05 33	06 03	15 11	15 48	16 23	16 57
	13	17 49.1	26.5	249 37.9	7.6	11 08.5	9.4 60.1	N 40	05 02	05 33	06 00	15 04	15 44	16 22	16 59
	14	32 49.3	27.5	264 04.5	7.5	10 59.1	9.5 60.1	35	05 03	05 32	05 58	14 57	15 40	16 21	17 01
	15	47 49.5	28.5	278 31.0	7.6	10 49.6	9.6 60.1	30	05 04	05 32	05 56	14 52	15 37	16 20	17 02
	16	62 49.7	29.4	292 57.6	7.6	10 40.0	9.6 60.2	20	05 04	05 30	05 52	14 42	15 31	16 18	17 05
	17	77 49.9	30.4	307 24.2	7.6	10 30.4	9.7 60.2	N 10	05 03	05 27	05 48	14 33	15 25	16 16	17 07
	18	92 50.1 S	4 31.4	321 50.8	7.6	S10 20.7	9.8 60.2	0	05 00	05 24	05 45	14 25	15 21	16 15	17 09
	19	107 50.3	32.3	336 17.4	7.7	10 10.9	9.9 60.2	S 10	04 56	05 21	05 42	14 17	15 16	16 14	17 11
	20	122 50.5	33.3	350 44.1	7.7	10 01.0	9.9 60.2	20	04 50	05 16	05 38	14 09	15 10	16 12	17 14
	21	137 50.7	34.2	5 10.8	7.6	9 51.1	10.0 60.2	30	04 42	05 10	05 34	13 59	15 05	16 11	17 17
	22	152 50.9	35.2	19 37.4	7.7	9 41.1	10.0 60.2	35	04 36	05 06	05 31	13 53	15 01	16 10	17 18
	23	167 51.1	36.2	34 04.1	7.8	9 31.1	10.1 60.3	40	04 29	05 01	05 28	13 46	14 57	16 09	17 20
	24							45	04 20	04 55	05 25	13 39	14 53	16 07	17 22
D O M I N G O	5 00	182 51.2 S	4 37.1	48 30.9	7.7	S 9 21.0	10.2 60.3	S 50	04 09	04 48	05 21	13 30	14 47	16 06	17 25
	01	197 51.4	38.1	62 57.6	7.7	9 10.8	10.3 60.3	52	04 03	04 45	05 19	13 25	14 45	16 05	17 26
	02	212 51.6	39.0	77 24.3	7.8	9 00.5	10.3 60.3	54	03 57	04 41	05 17	13 21	14 42	16 05	17 27
	03	227 51.8	40.0	91 51.1	7.8	8 50.2	10.4 60.3	56	03 50	04 36	05 14	13 16	14 39	16 04	17 28
	04	242 52.0	41.0	106 17.9	7.8	8 39.8	10.4 60.3	58	03 42	04 32	05 12	13 10	14 36	16 03	17 30
	05	257 52.2	41.9	120 44.7	7.8	8 29.4	10.5 60.3	S 60	03 33	04 26	05 09	13 03	14 32	16 02	17 32
	06	272 52.4 S	4 42.9	135 11.5	7.8	S 8 18.9	10.5 60.3	Lat.		Ocaso Sol	Crepúsculo		Ocaso Luna		
	07	287 52.6	43.9	149 38.3	7.9	8 08.4	10.6 60.3								
	08	302 52.8	44.8	164 05.2	7.8	7 57.8	10.7 60.4								
	09	317 53.0	45.8	178 32.0	7.9	7 47.1	10.7 60.4								
	10	332 53.1	46.7	192 58.9	7.9	7 36.4	10.8 60.4								
	11	347 53.3	47.7	207 25.8	7.9	7 25.6	10.8 60.4								
	12	2 53.5 S	4 48.7	221 52.7	8.0	S 7 14.8	10.9 60.4	N 72	16 58	18 06	19 25	24 45	00 45	02 47	04 46
	13	17 53.7	49.6	236 19.7	7.9	7 03.9	10.9 60.4	N 70	17 04	18 05	19 16	25 01	01 01	02 54	04 46
	14	32 53.9	50.6	250 46.6	8.0	6 53.0	11.0 60.4	68	17 09	18 04	19 09	25 13	01 13	02 59	04 45
	15	47 54.1	51.5	265 13.6	7.9	6 42.0	11.0 60.4	66	17 12	18 03	19 03	25 23	01 23	03 04	04 45
	16	62 54.3	52.5	279 40.5	8.0	6 31.0	11.0 60.4	64	17 16	18 03	18 58	25 31	01 31	03 08	04 45
	17	77 54.5	53.5	294 07.5	8.0	6 20.0	11.1 60.4	62	17 18	18 03	18 54	00 08	01 38	03 11	04 44
	18	92 54.6 S	4 54.4	308 34.5	8.0	S 6 08.9	11.2 60.4	60	17 21	18 02	18 51	00 17	01 44	03 14	04 44
	19	107 54.8	55.4	323 01.5	8.1	5 57.7	11.1 60.4	N 58	17 23	18 02	18 48	00 25	01 50	03 16	04 44
	20	122 55.0	56.3	337 28.6	8.0	5 46.6	11.3 60.5	56	17 25	18 02	18 45	00 32	01 54	03 19	04 44
	21	137 55.2	57.3	351 55.6	8.1	5 35.3	11.2 60.5	54	17 27	18 02	18 43	00 39	01 59	03 21	04 43
	22	152 55.4	58.3	6 22.7	8.1	5 24.1	11.3 60.5	52	17 29	18 02	18 41	00 44	02 03	03 23	04 43
	23	167 55.6	59.2	20 49.8	8.1	5 12.8	11.3 60.5	50	17 30	18 02	18 40	00 50	02 06	03 24	04 43
	24							45	17 33	18 03	18 37	01 01	02 14	03 28	04 43
L U N E S	6 00	182 55.8 S	5 00.2	35 16.9	8.1	S 5 01.5	11.4 60.5	N 40	17 36	18 03	18 35	01 10	02 20	03 31	04 43
	01	197 56.0	01.1	49 44.0	8.1	4 50.1	11.4 60.5	35	17 39	18 04	18 33	01 18	02 25	03 34	04 42
	02	212 56.1	02.1	64 11.1	8.1	4 38.7	11.4 60.5	30	17 41	18 05	18 32	01 24	02 30	03 36	04 42
	03	227 56.3	03.1	78 38.2	8.1	4 27.3	11.5 60.5	20	17 45	18 07	18 32	01 36	02 38	03 40	04 42
	04	242 56.5	04.0	93 05.3	8.2	4 15.8	11.5 60.5	N 10	17 48	18 09	18 34	01 47	02 45	03 43	04 41
	05	257 56.7	05.0	107 32.5	8.2	4 04.3	11.5 60.5	0	17 52	18 12	18 37	01 56	02 52	03 46	04 41
	06	272 56.9 S	5 05.9	121 59.7	8.1	S 3 52.8	11.5 60.5	S 10	17 55	18 16	18 41	02 06	02 58	03 50	04 40
	07	287 57.1	06.9	136 26.8	8.2	3 41.3	11.6 60.5	20	17 59	18 21	18 47	02 16	03 05	03 53	04 40
	08	302 57.3	07.9	150 54.0	8.2	3 29.7	11.6 60.5	30	18 04	18 28	18 56	02 27	03 13	03 57	04 39
	09	317 57.4	08.8	165 21.2	8.2	3 18.1	11.6 60.5	35	18 06	18 32	19 02	02 34	03 17	03 59	04 39
	10	332 57.6	09.8	179 48.4	8.3	3 06.5	11.6 60.5	40	18 09	18 37	19 09	02 41	03 22	04 01	04 39
	11	347 57.8	10.7	194 15.7	8.2	2 54.9	11.6 60.5	45	18 13	18 43	19 18	02 50	03 28	04 04	04 38
	12	2 58.0 S	5 11.7	208 42.9	8.2	S 2 43.3	11.7 60.5	S 50	18 17	18 50	19 30	03 00	03 35	04 07	04 38
	13	17 58.2	12.7	223 10.1	8.3	2 31.6	11.7 60.5	52	18 19	18 54	19 35	03 05	03 38	04 09	04 38
	14	32 58.4	13.6	237 37.4	8.3	2 19.9	11.7 60.5	54	18 21	18 57	19 41	03 10	03 42	04 10	04 37
	15	47 58.5	14.6	252 04.7	8.2	2 08.2	11.7 60.5	56	18 24	19 02	19 49	03 16	03 46	04 12	04 37
	16	62 58.7	15.5	266 31.9	8.3	1 56.5	11.7 60.5	58	18 26	19 07	19 57	03 22	03 50	04 14	04 37
	17	77 58.9	16.5	280 59.2	8.3	1 44.8	11.7 60.5	S 60	18 29	19 13	20 07	03 30	03 55	04 16	04 36
	18	92 59.1 S	5 17.4	295 26.5	8.3	S 1 33.1	11.8 60.5	SOL		LUNA					
	19	107 59.3	18.4	309 53.8	8.3	1 21.3	11.7 60.5	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase
	20	122 59.5	19.4	324 21.1	8.3	1 09.6	11.8 60.5		00h	12h		Sup.	Inf.		
	21	137 59.6	20.3	338 48.4	8.4	0 57.8	11.7 60.5								
	22	152 59.8	21.3	353 15.8	8.3	0 46.1	11.8 60.5	d	m s	m s	h m	h m	h m	d	%
	23	168 00.0	22.2	7 43.1	8.3	S 0 34.3	11.8 60.5	4	11 06	11 15	11 49	20 38	08 11	10 79	

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.8	JÚPITER -1.9	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
7 00	15 33.9	186 51.0 S 2 15.6	121 02.2 S24 11.7	236 00.4 N16 16.7	146 20.4 S16 07.3	Acamar	315 17.3 S40 14.6	
01	30 36.4	201 50.6 16.9	136 02.7 11.9	251 02.5 16.6	161 22.6 07.4	Achernar	335 25.6 S57 09.7	
02	45 38.8	216 50.2 18.2	151 03.2 12.1	266 04.5 16.4	176 24.8 07.5	Acrux	173 08.8 S63 10.8	
03	60 41.3	231 49.8 . . 19.4	166 03.8 . . 12.3	281 06.6 . . 16.3	191 27.0 . . 07.5	Adhara	255 11.8 S28 59.5	
04	75 43.8	246 49.4 20.7	181 04.3 12.4	296 08.6 16.2	206 29.2 07.6	Aldebarán	290 48.2 N16 32.2	
05	90 46.2	261 49.0 21.9	196 04.8 12.6	311 10.7 16.1	221 31.4 07.7			
06	105 48.7	276 48.6 S 2 23.2	211 05.4 S24 12.8	326 12.7 N16 16.0	236 33.6 S16 07.8	Alioth	166 20.6 N55 52.8	
07	120 51.2	291 48.2 24.4	226 05.9 13.0	341 14.8 15.9	251 35.8 07.8	Alkaid	152 58.7 N49 14.6	
08	135 53.6	306 47.8 25.7	241 06.4 13.2	356 16.9 15.7	266 38.0 07.9	Al Na'ir	62 07.3 N 8 54.8	
09	150 56.1	321 47.4 . . 26.9	256 06.9 . . 13.4	11 18.9 . . 15.6	281 40.2 . . 08.0	Alnilam	275 45.3 S 1 11.6	
10	165 58.6	336 47.0 28.2	271 07.5 13.6	26 21.0 15.5	296 42.5 08.1	Alphard	217 55.4 S 8 43.3	
11	181 01.0	351 46.6 29.4	286 08.0 13.8	41 23.0 15.4	311 44.7 08.1			
12	196 03.5	6 46.2 S 2 30.7	301 08.5 S24 14.0	56 25.1 N16 15.3	326 46.9 S16 08.2	Alphecca	126 10.6 N26 40.2	
13	211 06.0	21 45.8 31.9	316 09.1 14.2	71 27.2 15.2	341 49.1 08.3	Alpheratz	357 42.2 N29 10.5	
14	226 08.4	36 45.4 33.2	331 09.6 14.3	86 29.2 15.0	356 51.3 08.3	Altair	27 42.4 S46 53.3	
15	241 10.9	51 45.0 . . 34.4	346 10.1 . . 14.5	101 31.3 . . 14.9	11 53.5 . . 08.4	Ankaa	353 14.5 S42 13.5	
16	256 13.3	66 44.6 35.7	1 10.6 14.7	116 33.3 14.8	26 55.7 08.5	Antares	112 25.4 S26 27.7	
17	271 15.8	81 44.2 36.9	16 11.2 14.9	131 35.4 14.7	41 57.9 08.6			
18	286 18.3	96 43.8 S 2 38.2	31 11.7 S24 15.1	146 37.5 N16 14.6	57 00.1 S16 08.6	Arcturus	145 55.3 N19 06.6	
19	301 20.7	111 43.4 39.4	46 12.2 15.3	161 39.5 14.5	72 02.3 08.7	Atria	107 26.6 S69 03.2	
20	316 23.2	126 43.0 40.7	61 12.7 15.5	176 41.6 14.3	87 04.5 08.8	Avior	234 17.8 S59 33.2	
21	331 25.7	141 42.6 . . 41.9	76 13.3 . . 15.6	191 43.6 . . 14.2	102 06.7 . . 08.9	Bellatrix	278 30.9 N 6 21.7	
22	346 28.1	156 42.2 43.2	91 13.8 15.8	206 45.7 14.1	117 08.9 08.9	Betelgeuse	271 00.2 N 7 24.5	
23	1 30.6	171 41.8 44.4	106 14.3 16.0	221 47.8 14.0	132 11.1 09.0			
8 00	16 33.1	186 41.4 S 2 45.7	121 14.8 S24 16.2	236 49.8 N16 13.9	147 13.3 S16 09.1	Canopus	263 55.6 S52 42.1	
01	31 35.5	201 41.0 47.0	136 15.4 16.4	251 51.9 13.8	162 15.6 09.1	Capella	280 32.9 N46 00.5	
02	46 38.0	216 40.6 48.2	151 15.9 16.6	266 53.9 13.6	177 17.8 09.2	Deneb	49 30.6 N45 20.4	
03	61 40.5	231 40.2 . . 49.5	166 16.4 . . 16.7	281 56.0 . . 13.5	192 20.0 . . 09.3	Denébola	182 33.1 N14 29.4	
04	76 42.9	246 39.8 50.7	181 16.9 16.9	296 58.1 13.4	207 22.2 09.4	Diphda	348 54.7 S17 54.2	
05	91 45.4	261 39.4 52.0	196 17.5 17.1	312 00.1 13.3	222 24.4 09.4			
06	106 47.8	276 39.0 S 2 53.2	211 18.0 S24 17.3	327 02.2 N16 13.2	237 26.6 S16 09.5	Dubhe	193 51.3 N61 40.1	
07	121 50.3	291 38.6 54.5	226 18.5 17.5	342 04.2 13.1	252 28.8 09.6	Elnath	278 11.3 N28 37.0	
08	136 52.8	306 38.2 55.7	241 19.0 17.6	357 06.3 12.9	267 31.0 09.7	Eltanin	90 45.9 N51 29.7	
09	151 55.2	321 37.8 . . 57.0	256 19.6 . . 17.8	12 08.4 . . 12.8	282 33.2 . . 09.7	Enif	33 46.0 N 9 56.9	
10	166 57.7	336 37.4 58.2	271 20.1 18.0	27 10.4 12.7	297 35.4 09.8	Fomalhaut	15 22.7 S29 32.5	
11	182 00.2	351 37.0 2 59.5	286 20.6 18.2	42 12.5 12.6	312 37.6 09.9			
12	197 02.6	6 36.6 S 3 00.7	301 21.1 S24 18.4	57 14.6 N16 12.5	327 39.8 S16 09.9	Gacrux	172 00.4 S57 11.6	
13	212 05.1	21 36.2 02.0	316 21.6 18.5	72 16.6 12.4	342 42.0 10.0	Gienah	175 51.7 S17 37.3	
14	227 07.6	36 35.8 03.2	331 22.2 18.7	87 18.7 12.3	357 44.2 10.1	Hadar	148 47.1 S60 26.6	
15	242 10.0	51 35.4 . . 04.5	346 22.7 . . 18.9	102 20.7 . . 12.1	12 46.4 . . 10.2	Hamal	327 59.4 N23 31.9	
16	257 12.5	66 35.0 05.7	1 23.2 19.1	117 22.8 12.0	27 48.6 10.2	Kaus Aust.	83 42.7 S34 22.5	
17	272 14.9	81 34.6 07.0	16 23.7 19.3	132 24.9 11.9	42 50.8 10.3			
18	287 17.4	96 34.2 S 3 08.2	31 24.2 S24 19.4	147 26.9 N16 11.8	57 53.0 S16 10.4	Kochab	137 21.2 N74 05.9	
19	302 19.9	111 33.8 09.5	46 24.8 19.6	162 29.0 11.7	72 55.3 10.5	Markab	13 37.1 N15 17.3	
20	317 22.3	126 33.4 10.7	61 25.3 19.8	177 31.1 11.6	87 57.5 10.5	Menkar	314 13.8 N 4 08.9	
21	332 24.8	141 33.0 . . 12.0	76 25.8 . . 20.0	192 33.1 . . 11.4	102 59.7 . . 10.6	Menkent	148 06.9 S36 26.4	
22	347 27.3	156 32.6 13.2	91 26.3 20.1	207 35.2 11.3	118 01.9 10.7	Miaplacidus	221 39.8 S69 46.5	
23	2 29.7	171 32.2 14.5	106 26.8 20.3	222 37.3 11.2	133 04.1 10.7			
9 00	17 32.2	186 31.8 S 3 15.7	121 27.3 S24 20.5	237 39.3 N16 11.1	148 06.3 S16 10.8	Mirfak	308 38.6 N49 54.6	
01	32 34.7	201 31.4 17.0	136 27.9 20.7	252 41.4 11.0	163 08.5 10.9	Nunki	75 57.2 S26 16.5	
02	47 37.1	216 31.0 18.2	151 28.4 20.8	267 43.5 10.9	178 10.7 11.0	Peacock	53 17.7 S56 41.2	
03	62 39.6	231 30.6 . . 19.5	166 28.9 . . 21.0	282 45.5 . . 10.8	193 12.9 . . 11.0	Póllux	243 26.7 N27 59.2	
04	77 42.1	246 30.2 20.7	181 29.4 21.2	297 47.6 10.6	208 15.1 11.1	Procyon	244 58.9 N 5 11.1	
05	92 44.5	261 29.8 22.0	196 29.9 21.3	312 49.7 10.5	223 17.3 11.2			
06	107 47.0	276 29.4 S 3 23.2	211 30.5 S24 21.5	327 51.7 N16 10.4	238 19.5 S16 11.3	Rasalhague	96 05.8 N12 33.3	
07	122 49.4	291 29.0 24.5	226 31.0 21.7	342 53.8 10.3	253 21.7 11.3	Régulus	207 42.8 N11 53.7	
08	137 51.9	306 28.6 25.7	241 31.5 21.9	357 55.9 10.2	268 23.9 11.4	Rigel	281 11.1 S 8 11.1	
09	152 54.4	321 28.2 . . 27.0	256 32.0 . . 22.0	12 57.9 . . 10.1	283 26.1 . . 11.5	Rigel Kent.	139 51.0 S60 53.7	
10	167 56.8	336 27.8 28.2	271 32.5 22.2	28 00.0 10.0	298 28.3 11.5	Sabik	102 11.7 S15 44.3	
11	182 59.3	351 27.4 29.5	286 33.0 22.4	43 02.1 09.8	313 30.5 11.6			
12	198 01.8	6 27.0 S 3 30.7	301 33.5 S24 22.5	58 04.1 N16 09.7	328 32.7 S16 11.7	Schedar	349 38.8 N56 37.2	
13	213 04.2	21 26.6 32.0	316 34.1 22.7	73 06.2 09.6	343 34.9 11.8	Shaula	96 20.9 S37 06.7	
14	228 06.7	36 26.2 33.2	331 34.6 22.9	88 08.3 09.5	358 37.1 11.8	Sirius	258 32.9 S16 44.2	
15	243 09.2	51 25.7 . . 34.4	346 35.1 . . 23.0	103 10.3 . . 09.4	13 39.3 . . 11.9	Spica	158 30.6 S11 14.1	
16	258 11.6	66 25.3 35.7	1 35.6 23.2	118 12.4 09.3	28 41.5 12.0	Suhail	222 52.0 S43 29.4	
17	273 14.1	81 24.9 36.9	16 36.1 23.4	133 14.5 09.2	43 43.7 12.1			
18	288 16.5	96 24.5 S 3 38.2	31 36.6 S24 23.5	148 16.5 N16 09.0	58 45.9 S16 12.1	Vega	80 38.4 N38 48.3	
19	303 19.0	111 24.1 39.4	46 37.1 23.7	163 18.6 08.9	73 48.1 12.2	Zuben'ubi	137 04.7 S16 06.0	
20	318 21.5	126 23.7 40.7	61 37.7 23.9	178 20.7 08.8	88 50.3 12.3			
21	333 23.9	141 23.3 . . 41.9	76 38.2 . . 24.0	193 22.7 . . 08.7	103 52.5 . . 12.4	AHS Paso Mer.		
22	348 26.4	156 22.9 43.2	91 38.7 24.2	208 24.8 08.6	118 54.7 12.4	Venus	170 08.3 11 34	
23	3 28.9	171 22.5 44.4	106 39.2 24.4	223 26.9 08.5	133 56.9 12.5	Marte	104 41.8 15 54	
						Júpiter	220 16.8 8 12	
						Saturno	130 40.3 14 09	
Paso Mer. 22 50.0	v -0.4 d 1.3		v 0.5 d 0.2	v 2.1 d 0.1	v 2.2 d 0.1			

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	7		8	9	10	
d h	°	'	°	'	°	'	'	°	h m	h m	h m	h m	h m	h m	h m	h m
MARTES	7 00	183 00.2	S 5 23.2	22 10.4	8.4	S 0 22.5	11.7	60.4	N 72	04 23	05 42	06 50	16 34	16 28	16 22	16 16
	01	198 00.4	24.1	36 37.8	8.4	S 0 10.8	11.8	60.4	N 70	04 31	05 42	06 43	16 38	16 39	16 41	16 45
	02	213 00.6	25.1	51 05.2	8.3	N 0 01.0	11.7	60.4	68	04 37	05 42	06 37	16 41	16 47	16 55	17 07
	03	228 00.7	26.1	65 32.5	8.4	0 12.7	11.8	60.4	66	04 42	05 41	06 33	16 43	16 54	17 07	17 24
	04	243 00.9	27.0	79 59.9	8.4	0 24.5	11.7	60.4	64	04 46	05 41	06 29	16 45	17 00	17 17	17 38
	05	258 01.1	28.0	94 27.3	8.3	0 36.2	11.8	60.4	62	04 49	05 41	06 25	16 47	17 05	17 25	17 50
	06	273 01.3	S 5 28.9	108 54.6	8.4	N 0 48.0	11.7	60.4	60	04 52	05 40	06 22	16 49	17 10	17 33	18 00
	07	288 01.5	29.9	123 22.0	8.4	0 59.7	11.7	60.4	N 58	04 54	05 40	06 19	16 51	17 14	17 39	18 09
	08	303 01.7	30.8	137 49.4	8.4	1 11.4	11.8	60.4	56	04 56	05 39	06 17	16 52	17 17	17 45	18 17
	09	318 01.8	31.8	152 16.8	8.4	1 23.2	11.7	60.4	54	04 58	05 39	06 14	16 53	17 21	17 50	18 24
	10	333 02.0	32.7	166 44.2	8.4	1 34.9	11.6	60.4	52	05 00	05 39	06 12	16 54	17 24	17 55	18 30
	11	348 02.2	33.7	181 11.6	8.4	1 46.5	11.7	60.4	50	05 01	05 38	06 11	16 55	17 26	17 59	18 36
	12	3 02.4	S 5 34.7	195 39.0	8.5	N 1 58.2	11.7	60.3	45	05 03	05 37	06 06	16 57	17 32	18 09	18 48
	13	18 02.6	35.6	210 06.5	8.4	2 09.9	11.6	60.3	N 40	05 05	05 36	06 03	16 59	17 37	18 17	18 58
	14	33 02.7	36.6	224 33.9	8.4	2 21.5	11.6	60.3	35	05 05	05 35	06 00	17 01	17 41	18 23	19 07
	15	48 02.9	37.5	239 01.3	8.4	2 33.1	11.6	60.3	30	05 06	05 33	05 57	17 02	17 45	18 29	19 15
	16	63 03.1	38.5	253 28.7	8.5	2 44.7	11.6	60.3	20	05 05	05 31	05 53	17 05	17 52	18 40	19 28
	17	78 03.3	39.4	267 56.2	8.4	2 56.3	11.6	60.3	N 10	05 03	05 27	05 48	17 07	17 58	18 49	19 40
	18	93 03.5	S 5 40.4	282 23.6	8.4	N 3 07.9	11.5	60.3	0	04 59	05 24	05 44	17 09	18 03	18 57	19 51
	19	108 03.6	41.3	296 51.0	8.5	3 19.4	11.5	60.2	S 10	04 54	05 19	05 40	17 11	18 09	19 06	20 02
	20	123 03.8	42.3	311 18.5	8.4	3 30.9	11.5	60.2	20	04 47	05 13	05 36	17 14	18 15	19 15	20 14
	21	138 04.0	43.2	325 45.9	8.4	3 42.4	11.4	60.2	30	04 38	05 06	05 30	17 17	18 22	19 26	20 28
	22	153 04.2	44.2	340 13.3	8.5	3 53.8	11.4	60.2	35	04 31	05 01	05 27	17 18	18 26	19 32	20 36
23	168 04.3	45.2	354 40.8	8.4	4 05.2	11.4	60.2	40	04 24	04 56	05 24	17 20	18 30	19 39	20 45	
MIÉRCOLES	8 00	183 04.5	S 5 46.1	9 08.2	8.5	N 4 16.6	11.4	60.2	45	04 14	04 50	05 19	17 22	18 36	19 47	20 56
	01	198 04.7	47.1	23 35.7	8.4	4 28.0	11.3	60.2	S 50	04 01	04 41	05 14	17 25	18 42	19 57	21 09
	02	213 04.9	48.0	38 03.1	8.5	4 39.3	11.3	60.1	52	03 55	04 37	05 12	17 26	18 45	20 02	21 15
	03	228 05.1	49.0	52 30.6	8.4	4 50.6	11.2	60.1	54	03 49	04 33	05 09	17 27	18 48	20 07	21 22
	04	243 05.2	49.9	66 58.0	8.5	5 01.8	11.2	60.1	56	03 41	04 28	05 07	17 28	18 52	20 13	21 29
	05	258 05.4	50.9	81 25.5	8.4	5 13.0	11.2	60.1	58	03 32	04 23	05 03	17 30	18 56	20 19	21 38
	06	273 05.6	S 5 51.8	95 52.9	8.5	N 5 24.2	11.1	60.1	S 60	03 22	04 17	05 00	17 32	19 01	20 27	21 47
	07	288 05.8	52.8	110 20.4	8.5	5 35.3	11.1	60.0	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
	08	303 05.9	53.7	124 47.9	8.4	5 46.4	11.1	60.0			Civil		Náut.		7	
	09	318 06.1	54.7	139 15.3	8.5	5 57.5	11.0	60.0							8	
	10	333 06.3	55.6	153 42.8	8.4	6 08.5	10.9	60.0							9	
	11	348 06.5	56.6	168 10.2	8.5	6 19.4	10.9	60.0							10	
	12	3 06.7	S 5 57.5	182 37.7	8.4	N 6 30.3	10.9	59.9	N 72	16 43	17 51	19 09	04 46	06 45	08 45	10 44
	13	18 06.8	58.5	197 05.1	8.5	6 41.2	10.8	59.9	N 70	16 50	17 51	19 02	04 46	06 37	08 28	10 16
	14	33 07.0	59.5	211 32.6	8.4	6 52.0	10.8	59.9	68	16 56	17 52	18 56	04 45	06 31	08 15	09 56
	15	48 07.2	6 00.4	226 00.0	8.5	7 02.8	10.7	59.9	66	17 01	17 52	18 51	04 45	06 26	08 04	09 39
	16	63 07.4	01.4	240 27.5	8.4	7 13.5	10.6	59.9	64	17 05	17 53	18 48	04 45	06 21	07 55	09 26
	17	78 07.5	02.3	254 54.9	8.5	7 24.1	10.6	59.8	62	17 09	17 53	18 44	04 44	06 17	07 48	09 15
	18	93 07.7	S 6 03.3	269 22.4	8.5	N 7 34.7	10.6	59.8	60	17 12	17 54	18 42	04 44	06 14	07 41	09 05
	19	108 07.9	04.2	283 49.9	8.4	7 45.3	10.5	59.8	N 58	17 15	17 54	18 39	04 44	06 11	07 36	08 57
	20	123 08.1	05.2	298 17.3	8.5	7 55.8	10.4	59.8	56	17 17	17 55	18 37	04 44	06 08	07 30	08 49
	21	138 08.2	06.1	312 44.8	8.4	8 06.2	10.4	59.7	54	17 20	17 55	18 36	04 43	06 06	07 26	08 43
	22	153 08.4	07.1	327 12.2	8.5	8 16.6	10.3	59.7	52	17 22	17 56	18 34	04 43	06 03	07 22	08 37
23	168 08.6	08.0	341 39.7	8.4	8 26.9	10.3	59.7	50	17 24	17 56	18 33	04 43	06 01	07 18	08 32	
JUEVES	9 00	183 08.8	S 6 09.0	356 07.1	8.5	N 8 37.2	10.1	59.7	45	17 28	17 57	18 31	04 43	05 57	07 10	08 20
	01	198 08.9	09.9	10 34.6	8.4	8 47.3	10.2	59.6	N 40	17 31	17 59	18 30	04 43	05 54	07 03	08 11
	02	213 09.1	10.9	25 02.0	8.5	8 57.5	10.0	59.6	35	17 35	18 00	18 29	04 42	05 50	06 58	08 03
	03	228 09.3	11.8	39 29.5	8.4	9 07.5	10.0	59.6	30	17 37	18 01	18 29	04 42	05 48	06 53	07 56
	04	243 09.4	12.8	53 56.9	8.4	9 17.5	10.0	59.6	20	17 42	18 04	18 30	04 42	05 43	06 44	07 44
	05	258 09.6	13.7	68 24.3	8.5	9 27.5	9.8	59.5	N 10	17 47	18 08	18 32	04 41	05 39	06 36	07 33
	06	273 09.8	S 6 14.7	82 51.8	8.4	N 9 37.3	9.8	59.5	0	17 51	18 12	18 36	04 41	05 35	06 29	07 23
	07	288 10.0	15.6	97 19.2	8.5	9 47.1	9.8	59.5	S 10	17 55	18 16	18 41	04 40	05 31	06 22	07 13
	08	303 10.1	16.6	111 46.7	8.4	9 56.9	9.6	59.4	20	18 00	18 22	18 48	04 40	05 27	06 14	07 02
	09	318 10.3	17.5	126 14.1	8.5	10 06.5	9.6	59.4	30	18 05	18 30	18 58	04 39	05 22	06 06	06 50
	10	333 10.5	18.5	140 41.6	8.4	10 16.1	9.5	59.4	35	18 09	18 34	19 04	04 39	05 19	06 01	06 43
	11	348 10.7	19.4	155 09.0	8.5	10 25.6	9.5	59.4	40	18 12	18 40	19 12	04 39	05 16	05 55	06 35
	12	3 10.8	S 6 20.4	169 36.5	8.4	N10 35.1	9.3	59.3	45	18 17	18 47	19 22	04 38	05 13	05 48	06 26
	13	18 11.0	21.3	184 03.9	8.5	10 44.4	9.3	59.3	S 50	18 22	18 55	19 35	04 38	05 08	05 40	06 15
	14	33 11.2	22.3	198 31.4	8.4	10 53.7	9.3	59.3	52	18 24	18 59	19 41	04 38	05 07	05 37	06 10
	15	48 11.3	23.2	212 58.8	8.4	11 03.0	9.1	59.2	54	18 27	19 03	19 48	04 37	05 04	05 33	06 04
	16	63 11.5	24.2	227 26.2	8.5	11 12.1	9.1	59.2	56	18 30	19 08	19 56	04 37	05 02	05 29	05 58
	17	78 11.7	25.1	241 53.7	8.4	11 21.2	8.9	59.2	58	18 33	19 14	20 05	04 37	04 59	05 24	05 51
	18	93 11.8	S 6 26.1	256 21.1	8.5	N11 30.1	8.9	59.1	S 60	18 37	19 20	20 16	04 36	04 57	05 18	05 43
	19	108 12.0	27.0	270 48.6	8.4	11 39.0	8.9	59.1	Día		SOL		Paso Mer.		LUNA	
	20	123 12.2	28.0	285 16.0	8.5	11 47.9	8.7	59.1			Ec. Tiempo		Paso Mer.			

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.8	JÚPITER -1.9	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
10 00	18 31.3	186 22.1 S 3 45.7	121 39.7 S24 24.5	238 28.9 N16 08.4	148 59.2 S16 12.6	Acamar	315 17.3 S40 14.7	
01	33 33.8	201 21.7 46.9	136 40.2 24.7	253 31.0 08.2	164 01.4 12.6	Achernar	335 25.6 S57 09.7	
02	48 36.3	216 21.3 48.2	151 40.7 24.9	268 33.1 08.1	179 03.6 12.7	Acrux	173 08.8 S63 10.7	
03	63 38.7	231 20.9 . . 49.4	166 41.2 . . 25.0	283 35.2 . . 08.0	194 05.8 . . 12.8	Adhara	255 11.8 S28 59.5	
04	78 41.2	246 20.5 50.7	181 41.7 25.2	298 37.2 07.9	209 08.0 12.9	Aldebarán	290 48.1 N16 32.2	
05	93 43.7	261 20.1 51.9	196 42.3 25.4	313 39.3 07.8	224 10.2 12.9			
06	108 46.1	276 19.7 S 3 53.2	211 42.8 S24 25.5	328 41.4 N16 07.7	239 12.4 S16 13.0	Alioth	166 20.6 N55 52.8	
07	123 48.6	291 19.3 54.4	226 43.3 25.7	343 43.4 07.6	254 14.6 13.1	Alkaid	152 58.7 N49 14.5	
08	138 51.0	306 18.9 55.7	241 43.8 25.8	358 45.5 07.4	269 16.8 13.2	Al Na'ir	27 42.4 S46 53.3	
09	153 53.5	321 18.4 . . 56.9	256 44.3 . . 26.0	13 47.6 . . 07.3	284 19.0 . . 13.2	Alnilam	275 45.3 S 1 11.6	
10	168 56.0	336 18.0 58.1	271 44.8 26.2	28 49.7 07.2	299 21.2 13.3	Alphard	217 55.4 S 8 43.3	
11	183 58.4	351 17.6 3 59.4	286 45.3 26.3	43 51.7 07.1	314 23.4 13.4			
12	199 00.9	6 17.2 S 4 00.6	301 45.8 S24 26.5	58 53.8 N16 07.0	329 25.6 S16 13.5	Alphecca	126 10.6 N26 40.2	
13	214 03.4	21 16.8 01.9	316 46.3 26.6	73 55.9 06.9	344 27.8 13.5	Alpheratz	357 42.2 N29 10.5	
14	229 05.8	36 16.4 03.1	331 46.8 26.8	88 57.9 06.8	359 30.0 13.6	Altair	62 07.3 N 8 54.8	
15	244 08.3	51 16.0 . . 04.4	346 47.4 . . 27.0	104 00.0 . . 06.7	14 32.2 . . 13.7	Ankaa	353 14.5 S42 13.5	
16	259 10.8	66 15.6 05.6	1 47.9 27.1	119 02.1 06.5	29 34.4 13.7	Antares	112 25.4 S26 27.7	
17	274 13.2	81 15.2 06.9	16 48.4 27.3	134 04.1 06.4	44 36.6 13.8			
18	289 15.7	96 14.8 S 4 08.1	31 48.9 S24 27.4	149 06.2 N16 06.3	59 38.8 S16 13.9	Arcturus	145 55.3 N19 06.6	
19	304 18.2	111 14.4 09.4	46 49.4 27.6	164 08.3 06.2	74 41.0 14.0	Atria	107 26.7 S69 03.2	
20	319 20.6	126 14.0 10.6	61 49.9 27.7	179 10.4 06.1	89 43.2 14.0	Avior	234 17.8 S59 33.2	
21	334 23.1	141 13.6 . . 11.8	76 50.4 . . 27.9	194 12.5 . . 06.0	104 45.4 . . 14.1	Bellatrix	278 30.9 N 6 21.7	
22	349 25.5	156 13.1 13.1	91 50.9 28.1	209 14.5 05.9	119 47.6 14.2	Betelgeuse	271 00.2 N 7 24.5	
23	4 28.0	171 12.7 14.3	106 51.4 28.2	224 16.6 05.8	134 49.8 14.3			
11 00	19 30.5	186 12.3 S 4 15.6	121 51.9 S24 28.4	239 18.7 N16 05.6	149 52.0 S16 14.3	Canopus	263 55.6 S52 42.1	
01	34 32.9	201 11.9 16.8	136 52.4 28.5	254 20.7 05.5	164 54.2 14.4	Capella	280 32.9 N46 00.5	
02	49 35.4	216 11.5 18.1	151 52.9 28.7	269 22.8 05.4	179 56.4 14.5	Deneb	49 30.7 N45 20.4	
03	64 37.9	231 11.1 . . 19.3	166 53.4 . . 28.8	284 24.9 . . 05.3	194 58.6 . . 14.6	Denébola	182 33.1 N14 29.4	
04	79 40.3	246 10.7 20.6	181 53.9 29.0	299 27.0 05.2	210 00.8 14.6	Diphda	348 54.7 S17 54.2	
05	94 42.8	261 10.3 21.8	196 54.4 29.1	314 29.0 05.1	225 03.0 14.7			
06	109 45.3	276 09.9 S 4 23.0	211 54.9 S24 29.3	329 31.1 N16 05.0	240 05.2 S16 14.8	Dubhe	193 51.3 N61 40.1	
07	124 47.7	291 09.5 24.3	226 55.4 29.4	344 33.2 04.9	255 07.4 14.8	Elnath	278 11.3 N28 37.0	
08	139 50.2	306 09.0 25.5	241 55.9 29.6	359 35.3 04.7	270 09.6 14.9	Eltanin	90 45.9 N51 29.7	
09	154 52.6	321 08.6 . . 26.8	256 56.4 . . 29.8	14 37.4 . . 04.6	285 11.8 . . 15.0	Enif	33 46.0 N 9 56.9	
10	169 55.1	336 08.2 28.0	271 57.0 29.9	29 39.4 04.5	300 14.0 15.1	Fomalhaut	15 22.7 S29 32.5	
11	184 57.6	351 07.8 29.3	286 57.5 30.1	44 41.5 04.4	315 16.2 15.1			
12	200 00.0	6 07.4 S 4 30.5	301 58.0 S24 30.2	59 43.6 N16 04.3	330 18.4 S16 15.2	Gacrux	172 00.4 S57 11.6	
13	215 02.5	21 07.0 31.7	316 58.5 30.4	74 45.7 04.2	345 20.6 15.3	Gienah	175 51.7 S17 37.3	
14	230 05.0	36 06.6 33.0	331 59.0 30.5	89 47.7 04.1	0 22.8 15.4	Hadar	148 47.1 S60 26.6	
15	245 07.4	51 06.2 . . 34.2	346 59.5 . . 30.7	104 49.8 . . 04.0	15 25.0 . . 15.4	Hamal	327 59.4 N23 31.9	
16	260 09.9	66 05.8 35.5	2 00.0 30.8	119 51.9 03.8	30 27.2 15.5	Kaus Aust.	83 42.7 S34 22.5	
17	275 12.4	81 05.3 36.7	17 00.5 30.9	134 54.0 03.7	45 29.4 15.6			
18	290 14.8	96 04.9 S 4 38.0	32 01.0 S24 31.1	149 56.0 N16 03.6	60 31.6 S16 15.7	Kochab	137 21.3 N74 05.9	
19	305 17.3	111 04.5 39.2	47 01.5 31.2	164 58.1 03.5	75 33.8 15.7	Markab	13 37.2 N15 17.3	
20	320 19.8	126 04.1 40.4	62 02.0 31.4	180 00.2 03.4	90 36.0 15.8	Menkar	314 13.8 N 4 08.9	
21	335 22.2	141 03.7 . . 41.7	77 02.5 . . 31.5	195 02.3 . . 03.3	105 38.2 . . 15.9	Menkent	148 06.9 S36 26.4	
22	350 24.7	156 03.3 42.9	92 03.0 31.7	210 04.4 03.2	120 40.4 16.0	Miaplacidus	221 39.8 S69 46.5	
23	5 27.1	171 02.9 44.2	107 03.5 31.8	225 06.4 03.1	135 42.6 16.0			
12 00	20 29.6	186 02.5 S 4 45.4	122 04.0 S24 32.0	240 08.5 N16 02.9	150 44.8 S16 16.1	Mirfak	308 38.6 N49 54.6	
01	35 32.1	201 02.0 46.6	137 04.5 32.1	255 10.6 02.8	165 47.0 16.2	Nunki	75 57.3 S26 16.5	
02	50 34.5	216 01.6 47.9	152 05.0 32.3	270 12.7 02.7	180 49.2 16.2	Peacock	53 17.7 S56 41.2	
03	65 37.0	231 01.2 . . 49.1	167 05.5 . . 32.4	285 14.8 . . 02.6	195 51.4 . . 16.3	Póllux	243 26.7 N27 59.2	
04	80 39.5	246 00.8 50.4	182 06.0 32.6	300 16.8 02.5	210 53.6 16.4	Procyon	244 58.8 N 5 11.1	
05	95 41.9	261 00.4 51.6	197 06.5 32.7	315 18.9 02.4	225 55.8 16.5			
06	110 44.4	276 00.0 S 4 52.9	212 07.0 S24 32.8	330 21.0 N16 02.3	240 58.0 S16 16.5	Rasalhague	96 05.8 N12 33.3	
07	125 46.9	290 59.6 54.1	227 07.5 33.0	345 23.1 02.2	256 00.2 16.6	Régulus	207 42.8 N11 53.7	
08	140 49.3	305 59.1 55.3	242 08.0 33.1	0 25.2 02.1	271 02.4 16.7	Rigel	281 11.0 S 8 11.1	
09	155 51.8	320 58.7 . . 56.6	257 08.5 . . 33.3	15 27.2 . . 01.9	286 04.6 . . 16.8	Rigel Kent.	139 51.0 S60 53.7	
10	170 54.3	335 58.3 57.8	272 09.0 33.4	30 29.3 01.8	301 06.8 16.8	Sabik	102 11.7 S15 44.3	
11	185 56.7	350 57.9 4 59.1	287 09.4 33.6	45 31.4 01.7	316 09.0 16.9			
12	200 59.2	5 57.5 S 5 00.3	302 09.9 S24 33.7	60 33.5 N16 01.6	331 11.1 S16 17.0	Schedar	349 38.8 N56 37.2	
13	216 01.6	20 57.1 01.5	317 10.4 33.8	75 35.6 01.5	346 13.3 17.1	Shaula	96 20.9 S37 06.7	
14	231 04.1	35 56.6 02.8	332 10.9 34.0	90 37.6 01.4	1 15.5 17.1	Sirius	258 32.9 S16 44.2	
15	246 06.6	50 56.2 . . 04.0	347 11.4 . . 34.1	105 39.7 . . 01.3	16 17.7 . . 17.2	Spica	158 30.6 S11 14.1	
16	261 09.0	65 55.8 05.2	2 11.9 34.3	120 41.8 01.2	31 19.9 17.3	Suhail	222 51.9 S43 29.4	
17	276 11.5	80 55.4 06.5	17 12.4 34.4	135 43.9 01.1	46 22.1 17.4			
18	291 14.0	95 55.0 S 5 07.7	32 12.9 S24 34.5	150 46.0 N16 00.9	61 24.3 S16 17.4	Vega	80 38.4 N38 48.3	
19	306 16.4	110 54.6 09.0	47 13.4 34.7	165 48.0 00.8	76 26.5 17.5	Zuben'ubi	137 04.7 S16 06.0	
20	321 18.9	125 54.1 10.2	62 13.9 34.8	180 50.1 00.7	91 28.7 17.6			
21	336 21.4	140 53.7 . . 11.4	77 14.4 . . 34.9	195 52.2 . . 00.6	106 30.9 . . 17.6			
22	351 23.8	155 53.3 12.7	92 14.9 35.1	210 54.3 00.5	121 33.1 17.7			
23	6 26.3	170 52.9 13.9	107 15.4 35.2	225 56.4 00.4	136 35.3 17.8			
Paso Mer. 22 38.2	v -0.4 d 1.2		v 0.5 d 0.2	v 2.1 d 0.1	v 2.2 d 0.1			
						AHS Paso Mer.		
						Venus	166 41.9 h 11 35	
						Marte	102 21.4 h 15 52	
						Júpiter	219 48.2 h 8 02	
						Saturno	130 21.5 h 13 58	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		10	11	12	13	
VERNES	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	1000	183 12.9	S 6 31.7	343 05.9	8.4	N12 22.4	8.4	59.0	04 37	05 55	07 04	16 16	16 06	15 30	□	
	01	198 13.0	32.7	357 33.3	8.5	12 30.8	8.3	58.9	N 70	04 43	05 54	06 56	16 45	16 54	17 13	
	02	213 13.2	33.6	12 00.8	8.4	12 39.1	8.2	58.9	68	04 47	05 52	06 48	17 07	17 24	17 54	
	03	228 13.4	34.6	26 28.2	8.5	12 47.3	8.2	58.9	66	04 51	05 51	06 42	17 24	17 47	18 21	
	04	243 13.5	35.5	40 55.7	8.5	12 55.5	8.0	58.8	64	04 54	05 49	06 37	17 38	18 06	18 42	
	05	258 13.7	36.5	55 23.2	8.5	13 03.5	8.0	58.8	62	04 57	05 48	06 33	17 50	18 21	19 00	
	06	273 13.9	S 6 37.4	69 50.7	8.4	N13 11.5	7.9	58.8	60	04 59	05 47	06 29	18 00	18 33	19 14	
	07	288 14.0	38.4	84 18.1	8.5	13 19.4	7.8	58.7	N 58	05 01	05 46	06 26	18 09	18 44	19 26	
	08	303 14.2	39.3	98 45.6	8.5	13 27.2	7.7	58.7	56	05 02	05 45	06 23	18 17	18 54	19 37	
	09	318 14.4	40.3	113 13.1	8.5	13 34.9	7.6	58.7	54	05 04	05 44	06 20	18 24	19 02	19 46	
	10	333 14.5	41.2	127 40.6	8.5	13 42.5	7.6	58.6	52	05 05	05 44	06 17	18 30	19 10	19 54	
	11	348 14.7	42.2	142 08.1	8.5	13 50.1	7.4	58.6	50	05 05	05 43	06 15	18 36	19 16	20 02	
	12	3 14.9	S 6 43.1	156 35.6	8.5	N13 57.5	7.4	58.6	45	05 07	05 41	06 10	18 48	19 31	20 18	
	13	18 15.0	44.0	171 03.1	8.5	14 04.9	7.2	58.5	N 40	05 08	05 39	06 06	18 58	19 43	20 31	
	14	33 15.2	45.0	185 30.6	8.6	14 12.1	7.2	58.5	35	05 08	05 37	06 02	19 07	19 53	20 42	
	15	48 15.4	45.9	199 58.2	8.5	14 19.3	7.0	58.4	30	05 07	05 35	05 59	19 15	20 02	20 52	
	16	63 15.5	46.9	214 25.7	8.5	14 26.3	7.0	58.4	20	05 06	05 31	05 53	19 28	20 18	21 09	
	17	78 15.7	47.8	228 53.2	8.6	14 33.3	6.9	58.4	N 10	05 03	05 27	05 48	19 40	20 32	21 24	
	18	93 15.9	S 6 48.8	243 20.8	8.5	N14 40.2	6.8	58.3	0	04 58	05 23	05 43	19 51	20 45	21 37	
	19	108 16.0	49.7	257 48.3	8.6	14 47.0	6.6	58.3	S 10	04 53	05 17	05 38	20 02	20 58	21 51	
	20	123 16.2	50.7	272 15.9	8.6	14 53.6	6.6	58.3	20	04 45	05 11	05 33	20 14	21 12	22 06	
	21	138 16.4	51.6	286 43.5	8.5	15 00.2	6.5	58.2	30	04 34	05 02	05 27	20 28	21 27	22 23	
	22	153 16.5	52.5	301 11.0	8.6	15 06.7	6.4	58.2	35	04 27	04 57	05 23	20 36	21 37	22 33	
	23	168 16.7	53.5	315 38.6	8.6	15 13.1	6.3	58.2	40	04 18	04 51	05 19	20 45	21 47	22 44	
SABADO	45	04 08	04 44	05 14	20 56	22 00	22 58	23 49	S 50	03 54	04 35	05 08	21 09	22 15	23 14	
	52	03 48	04 30	05 05	21 15	22 22	23 22	24 13	54	03 40	04 25	05 02	21 22	22 30	23 30	
	56	03 32	04 20	04 59	21 29	22 39	23 40	24 32	58	03 22	04 14	04 55	21 38	22 49	23 51	
	S 60	03 11	04 07	04 51	21 47	23 01	24 04	00 04	Ocaso Sol		Crepúsculo		Ocaso Luna			
	Lat.	Ocaso Sol	Civil	Náut.	10	11	12	13								
	N 72	h m	h m	h m	h m	h m	h m	h m								
	N 70	16 27	17 36	18 54	10 44	12 46	15 13	□								
	68	16 36	17 38	18 48	10 16	12 00	13 30	14 36								
	66	16 44	17 40	18 44	09 56	11 29	12 50	13 52								
	64	16 50	17 41	18 40	09 59	11 07	12 23	13 23								
	62	16 55	17 43	18 37	09 56	10 49	12 02	13 01								
	60	16 59	17 44	18 35	09 15	10 35	11 45	12 43								
	N 58	17 03	17 45	18 33	09 05	10 22	11 31	12 28								
	56	17 07	17 46	18 31	08 57	10 12	11 19	12 16								
	54	17 10	17 47	18 30	08 49	10 03	11 08	12 05								
	52	17 13	17 48	18 29	08 43	09 55	10 59	11 55								
	50	17 15	17 49	18 28	08 37	09 47	10 51	11 47								
	45	17 17	17 50	18 27	08 32	09 41	10 44	11 39								
	DOMINGO	45	17 23	17 52	18 26	08 20	09 27	10 28	11 23	N 40	17 27	17 54	18 25	08 11	09 15	10 15
		35	17 31	17 56	18 25	08 03	09 05	10 04	10 58	30	17 34	17 58	18 26	07 56	08 57	09 55
		20	17 40	18 02	18 27	07 44	08 42	09 38	10 31	N 10	17 45	18 06	18 31	07 33	08 29	09 24
		0	17 50	18 11	18 35	07 23	08 17	09 10	10 02	0	17 50	18 11	18 35	07 23	08 17	09 10
		S 10	17 55	18 16	18 41	07 13	08 05	08 57	09 48	20	18 01	18 23	18 49	07 02	07 52	08 42
		30	18 07	18 32	19 00	06 50	07 37	08 26	09 16	30	18 07	18 32	19 00	06 50	07 37	08 26
		35	18 11	18 37	19 07	06 43	07 29	08 16	09 06	40	18 15	18 43	19 16	06 35	07 19	08 05
45		18 20	18 51	19 27	06 26	07 07	07 52	08 41	S 50	18 27	19 00	19 41	06 15	06 54	07 37	
52		18 29	19 04	19 47	06 10	06 47	07 29	08 17	52	18 29	19 04	19 47	06 10	06 47	07 29	
54		18 33	19 09	19 55	06 04	06 40	07 21	08 08	54	18 33	19 09	19 55	06 04	06 40	07 21	
56		18 36	19 15	20 04	05 58	06 32	07 12	07 59	56	18 36	19 15	20 04	05 58	06 32	07 12	
58		18 40	19 21	20 14	05 51	06 23	07 02	07 48	58	18 40	19 21	20 14	05 51	06 23	07 02	
S 60		18 44	19 29	20 25	05 43	06 13	06 50	07 35	S 60	18 44	19 29	20 25	05 43	06 13	06 50	
Día		SOL		Paso Mer.		LUNA										
		Ec. Tiempo														
		00h 12h														
d		m s	m s	h m	h m	h m	d	%								
10		12 51	12 59	11 47	01 10	13 37	16 95									
11		13 07	13 15	11 47	02 04	14 31	17 88									
12		13 23	13 30	11 46	02 57	15 24	18 81									
S/D 16.0		d 0.9	S/D 16.0	15.7	15.5											

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.9	JÚPITER -2.0	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
LUNES								
13 00	21 28.7	185 52.5 S 5 15.1	122 15.9 S24 35.3	240 58.5 N16 00.3	151 37.5 S16 17.9	Acamar	315 17.3 S40 14.7	
01	36 31.2	200 52.1 16.4	137 16.4 35.5	256 00.5 00.2	166 39.7 17.9	Achernar	335 25.6 S57 09.7	
02	51 33.7	215 51.6 17.6	152 16.9 35.6	271 02.6 00.1	181 41.9 18.0	Acrux	173 08.8 S63 10.7	
03	66 36.1	230 51.2 . . 18.9	167 17.4 . . 35.8	286 04.7 16 00.0	196 44.1 . . 18.1	Adhara	255 11.8 S28 59.5	
04	81 38.6	245 50.8 20.1	182 17.9 35.9	301 06.8 15 59.8	211 46.3 18.2	Aldebarán	290 48.1 N16 32.2	
05	96 41.1	260 50.4 21.3	197 18.4 36.0	316 08.9 59.7	226 48.5 18.2			
06	111 43.5	275 50.0 S 5 22.6	212 18.8 S24 36.2	331 11.0 N15 59.6	241 50.7 S16 18.3	Alioth	166 20.6 N55 52.8	
07	126 46.0	290 49.5 23.8	227 19.3 36.3	346 13.1 59.5	256 52.9 18.4	Alkaid	152 58.7 N49 14.5	
08	141 48.5	305 49.1 25.0	242 19.8 36.4	1 15.1 59.4	271 55.1 18.5	Al Na'ir	62 07.3 N 8 54.8	
09	156 50.9	320 48.7 . . 26.3	257 20.3 . . 36.6	16 17.2 . . 59.3	286 57.3 . . 18.5	Alnilam	275 45.3 S 1 11.6	
10	171 53.4	335 48.3 27.5	272 20.8 36.7	31 19.3 59.2	301 59.5 18.6	Alphard	217 55.4 S 8 43.3	
11	186 55.9	350 47.9 28.7	287 21.3 36.8	46 21.4 59.1	317 01.7 18.7			
12	201 58.3	5 47.4 S 5 30.0	302 21.8 S24 36.9	61 23.5 N15 59.0	332 03.9 S16 18.8	Alphecca	126 10.6 N26 40.2	
13	217 00.8	20 47.0 31.2	317 22.3 37.1	76 25.6 58.9	347 06.1 18.8	Alpheratz	357 42.2 N29 10.5	
14	232 03.2	35 46.6 32.5	332 22.8 37.2	91 27.7 58.7	2 08.3 18.9	Altair	62 07.3 N 8 54.8	
15	247 05.7	50 46.2 . . 33.7	347 23.3 . . 37.3	106 29.7 . . 58.6	17 10.5 . . 19.0	Ankaa	353 14.5 S42 13.5	
16	262 08.2	65 45.8 34.9	2 23.8 37.5	121 31.8 58.5	32 12.7 19.1	Antares	112 25.4 S26 27.7	
17	277 10.6	80 45.3 36.2	17 24.2 37.6	136 33.9 58.4	47 14.8 19.1			
18	292 13.1	95 44.9 S 5 37.4	32 24.7 S24 37.7	151 36.0 N15 58.3	62 17.0 S16 19.2	Arcturus	145 55.3 N19 06.5	
19	307 15.6	110 44.5 38.6	47 25.2 37.9	166 38.1 58.2	77 19.2 19.3	Atria	107 26.7 S69 03.2	
20	322 18.0	125 44.1 39.9	62 25.7 38.0	181 40.2 58.1	92 21.4 19.3	Avior	234 17.7 S59 33.2	
21	337 20.5	140 43.6 . . 41.1	77 26.2 . . 38.1	196 42.3 . . 58.0	107 23.6 . . 19.4	Bellatrix	278 30.9 N 6 21.7	
22	352 23.0	155 43.2 42.3	92 26.7 38.2	211 44.4 57.9	122 25.8 19.5	Betelgeuse	271 00.2 N 7 24.5	
23	7 25.4	170 42.8 43.6	107 27.2 38.4	226 46.4 57.8	137 28.0 19.6			
MARTES								
14 00	22 27.9	185 42.4 S 5 44.8	122 27.7 S24 38.5	241 48.5 N15 57.7	152 30.2 S16 19.6	Canopus	263 55.6 S52 42.1	
01	37 30.4	200 42.0 46.0	137 28.1 38.6	256 50.6 57.5	167 32.4 19.7	Capella	280 32.9 N46 00.5	
02	52 32.8	215 41.5 47.3	152 28.6 38.7	271 52.7 57.4	182 34.6 19.8	Deneb	49 30.7 N45 20.5	
03	67 35.3	230 41.1 . . 48.5	167 29.1 . . 38.9	286 54.8 . . 57.3	197 36.8 . . 19.9	Denébola	182 33.1 N14 29.4	
04	82 37.7	245 40.7 49.7	182 29.6 39.0	301 56.9 57.2	212 39.0 19.9	Diphda	348 54.7 S17 54.2	
05	97 40.2	260 40.3 50.9	197 30.1 39.1	316 59.0 57.1	227 41.2 20.0			
06	112 42.7	275 39.8 S 5 52.2	212 30.6 S24 39.2	332 01.1 N15 57.0	242 43.4 S16 20.1	Dubhe	193 51.3 N61 40.1	
07	127 45.1	290 39.4 53.4	227 31.1 39.4	347 03.2 56.9	257 45.6 20.2	Elnath	278 11.3 N28 37.0	
08	142 47.6	305 39.0 54.6	242 31.6 39.5	2 05.2 56.8	272 47.8 20.2	Eltanin	90 45.9 N51 29.7	
09	157 50.1	320 38.6 . . 55.9	257 32.0 . . 39.6	17 07.3 . . 56.7	287 50.0 . . 20.3	Enif	33 46.1 N 9 56.9	
10	172 52.5	335 38.1 57.1	272 32.5 39.7	32 09.4 56.6	302 52.2 20.4	Fomalhaut	15 22.7 S29 32.5	
11	187 55.0	350 37.7 58.3	287 33.0 39.8	47 11.5 56.5	317 54.4 20.5			
12	202 57.5	5 37.3 S 5 59.6	302 33.5 S24 40.0	62 13.6 N15 56.3	332 56.5 S16 20.5	Gacrux	172 00.4 S57 11.6	
13	217 59.9	20 36.9 6 00.8	317 34.0 40.1	77 15.7 56.2	347 58.7 20.6	Gienah	175 51.7 S17 37.3	
14	233 02.4	35 36.4 02.0	332 34.5 40.2	92 17.8 56.1	3 00.9 20.7	Hadar	148 47.1 S60 26.5	
15	248 04.8	50 36.0 . . 03.3	347 35.0 . . 40.3	107 19.9 . . 56.0	18 03.1 . . 20.8	Hamal	327 59.4 N23 32.0	
16	263 07.3	65 35.6 04.5	2 35.4 40.4	122 22.0 55.9	33 05.3 20.8	Kaus Aust.	83 42.7 S34 22.5	
17	278 09.8	80 35.1 05.7	17 35.9 40.6	137 24.1 55.8	48 07.5 20.9			
18	293 12.2	95 34.7 S 6 06.9	32 36.4 S24 40.7	152 26.2 N15 55.7	63 09.7 S16 21.0	Kochab	137 21.3 N74 05.9	
19	308 14.7	110 34.3 08.2	47 36.9 40.8	167 28.2 55.6	78 11.9 21.1	Markab	13 37.2 N15 17.3	
20	323 17.2	125 33.9 09.4	62 37.4 40.9	182 30.3 55.5	93 14.1 21.1	Menkar	314 13.8 N 4 08.9	
21	338 19.6	140 33.4 . . 10.6	77 37.9 . . 41.0	197 32.4 . . 55.4	108 16.3 . . 21.2	Menkent	148 06.9 S36 26.4	
22	353 22.1	155 33.0 11.9	92 38.3 41.2	212 34.5 55.3	123 18.5 21.3	Miaplacidus	221 39.7 S69 46.5	
23	8 24.6	170 32.6 13.1	107 38.8 41.3	227 36.6 55.2	138 20.7 21.3			
MIÉRCOLES								
15 00	23 27.0	185 32.2 S 6 14.3	122 39.3 S24 41.4	242 38.7 N15 55.0	153 22.9 S16 21.4	Mirfak	308 38.6 N49 54.6	
01	38 29.5	200 31.7 15.5	137 39.8 41.5	257 40.8 54.9	168 25.1 21.5	Nunki	75 57.3 S26 16.5	
02	53 32.0	215 31.3 16.8	152 40.3 41.6	272 42.9 54.8	183 27.3 21.6	Peacock	53 17.8 S56 41.2	
03	68 34.4	230 30.9 . . 18.0	167 40.7 . . 41.7	287 45.0 . . 54.7	198 29.5 . . 21.6	Póllux	243 26.7 N27 59.2	
04	83 36.9	245 30.4 19.2	182 41.2 41.8	302 47.1 54.6	213 31.6 21.7	Procyon	244 58.8 N 5 11.1	
05	98 39.3	260 30.0 20.4	197 41.7 42.0	317 49.2 54.5	228 33.8 21.8			
06	113 41.8	275 29.6 S 6 21.7	212 42.2 S24 42.1	332 51.3 N15 54.4	243 36.0 S16 21.9	Rasalhague	96 05.8 N12 33.3	
07	128 44.3	290 29.1 22.9	227 42.7 42.2	347 53.4 54.3	258 38.2 21.9	Régulus	207 42.8 N11 53.6	
08	143 46.7	305 28.7 24.1	242 43.1 42.3	2 55.5 54.2	273 40.4 22.0	Rigel	281 11.0 S 8 11.1	
09	158 49.2	320 28.3 . . 25.4	257 43.6 . . 42.4	17 57.6 . . 54.1	288 42.6 . . 22.1	Rigel Kent.	139 51.0 S60 53.6	
10	173 51.7	335 27.9 26.6	272 44.1 42.5	32 59.7 54.0	303 44.8 22.2	Sabik	102 11.7 S15 44.3	
11	188 54.1	350 27.4 27.8	287 44.6 42.6	48 01.8 53.9	318 47.0 22.2			
12	203 56.6	5 27.0 S 6 29.0	302 45.1 S24 42.7	63 03.8 N15 53.8	333 49.2 S16 22.3	Schedar	349 38.8 N56 37.2	
13	218 59.1	20 26.6 30.3	317 45.5 42.9	78 05.9 53.7	348 51.4 22.4	Shaula	96 20.9 S37 06.7	
14	234 01.5	35 26.1 31.5	332 46.0 43.0	93 08.0 53.5	3 53.6 22.5	Sirius	258 32.9 S16 44.2	
15	249 04.0	50 25.7 . . 32.7	347 46.5 . . 43.1	108 10.1 . . 53.4	18 55.8 . . 22.5	Spica	158 30.6 S11 14.1	
16	264 06.5	65 25.3 33.9	2 47.0 43.2	123 12.2 53.3	33 58.0 22.6	Suhail	222 51.9 S43 29.4	
17	279 08.9	80 24.8 35.2	17 47.5 43.3	138 14.3 53.2	49 00.1 22.7			
18	294 11.4	95 24.4 S 6 36.4	32 47.9 S24 43.4	153 16.4 N15 53.1	64 02.3 S16 22.8	Vega	80 38.4 N38 48.3	
19	309 13.8	110 24.0 37.6	47 48.4 43.5	168 18.5 53.0	79 04.5 22.8	Zuben'ubi	137 04.7 S16 06.0	
20	324 16.3	125 23.5 38.8	62 48.9 43.6	183 20.6 52.9	94 06.7 22.9			
21	339 18.8	140 23.1 . . 40.0	77 49.4 . . 43.7	198 22.7 . . 52.8	109 08.9 . . 23.0			
22	354 21.2	155 22.7 41.3	92 49.8 43.8	213 24.8 52.7	124 11.1 23.1			
23	9 23.7	170 22.2 42.5	107 50.3 43.9	228 26.9 52.6	139 13.3 23.1			
Paso Mer.	22 26.5	v -0.4 d 1.2	v 0.5 d 0.1	v 2.1 d 0.1	v 2.2 d 0.1			
						AHS Paso Mer.		
						Venus	163 14.5 h 11 38	
						Marte	99 59.8 h 15 50	
						Júpiter	219 20.6 h 7 52	
						Saturno	130 02.3 h 13 48	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		13	14	15	16			
13 00 01 02 03 04 05	d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m		
	183	24.5 S	7 39.5	304	32.5	9.7	N18	22.0	1.3	56.4	N 72	04 50	06 09	07 19		17 42	19 42	21 27
	198	24.6	40.5	319	01.2	9.8	18	23.3	1.2	56.4	N 70	04 55	06 05	07 08	17 55	19 03	20 27	21 56
	213	24.8	41.4	333	30.0	9.7	18	24.5	1.1	56.4	68	04 58	06 02	06 59	18 39	19 42	20 56	22 17
	228	24.9	42.3	347	58.7	9.8	18	25.6	0.9	56.3	66	05 01	06 00	06 52	19 08	20 09	21 18	22 33
	243	25.1	43.3	2	27.5	9.9	18	26.5	0.9	56.3	64	05 03	05 58	06 46	19 30	20 29	21 36	22 47
	258	25.2	44.2	16	56.4	9.8	18	27.4	0.8	56.3	62	05 05	05 56	06 41	19 48	20 46	21 50	22 58
	273	25.4 S	7 45.1	31	25.2	9.9	N18	28.2	0.7	56.2	60	05 06	05 54	06 36	20 03	20 59	22 02	23 08
	288	25.6	46.1	45	54.1	10.0	18	28.9	0.6	56.2	N 58	05 07	05 53	06 32	20 15	21 11	22 12	23 17
	303	25.7	47.0	60	23.1	10.0	18	29.5	0.5	56.2	56	05 08	05 51	06 29	20 26	21 22	22 21	23 24
L U N E S 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	318	25.9	47.9	74	52.1	10.0	18	30.0	0.4	56.1	54	05 09	05 50	06 26	20 36	21 31	22 29	23 31
	333	26.0	48.9	89	21.1	10.0	18	30.4	0.3	56.1	52	05 10	05 49	06 23	20 44	21 39	22 36	23 37
	348	26.2	49.8	103	50.1	10.1	18	30.7	0.2	56.1	50	05 10	05 47	06 20	20 52	21 46	22 43	23 42
	3	26.3 S	7 50.7	118	19.2	10.2	N18	30.9	0.1	56.0	45	05 11	05 45	06 14	21 08	22 01	22 57	23 53
	18	26.5	51.7	132	48.4	10.1	18	31.0	0.0	56.0	N 40	05 11	05 42	06 09	21 21	22 14	23 08	24 03
	33	26.6	52.6	147	17.5	10.3	18	31.0	0.1	56.0	35	05 10	05 39	06 05	21 33	22 25	23 18	24 11
	48	26.8	53.5	161	46.8	10.2	18	30.9	0.2	55.9	30	05 09	05 37	06 01	21 43	22 34	23 26	24 18
	63	26.9	54.5	176	16.0	10.3	18	30.7	0.3	55.9	20	05 07	05 32	05 54	22 00	22 51	23 41	24 31
	78	27.1	55.4	190	45.3	10.3	18	30.4	0.4	55.9	N 10	05 03	05 27	05 48	22 15	23 05	23 54	24 41
	93	27.2 S	7 56.3	205	14.6	10.4	N18	30.0	0.4	55.8	0	04 58	05 22	05 43	22 29	23 18	24 06	00 06
M A R T E S 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	108	27.4	57.3	219	44.0	10.4	18	29.6	0.6	55.8	S 10	04 51	05 16	05 37	22 43	23 31	24 18	00 18
	123	27.5	58.2	234	13.4	10.5	18	29.0	0.7	55.8	20	04 42	05 08	05 31	22 58	23 46	24 30	00 30
	138	27.7	59.1	248	42.9	10.5	18	28.3	0.7	55.8	30	04 30	04 59	05 23	23 15	24 02	00 02	00 45
	153	27.8	8 00.1	263	12.4	10.5	18	27.6	0.9	55.7	35	04 23	04 53	05 19	23 25	24 11	00 11	00 53
	168	28.0	01.0	277	41.9	10.6	18	26.7	0.9	55.7	40	04 13	04 46	05 14	23 36	24 22	00 22	01 03
	277	41.9	10.6	18	26.7	0.9	55.7	45	04 02	04 38	05 08	23 49	24 35	00 35	01 14			
	292	11.5	10.6	N18	25.8	1.1	55.7	50	03 47	04 28	05 02	24 06	00 06	00 50	01 28			
	306	41.1	10.7	18	24.7	1.1	55.6	52	03 40	04 23	04 58	24 13	00 13	00 57	01 34			
	321	10.8	10.7	18	23.6	1.2	55.6	54	03 32	04 18	04 55	24 22	00 22	01 05	01 41			
	335	40.5	10.7	18	22.4	1.4	55.6	56	03 23	04 12	04 51	24 32	00 32	01 14	01 49			
M A R T E S 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	243	28.7	05.6	350	10.2	10.8	18	21.0	1.4	55.6	58	03 12	04 05	04 47	24 42	00 42	01 24	01 57
	258	28.8	06.6	4	40.0	10.9	18	19.6	1.5	55.5	S 60	02 59	03 57	04 42	00 04	00 55	01 36	02 07
	273	29.0 S	8 07.5	19	09.9	10.9	N18	18.1	1.6	55.5	Ocaso Sol		Crepúsculo		Ocaso Luna			
	288	29.1	08.4	33	39.8	10.9	18	16.5	1.6	55.5	Lat.		Civil	Náut.	13	14	15	16
	303	29.3	09.4	48	09.7	11.0	18	14.9	1.8	55.4					h m	h m	h m	h m
	318	29.4	10.3	62	39.7	11.0	18	13.1	1.9	55.4	N 72	h m	h m	h m	h m	h m	h m	h m
	333	29.6	11.2	77	09.7	11.0	18	11.2	1.9	55.4	70	16 12	17 21	18 39		16 33	16 13	16 04
	348	29.7	12.1	91	39.7	11.1	18	09.3	2.1	55.4	N 70	16 22	17 25	18 35	14 36	15 12	15 28	15 35
	3	29.9 S	8 13.1	106	09.8	11.2	N18	07.2	2.1	55.3	68	16 31	17 28	18 32	13 52	14 33	14 58	15 13
	18	30.0	14.0	120	40.0	11.2	18	05.1	2.2	55.3	66	16 38	17 30	18 29	13 23	14 06	14 35	14 55
M I É R C O L E S 15 16 17 18 19 20 21 22 23	48	30.3	15.9	149	40.4	11.3	18	00.6	2.4	55.3	64	16 44	17 33	18 27	13 01	13 45	14 18	14 41
	63	30.4	16.8	164	10.7	11.3	17	58.2	2.5	55.2	62	16 50	17 35	18 26	12 43	13 28	14 03	14 29
	78	30.6	17.7	178	41.0	11.4	17	55.7	2.5	55.2	60	16 54	17 36	18 24	12 28	13 14	13 51	14 19
	93	30.7 S	8 18.6	193	11.4	11.4	N17	53.2	2.7	55.2	N 58	16 59	17 38	18 23	12 16	13 02	13 40	14 10
	108	30.9	19.6	207	41.8	11.5	17	50.5	2.7	55.2	56	17 02	17 40	18 23	12 05	12 52	13 31	14 02
	123	31.0	20.5	222	12.3	11.5	17	47.8	2.8	55.1	54	17 05	17 41	18 22	11 55	12 43	13 22	13 55
	138	31.1	21.4	236	42.8	11.5	17	45.0	2.9	55.1	52	17 08	17 42	18 21	11 47	12 35	13 15	13 49
	153	31.3	22.3	251	13.3	11.6	17	42.1	3.0	55.1	50	17 11	17 44	18 21	11 39	12 27	13 08	13 43
	168	31.4	23.3	265	43.9	11.7	17	39.1	3.0	55.1	45	17 17	17 47	18 21	11 23	12 11	12 54	13 31
	265	43.9	11.7	17	39.1	3.0	55.1	40	17 17	17 47	18 21	11 23	12 11	12 54	13 31			
15 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	183	31.6 S	8 24.2	280	14.6	11.7	N17	36.1	3.2	55.0	N 40	17 22	17 49	18 21	11 10	11 58	12 42	13 21
	198	31.7	25.1	294	45.3	11.7	17	32.9	3.2	55.0	35	17 27	17 52	18 21	10 58	11 47	12 32	13 12
	213	31.9	26.1	309	16.0	11.8	17	29.7	3.3	55.0	30	17 31	17 55	18 22	10 48	11 38	12 23	13 04
	228	32.0	27.0	323	46.8	11.8	17	26.4	3.4	55.0	20	17 37	18 00	18 25	10 31	11 21	12 07	12 51
	243	32.1	27.9	338	17.6	11.9	17	23.0	3.5	55.0	N 10	17 43	18 05	18 29	10 16	11 06	11 54	12 39
	258	32.3	28.8	352	48.5	11.9	17	19.5	3.5	54.9	0	17 49	18 10	18 34	10 02	10 53	11 41	12 28
	273	32.4 S	8 29.8	7	19.4	11.9	N17	16.0	3.6	54.9	S 10	17 55	18 17	18 41	09 48	10 39	11 29	12 17
	288	32.6	30.7	21	50.3	12.0	17	12.4	3.7	54.9	20	18 02	18 24	18 50	09 33	10 24	11 15	12 05
	303	32.7	31.6	36	21.3	12.1	17	08.7	3.8	54.9	30	18 09	18 34	19 02	09 16	10 07	10 59	11 51
	318	32.8	32.5	50	52.4	12.1	17	04.9	3.9	54.9	35	18 14	18 39	19 10	09 06	09 58	10 50	11 43
M I É R C O L E S 10 11 12 13 14 15 16 17 18 19 20 21 22 23	333	33.0	33.5	65	23.5	12.1	17	01.0	3.9	54.8	40	18 19	18 46	19 20	08 54	09 46	10 40	11 34
	348	33.1	34.4	79	54.6	12.2	16	57.1	4.0	54.8	45	18 24	18 55	19 31	08 41	09 33	10 28	11 24
	3	33.3 S	8 35.3	94	25.8	12.3	N16	53.1	4.1	54.8	S 50	18 31	19 05	19 46	08 25	09 17	10 13	11 11
	18	33.4	36.2	108	57.1	12.2	16	49.0	4.2	54.8	52	18 35	19 10	19 54	08 17	09 09	10 06	11 05
	33	33.5	37.1	123	28.3	12.4	16	44.8	4.2	54.8	54	18 38	19 16	20 02	08 08	09 01	09 58	10 58
	48	33.7	38															

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.9	JÚPITER -2.0	SATURNO +0.6	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
16 00	24 26.2	185 21.8 S 6 43.7	122 50.8 S24 44.0	243 29.0 N15 52.5	154 15.5 S16 23.2	Acamar 315 17.3 S40 14.7
01	39 28.6	200 21.4 44.9	137 51.3 44.2	258 31.1 52.4	169 17.7 23.3	Achernar 335 25.6 S57 09.7
02	54 31.1	215 20.9 46.2	152 51.8 44.3	273 33.2 52.3	184 19.9 23.4	Acrux 173 08.8 S63 10.7
03	69 33.6	230 20.5 . . 47.4	167 52.2 . . 44.4	288 35.3 . . 52.2	199 22.1 . . 23.4	Adhara 255 11.7 S28 59.5
04	84 36.0	245 20.0 48.6	182 52.7 44.5	303 37.4 52.1	214 24.3 23.5	Aldebarán 290 48.1 N16 32.2
05	99 38.5	260 19.6 49.8	197 53.2 44.6	318 39.5 51.9	229 26.4 23.6	
06	114 41.0	275 19.2 S 6 51.0	212 53.7 S24 44.7	333 41.6 N15 51.8	244 28.6 S16 23.7	Alioth 166 20.6 N55 52.8
07	129 43.4	290 18.7 52.3	227 54.1 44.8	348 43.7 51.7	259 30.8 23.7	Alkaid 152 58.7 N49 14.5
08	144 45.9	305 18.3 53.5	242 54.6 44.9	3 45.8 51.6	274 33.0 23.8	Al Na'ir 27 42.4 S46 53.3
09	159 48.3	320 17.9 . . 54.7	257 55.1 . . 45.0	18 47.9 . . 51.5	289 35.2 . . 23.9	Alnilam 275 45.3 S 1 11.6
10	174 50.8	335 17.4 55.9	272 55.6 45.1	33 50.0 51.4	304 37.4 23.9	Alphard 217 55.3 S 8 43.3
11	189 53.3	350 17.0 57.1	287 56.0 45.2	48 52.1 51.3	319 39.6 24.0	
12	204 55.7	5 16.6 S 6 58.4	302 56.5 S24 45.3	63 54.2 N15 51.2	334 41.8 S16 24.1	Alphecca 126 10.6 N26 40.2
13	219 58.2	20 16.1 6 59.6	317 57.0 45.4	78 56.3 51.1	349 44.0 24.2	Alpheratz 357 42.2 N29 10.5
14	235 00.7	35 15.7 7 00.8	332 57.5 45.5	93 58.4 51.0	4 46.2 24.2	Altair 62 07.3 N 8 54.8
15	250 03.1	50 15.2 . . 02.0	347 57.9 . . 45.6	109 00.5 . . 50.9	19 48.4 . . 24.3	Ankaa 353 14.5 S42 13.5
16	265 05.6	65 14.8 03.2	2 58.4 45.7	124 02.6 50.8	34 50.5 24.4	Antares 112 25.4 S26 27.7
17	280 08.1	80 14.4 04.5	17 58.9 45.8	139 04.7 50.7	49 52.7 24.5	
18	295 10.5	95 13.9 S 7 05.7	32 59.3 S24 45.9	154 06.8 N15 50.6	64 54.9 S16 24.5	Arcturus 145 55.3 N19 06.5
19	310 13.0	110 13.5 06.9	47 59.8 46.0	169 08.9 50.5	79 57.1 24.6	Atria 107 26.7 S69 03.2
20	325 15.4	125 13.0 08.1	63 00.3 46.1	184 11.0 50.4	94 59.3 24.7	Avior 234 17.7 S59 33.2
21	340 17.9	140 12.6 . . 09.3	78 00.8 . . 46.2	199 13.1 . . 50.3	110 01.5 . . 24.8	Bellatrix 278 30.9 N 6 21.7
22	355 20.4	155 12.2 10.5	93 01.2 46.3	214 15.2 50.1	125 03.7 24.8	Betelgeuse 271 00.2 N 7 24.5
23	10 22.8	170 11.7 11.8	108 01.7 46.4	229 17.3 50.0	140 05.9 24.9	
17 00	25 25.3	185 11.3 S 7 13.0	123 02.2 S24 46.5	244 19.4 N15 49.9	155 08.1 S16 25.0	Canopus 263 55.6 S52 42.1
01	40 27.8	200 10.8 14.2	138 02.6 46.6	259 21.5 49.8	170 10.3 25.1	Capella 280 32.8 N46 00.5
02	55 30.2	215 10.4 15.4	153 03.1 46.7	274 23.6 49.7	185 12.4 25.1	Deneb 49 30.7 N45 20.5
03	70 32.7	230 10.0 . . 16.6	168 03.6 . . 46.8	289 25.7 . . 49.6	200 14.6 . . 25.2	Denébola 182 33.1 N14 29.4
04	85 35.2	245 09.5 17.8	183 04.1 46.8	304 27.8 49.5	215 16.8 25.3	Diphda 348 54.7 S17 54.2
05	100 37.6	260 09.1 19.0	198 04.5 46.9	319 30.0 49.4	230 19.0 25.4	
06	115 40.1	275 08.6 S 7 20.3	213 05.0 S24 47.0	334 32.1 N15 49.3	245 21.2 S16 25.4	Dubhe 193 51.2 N61 40.1
07	130 42.6	290 08.2 21.5	228 05.5 47.1	349 34.2 49.2	260 23.4 25.5	Elnath 278 11.3 N28 37.0
08	145 45.0	305 07.7 22.7	243 05.9 47.2	4 36.3 49.1	275 25.6 25.6	Eltanin 90 46.0 N51 29.7
09	160 47.5	320 07.3 . . 23.9	258 06.4 . . 47.3	19 38.4 . . 49.0	290 27.8 . . 25.7	Enif 33 46.1 N 9 56.9
10	175 49.9	335 06.9 25.1	273 06.9 47.4	34 40.5 48.9	305 30.0 25.7	Fomalhaut 15 22.8 S29 32.5
11	190 52.4	350 06.4 26.3	288 07.3 47.5	49 42.6 48.8	320 32.1 25.8	
12	205 54.9	5 06.0 S 7 27.5	303 07.8 S24 47.6	64 44.7 N15 48.7	335 34.3 S16 25.9	Gacrux 172 00.3 S57 11.6
13	220 57.3	20 05.5 28.8	318 08.3 47.7	79 46.8 48.6	350 36.5 26.0	Gienah 175 51.7 S17 37.3
14	235 59.8	35 05.1 30.0	333 08.8 47.8	94 48.9 48.5	5 38.7 26.0	Hadar 148 47.1 S60 26.5
15	251 02.3	50 04.6 . . 31.2	348 09.2 . . 47.9	109 51.0 . . 48.4	20 40.9 . . 26.1	Hamal 327 59.4 N23 32.0
16	266 04.7	65 04.2 32.4	3 09.7 47.9	124 53.1 48.3	35 43.1 26.2	Kaus Aust. 83 42.8 S34 22.5
17	281 07.2	80 03.7 33.6	18 10.2 48.0	139 55.2 48.2	50 45.3 26.3	
18	296 09.7	95 03.3 S 7 34.8	33 10.6 S24 48.1	154 57.3 N15 48.1	65 47.5 S16 26.3	Kochab 137 21.3 N74 05.9
19	311 12.1	110 02.8 36.0	48 11.1 48.2	169 59.4 48.0	80 49.7 26.4	Markab 13 37.2 N15 17.3
20	326 14.6	125 02.4 37.2	63 11.6 48.3	185 01.5 47.8	95 51.8 26.5	Menkar 314 13.8 N 4 08.9
21	341 17.0	140 02.0 . . 38.5	78 12.0 . . 48.4	200 03.6 . . 47.7	110 54.0 . . 26.6	Menkent 148 06.9 S36 26.4
22	356 19.5	155 01.5 39.7	93 12.5 48.5	215 05.8 47.6	125 56.2 26.6	Miaplacidus 221 39.7 S69 46.5
23	11 22.0	170 01.1 40.9	108 13.0 48.6	230 07.9 47.5	140 58.4 26.7	
18 00	26 24.4	185 00.6 S 7 42.1	123 13.4 S24 48.6	245 10.0 N15 47.4	156 00.6 S16 26.8	Mirfak 308 38.5 N49 54.6
01	41 26.9	200 00.2 43.3	138 13.9 48.7	260 12.1 47.3	171 02.8 26.9	Nunki 75 57.3 S26 16.5
02	56 29.4	214 59.7 44.5	153 14.4 48.8	275 14.2 47.2	186 05.0 26.9	Peacock 53 17.8 S56 41.2
03	71 31.8	229 59.3 . . 45.7	168 14.8 . . 48.9	290 16.3 . . 47.1	201 07.2 . . 27.0	Póllux 243 26.7 N27 59.2
04	86 34.3	244 58.8 46.9	183 15.3 49.0	305 18.4 47.0	216 09.4 27.1	Procyon 244 58.8 N 5 11.1
05	101 36.8	259 58.4 48.1	198 15.8 49.1	320 20.5 46.9	231 11.5 27.2	
06	116 39.2	274 57.9 S 7 49.3	213 16.2 S24 49.2	335 22.6 N15 46.8	246 13.7 S16 27.2	Rasalhague 96 05.8 N12 33.3
07	131 41.7	289 57.5 50.5	228 16.7 49.2	350 24.7 46.7	261 15.9 27.3	Régulus 207 42.8 N11 53.6
08	146 44.2	304 57.0 51.7	243 17.1 49.3	5 26.8 46.6	276 18.1 27.4	Rigel 281 11.0 S 8 11.1
09	161 46.6	319 56.6 . . 53.0	258 17.6 . . 49.4	20 29.0 . . 46.5	291 20.3 . . 27.5	Rigel Kent. 139 51.0 S60 53.6
10	176 49.1	334 56.1 54.2	273 18.1 49.5	35 31.1 46.4	306 22.5 27.5	Sabik 102 11.7 S15 44.3
11	191 51.5	349 55.7 55.4	288 18.5 49.6	50 33.2 46.3	321 24.7 27.6	
12	206 54.0	4 55.2 S 7 56.6	303 19.0 S24 49.6	65 35.3 N15 46.2	336 26.9 S16 27.7	Schedar 349 38.8 N56 37.2
13	221 56.5	19 54.8 57.8	318 19.5 49.7	80 37.4 46.1	351 29.0 27.7	Shaula 96 20.9 S37 06.7
14	236 58.9	34 54.3 7 59.0	333 19.9 49.8	95 39.5 46.0	6 31.2 27.8	Sirius 258 32.8 S16 44.2
15	252 01.4	49 53.9 8 00.2	348 20.4 . . 49.9	110 41.6 . . 45.9	21 33.4 . . 27.9	Spica 158 30.6 S11 14.1
16	267 03.9	64 53.4 01.4	3 20.9 50.0	125 43.7 45.8	36 35.6 28.0	Suhail 222 51.9 S43 29.4
17	282 06.3	79 53.0 02.6	18 21.3 50.0	140 45.8 45.7	51 37.8 28.0	
18	297 08.8	94 52.5 S 8 03.8	33 21.8 S24 50.1	155 48.0 N15 45.6	66 40.0 S16 28.1	Vega 80 38.5 N38 48.3
19	312 11.3	109 52.1 05.0	48 22.2 50.2	170 50.1 45.5	81 42.2 28.2	Zuben'ubi 137 04.7 S16 06.0
20	327 13.7	124 51.6 06.2	63 22.7 50.3	185 52.2 45.4	96 44.4 28.3	
21	342 16.2	139 51.1 . . 07.4	78 23.2 . . 50.3	200 54.3 . . 45.3	111 46.5 . . 28.3	AHS Paso Mer.
22	357 18.7	154 50.7 08.6	93 23.6 50.4	215 56.4 45.2	126 48.7 28.4	Venus 159 46.0 11 40
23	12 21.1	169 50.2 09.8	108 24.1 50.5	230 58.5 45.1	141 50.9 28.5	Marte 97 36.9 15 47
						Júpiter 218 54.1 7 42
						Saturno 129 42.8 13 37
Paso Mer. 22 14.7	v -0.4 d 1.2		v 0.5 d 0.1	v 2.1 d 0.1	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		16	17	18	19
J U E V E S	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m
	00	183 34.9	S 8 46.4	268 43.5	12.8	N15 59.1	4.9 54.6	N 70	05 03	06 22	07 33	21 27	23 06	24 42	00 42
	01	198 35.0	47.3	283 15.3	12.8	15 54.2	5.1 54.6	68	05 06	06 17	07 21	21 56	23 25	24 53	00 53
	02	213 35.2	48.2	297 47.1	12.8	15 49.1	5.1 54.5	66	05 10	06 09	07 02	22 33	23 51	25 10	01 10
	03	228 35.3	49.1	312 18.9	12.9	15 44.0	5.1 54.5	64	05 11	06 06	06 55	22 47	24 01	00 01	01 16
	04	243 35.4	50.1	326 50.8	12.9	15 38.9	5.3 54.5	62	05 12	06 04	06 49	22 58	24 09	00 09	01 21
	05	258 35.6	51.0	341 22.7	13.0	15 33.6	5.3 54.5	60	05 13	06 01	06 44	23 08	24 17	00 17	01 26
	06	273 35.7	S 8 51.9	355 54.7	13.0	N15 28.3	5.3 54.5	N 58	05 14	05 59	06 39	23 17	24 23	00 23	01 30
	07	288 35.9	52.8	10 26.7	13.1	15 23.0	5.5 54.5	56	05 14	05 57	06 35	23 24	24 28	00 28	01 34
	08	303 36.0	53.7	24 58.8	13.1	15 17.5	5.5 54.5	54	05 14	05 55	06 31	23 31	24 33	00 33	01 37
	09	318 36.1	54.7	39 30.9	13.1	15 12.0	5.6 54.4	52	05 15	05 54	06 28	23 37	24 38	00 38	01 40
	10	333 36.3	55.6	54 03.0	13.2	15 06.4	5.6 54.4	50	05 15	05 52	06 25	23 42	24 42	00 42	01 43
	11	348 36.4	56.5	68 35.2	13.2	15 00.8	5.7 54.4	45	05 14	05 48	06 18	23 53	24 51	00 51	01 49
	12	3 36.5	S 8 57.4	83 07.4	13.2	N14 55.1	5.7 54.4	N 40	05 14	05 45	06 12	24 03	00 03	00 58	01 54
	13	18 36.7	58.3	97 39.6	13.3	14 49.4	5.9 54.4	35	05 12	05 42	06 07	24 11	00 11	01 04	01 58
	14	33 36.8	8 59.2	112 11.9	13.4	14 43.5	5.9 54.4	30	05 11	05 39	06 03	24 18	00 18	01 10	02 02
	15	48 36.9	9 00.2	126 44.3	13.3	14 37.6	5.9 54.4	20	05 07	05 33	05 55	24 31	00 31	01 20	02 08
	16	63 37.0	01.1	141 16.6	13.4	14 31.7	6.0 54.4	N 10	05 03	05 27	05 49	24 41	00 41	01 28	02 14
	17	78 37.2	02.0	155 49.0	13.5	14 25.7	6.1 54.4	0	04 57	05 21	05 42	00 06	00 51	01 36	02 19
	18	93 37.3	S 9 02.9	170 21.5	13.5	N14 19.6	6.1 54.3	S 10	04 49	05 14	05 35	00 18	01 02	01 44	02 24
	19	108 37.4	03.8	184 54.0	13.5	14 13.5	6.2 54.3	20	04 40	05 06	05 28	00 30	01 12	01 52	02 30
	20	123 37.6	04.7	199 26.5	13.6	14 07.3	6.3 54.3	30	04 27	04 56	05 20	00 45	01 25	02 01	02 36
	21	138 37.7	05.7	213 59.1	13.6	14 01.0	6.3 54.3	35	04 18	04 49	05 15	00 53	01 32	02 07	02 40
	22	153 37.8	06.6	228 31.7	13.6	13 54.7	6.3 54.3	40	04 08	04 42	05 10	01 03	01 40	02 13	02 44
	23	168 38.0	07.5	243 04.3	13.7	13 48.4	6.5 54.3	45	03 56	04 33	05 03	01 14	01 49	02 20	02 49
V I E R N E S	00	183 38.1	S 9 08.4	257 37.0	13.7	N13 41.9	6.4 54.3	S 50	03 40	04 22	04 55	01 28	02 00	02 29	02 55
	01	198 38.2	09.3	272 09.7	13.7	13 35.5	6.6 54.3	52	03 32	04 16	04 52	01 34	02 05	02 33	02 57
	02	213 38.4	10.2	286 42.4	13.8	13 28.9	6.6 54.3	54	03 23	04 10	04 48	01 41	02 11	02 37	03 00
	03	228 38.5	11.2	301 15.2	13.8	13 22.3	6.6 54.3	56	03 13	04 04	04 44	01 49	02 17	02 42	03 04
	04	243 38.6	12.1	315 48.0	13.8	13 15.7	6.7 54.3	58	03 01	03 56	04 39	01 57	02 25	02 47	03 07
	05	258 38.7	13.0	330 20.8	13.9	13 09.0	6.8 54.2	S 60	02 47	03 47	04 33	02 07	02 33	02 53	03 11
	06	273 38.9	S 9 13.9	344 53.7	13.9	N13 02.2	6.8 54.2	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	288 39.0	14.8	359 26.6	14.0	12 55.4	6.9 54.2								
	08	303 39.1	15.7	13 59.6	14.0	12 48.5	6.9 54.2								
	09	318 39.2	16.6	28 32.6	14.0	12 41.6	7.0 54.2								
	10	333 39.4	17.6	43 05.6	14.0	12 34.6	7.0 54.2								
	11	348 39.5	18.5	57 38.6	14.1	12 27.6	7.1 54.2	N 72	h m	h m	h m	h m	h m	h m	h m
	12	3 39.6	S 9 19.4	72 11.7	14.1	N12 20.5	7.2 54.2	N 70	15 56	17 07	18 25	16 04	15 58	15 52	15 47
	13	18 39.8	20.3	86 44.8	14.1	12 13.3	7.1 54.2	68	16 08	17 16	18 20	15 13	15 22	15 29	15 34
	14	33 39.9	21.2	101 17.9	14.2	12 06.2	7.3 54.2	66	16 18	17 20	18 19	14 55	15 10	15 20	15 29
	15	48 40.0	22.1	115 51.1	14.2	11 58.9	7.3 54.2	64	16 34	17 23	18 18	14 41	14 59	15 13	15 25
	16	63 40.1	23.0	130 24.3	14.2	11 51.6	7.3 54.2	62	16 40	17 26	18 17	14 29	14 50	15 06	15 21
	17	78 40.3	23.9	144 57.5	14.2	11 44.3	7.4 54.2	60	16 46	17 28	18 16	14 19	14 42	15 01	15 18
	18	93 40.4	S 9 24.9	159 30.7	14.3	N11 36.9	7.4 54.2	N 58	16 50	17 30	18 16	14 10	14 35	14 56	15 15
	19	108 40.5	25.8	174 04.0	14.3	11 29.5	7.5 54.2	56	16 55	17 32	18 15	14 02	14 29	14 52	15 12
	20	123 40.6	26.7	188 37.3	14.3	11 22.0	7.5 54.2	54	16 59	17 34	18 15	13 55	14 23	14 48	15 10
	21	138 40.8	27.6	203 10.6	14.4	11 14.5	7.6 54.2	52	17 02	17 36	18 15	13 49	14 18	14 44	15 08
	22	153 40.9	28.5	217 44.0	14.4	11 06.9	7.6 54.2	50	17 05	17 38	18 15	13 43	14 14	14 41	15 06
	23	168 41.0	29.4	232 17.4	14.4	10 59.3	7.7 54.2	45	17 12	17 42	18 16	13 31	14 04	14 34	15 02
	S Á B A D O	00	183 41.1	S 9 30.3	246 50.8	14.4	N10 51.6	7.7 54.2	N 40	17 18	17 45	18 17	13 21	13 56	14 28	14 58
01		198 41.3	31.2	261 24.2	14.4	10 43.9	7.8 54.2	35	17 23	17 48	18 18	13 12	13 49	14 23	14 55
02		213 41.4	32.1	275 57.6	14.5	10 36.1	7.8 54.2	30	17 27	17 51	18 19	13 04	13 42	14 18	14 53
03		228 41.5	33.1	290 31.1	14.5	10 28.3	7.8 54.2	20	17 35	17 57	18 23	12 51	13 32	14 10	14 48
04		243 41.6	34.0	305 04.6	14.6	10 20.5	7.9 54.2	N 10	17 42	18 03	18 28	12 39	13 22	14 03	14 44
05		258 41.7	34.9	319 38.2	14.5	10 12.6	8.0 54.2	0	17 49	18 10	18 34	12 28	13 13	13 57	14 40
06		273 41.9	S 9 35.8	334 11.7	14.6	N10 04.6	7.9 54.2	S 10	17 55	18 17	18 42	12 17	13 04	13 50	14 36
07		288 42.0	36.7	348 45.3	14.6	9 56.7	8.0 54.2	20	18 03	18 25	18 51	12 05	12 54	13 43	14 32
08		303 42.1	37.6	3 18.9	14.6	9 48.7	8.1 54.2	30	18 11	18 36	19 05	11 51	12 43	13 35	14 27
09		318 42.2	38.5	17 52.5	14.6	9 40.6	8.1 54.2	35	18 16	18 42	19 13	11 43	12 37	13 30	14 24
10		333 42.3	39.4	32 26.1	14.7	9 32.5	8.1 54.2	40	18 22	18 50	19 23	11 34	12 30	13 25	14 21
11		348 42.5	40.3	46 59.8	14.6	9 24.4	8.2 54.2	45	18 28	18 59	19 36	11 24	12 21	13 19	14 17
12		3 42.6	S 9 41.2	61 33.4	14.7	N 9 16.2	8.2 54.2	S 50	18 36	19 10	19 52	11 11	12 11	13 11	14 13
13		18 42.7	42.1	76 07.1	14.7	9 08.0	8.3 54.2	52	18 40	19 16	20 00	11 05	12 06	13 08	14 11
14		33 42.8	43.0	90 40.8	14.7	8 59.7	8.3 54.2	54	18 44	19 22	20 09	10 58	12 00	13 04	14 08
15		48 42.9	44.0	105 14.5	14.8	8 51.4	8.3 54.2	56	18 49	19 29	20 20	10 51	11 55	13 00	14 06
16		63 43.1	44.9	119 48.3	14.7	8 43.1	8.4 54.2	58	18 54	19 36	20 32	10 42	11 48	12 55	14 03
17		78 43.2	45.8	134 22.0	14.8	8 34.7	8.4 54.2	S 60	18 59	19 45	20 46	10 33	11 40	12 50	14 00
18		93 43.3	S 9 46.7	148 55.8	14.8	N 8 26.3	8.5 54.2								
19		108 43.4	47.6	163 29.6	14.8	8 17.8	8.5 54.2								
20		123 43.5	48.5	178 03.4	14.8	8 09.3	8.5 54.2								
21		138 43.7	49.4	192 37.2	14.8	8 00.8	8.5 54.2								
22		153 43.8	50.3	207 11.0	14.9	7 52.3	8.6 54.2								
23		168 43.9	51.2	221 44.9	14.8	N 7 43.7	8.6 54.2								
											</				

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.9	JÚPITER -2.0	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
19 00	27 23.6	184 49.8 S 8 11.0	123 24.5 S24 50.6	246 00.6 N15 45.0	156 53.1 S16 28.6	Acamar	315 17.3 S40 14.7	
01	42 26.0	199 49.3 12.2	138 25.0 50.7	261 02.7 44.9	171 55.3 28.6	Achernar	335 25.6 S57 09.7	
02	57 28.5	214 48.9 13.4	153 25.5 50.7	276 04.9 44.8	186 57.5 28.7	Acrux	173 08.8 S63 10.7	
03	72 31.0	229 48.4 . . 14.6	168 25.9 . . 50.8	291 07.0 . . 44.7	201 59.7 . . 28.8	Adhara	255 11.7 S28 59.5	
04	87 33.4	244 48.0 15.8	183 26.4 50.9	306 09.1 44.6	217 01.8 28.9	Aldebarán	290 48.1 N16 32.2	
05	102 35.9	259 47.5 17.0	198 26.9 50.9	321 11.2 44.4	232 04.0 28.9			
06	117 38.4	274 47.0 S 8 18.2	213 27.3 S24 51.0	336 13.3 N15 44.3	247 06.2 S16 29.0	Alioth	166 20.5 N55 52.8	
07	132 40.8	289 46.6 19.4	228 27.8 51.1	351 15.4 44.2	262 08.4 29.1	Alkaid	152 58.7 N49 14.5	
08	147 43.3	304 46.1 20.6	243 28.2 51.2	6 17.5 44.1	277 10.6 29.2	Al Na'ir	27 42.4 S46 53.3	
09	162 45.8	319 45.7 . . 21.8	258 28.7 . . 51.2	21 19.7 . . 44.0	292 12.8 . . 29.2	Alnilam	275 45.3 S 1 11.6	
10	177 48.2	334 45.2 23.0	273 29.1 51.3	36 21.8 43.9	307 15.0 29.3	Alphard	217 55.3 S 8 43.3	
11	192 50.7	349 44.8 24.2	288 29.6 51.4	51 23.9 43.8	322 17.1 29.4			
12	207 53.1	4 44.3 S 8 25.4	303 30.1 S24 51.5	66 26.0 N15 43.7	337 19.3 S16 29.5	Alphecca	126 10.6 N26 40.2	
13	222 55.6	19 43.8 26.6	318 30.5 51.5	81 28.1 43.6	352 21.5 29.5	Alpheratz	357 42.2 N29 10.5	
14	237 58.1	34 43.4 27.8	333 31.0 51.6	96 30.2 43.5	7 23.7 29.6	Altair	62 07.4 N 8 54.8	
15	253 00.5	49 42.9 . . 29.0	348 31.4 . . 51.7	111 32.4 . . 43.4	22 25.9 . . 29.7	Ankaa	353 14.5 S42 13.5	
16	268 03.0	64 42.5 30.2	3 31.9 51.7	126 34.5 43.3	37 28.1 29.8	Antares	112 25.4 S26 27.7	
17	283 05.5	79 42.0 31.4	18 32.4 51.8	141 36.6 43.2	52 30.3 29.8			
18	298 07.9	94 41.5 S 8 32.6	33 32.8 S24 51.9	156 38.7 N15 43.1	67 32.4 S16 29.9	Arcturus	145 55.3 N19 06.5	
19	313 10.4	109 41.1 33.8	48 33.3 51.9	171 40.8 43.0	82 34.6 30.0	Atria	107 26.7 S69 03.2	
20	328 12.9	124 40.6 35.0	63 33.7 52.0	186 42.9 42.9	97 36.8 30.1	Avior	234 17.6 S59 33.2	
21	343 15.3	139 40.2 . . 36.2	78 34.2 . . 52.1	201 45.1 . . 42.8	112 39.0 . . 30.1	Bellatrix	278 30.8 N 6 21.7	
22	358 17.8	154 39.7 37.4	93 34.6 52.1	216 47.2 42.7	127 41.2 30.2	Betelgeuse	271 00.2 N 7 24.5	
23	13 20.3	169 39.2 38.6	108 35.1 52.2	231 49.3 42.6	142 43.4 30.3			
20 00	28 22.7	184 38.8 S 8 39.8	123 35.6 S24 52.3	246 51.4 N15 42.5	157 45.6 S16 30.4	Canopus	263 55.5 S52 42.1	
01	43 25.2	199 38.3 41.0	138 36.0 52.3	261 53.5 42.4	172 47.7 30.4	Capella	280 32.8 N46 00.5	
02	58 27.6	214 37.8 42.2	153 36.5 52.4	276 55.7 42.3	187 49.9 30.5	Deneb	49 30.7 N45 20.5	
03	73 30.1	229 37.4 . . 43.4	168 36.9 . . 52.5	291 57.8 . . 42.2	202 52.1 . . 30.6	Denébola	182 33.0 N14 29.4	
04	88 32.6	244 36.9 44.6	183 37.4 52.5	306 59.9 42.1	217 54.3 30.7	Diphda	348 54.7 S17 54.3	
05	103 35.0	259 36.5 45.8	198 37.8 52.6	322 02.0 42.0	232 56.5 30.7			
06	118 37.5	274 36.0 S 8 47.0	213 38.3 S24 52.6	337 04.1 N15 41.9	247 58.7 S16 30.8	Dubhe	193 51.2 N61 40.1	
07	133 40.0	289 35.5 48.1	228 38.7 52.7	352 06.3 41.8	263 00.9 30.9	Elnath	278 11.2 N28 37.0	
08	148 42.4	304 35.1 49.3	243 39.2 52.8	7 08.4 41.7	278 03.0 31.0	Eltanin	90 46.0 N51 29.7	
09	163 44.9	319 34.6 . . 50.5	258 39.7 . . 52.8	22 10.5 . . 41.6	293 05.2 . . 31.0	Enif	33 46.1 N 9 56.9	
10	178 47.4	334 34.1 51.7	273 40.1 52.9	37 12.6 41.5	308 07.4 31.1	Fomalhaut	15 22.8 S29 32.6	
11	193 49.8	349 33.7 52.9	288 40.6 53.0	52 14.7 41.4	323 09.6 31.2			
12	208 52.3	4 33.2 S 8 54.1	303 41.0 S24 53.0	67 16.9 N15 41.3	338 11.8 S16 31.3	Gacrux	172 00.3 S57 11.6	
13	223 54.7	19 32.7 55.3	318 41.5 53.1	82 19.0 41.2	353 14.0 31.3	Gienah	175 51.7 S17 37.3	
14	238 57.2	34 32.3 56.5	333 41.9 53.1	97 21.1 41.1	8 16.1 31.4	Hadar	148 47.1 S60 26.5	
15	253 59.7	49 31.8 . . 57.7	348 42.4 . . 53.2	112 23.2 . . 41.0	23 18.3 . . 31.5	Hamal	327 59.4 N23 32.0	
16	269 02.1	64 31.3 8 58.9	3 42.8 53.2	127 25.4 40.9	38 20.5 31.6	Kaus Aust.	83 42.8 S34 22.5	
17	284 04.6	79 30.9 9 00.1	18 43.3 53.3	142 27.5 40.8	53 22.7 31.6			
18	299 07.1	94 30.4 S 9 01.2	33 43.7 S24 53.4	157 29.6 N15 40.7	68 24.9 S16 31.7	Kochab	137 21.4 N74 05.9	
19	314 09.5	109 29.9 02.4	48 44.2 53.4	172 31.7 40.6	83 27.1 31.8	Markab	13 37.2 N15 17.3	
20	329 12.0	124 29.5 03.6	63 44.6 53.5	187 33.8 40.5	98 29.2 31.9	Menkar	314 13.8 N 4 08.9	
21	344 14.5	139 29.0 . . 04.8	78 45.1 . . 53.5	202 36.0 . . 40.4	113 31.4 . . 31.9	Menkent	148 06.9 S36 26.4	
22	359 16.9	154 28.5 06.0	93 45.5 53.6	217 38.1 40.3	128 33.6 32.0	Miaplacidus	221 39.6 S69 46.5	
23	14 19.4	169 28.0 07.2	108 46.0 53.6	232 40.2 40.2	143 35.8 32.1			
21 00	29 21.9	184 27.6 S 9 08.4	123 46.4 S24 53.7	247 42.3 N15 40.1	158 38.0 S16 32.2	Mirfak	308 38.5 N49 54.7	
01	44 24.3	199 27.1 09.6	138 46.9 53.8	262 44.5 40.0	173 40.2 32.2	Nunki	75 57.3 S26 16.5	
02	59 26.8	214 26.6 10.7	153 47.3 53.8	277 46.6 39.9	188 42.4 32.3	Peacock	53 17.8 S56 41.3	
03	74 29.2	229 26.2 . . 11.9	168 47.8 . . 53.9	292 48.7 . . 39.8	203 44.5 . . 32.4	Póllux	243 26.6 N27 59.2	
04	89 31.7	244 25.7 13.1	183 48.3 53.9	307 50.8 39.7	218 46.7 32.5	Procyon	244 58.8 N 5 11.1	
05	104 34.2	259 25.2 14.3	198 48.7 54.0	322 53.0 39.6	233 48.9 32.5			
06	119 36.6	274 24.7 S 9 15.5	213 49.2 S24 54.0	337 55.1 N15 39.5	248 51.1 S16 32.6	Rasalhague	96 05.8 N12 33.3	
07	134 39.1	289 24.3 16.7	228 49.6 54.1	352 57.2 39.4	263 53.3 32.7	Régulus	207 42.7 N11 53.6	
08	149 41.6	304 23.8 17.8	243 50.1 54.1	7 59.3 39.3	278 55.5 32.8	Rigel	281 11.0 S 8 11.1	
09	164 44.0	319 23.3 . . 19.0	258 50.5 . . 54.2	23 01.5 . . 39.2	293 57.6 . . 32.8	Rigel Kent.	139 51.1 S60 53.6	
10	179 46.5	334 22.9 20.2	273 51.0 54.2	38 03.6 39.1	308 59.8 32.9	Sabik	102 11.7 S15 44.3	
11	194 49.0	349 22.4 21.4	288 51.4 54.3	53 05.7 39.0	324 02.0 33.0			
12	209 51.4	4 21.9 S 9 22.6	303 51.9 S24 54.3	68 07.8 N15 38.9	339 04.2 S16 33.1	Schedar	349 38.8 N56 37.3	
13	224 53.9	19 21.4 23.8	318 52.3 54.4	83 10.0 38.8	354 06.4 33.1	Shaula	96 20.9 S37 06.7	
14	239 56.4	34 21.0 24.9	333 52.7 54.4	98 12.1 38.7	9 08.5 33.2	Sirius	258 32.8 S16 44.2	
15	254 58.8	49 20.5 . . 26.1	348 53.2 . . 54.5	113 14.2 . . 38.6	24 10.7 . . 33.3	Spica	158 30.6 S11 14.1	
16	270 01.3	64 20.0 27.3	3 53.6 54.5	128 16.4 38.5	39 12.9 33.4	Suhail	222 51.9 S43 29.4	
17	285 03.7	79 19.5 28.5	18 54.1 54.6	143 18.5 38.4	54 15.1 33.4			
18	300 06.2	94 19.1 S 9 29.7	33 54.5 S24 54.6	158 20.6 N15 38.3	69 17.3 S16 33.5	Vega	80 38.5 N38 48.3	
19	315 08.7	109 18.6 30.8	48 55.0 54.7	173 22.7 38.2	84 19.5 33.6	Zuben'ubi	137 04.7 S16 06.0	
20	330 11.1	124 18.1 32.0	63 55.4 54.7	188 24.9 38.1	99 21.6 33.7			
21	345 13.6	139 17.6 . . 33.2	78 55.9 . . 54.7	203 27.0 . . 38.0	114 23.8 . . 33.7			
22	0 16.1	154 17.1 34.4	93 56.3 54.8	218 29.1 38.0	129 26.0 33.8			
23	15 18.5	169 16.7 35.6	108 56.8 54.8	233 31.3 37.9	144 28.2 33.9			
h m								
Paso Mer.	22 02.9	v -0.5 d 1.2	v 0.5 d 0.1	v 2.1 d 0.1	v 2.2 d 0.1			
AHS Paso Mer.								
						Venus	156 16.1 h m	11 42
						Marte	95 12.8 h m	15 45
						Júpiter	218 28.7 h m	7 32
						Saturno	129 22.8 h m	13 27

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	19	20	21	22
DOMINGO	d h	° /	° /	° /	° /	° /	° /	N °	h m	h m	h m	h m	h m	h m	h m
	19 00	183 44.0	S 9 52.1	236 18.7	14.9	N 7 35.1	8.7 54.2	N 72	05 16	06 35	07 49	00 42	02 17	03 52	05 28
	01	198 44.1	53.0	250 52.6	14.9	7 26.4	8.7 54.2	N 70	05 18	06 29	07 34	00 53	02 22	03 51	05 22
	02	213 44.2	53.9	265 26.5	14.9	7 17.7	8.7 54.2	68	05 19	06 23	07 22	01 02	02 26	03 50	05 16
	03	228 44.4	54.8	280 00.4	14.9	7 09.0	8.7 54.2	66	05 19	06 19	07 13	01 10	02 29	03 50	05 12
	04	243 44.5	55.7	294 34.3	14.9	7 00.3	8.8 54.2	64	05 20	06 15	07 04	01 16	02 32	03 49	05 08
	05	258 44.6	56.6	309 08.2	14.9	6 51.5	8.8 54.2	62	05 20	06 12	06 57	01 21	02 35	03 49	05 05
	06	273 44.7	S 9 57.5	323 42.1	14.9	N 6 42.7	8.9 54.2	60	05 20	06 08	06 51	01 26	02 37	03 49	05 02
	07	288 44.8	58.4	338 16.0	14.9	6 33.8	8.9 54.2	N 58	05 20	06 06	06 46	01 30	02 39	03 48	04 59
	08	303 44.9	9 59.3	352 49.9	15.0	6 24.9	8.9 54.2	56	05 20	06 01	06 37	01 37	02 42	03 48	04 55
	09	318 45.0	10 00.2	7 23.9	14.9	6 16.0	8.9 54.3	54	05 19	05 59	06 33	01 40	02 43	03 48	04 53
	10	333 45.2	01.1	21 57.8	15.0	6 07.1	9.0 54.3	50	05 19	05 57	06 30	01 43	02 45	03 47	04 51
	11	348 45.3	02.0	36 31.8	14.9	5 58.1	9.0 54.3	45	05 18	05 52	06 22	01 49	02 48	03 47	04 48
	12	3 45.4	S 10 02.9	51 05.7	15.0	N 5 49.1	9.0 54.3	N 40	05 17	05 48	06 16	01 54	02 50	03 47	04 45
	13	18 45.5	03.8	65 39.7	15.0	5 40.1	9.0 54.3	35	05 15	05 44	06 10	01 58	02 52	03 46	04 42
	14	33 45.6	04.7	80 13.7	14.9	5 31.1	9.1 54.3	30	05 13	05 41	06 05	02 02	02 54	03 46	04 40
	15	48 45.7	5.6	94 47.6	15.0	5 22.0	9.1 54.3	20	05 08	05 34	05 56	02 08	02 57	03 46	04 36
	16	63 45.8	06.5	109 21.6	15.0	5 12.9	9.1 54.3	N 10	05 03	05 27	05 49	02 14	03 00	03 46	04 32
	17	78 45.9	07.4	123 55.6	15.0	5 03.8	9.1 54.3	0	04 56	05 20	05 41	02 19	03 02	03 45	04 29
	18	93 46.1	S 10 08.3	138 29.6	14.9	N 4 54.7	9.2 54.3	S 10	04 48	05 13	05 34	02 24	03 05	03 45	04 26
	19	108 46.2	09.2	153 03.5	15.0	4 45.5	9.2 54.3	20	04 37	05 04	05 26	02 30	03 07	03 45	04 23
	20	123 46.3	10.1	167 37.5	15.0	4 36.3	9.2 54.3	30	04 23	04 52	05 17	02 36	03 10	03 44	04 19
	21	138 46.4	11.0	182 11.5	15.0	4 27.1	9.2 54.4	35	04 14	04 45	05 11	02 40	03 12	03 44	04 17
	22	153 46.5	11.9	196 45.5	14.9	4 17.9	9.3 54.4	40	04 03	04 37	05 05	02 44	03 14	03 44	04 14
	23	168 46.6	12.8	211 19.4	15.0	4 08.6	9.3 54.4	45	03 50	04 27	04 58	02 49	03 17	03 44	04 11
LUNES	20 00	183 46.7	S 10 13.7	225 53.4	15.0	N 3 59.3	9.3 54.4	S 50	03 33	04 15	04 49	02 55	03 19	03 43	04 08
	01	198 46.8	14.6	240 27.4	14.9	3 50.0	9.3 54.4	52	03 24	04 09	04 45	02 57	03 21	03 43	04 07
	02	213 46.9	15.5	255 01.3	15.0	3 40.7	9.3 54.4	54	03 15	04 03	04 41	03 00	03 22	03 43	04 05
	03	228 47.1	16.4	269 35.3	15.0	3 31.4	9.4 54.4	56	03 04	03 56	04 36	03 04	03 24	03 43	04 03
	04	243 47.2	17.3	284 09.3	14.9	3 22.0	9.4 54.4	58	02 51	03 47	04 31	03 07	03 25	03 43	04 01
	05	258 47.3	18.2	298 43.2	15.0	3 12.6	9.4 54.4	S 60	02 35	03 38	04 24	03 11	03 27	03 43	03 59
	06	273 47.4	S 10 19.1	313 17.2	14.9	N 3 03.2	9.4 54.4	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	288 47.5	20.0	327 51.1	14.9	2 53.8	9.4 54.5			Civil	Náut.	19	20	21	22
	08	303 47.6	20.9	342 25.0	15.0	2 44.4	9.5 54.5								
	09	318 47.7	21.8	356 59.0	14.9	2 34.9	9.4 54.5								
	10	333 47.8	22.7	11 32.9	14.9	2 25.5	9.5 54.5								
	11	348 47.9	23.6	26 06.8	14.9	2 16.0	9.5 54.5	N 72	h m	h m	h m	h m	h m	h m	h m
	12	3 48.0	S 10 24.5	40 40.7	14.9	N 2 06.5	9.5 54.5	N 70	15 39	16 53	18 11	15 47	15 41	15 36	15 30
	13	18 48.1	25.4	55 14.6	14.9	1 57.0	9.5 54.5	68	15 54	16 59	18 10	15 40	15 39	15 39	15 39
	14	33 48.2	26.3	69 48.5	14.8	1 47.5	9.6 54.5	66	16 06	17 05	18 09	15 34	15 38	15 42	15 46
	15	48 48.3	27.2	84 22.3	14.9	1 37.9	9.5 54.6	64	16 16	17 13	18 08	15 25	15 35	15 46	15 57
	16	63 48.4	28.1	98 56.2	14.8	1 28.4	9.6 54.6	62	16 31	17 17	18 08	15 21	15 34	15 48	16 02
	17	78 48.6	29.0	113 30.0	14.9	1 18.8	9.5 54.6	60	16 37	17 20	18 08	15 18	15 33	15 49	16 05
	18	93 48.7	S 10 29.9	128 03.9	14.8	N 1 09.3	9.6 54.6	N 58	16 43	17 23	18 08	15 15	15 33	15 50	16 09
	19	108 48.8	30.8	142 37.7	14.8	0 59.7	9.6 54.6	56	16 47	17 25	18 08	15 12	15 32	15 51	16 12
	20	123 48.9	31.7	157 11.5	14.8	0 50.1	9.6 54.6	54	16 52	17 28	18 09	15 10	15 31	15 53	16 15
	21	138 49.0	32.5	171 45.3	14.7	0 40.5	9.6 54.6	52	16 56	17 30	18 09	15 08	15 31	15 53	16 17
	22	153 49.1	33.4	186 19.0	14.8	0 30.9	9.6 54.7	50	16 59	17 32	18 10	15 06	15 30	15 54	16 20
	23	168 49.2	34.3	200 52.8	14.7	0 21.3	9.6 54.7	45	17 07	17 37	18 11	15 02	15 29	15 56	16 25
	MARTES	20 00	183 49.3	S 10 35.2	215 26.5	14.8	N 0 11.7	9.7 54.7	N 40	17 13	17 41	18 12	14 58	15 28	15 58	16 29
01		198 49.4	36.1	230 00.3	14.7	N 0 02.0	9.6 54.7	35	17 19	17 45	18 14	14 55	15 27	15 59	16 32
02		213 49.5	37.0	244 34.0	14.6	S 0 07.6	9.7 54.7	30	17 24	17 48	18 16	14 53	15 26	16 00	16 36
03		228 49.6	37.9	259 07.6	14.7	0 17.3	9.6 54.7	20	17 33	17 55	18 21	14 48	15 25	16 03	16 41
04		243 49.7	38.8	273 41.3	14.7	0 26.9	9.6 54.7	N 10	17 41	18 02	18 27	14 44	15 24	16 04	16 46
05		258 49.8	39.7	288 15.0	14.6	0 36.5	9.7 54.8	0	17 48	18 09	18 34	14 40	15 23	16 06	16 51
06		273 49.9	S 10 40.6	302 48.6	14.6	S 0 46.2	9.7 54.8	S 10	17 56	18 17	18 42	14 36	15 22	16 08	16 55
07		288 50.0	41.5	317 22.2	14.6	0 55.9	9.6 54.8	20	18 04	18 26	18 53	14 32	15 20	16 10	17 00
08		303 50.1	42.4	331 55.8	14.5	1 05.5	9.7 54.8	30	18 13	18 38	19 07	14 27	15 19	16 12	17 06
09		318 50.2	43.2	346 29.3	14.6	1 15.2	9.6 54.8	35	18 19	18 45	19 16	14 24	15 18	16 13	17 09
10		333 50.3	44.1	1 02.9	14.5	1 24.8	9.7 54.8	40	18 25	18 53	19 27	14 21	15 17	16 14	17 13
11		348 50.4	45.0	15 36.4	14.5	1 34.5	9.7 54.9	45	18 32	19 03	19 41	14 17	15 16	16 16	17 17
12		3 50.5	S 10 45.9	30 09.9	14.4	S 1 44.2	9.6 54.9	S 50	18 41	19 16	19 58	14 13	15 15	16 18	17 22
13		18 50.6	46.8	44 43.3	14.5	1 53.8	9.7 54.9	52	18 45	19 22	20 07	14 11	15 14	16 19	17 25
14		33 50.7	47.7	59 16.8	14.4	2 03.5	9.7 54.9	54	18 50	19 28	20 17	14 08	15 13	16 20	17 27
15		48 50.8	48.6	73 50.2	14.4	2 13.2	9.6 54.9	56	18 55	19 36	20 28	14 06	15 13	16 21	17 30
16		63 50.9	49.5	88 23.6	14.3	2 22.8	9.7 54.9	58	19 01	19 44	20 41	14 03	15 12	16 22	17 33
17		78 51.0	50.4	102 56.9	14.4	2 32.5	9.6 55.0	S 60	19 07	19 54	20 57	14 00	15 11	16 23	17 37
18		93 51.1	S 10 51.2	117 30.3	14.3	S 2 42.1	9.7 55.0	SOL		LUNA					
19		108 51.2	52.1	132 03.6	14.3	2 51.8	9.6 55.0	Día				Paso Mer.			
20		123 51.3	53.0	146 36.9	14.2	3 01.4	9.6 55.0		Ec. Tiempo			Paso Mer.			
21		138 51.4	53.9	161 10.1	14.2	3 11.0	9.7 55.0		00h	12h		Paso Mer.			
22		153 51.5	54.8	175 43.3	14.2	3 20.7	9.6 55.0	d	m s	m s	h m	h m	h m	d	%
23		168 51.6	55.7	190 16.5	14.2	S 3 30.3	9.6 55.1	19	14 56	15 01	11 45	08 30	20 51	25 18	
								20	15 07	15 12	11 45	09 12	21 34	26 11</	

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.9	JÚPITER -2.0	SATURNO +0.6	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
22 00	30 21.0	184 16.2 S 9 36.7	123 57.2 S24 54.9	248 33.4 N15 37.8	159 30.4 S16 34.0	Acamar 315 17.3 S40 14.7
01	45 23.5	199 15.7 37.9	138 57.7 54.9	263 35.5 37.7	174 32.6 34.0	Achernar 335 25.6 S57 09.7
02	60 25.9	214 15.2 39.1	153 58.1 55.0	278 37.6 37.6	189 34.7 34.1	Acrux 173 08.8 S63 10.7
03	75 28.4	229 14.8 . . 40.3	168 58.6 . . 55.0	293 39.8 . . 37.5	204 36.9 . . 34.2	Adhara 255 11.7 S28 59.5
04	90 30.8	244 14.3 41.4	183 59.0 55.1	308 41.9 37.4	219 39.1 34.3	Aldebarán 290 48.1 N16 32.2
05	105 33.3	259 13.8 42.6	198 59.5 55.1	323 44.0 37.3	234 41.3 34.3	
06	120 35.8	274 13.3 S 9 43.8	213 59.9 S24 55.1	338 46.2 N15 37.2	249 43.5 S16 34.4	Alioth 166 20.5 N55 52.8
07	135 38.2	289 12.8 45.0	229 00.4 55.2	353 48.3 37.1	264 45.6 34.5	Alkaid 152 58.7 N49 14.5
08	150 40.7	304 12.3 46.1	244 00.8 55.2	8 50.4 37.0	279 47.8 34.6	Al Na'ir 62 07.4 N 8 54.8
09	165 43.2	319 11.9 . . 47.3	259 01.2 . . 55.3	23 52.6 . . 36.9	294 50.0 . . 34.6	Alnilam 275 45.2 S 1 11.6
10	180 45.6	334 11.4 48.5	274 01.7 55.3	38 54.7 36.8	309 52.2 34.7	Alphard 217 55.3 S 8 43.4
11	195 48.1	349 10.9 49.7	289 02.1 55.3	53 56.8 36.7	324 54.4 34.8	
12	210 50.6	4 10.4 S 9 50.8	304 02.6 S24 55.4	68 59.0 N15 36.6	339 56.6 S16 34.8	Alphecca 126 10.6 N26 40.2
13	225 53.0	19 09.9 52.0	319 03.0 55.4	84 01.1 36.5	354 58.7 34.9	Alpheratz 357 42.2 N29 10.5
14	240 55.5	34 09.5 53.2	334 03.5 55.5	99 03.2 36.4	10 00.9 35.0	Altair 27 42.4 S46 53.4
15	255 58.0	49 09.0 . . 54.4	349 03.9 . . 55.5	114 05.4 . . 36.3	25 03.1 . . 35.1	Ankaa 353 14.5 S42 13.5
16	271 00.4	64 08.5 55.5	4 04.4 55.5	129 07.5 36.2	40 05.3 35.1	Antares 112 25.4 S26 27.7
17	286 02.9	79 08.0 56.7	19 04.8 55.6	144 09.6 36.1	55 07.5 35.2	
18	301 05.3	94 07.5 S 9 57.9	34 05.2 S24 55.6	159 11.8 N15 36.0	70 09.6 S16 35.3	Arcturus 145 55.3 N19 06.5
19	316 07.8	109 07.0 9 59.0	49 05.7 55.6	174 13.9 35.9	85 11.8 35.4	Atria 107 26.8 S69 03.2
20	331 10.3	124 06.5 10 00.2	64 06.1 55.7	189 16.0 35.8	100 14.0 35.4	Avior 234 17.6 S59 33.2
21	346 12.7	139 06.1 . . 01.4	79 06.6 . . 55.7	204 18.2 . . 35.7	115 16.2 . . 35.5	Bellatrix 278 30.8 N 6 21.7
22	1 15.2	154 05.6 02.6	94 07.0 55.7	219 20.3 35.6	130 18.4 35.6	Betelgeuse 271 00.1 N 7 24.5
23	16 17.7	169 05.1 03.7	109 07.5 55.8	234 22.4 35.5	145 20.5 35.7	
23 00	31 20.1	184 04.6 S10 04.9	124 07.9 S24 55.8	249 24.6 N15 35.4	160 22.7 S16 35.7	Canopus 263 55.5 S52 42.1
01	46 22.6	199 04.1 06.1	139 08.3 55.8	264 26.7 35.3	175 24.9 35.8	Capella 280 32.8 N46 00.5
02	61 25.1	214 03.6 07.2	154 08.8 55.9	279 28.8 35.2	190 27.1 35.9	Deneb 49 30.7 N45 20.5
03	76 27.5	229 03.1 . . 08.4	169 09.2 . . 55.9	294 31.0 . . 35.1	205 29.3 . . 36.0	Denébola 182 33.0 N14 29.4
04	91 30.0	244 02.6 09.6	184 09.7 55.9	309 33.1 35.0	220 31.5 36.0	Diphda 348 54.7 S17 54.3
05	106 32.4	259 02.2 10.7	199 10.1 56.0	324 35.2 34.9	235 33.6 36.1	
06	121 34.9	274 01.7 S10 11.9	214 10.6 S24 56.0	339 37.4 N15 34.9	250 35.8 S16 36.2	Dubhe 193 51.2 N61 40.0
07	136 37.4	289 01.2 13.1	229 11.0 56.0	354 39.5 34.8	265 38.0 36.3	Elnath 278 11.2 N28 37.0
08	151 39.8	304 00.7 14.2	244 11.4 56.1	9 41.6 34.7	280 40.2 36.3	Eltanin 90 46.0 N51 29.7
09	166 42.3	319 00.2 . . 15.4	259 11.9 . . 56.1	24 43.8 . . 34.6	295 42.4 . . 36.4	Enif 33 46.1 N 9 56.9
10	181 44.8	333 59.7 16.6	274 12.3 56.1	39 45.9 34.5	310 44.5 36.5	Fomalhaut 15 22.8 S29 32.6
11	196 47.2	348 59.2 17.7	289 12.8 56.2	54 48.1 34.4	325 46.7 36.6	
12	211 49.7	3 58.7 S10 18.9	304 13.2 S24 56.2	69 50.2 N15 34.3	340 48.9 S16 36.6	Gacrux 172 00.3 S57 11.6
13	226 52.2	18 58.2 20.0	319 13.6 56.2	84 52.3 34.2	355 51.1 36.7	Gienah 175 51.6 S17 37.3
14	241 54.6	33 57.7 21.2	334 14.1 56.2	99 54.5 34.1	10 53.3 36.8	Hadar 148 47.1 S60 26.5
15	256 57.1	48 57.2 . . 22.4	349 14.5 . . 56.3	114 56.6 . . 34.0	25 55.4 . . 36.9	Hamal 327 59.4 N23 32.0
16	271 59.6	63 56.8 23.5	4 15.0 56.3	129 58.7 33.9	40 57.6 36.9	Kaus Aust. 83 42.8 S34 22.5
17	287 02.0	78 56.3 24.7	19 15.4 56.3	145 00.9 33.8	55 59.8 37.0	
18	302 04.5	93 55.8 S10 25.9	34 15.8 S24 56.3	160 03.0 N15 33.7	71 02.0 S16 37.1	Kochab 137 21.4 N74 05.9
19	317 06.9	108 55.3 27.0	49 16.3 56.4	175 05.2 33.6	86 04.2 37.2	Markab 13 37.2 N15 17.3
20	332 09.4	123 54.8 28.2	64 16.7 56.4	190 07.3 33.5	101 06.3 37.2	Menkar 314 13.8 N 4 08.9
21	347 11.9	138 54.3 . . 29.3	79 17.2 . . 56.4	205 09.4 . . 33.4	116 08.5 . . 37.3	Menkent 148 06.9 S36 26.4
22	2 14.3	153 53.8 30.5	94 17.6 56.4	220 11.6 33.3	131 10.7 37.4	Miaplacidus 221 39.6 S69 46.5
23	17 16.8	168 53.3 31.7	109 18.0 56.5	235 13.7 33.2	146 12.9 37.5	
24 00	32 19.3	183 52.8 S10 32.8	124 18.5 S24 56.5	250 15.9 N15 33.1	161 15.1 S16 37.5	Mirfak 308 38.5 N49 54.7
01	47 21.7	198 52.3 34.0	139 18.9 56.5	265 18.0 33.0	176 17.2 37.6	Nunki 75 57.3 S26 16.5
02	62 24.2	213 51.8 35.1	154 19.4 56.5	280 20.1 32.9	191 19.4 37.7	Peacock 53 17.8 S56 41.3
03	77 26.7	228 51.3 . . 36.3	169 19.8 . . 56.6	295 22.3 . . 32.9	206 21.6 . . 37.8	Póllux 243 26.6 N27 59.2
04	92 29.1	243 50.8 37.4	184 20.2 56.6	310 24.4 32.8	221 23.8 37.8	Procyon 244 58.7 N 5 11.1
05	107 31.6	258 50.3 38.6	199 20.7 56.6	325 26.6 32.7	236 25.9 37.9	
06	122 34.0	273 49.8 S10 39.8	214 21.1 S24 56.6	340 28.7 N15 32.6	251 28.1 S16 38.0	Rasalhague 96 05.8 N12 33.3
07	137 36.5	288 49.3 40.9	229 21.5 56.6	355 30.9 32.5	266 30.3 38.1	Régulus 207 42.7 N11 53.6
08	152 39.0	303 48.8 42.1	244 22.0 56.7	10 33.0 32.4	281 32.5 38.1	Rigel 281 11.0 S 8 11.1
09	167 41.4	318 48.3 . . 43.2	259 22.4 . . 56.7	25 35.1 . . 32.3	296 34.7 . . 38.2	Rigel Kent. 139 51.1 S60 53.6
10	182 43.9	333 47.8 44.4	274 22.9 56.7	40 37.3 32.2	311 36.8 38.3	Sabik 102 11.7 S15 44.3
11	197 46.4	348 47.3 45.5	289 23.3 56.7	55 39.4 32.1	326 39.0 38.4	
12	212 48.8	3 46.8 S10 46.7	304 23.7 S24 56.7	70 41.6 N15 32.0	341 41.2 S16 38.4	Schedar 349 38.8 N56 37.3
13	227 51.3	18 46.3 47.8	319 24.2 56.7	85 43.7 31.9	356 43.4 38.5	Shaula 96 20.9 S37 06.7
14	242 53.8	33 45.8 49.0	334 24.6 56.8	100 45.9 31.8	11 45.6 38.6	Sirius 258 32.8 S16 44.2
15	257 56.2	48 45.3 . . 50.1	349 25.0 . . 56.8	115 48.0 . . 31.7	26 47.7 . . 38.7	Spica 158 30.6 S11 14.1
16	272 58.7	63 44.8 51.3	4 25.5 56.8	130 50.1 31.6	41 49.9 38.7	Suhail 222 51.8 S43 29.4
17	288 01.2	78 44.3 52.4	19 25.9 56.8	145 52.3 31.5	56 52.1 38.8	
18	303 03.6	93 43.8 S10 53.6	34 26.3 S24 56.8	160 54.4 N15 31.4	71 54.3 S16 38.9	Vega 80 38.5 N38 48.3
19	318 06.1	108 43.3 54.7	49 26.8 56.8	175 56.6 31.4	86 56.5 39.0	Zuben'ubi 137 04.7 S16 06.0
20	333 08.5	123 42.8 55.9	64 27.2 56.9	190 58.7 31.3	101 58.6 39.0	
21	348 11.0	138 42.3 . . 57.0	79 27.6 . . 56.9	206 00.9 . . 31.2	117 00.8 . . 39.1	AHS Paso Mer.
22	3 13.5	153 41.8 58.2	94 28.1 56.9	221 03.0 31.1	132 03.0 39.2	Venus 152 44.5 11 44
23	18 15.9	168 41.3 59.3	109 28.5 56.9	236 05.2 31.0	147 05.2 39.3	Marte 92 47.8 15 43
						Júpiter 218 04.4 7 21
						Saturno 129 02.6 13 17
Paso Mer. 21 51.1	v -0.5 d 1.2		v 0.4 d 0.0	v 2.1 d 0.1	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	22	23	24	25
MIÉRCOLES	d h	° /	° /		° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m
	22 00	183 51.7	S10 56.6	204 49.7	14.1	S 3 39.9	9.6 55.1	N 70	05 29	06 48	08 04	05 28	07 09	08 55	10 48
	01	198 51.8	57.4	219 22.8	14.1	3 49.5	9.6 55.1	68	05 29	06 34	07 34	05 16	06 45	08 15	09 46
	02	213 51.9	58.3	233 55.9	14.1	3 59.1	9.6 55.1	66	05 28	06 28	07 23	05 12	06 36	08 01	09 26
	03	228 52.0	10 59.2	248 29.0	14.0	4 08.7	9.5 55.1	64	05 28	06 23	07 14	05 08	06 28	07 49	09 10
	04	243 52.1	11 00.1	263 02.0	14.0	4 18.2	9.6 55.2	62	05 28	06 19	07 06	05 05	06 22	07 40	08 57
	05	258 52.2	01.0	277 35.0	13.9	4 27.8	9.5 55.2	60	05 27	06 16	06 59	05 02	06 16	07 31	08 46
	06	273 52.2	S11 01.9	292 07.9	14.0	S 4 37.3	9.6 55.2	N 58	05 26	06 12	06 53	04 59	06 11	07 24	08 37
	07	288 52.3	02.7	306 40.9	13.8	4 46.9	9.5 55.2	56	05 26	06 09	06 48	04 57	06 07	07 18	08 28
	08	303 52.4	03.6	321 13.7	13.9	4 56.4	9.5 55.2	54	05 25	06 06	06 43	04 55	06 03	07 12	08 21
	09	318 52.5	.. 04.5	335 46.6	13.8	5 05.9	9.5 55.3	52	05 24	06 04	06 38	04 53	06 00	07 07	08 14
	10	333 52.6	05.4	350 19.4	13.8	5 15.4	9.4 55.3	50	05 24	06 01	06 35	04 51	05 56	07 02	08 08
	11	348 52.7	06.3	4 52.2	13.7	5 24.8	9.5 55.3	45	05 22	05 56	06 26	04 48	05 49	06 52	07 56
	12	3 52.8	S11 07.2	19 24.9	13.7	S 5 34.3	9.4 55.3	N 40	05 20	05 51	06 19	04 45	05 44	06 44	07 45
	13	18 52.9	08.0	33 57.6	13.7	5 43.7	9.4 55.3	35	05 17	05 47	06 13	04 42	05 39	06 37	07 36
	14	33 53.0	08.9	48 30.3	13.6	5 53.1	9.4 55.3	30	05 15	05 43	06 07	04 40	05 35	06 31	07 28
	15	48 53.1	.. 09.8	63 02.9	13.6	6 02.5	9.4 55.4	20	05 09	05 35	05 58	04 36	05 27	06 20	07 14
	16	63 53.2	10.7	77 35.5	13.5	6 11.9	9.4 55.4	N 10	05 03	05 28	05 49	04 32	05 21	06 11	07 03
	17	78 53.3	11.6	92 08.0	13.6	6 21.3	9.3 55.4	0	04 55	05 20	05 41	04 29	05 15	06 02	06 51
	18	93 53.4	S11 12.4	106 40.6	13.4	S 6 30.6	9.3 55.4	S 10	04 46	05 11	05 33	04 26	05 09	05 53	06 40
	19	108 53.4	13.3	121 13.0	13.4	6 39.9	9.3 55.4	20	04 35	05 01	05 24	04 23	05 02	05 44	06 29
	20	123 53.5	14.2	135 45.4	13.4	6 49.2	9.3 55.5	30	04 20	04 49	05 14	04 19	04 55	05 34	06 15
	21	138 53.6	.. 15.1	150 17.8	13.4	6 58.5	9.2 55.5	35	04 10	04 42	05 08	04 17	04 51	05 28	06 08
	22	153 53.7	16.0	164 50.2	13.2	7 07.7	9.3 55.5	40	03 59	04 33	05 01	04 14	04 46	05 21	05 59
	23	168 53.8	16.8	179 22.4	13.3	7 17.0	9.1 55.5	45	03 44	04 22	04 53	04 11	04 41	05 13	05 49
JUEVES	23 00	183 53.9	S11 17.7	193 54.7	13.2	S 7 26.1	9.2 55.5	S 50	03 26	04 09	04 43	04 08	04 34	05 03	05 37
	01	198 54.0	18.6	208 26.9	13.2	7 35.3	9.1 55.6	52	03 17	04 02	04 39	04 07	04 31	04 59	05 31
	02	213 54.1	19.5	222 59.1	13.1	7 44.4	9.1 55.6	54	03 06	03 55	04 34	04 05	04 28	04 54	05 25
	03	228 54.2	.. 20.4	237 31.2	13.1	7 53.5	9.1 55.6	56	02 54	03 47	04 29	04 03	04 25	04 49	05 18
	04	243 54.3	21.2	252 03.3	13.0	8 02.6	9.1 55.6	58	02 40	03 38	04 23	04 01	04 21	04 43	05 10
	05	258 54.3	22.1	266 35.3	13.0	8 11.7	9.0 55.6	S 60	02 23	03 28	04 16	03 59	04 16	04 37	05 01
	06	273 54.4	S11 23.0	281 07.3	12.9	S 8 20.7	9.0 55.7	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	288 54.5	23.9	295 39.2	12.9	8 29.7	8.9 55.7			Civil	Náut.	22	23	24	25
	08	303 54.6	24.7	310 11.1	12.8	8 38.6	8.9 55.7								
	09	318 54.7	.. 25.6	324 42.9	12.8	8 47.5	8.9 55.7								
	10	333 54.8	26.5	339 14.7	12.7	8 56.4	8.9 55.8	N 72	h m	h m	h m	h m	h m	h m	h m
	11	348 54.9	27.4	353 46.4	12.7	9 05.3	8.8 55.8	N 70	15 23	16 39	17 57	15 30	15 24	15 17	15 08
	12	3 54.9	S11 28.2	8 18.1	12.7	S 9 14.1	8.8 55.8	N 70	15 40	16 47	17 58	15 39	15 39	15 41	15 45
	13	18 55.0	29.1	22 49.8	12.6	9 22.9	8.7 55.8	68	15 53	16 53	17 58	15 46	15 52	16 00	16 12
	14	33 55.1	30.0	37 21.4	12.5	9 31.6	8.7 55.8	66	16 05	16 59	17 59	15 52	16 02	16 14	16 32
	15	48 55.2	.. 30.9	51 52.9	12.5	9 40.3	8.7 55.9	64	16 14	17 04	17 59	15 57	16 10	16 27	16 49
	16	63 55.3	31.7	66 24.4	12.5	9 49.0	8.6 55.9	62	16 22	17 08	18 00	16 02	16 18	16 37	17 02
	17	78 55.4	32.6	80 55.9	12.4	S 9 57.6	8.6 55.9	60	16 29	17 12	18 00	16 05	16 24	16 46	17 14
	18	93 55.5	S11 33.5	Un eclipse parcial de Sol se produce en esta fecha. Ver página 5.				N 58	16 35	17 15	18 01	16 09	16 30	16 54	17 24
	19	108 55.5	34.4					56	16 40	17 19	18 02	16 12	16 35	17 01	17 33
	20	123 55.6	35.2					54	16 45	17 21	18 03	16 15	16 39	17 07	17 40
	21	138 55.7	.. 36.1					52	16 49	17 24	18 03	16 17	16 43	17 13	17 47
	22	153 55.8	37.0					50	16 53	17 27	18 04	16 20	16 47	17 18	17 54
	23	168 55.9	37.8	45	17 02	17 32	18 06	16 25	16 55	17 29	18 07				
	VIERNES	24 00	183 55.9	S11 38.7	182 34.5	12.1	S10 56.7	8.3 56.0	N 40	17 09	17 37	18 09	16 29	17 02	17 38	18 19
01		198 56.0	39.6	197 05.6	12.0	11 05.0	8.2 56.1	35	17 16	17 41	18 11	16 32	17 08	17 46	18 28
02		213 56.1	40.5	211 36.6	11.9	11 13.2	8.2 56.1	30	17 21	17 45	18 13	16 36	17 13	17 53	18 37
03		228 56.2	.. 41.3	226 07.5	11.8	11 21.4	8.1 56.1	20	17 31	17 53	18 19	16 41	17 22	18 05	18 51
04		243 56.3	42.2	240 38.3	11.9	11 29.5	8.1 56.1	N 10	17 40	18 01	18 26	16 46	17 30	18 15	19 04
05		258 56.4	43.1	255 09.2	11.7	11 37.6	8.0 56.2	0	17 48	18 09	18 33	16 51	17 37	18 25	19 16
06		273 56.4	S11 43.9	269 39.9	11.7	S11 45.6	7.9 56.2	S 10	17 56	18 18	18 43	16 55	17 44	18 35	19 28
07		288 56.5	44.8	284 10.6	11.7	11 53.5	7.9 56.2	20	18 05	18 28	18 54	17 00	17 52	18 46	19 41
08		303 56.6	45.7	298 41.3	11.6	12 01.4	7.9 56.2	30	18 15	18 40	19 10	17 06	18 01	18 58	19 56
09		318 56.7	.. 46.5	313 11.9	11.5	12 09.3	7.8 56.2	35	18 21	18 48	19 19	17 09	18 07	19 05	20 04
10		333 56.8	47.4	327 42.4	11.5	12 17.1	7.8 56.3	40	18 28	18 57	19 31	17 13	18 12	19 13	20 14
11		348 56.8	48.3	342 12.9	11.5	12 24.9	7.6 56.3	45	18 36	19 08	19 46	17 17	18 19	19 22	20 25
12		3 56.9	S11 49.2	356 43.4	11.3	S12 32.5	7.7 56.3	S 50	18 46	19 21	20 05	17 22	18 28	19 34	20 39
13		18 57.0	50.0	11 13.7	11.4	12 40.2	7.5 56.3	52	18 51	19 28	20 14	17 25	18 32	19 39	20 46
14		33 57.1	50.9	25 44.1	11.2	12 47.7	7.6 56.3	54	18 56	19 35	20 24	17 27	18 36	19 45	20 53
15		48 57.1	.. 51.8	40 14.3	11.2	12 55.3	7.4 56.4	56	19 01	19 43	20 37	17 30	18 40	19 51	21 01
16		63 57.2	52.6	54 44.5	11.2	13 02.7	7.4 56.4	58	19 08	19 52	20 52	17 33	18 46	19 59	21 10
17		78 57.3	53.5	69 14.7	11.1	13 10.1	7.3 56.4	S 60	19 15	20 03	21 09	17 37	18 52	20 07	21 20
18		93 57.4	S11 54.4	83 44.8	11.0	S13 17.4	7.3 56.4	SOL		LUNA					
19		108 57.4	55.2	98 14.8	11.0	13 24.7	7.2 56.4	Día	Ec. Tiempo	Paso Mer.	Paso Mer.		Edad	Fase	
20		123 57.5	56.1	112 44.8	11.0	13 31.9	7.1 56.5				Sup.	Inf.			
21		138 57.6	.. 56.9	127 14.8	10.8	13 39.0	7.1 56.5	00h	12h						
22		153 57.7	57.8	141 44.6	10.9	13 46.1	7.0 56.5	d	m s	m s	h m	h m	h m	d %	
23		168 57.7	58.7	156 14.5	10.7	S13 53.1	7.0 56.5	22	15 27	15 31	11 44	10 40	23 03	28 2	
								23	15 35	15 40	11 44	11 26	23 49	29 0	
							24	15 44	15 47	11 44	12 14	24 38	01 0		

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.9	JÚPITER -2.0	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
25 00	33 18.4	183 40.8 S11 00.5	124 28.9 S24 56.9	251 07.3 N15 30.9	162 07.3 S16 39.3	Acamar	315 17.3 S40 14.7	
01	48 20.9	198 40.3 01.6	139 29.4 56.9	266 09.4 30.8	177 09.5 39.4	Achernar	335 25.6 S57 09.7	
02	63 23.3	213 39.8 02.8	154 29.8 56.9	281 11.6 30.7	192 11.7 39.5	Acrux	173 08.7 S63 10.7	
03	78 25.8	228 39.3 . . 03.9	169 30.3 . . 56.9	296 13.7 . . 30.6	207 13.9 . . 39.6	Adhara	255 11.7 S28 59.5	
04	93 28.3	243 38.8 05.1	184 30.7 57.0	311 15.9 30.5	222 16.1 39.6	Aldebarán	290 48.0 N16 32.2	
05	108 30.7	258 38.2 06.2	199 31.1 57.0	326 18.0 30.4	237 18.2 39.7			
06	123 33.2	273 37.7 S11 07.4	214 31.6 S24 57.0	341 20.2 N15 30.3	252 20.4 S16 39.8	Alioth	166 20.5 N55 52.7	
07	138 35.7	288 37.2 08.5	229 32.0 57.0	356 22.3 30.2	267 22.6 39.9	Alkaid	152 58.7 N49 14.5	
08	153 38.1	303 36.7 09.7	244 32.4 57.0	11 24.5 30.1	282 24.8 39.9	Al Na'ir	62 07.4 N 8 54.8	
09	168 40.6	318 36.2 . . 10.8	259 32.9 . . 57.0	26 26.6 . . 30.0	297 26.9 . . 40.0	Alnilam	275 45.2 S 1 11.6	
10	183 43.0	333 35.7 11.9	274 33.3 57.0	41 28.8 30.0	312 29.1 40.1	Alphard	217 55.3 S 8 43.4	
11	198 45.5	348 35.2 13.1	289 33.7 57.0	56 30.9 29.9	327 31.3 40.2			
12	213 48.0	3 34.7 S11 14.2	304 34.2 S24 57.0	71 33.1 N15 29.8	342 33.5 S16 40.2	Alphecca	126 10.6 N26 40.2	
13	228 50.4	18 34.2 15.4	319 34.6 57.0	86 35.2 29.7	357 35.7 40.3	Alpheratz	357 42.2 N29 10.5	
14	243 52.9	33 33.7 16.5	334 35.0 57.0	101 37.4 29.6	12 37.8 40.4	Altair	62 07.4 N 8 54.8	
15	258 55.4	48 33.2 . . 17.7	349 35.4 . . 57.0	116 39.5 . . 29.5	27 40.0 . . 40.5	Ankaa	353 14.5 S42 13.5	
16	273 57.8	63 32.6 18.8	4 35.9 57.0	131 41.7 29.4	42 42.2 40.5	Antares	112 25.4 S26 27.7	
17	289 00.3	78 32.1 19.9	19 36.3 57.1	146 43.8 29.3	57 44.4 40.6			
18	304 02.8	93 31.6 S11 21.1	34 36.7 S24 57.1	161 46.0 N15 29.2	72 46.5 S16 40.7	Arcturus	145 55.3 N19 06.5	
19	319 05.2	108 31.1 22.2	49 37.2 57.1	176 48.1 29.1	87 48.7 40.8	Atria	107 26.8 S69 03.2	
20	334 07.7	123 30.6 23.4	64 37.6 57.1	191 50.3 29.0	102 50.9 40.8	Avior	234 17.6 S59 33.2	
21	349 10.1	138 30.1 . . 24.5	79 38.0 . . 57.1	206 52.4 . . 28.9	117 53.1 . . 40.9	Bellatrix	278 30.8 N 6 21.7	
22	4 12.6	153 29.6 25.6	94 38.5 57.1	221 54.6 28.9	132 55.2 41.0	Betelgeuse	271 00.1 N 7 24.5	
23	19 15.1	168 29.1 26.8	109 38.9 57.1	236 56.7 28.8	147 57.4 41.1			
26 00	34 17.5	183 28.5 S11 27.9	124 39.3 S24 57.1	251 58.9 N15 28.7	162 59.6 S16 41.1	Canopus	263 55.5 S52 42.1	
01	49 20.0	198 28.0 29.0	139 39.8 57.1	267 01.0 28.6	178 01.8 41.2	Capella	280 32.7 N46 00.5	
02	64 22.5	213 27.5 30.2	154 40.2 57.1	282 03.2 28.5	193 04.0 41.3	Deneb	49 30.8 N45 20.5	
03	79 24.9	228 27.0 . . 31.3	169 40.6 . . 57.1	297 05.3 . . 28.4	208 06.1 . . 41.4	Denébola	182 33.0 N14 29.4	
04	94 27.4	243 26.5 32.5	184 41.1 57.1	312 07.5 28.3	223 08.3 41.4	Diphda	348 54.7 S17 54.3	
05	109 29.9	258 26.0 33.6	199 41.5 57.1	327 09.6 28.2	238 10.5 41.5			
06	124 32.3	273 25.4 S11 34.7	214 41.9 S24 57.1	342 11.8 N15 28.1	253 12.7 S16 41.6	Dubhe	193 51.2 N61 40.0	
07	139 34.8	288 24.9 35.9	229 42.3 57.1	357 13.9 28.0	268 14.8 41.7	Elnath	278 11.2 N28 37.0	
08	154 37.3	303 24.4 37.0	244 42.8 57.1	12 16.1 27.9	283 17.0 41.7	Eltanin	90 46.0 N51 29.7	
09	169 39.7	318 23.9 . . 38.1	259 43.2 . . 57.1	27 18.3 . . 27.9	298 19.2 . . 41.8	Enif	33 46.1 N 9 56.9	
10	184 42.2	333 23.4 39.3	274 43.6 57.1	42 20.4 27.8	313 21.4 41.9	Fomalhaut	15 22.8 S29 32.6	
11	199 44.6	348 22.8 40.4	289 44.1 57.1	57 22.6 27.7	328 23.5 42.0			
12	214 47.1	3 22.3 S11 41.5	304 44.5 S24 57.1	72 24.7 N15 27.6	343 25.7 S16 42.0	Gacrux	172 00.3 S57 11.6	
13	229 49.6	18 21.8 42.7	319 44.9 57.1	87 26.9 27.5	358 27.9 42.1	Gienah	175 51.6 S17 37.3	
14	244 52.0	33 21.3 43.8	334 45.3 57.0	102 29.0 27.4	13 30.1 42.2	Hadar	148 47.1 S60 26.5	
15	259 54.5	48 20.8 . . 44.9	349 45.8 . . 57.0	117 31.2 . . 27.3	28 32.2 . . 42.3	Hamal	327 59.3 N23 32.0	
16	274 57.0	63 20.2 46.0	4 46.2 57.0	132 33.3 27.2	43 34.4 42.3	Kaus Aust.	83 42.8 S34 22.5	
17	289 59.4	78 19.7 47.2	19 46.6 57.0	147 35.5 27.1	58 36.6 42.4			
18	305 01.9	93 19.2 S11 48.3	34 47.1 S24 57.0	162 37.7 N15 27.0	73 38.8 S16 42.5	Kochab	137 21.4 N74 05.8	
19	320 04.4	108 18.7 49.4	49 47.5 57.0	177 39.8 26.9	88 41.0 42.6	Markab	13 37.2 N15 17.3	
20	335 06.8	123 18.2 50.6	64 47.9 57.0	192 42.0 26.9	103 43.1 42.6	Menkar	314 13.8 N 4 08.8	
21	350 09.3	138 17.6 . . 51.7	79 48.3 . . 57.0	207 44.1 . . 26.8	118 45.3 . . 42.7	Menkent	148 06.8 S36 26.4	
22	5 11.8	153 17.1 52.8	94 48.8 57.0	222 46.3 26.7	133 47.5 42.8	Miaplacidus	221 39.5 S69 46.5	
23	20 14.2	168 16.6 53.9	109 49.2 57.0	237 48.4 26.6	148 49.7 42.9			
27 00	35 16.7	183 16.1 S11 55.1	124 49.6 S24 57.0	252 50.6 N15 26.5	163 51.8 S16 42.9	Mirfak	308 38.5 N49 54.7	
01	50 19.1	198 15.5 56.2	139 50.1 57.0	267 52.8 26.4	178 54.0 43.0	Nunki	75 57.3 S26 16.5	
02	65 21.6	213 15.0 57.3	154 50.5 57.0	282 54.9 26.3	193 56.2 43.1	Peacock	53 17.9 S56 41.3	
03	80 24.1	228 14.5 . . 58.4	169 50.9 . . 56.9	297 57.1 . . 26.2	208 58.4 . . 43.2	Póllux	243 26.6 N27 59.2	
04	95 26.5	243 14.0 11 59.6	184 51.3 56.9	312 59.2 26.1	224 00.5 43.2	Procyon	244 58.7 N 5 11.1	
05	110 29.0	258 13.4 12 00.7	199 51.8 56.9	328 01.4 26.1	239 02.7 43.3			
06	125 31.5	273 12.9 S12 01.8	214 52.2 S24 56.9	343 03.5 N15 26.0	254 04.9 S16 43.4	Rasalhague	96 05.8 N12 33.3	
07	140 33.9	288 12.4 02.9	229 52.6 56.9	358 05.7 25.9	269 07.1 43.5	Régulus	207 42.7 N11 53.6	
08	155 36.4	303 11.9 04.1	244 53.0 56.9	13 07.9 25.8	284 09.2 43.5	Rigel	281 10.9 S 8 11.1	
09	170 38.9	318 11.3 . . 05.2	259 53.5 . . 56.9	28 10.0 . . 25.7	299 11.4 . . 43.6	Rigel Kent.	139 51.1 S60 53.6	
10	185 41.3	333 10.8 06.3	274 53.9 56.9	43 12.2 25.6	314 13.6 43.7	Sabik	102 11.7 S15 44.3	
11	200 43.8	348 10.3 07.4	289 54.3 56.8	58 14.3 25.5	329 15.8 43.8			
12	215 46.3	3 09.7 S12 08.5	304 54.7 S24 56.8	73 16.5 N15 25.4	344 17.9 S16 43.8	Schedar	349 38.8 N56 37.3	
13	230 48.7	18 09.2 09.7	319 55.2 56.8	88 18.7 25.3	359 20.1 43.9	Shaula	96 20.9 S37 06.7	
14	245 51.2	33 08.7 10.8	334 55.6 56.8	103 20.8 25.3	14 22.3 44.0	Sirius	258 32.8 S16 44.2	
15	260 53.6	48 08.1 . . 11.9	349 56.0 . . 56.8	118 23.0 . . 25.2	29 24.5 . . 44.1	Spica	158 30.6 S11 14.1	
16	275 56.1	63 07.6 13.0	4 56.4 56.8	133 25.1 25.1	44 26.6 44.1	Suhail	222 51.8 S43 29.4	
17	290 58.6	78 07.1 14.1	19 56.9 56.8	148 27.3 25.0	59 28.8 44.2			
18	306 01.0	93 06.5 S12 15.2	34 57.3 S24 56.7	163 29.5 N15 24.9	74 31.0 S16 44.3	Vega	80 38.5 N38 48.3	
19	321 03.5	108 06.0 16.4	49 57.7 56.7	178 31.6 24.8	89 33.2 44.4	Zuben'ubi	137 04.7 S16 06.0	
20	336 06.0	123 05.5 17.5	64 58.1 56.7	193 33.8 24.7	104 35.3 44.4			
21	351 08.4	138 05.0 . . 18.6	79 58.6 . . 56.7	208 36.0 . . 24.6	119 37.5 . . 44.5	AHS Paso Mer.		
22	6 10.9	153 04.4 19.7	94 59.0 56.7	223 38.1 24.5	134 39.7 44.6	Venus	149 11.0 h 11 47	
23	21 13.4	168 03.9 20.8	109 59.4 56.6	238 40.3 24.5	149 41.9 44.7	Marte	90 21.8 h 15 41	
						Júpiter	217 41.3 h 7 11	
						Saturno	128 42.1 h 13 06	
Paso Mer. 21 39.3	v -0.5 d 1.1		v 0.4 d 0.0	v 2.2 d 0.1	v 2.2 d 0.1			

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna							
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	25	26	27	28			
^d ^h	°	′	°	′	°	′	°	h	m	h	m	h	m	h	m			
25	01	183 57.8	S11 59.5	170 44.2	10.7	S14 00.1	6.8	56.6	N 72	05 41	07 02	08 21	10 48	12 58	■	■		
	02	198 57.9	12 00.4	185 13.9	10.7	14 06.9	6.8	56.6	N 70	05 40	06 52	08 01	10 12	11 50	13 16	14 10		
	03	213 58.0	01.3	199 43.6	10.6	14 13.7	6.8	56.6	68	05 39	06 44	07 46	09 46	11 13	12 30	13 25		
	04	228 58.0	02.1	214 13.2	10.5	14 20.5	6.6	56.6	66	05 37	06 38	07 33	09 26	10 48	11 59	12 55		
	05	243 58.1	03.0	228 42.7	10.5	14 27.1	6.6	56.6	64	05 36	06 32	07 23	09 10	10 28	11 37	12 33		
	06	258 58.2	03.9	243 12.2	10.4	14 33.7	6.5	56.7	62	05 35	06 27	07 14	08 57	10 12	11 19	12 15		
	07	273 58.3	S12 04.7	257 41.6	10.4	S14 40.2	6.5	56.7	60	05 34	06 23	07 06	08 46	09 58	11 04	12 00		
	08	288 58.3	05.6	272 11.0	10.3	14 46.7	6.4	56.7	N 58	05 33	06 19	07 00	08 37	09 47	10 51	11 47		
	09	303 58.4	06.4	286 40.3	10.3	14 53.1	6.3	56.7	56	05 32	06 15	06 54	08 28	09 37	10 40	11 36		
	10	318 58.5	07.3	301 09.6	10.2	14 59.4	6.2	56.7	54	05 30	06 12	06 49	08 21	09 28	10 31	11 27		
S Á B A D O	11	333 58.6	08.2	315 38.8	10.1	15 05.6	6.1	56.8	52	05 29	06 09	06 44	08 14	09 20	10 22	11 18		
	12	348 58.6	09.0	330 07.9	10.1	15 11.7	6.1	56.8	50	05 28	06 06	06 39	08 08	09 13	10 14	11 10		
	13	3 58.7	S12 09.9	344 37.0	10.1	S15 17.8	6.0	56.8	45	05 25	06 00	06 30	07 56	08 58	09 58	10 54		
	14	18 58.8	10.7	359 06.1	10.0	15 23.8	5.9	56.8	N 40	05 23	05 54	06 22	07 45	08 46	09 45	10 41		
	15	33 58.8	11.6	13 35.1	9.9	15 29.7	5.8	56.8	35	05 20	05 49	06 15	07 36	08 35	09 33	10 29		
	16	48 58.9	12.5	28 04.0	9.9	15 35.5	5.8	56.9	30	05 17	05 45	06 09	07 28	08 26	09 23	10 19		
	17	63 59.0	13.3	42 32.9	9.8	15 41.3	5.6	56.9	20	05 10	05 36	05 59	07 14	08 10	09 06	10 02		
	18	78 59.0	14.2	57 01.7	9.8	15 46.9	5.6	56.9	N 10	05 03	05 28	05 49	07 03	07 56	08 51	09 47		
	19	93 59.1	S12 15.0	71 30.5	9.7	S15 52.5	5.5	56.9	0	04 55	05 19	05 41	06 51	07 43	08 37	09 33		
	20	108 59.2	15.9	85 59.2	9.7	15 58.0	5.4	57.0	S 10	04 45	05 10	05 32	06 40	07 31	08 24	09 19		
D O M I N G O	21	123 59.3	16.8	100 27.9	9.6	16 03.4	5.4	57.0	20	04 33	04 59	05 22	06 29	07 17	08 09	09 04		
	22	138 59.3	17.6	114 56.5	9.5	16 08.8	5.2	57.0	30	04 16	04 46	05 11	06 15	07 01	07 52	08 47		
	23	153 59.4	18.5	129 25.0	9.6	16 14.0	5.2	57.0	35	04 06	04 38	05 04	06 08	06 52	07 42	08 37		
	24	168 59.5	19.3	143 53.6	9.4	16 19.2	5.0	57.0	40	03 54	04 28	04 57	05 59	06 42	07 31	08 25		
	25	183 59.5	S12 20.2	158 22.0	9.4	S16 24.2	5.0	57.1	45	03 39	04 17	04 48	05 49	06 30	07 18	08 12		
	01	198 59.6	21.0	172 50.4	9.4	16 29.2	4.9	57.1	S 50	03 19	04 03	04 38	05 37	06 16	07 02	07 56		
	02	213 59.7	21.9	187 18.8	9.3	16 34.1	4.8	57.1	52	03 09	03 56	04 33	05 31	06 09	06 54	07 48		
	03	228 59.7	22.7	201 47.1	9.2	16 38.9	4.7	57.1	54	02 58	03 48	04 27	05 25	06 02	06 46	07 39		
	04	243 59.8	23.6	216 15.3	9.2	16 43.6	4.7	57.1	56	02 44	03 39	04 21	05 18	05 53	06 37	07 30		
	05	258 59.9	24.5	230 43.5	9.2	16 48.3	4.5	57.2	58	02 29	03 30	04 15	05 10	05 44	06 26	07 19		
L U N E S	06	273 59.9	S12 25.3	245 11.7	9.1	S16 52.8	4.4	57.2	S 60	02 09	03 18	04 07	05 01	05 33	06 14	07 06		
	07	289 00.0	26.2	259 39.8	9.1	16 57.2	4.4	57.2	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna			
	08	304 00.0	27.0	274 07.9	9.0	17 01.6	4.2	57.2			Civil		Náut.	25	26	27	28	
	09	319 00.1	27.9	288 35.9	8.9	17 05.8	4.2	57.2										
	10	334 00.2	28.7	303 03.8	8.9	17 10.0	4.1	57.3										
	11	349 00.2	29.6	317 31.7	8.9	17 14.1	3.9	57.3										
	12	4 00.3	S12 30.4	331 59.6	8.8	S17 18.0	3.9	57.3	N 72	15 06	16 25	17 44	15 08	14 48	■	■		
	13	19 00.4	31.3	346 27.4	8.8	17 21.9	3.8	57.3	N 70	15 25	16 34	17 46	15 45	15 56	16 23	17 25		
	14	34 00.4	32.1	0 55.2	8.7	17 25.7	3.7	57.3	68	15 41	16 42	17 48	16 12	16 33	17 10	18 10		
	15	49 00.5	33.0	15 22.9	8.7	17 29.4	3.5	57.4	66	15 53	16 49	17 49	16 32	16 59	17 40	18 39		
S O L O	16	64 00.6	33.8	29 50.6	8.7	17 32.9	3.5	57.4	64	16 04	16 55	17 50	16 49	17 19	18 03	19 02		
	17	79 00.6	34.7	44 18.3	8.6	17 36.4	3.4	57.4	62	16 13	17 00	17 52	17 02	17 36	18 21	19 19		
	18	94 00.7	S12 35.5	58 45.9	8.5	S17 39.8	3.3	57.4	60	16 20	17 04	17 53	17 14	17 49	18 36	19 34		
	19	109 00.7	36.4	73 13.4	8.5	17 43.1	3.2	57.4	N 58	16 27	17 08	17 54	17 24	18 01	18 49	19 47		
	20	124 00.8	37.2	87 40.9	8.5	17 46.3	3.0	57.5	56	16 33	17 12	17 55	17 33	18 11	19 00	19 58		
	21	139 00.9	38.1	102 08.4	8.4	17 49.3	3.0	57.5	54	16 39	17 15	17 57	17 40	18 21	19 09	20 07		
	22	154 00.9	38.9	116 35.8	8.4	17 52.3	2.9	57.5	52	16 43	17 18	17 58	17 47	18 29	19 18	20 16		
	23	169 01.0	39.8	131 03.2	8.4	17 55.2	2.8	57.5	50	16 48	17 21	17 59	17 54	18 36	19 26	20 23		
	24	184 01.0	S12 40.6	145 30.6	8.3	S17 58.0	2.6	57.5	45	16 57	17 27	18 02	18 07	18 51	19 42	20 39		
	25	199 01.1	41.5	159 57.9	8.3	18 00.6	2.6	57.5	N 40	17 05	17 33	18 05	18 19	19 04	19 56	20 53		
L U N E S	01	214 01.2	42.3	174 25.2	8.2	18 03.2	2.4	57.6	35	17 12	17 38	18 08	18 28	19 15	20 07	21 04		
	02	229 01.2	43.2	188 52.4	8.2	18 05.6	2.4	57.6	30	17 18	17 43	18 11	18 37	19 25	20 17	21 14		
	03	244 01.3	44.0	203 19.6	8.2	18 08.0	2.2	57.6	N 10	17 29	17 51	18 17	18 51	19 41	20 35	21 31		
	04	259 01.3	44.9	217 46.8	8.1	18 10.2	2.2	57.6	20	17 38	18 00	18 25	19 04	19 56	20 50	21 46		
	05	274 01.4	S12 45.7	232 13.9	8.1	S18 12.4	2.0	57.6	0	17 47	18 09	18 33	19 16	20 09	21 04	21 59		
	06	289 01.4	46.6	246 41.0	8.1	18 14.4	1.9	57.7	S 10	17 56	18 18	18 43	19 28	20 22	21 18	22 13		
	07	304 01.5	47.4	261 08.1	8.0	18 16.3	1.9	57.7	20	18 06	18 29	18 56	19 41	20 37	21 33	22 28		
	08	319 01.6	48.2	275 35.1	8.0	18 18.2	1.7	57.7	30	18 18	18 43	19 12	19 56	20 53	21 50	22 44		
	09	334 01.6	49.1	290 02.1	8.0	18 19.9	1.6	57.7	35	18 24	18 51	19 22	20 04	21 03	22 00	22 54		
	10	349 01.7	49.9	304 29.1	7.9	18 21.5	1.5	57.7	40	18 32	19 00	19 35	20 14	21 14	22 11	23 05		
S O L O	11	4 01.7	S12 50.8	318 56.0	7.9	S18 23.0	1.4	57.8	45	18 41	19 12	19 51	20 25	21 27	22 25	23 18		
	12	19 01.8	51.6	333 22.9	7.9	18 24.4	1.2	57.8	S 50	18 51	19 27	20 11	20 39	21 42	22 41	23 34		
	13	34 01.8	52.5	347 49.8	7.8	18 25.6	1.2	57.8	52	18 56	19 34	20 21	20 46	21 50	22 49	23 41		
	14	49 01.9	53.3	2 16.6	7.9	18 26.8	1.1	57.8	54	19 02	19 41	20 32	20 53	21 58	22 57	23 50		
	15	64 02.0	54.1	16 43.5	7.8	18 27.9	0.9	57.8	56	19 08	19 50	20 46	21 01	22 07	23 07	23 59		
	16	79 02.0	55.0	31 10.3	7.7	18 28.8	0.8	57.8	58	19 15	20 00	21 02	21 10	22 17	23 18	24 09		
	17	94 02.1	S12 55.8	45 37.0	7.8	S18 29.6	0.8	57.9	S 60	19 23	20 12	21 22	21 20	22 29	23 30	24 21		
	18	109 02.1	56.7	60 03.8	7.7	18 30.4	0.6	57.9	Dia		SOL		Paso Mer.		LUNA			
	19	124 02.2	57.5	74 30.5	7.7	18 31.0	0.5	57.9			Ec. Tiempo		Paso Mer.		Paso Mer. Sup. Inf.		Edad	Fase
	20	139 02.2	58.4	88 57.2	7.7	18 31.5	0.4	57.9	00h		12h							
21	154 02.3	12 59.2	103 23.9	7.6	18 31.9	0.3	57.9											
22	169 0																	

UT (HmGr)		ARIES			VENUS -4.0			MARTE +0.9			JÚPITER -2.0			SATURNO +0.5			ESTRELLAS		
		AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre	AHS	Dec				
28	00	36 15.8	183 03.3	S12 21.9	124 59.8	S24 56.6	253 42.4	N15 24.4	164 44.0	S16 44.7	Acamar	315 17.3	S40 14.7						
	01	51 18.3	198 02.8	23.0	140 00.3	56.6	268 44.6	24.3	179 46.2	44.8	Achernar	333 25.6	S57 09.8						
	02	66 20.7	213 02.3	24.2	155 00.7	56.6	283 46.8	24.2	194 48.4	44.9	Acrux	173 08.7	S63 10.7						
	03	81 23.2	228 01.7	25.3	170 01.1	56.6	298 48.9	24.1	209 50.6	45.0	Adhara	255 11.6	S28 59.5						
	04	96 25.7	243 01.2	26.4	185 01.5	56.5	313 51.1	24.0	224 52.7	45.0	Aldebarán	290 48.0	N16 32.2						
MARTES	05	111 28.1	258 00.7	27.5	200 02.0	56.5	328 53.3	23.9	239 54.9	45.1									
	06	126 30.6	273 00.1	S12 28.6	215 02.4	S24 56.5	343 55.4	N15 23.8	254 57.1	S16 45.2	Alioth	166 20.5	N55 52.7						
	07	141 33.1	287 59.6	29.7	230 02.8	56.5	358 57.6	23.8	269 59.3	45.3	Alkaid	152 58.7	N49 14.4						
	08	156 35.5	302 59.1	30.8	245 03.2	56.4	13 59.8	23.7	285 01.4	45.3	Al Na'ir	27 42.5	S46 53.4						
	09	171 38.0	317 58.5	31.9	260 03.7	56.4	29 01.9	23.6	300 03.6	45.4	Anilam	275 45.2	S 1 11.1						
	10	186 40.5	332 58.0	33.0	275 04.1	56.4	44 04.1	23.5	315 05.8	45.5	Alphard	217 55.3	S 8 43.4						
	11	201 42.9	347 57.4	34.1	290 04.5	56.4	59 06.3	23.4	330 08.0	45.6									
	12	216 45.4	2 56.9	S12 35.3	305 04.9	S24 56.4	74 08.4	N15 23.3	345 10.1	S16 45.6	Alphecca	126 10.6	N26 40.2						
	13	231 47.9	17 56.4	36.4	320 05.3	56.3	89 10.6	23.2	0 12.3	45.7	Alpheratz	357 42.2	N29 10.5						
	14	246 50.3	32 55.8	37.5	335 05.8	56.3	104 12.8	23.1	15 14.5	45.8	Altair	62 07.4	N 8 54.8						
	15	261 52.8	47 55.3	38.6	350 06.2	56.3	119 14.9	23.1	30 16.6	45.9	Ankaa	353 14.5	S42 13.6						
	16	276 55.2	62 54.7	39.7	5 06.6	56.2	134 17.1	23.0	45 18.8	45.9	Antares	112 25.4	S26 27.7						
	17	291 57.7	77 54.2	40.8	20 07.0	56.2	149 19.3	22.9	60 21.0	46.0									
	18	307 00.2	92 53.6	S12 41.9	35 07.5	S24 56.2	164 21.4	N15 22.8	75 23.2	S16 46.1	Arcturus	145 55.3	N19 06.5						
	19	322 02.6	107 53.1	43.0	50 07.9	56.2	179 23.6	22.7	90 25.3	46.2	Atria	107 16.8	S69 03.2						
	20	337 05.1	122 52.6	44.1	65 08.3	56.1	194 25.8	22.6	105 27.5	46.2	Avior	234 17.5	S59 33.2						
	21	352 07.6	137 52.0	45.2	80 08.7	56.1	209 27.9	22.5	120 29.7	46.3	Bellatrix	278 30.8	N 6 21.7						
	22	7 10.0	152 51.5	46.3	95 09.1	56.1	224 30.1	22.5	135 31.9	46.4	Betelgeuse	271 00.1	N 7 24.5						
	23	22 12.5	167 50.9	47.4	110 09.6	56.0	239 32.3	22.4	150 34.0	46.5									
29	00	37 15.0	182 50.4	S12 48.5	125 10.0	S24 56.0	254 34.4	N15 22.3	165 36.2	S16 46.5	Canopus	263 55.4	S52 42.1						
	01	52 17.4	197 49.8	49.6	140 10.4	56.0	269 36.6	22.2	180 38.4	46.6	Capella	280 32.7	N46 00.5						
	02	67 19.9	212 49.3	50.7	155 10.8	55.9	284 38.8	22.1	195 40.6	46.7	Deneb	49 30.8	N45 20.5						
	03	82 22.4	227 48.7	51.8	170 11.2	55.9	299 40.9	22.0	210 42.7	46.8	Denébola	182 33.0	N14 29.4						
	04	97 24.8	242 48.2	52.9	185 11.7	55.9	314 43.1	21.9	225 44.9	46.8	Diphda	348 54.7	S17 54.3						
MERCURIO	05	112 27.3	257 47.7	54.0	200 12.1	55.8	329 45.3	21.9	240 47.1	46.9									
	06	127 29.7	272 47.1	S12 55.1	215 12.5	S24 55.8	344 47.5	N15 21.8	255 49.3	S16 47.0	Dubhe	193 51.1	N61 40.0						
	07	142 32.2	287 46.6	56.2	230 12.9	55.8	359 49.6	21.7	270 51.4	47.1	El Nath	278 11.2	N28 37.0						
	08	157 34.7	302 46.0	57.3	245 13.3	55.7	14 51.8	21.6	285 53.6	47.1	Eltanin	90 46.0	N51 29.7						
	09	172 37.1	317 45.5	58.4	260 13.8	55.7	29 54.0	21.5	300 55.8	47.2	Enif	33 46.1	N 9 56.9						
	10	187 39.6	332 44.9	12 59.5	275 14.2	55.7	44 56.1	21.4	315 57.9	47.3	Fomalhaut	15 22.8	S29 32.6						
	11	202 42.1	347 44.4	13 00.6	290 14.6	55.6	59 58.3	21.3	331 00.1	47.4									
	12	217 44.5	2 43.8	S13 01.7	305 15.0	S24 55.6	75 00.5	N15 21.3	346 02.3	S16 47.4	Gacrux	172 00.3	S57 11.6						
	13	232 47.0	17 43.3	02.8	320 15.4	55.6	90 02.7	21.2	1 04.5	47.5	Gienah	175 51.6	S17 37.3						
	14	247 49.5	32 42.7	03.9	335 15.9	55.5	105 04.8	21.1	16 06.6	47.6	Hadar	148 47.1	S60 26.5						
	15	262 51.9	47 42.2	05.0	350 16.3	55.5	120 07.0	21.0	31 08.8	47.7	Hamal	327 59.3	N23 32.0						
	16	277 54.4	62 41.6	06.0	5 16.7	55.5	135 09.2	20.9	46 11.0	47.7	Kaus Aust.	83 42.8	S34 22.5						
	17	292 56.9	77 41.1	07.1	20 17.1	55.4	150 11.4	20.8	61 13.2	47.8									
	18	307 59.3	92 40.5	S13 08.2	35 17.5	S24 55.4	165 13.5	N15 20.7	76 15.3	S16 47.9	Kochab	137 21.4	N74 05.8						
	19	323 01.8	107 39.9	09.3	50 18.0	55.3	180 15.7	20.7	91 17.5	48.0	Markab	13 37.2	N15 17.4						
	20	338 04.2	122 39.4	10.4	65 18.4	55.3	195 17.9	20.6	106 19.7	48.0	Menkar	314 13.8	N 4 08.8						
	21	353 06.7	137 38.8	11.5	80 18.8	55.3	210 20.0	20.5	121 21.8	48.1	Menkent	148 06.8	S36 26.4						
	22	8 09.2	152 38.3	12.6	95 19.2	55.2	225 22.2	20.4	136 24.0	48.2	Miaplacidus	221 39.5	S69 46.5						
	23	23 11.6	167 37.7	13.7	110 19.6	55.2	240 24.4	20.3	151 26.2	48.3									
30	00	38 14.1	182 37.2	S13 14.8	125 20.1	S24 55.1	255 26.6	N15 20.2	166 28.4	S16 48.3	Mirfak	308 38.5	N49 54.7						
	01	53 16.6	197 36.6	15.9	140 20.5	55.1	270 28.7	20.2	181 30.5	48.4	Nunki	75 57.3	S26 16.5						
	02	68 19.0	212 36.1	16.9	155 20.9	55.0	285 30.9	20.1	196 32.7	48.5	Peacock	53 17.9	S56 41.3						
	03	83 21.5	227 35.5	18.0	170 21.3	55.0	300 33.1	20.0	211 34.9	48.6	Póllux	243 26.6	N27 59.2						
	04	98 24.0	242 34.9	19.1	185 21.7	55.0	315 35.3	19.9	226 37.0	48.6	Procyon	244 58.7	N 5 11.1						
JUEVES	05	113 26.4	257 34.4	20.2	200 22.1	54.9	330 37.5	19.8	241 39.2	48.7									
	06	128 28.9	272 33.8	S13 21.3	215 22.6	S24 54.9	345 39.6	N15 19.7	256 41.4	S16 48.8	Rasalhague	96 05.8	N12 33.3						
	07	143 31.3	287 33.3	22.4	230 23.0	54.8	0 41.8	19.6	271 43.6	48.9	Régulus	207 42.7	N11 53.6						
	08	158 33.8	302 32.7	23.4	245 23.4	54.8	15 44.0	19.6	286 45.7	48.9	Rigel	281 10.9	S 8 11.1						
	09	173 36.3	317 32.1	24.5	260 23.8	54.7	30 46.2	19.5	301 47.9	49.0	Rigel Kent.	139 51.0	S60 53.6						
	10	188 38.7	332 31.6	25.6	275 24.2	54.7	45 48.3	19.4	316 50.1	49.1	Sabik	102 11.7	S15 44.3						
	11	203 41.2	347 31.0	26.7	290 24.6	54.6	60 50.5	19.3	331 52.3	49.1									
	12	218 43.7	2 30.5	S13 27.8	305 25.1	S24 54.6	75 52.7	N15 19.2	346 54.4	S16 49.2	Schedar	349 38.8	N56 37.3						
	13	233 46.1	17 29.9	28.9	320 25.5	54.6	90 54.9	19.1	1 56.6	49.3	Shaula	96 20.9	S37 06.7						
	14	248 48.6	32 29.3	29.9	335 25.9	54.5	105 57.1	19.1	16 58.8	49.4	Sirius	258 32.7	S16 44.2						
	15	263 51.1	47 28.8	31.0	350 26.3	54.5	120 59.2	19.0	32 00.9	49.4	Spica	158 30.8	S11 14.1						
	16	278 53.5	62 28.2	32.1	5 26.7	54.4	136 01.4	18.9	47 03.1	49.5	Suhail	222 51.6	S43 29.4						
	17	293 56.0	77 27.7	33.2	20 27.1	54.4	151 03.6	18.8	62 05.3	49.6									
	18	308 58.5	92 27.1	S13 34.2	35 27.6	S24 54.3	166 05.8	N15 18.7	77 07.5	S16 49.7	Vega	80 38.5	N38 48.3						
	19	324 00.9	107 26.5	35.3	50 28.0	54.3	181 07.9	18.6	92 09.6	49.7	Zuben'ubi	137 04.7	S16 06.0						
	20	339 03.4	122 26.0	36.4	65 28.4	54.2	196 10.1	18.6	107 11.8	49.8									
	21	354 05.8	137 25.4	37.5	80 28.8	54.2	211 12.3	18.5	122 14.0	49.9									
	22	9 08.3	152 24.8	38.6	95 29.2	54.1	226 14.5	18.4	137 16.1	50.0									
	23	24 10.8	167 24.3	39.6	110 29.6	54.0	241 16.7	18.3	152 18.3	50.0									
h m																			
Paso Mer. 21 27.5		<i>v</i> -0.6	<i>d</i> 1.1		<i>v</i> 0.4	<i>d</i> 0.0		<i>v</i> 2.2	<i>d</i> 0.1		<i>v</i> 2.2	<i>d</i> 0.1							
								</											

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph	Náut.		Civil	28		29	30	31		
d h	° / ' "	° / ' "	° / ' "	° / ' "	° / ' "	° / ' "	° / ' "	°	h m	h m	h m	h m	h m	h m	h m	h m	
M A R T E S	28 00	184 02.4	S13 00.9	132 17.1	7.7	S18 32.3	0.1	58.0	N 72	05 54	07 15	08 38	14 10	14 34	14 43	14 47	
	01	199 02.4	01.7	146 43.8	7.5	18 32.4	0.1	58.0	N 70	05 51	07 04	08 15	13 25	13 59	14 19	14 31	
	02	214 02.5	02.6	161 10.3	7.6	18 32.3	0.2	58.0	68	05 48	06 55	07 58	12 55	13 34	14 00	14 18	
	03	229 02.5	03.4	175 36.9	7.6	18 32.1	0.2	58.0	66	05 46	06 47	07 44	12 33	13 15	13 45	14 07	
	04	244 02.6	04.2	190 03.5	7.5	18 31.9	0.4	58.0	64	05 44	06 40	07 32	12 15	12 59	13 32	13 57	
	05	259 02.6	05.1	204 30.0	7.5	18 31.5	0.6	58.1	62	05 42	06 35	07 23	12 00	12 45	13 21	13 49	
	06	274 02.7	S13 05.9	218 56.5	7.5	S18 30.9	0.6	58.1	N 58	05 39	06 25	07 07	11 47	12 34	13 12	13 42	
	07	289 02.7	06.7	233 23.0	7.5	18 30.3	0.7	58.1	56	05 37	06 21	07 00	11 36	12 24	13 03	13 36	
	08	304 02.8	07.6	247 49.5	7.5	18 29.6	0.9	58.1	54	05 36	06 17	06 54	11 27	12 15	12 56	13 30	
	09	319 02.8	08.4	262 16.0	7.5	18 28.7	0.9	58.1	52	05 34	06 14	06 49	11 18	12 07	12 49	13 25	
	10	334 02.9	09.3	276 42.5	7.4	18 27.8	1.1	58.1	50	05 33	06 11	06 44	11 10	12 00	12 43	13 21	
	11	349 02.9	10.1	291 08.9	7.5	18 26.7	1.2	58.2	45	05 29	06 04	06 34	10 54	11 45	12 30	13 11	
	12	4 03.0	S13 10.9	305 35.4	7.4	S18 25.5	1.3	58.2	N 40	05 26	05 58	06 25	10 41	11 32	12 19	13 02	
	13	19 03.0	11.8	320 01.8	7.5	18 24.2	1.4	58.2	35	05 22	05 52	06 18	10 29	11 21	12 10	12 55	
	14	34 03.1	12.6	334 28.3	7.4	18 22.8	1.6	58.2	30	05 19	05 47	06 11	10 19	11 12	12 02	12 49	
	15	49 03.1	13.4	348 54.7	7.4	18 21.2	1.6	58.2	20	05 11	05 37	06 00	10 02	10 56	11 48	12 38	
	16	64 03.2	14.3	3 21.1	7.4	18 19.6	1.8	58.3	N 10	05 03	05 28	05 50	09 47	10 42	11 36	12 28	
	17	79 03.2	15.1	17 47.5	7.4	18 17.8	1.9	58.3	0	04 54	05 19	05 40	09 33	10 29	11 24	12 19	
	18	94 03.3	S13 15.9	32 13.9	7.4	S18 15.9	2.0	58.3	S 10	04 44	05 09	05 31	09 19	10 15	11 13	12 10	
	19	109 03.3	16.8	46 40.3	7.4	18 13.9	2.1	58.3	20	04 30	04 57	05 20	09 04	10 01	11 00	12 00	
	20	124 03.3	17.6	61 06.7	7.4	18 11.8	2.2	58.3	30	04 13	04 43	05 08	08 47	09 45	10 46	11 49	
	21	139 03.4	18.4	75 33.1	7.4	18 09.6	2.3	58.3	35	04 02	04 34	05 01	08 37	09 36	10 38	11 42	
	22	154 03.4	19.3	89 59.5	7.3	18 07.3	2.4	58.4	40	03 49	04 24	04 53	08 25	09 25	10 29	11 35	
	23	169 03.5	20.1	104 25.8	7.4	18 04.9	2.6	58.4	45	03 33	04 12	04 44	08 12	09 12	10 18	11 27	
	M I É R C O L E S	29 00	184 03.5	S13 20.9	118 52.2	7.4	S18 02.3	2.7	58.4	S 50	03 12	03 56	04 32	07 56	08 57	10 04	11 16
01		199 03.6	21.8	133 18.6	7.4	17 59.6	2.8	58.4	52	03 01	03 49	04 27	07 48	08 50	09 58	11 11	
02		214 03.6	22.6	147 45.0	7.4	17 56.8	2.8	58.4	54	02 49	03 41	04 21	07 39	08 42	09 51	11 06	
03		229 03.7	23.4	162 11.4	7.4	17 54.0	3.1	58.4	56	02 35	03 32	04 14	07 30	08 33	09 44	11 00	
04		244 03.7	24.2	176 37.8	7.3	17 50.9	3.1	58.5	58	02 17	03 21	04 07	07 19	08 23	09 35	10 54	
05		259 03.7	25.1	191 04.1	7.4	17 47.8	3.2	58.5	S 60	01 56	03 08	03 59	07 06	08 11	09 25	10 46	
06		274 03.8	S13 25.9	205 30.5	7.4	S17 44.6	3.3	58.5	Lat.	Ocaso Sol	Crepúsculo	Civil	Náut.	Ocaso Luna			
07		289 03.8	26.7	219 56.9	7.4	17 41.3	3.5	58.5						28	29	30	31
08		304 03.9	27.6	234 23.3	7.5	17 37.8	3.6	58.5	N 72	h m	h m	h m	h m	h m	h m	h m	h m
09		319 03.9	28.4	248 49.8	7.4	17 34.2	3.6	58.5	N 70	14 48	16 11	17 32	18 00	18 00	20 12	22 14	
10		334 04.0	29.2	263 16.2	7.4	17 30.6	3.8	58.5	N 70	15 11	16 22	17 35	17 25	18 58	20 44	22 33	
11		349 04.0	30.0	277 42.6	7.4	17 26.8	3.9	58.6	68	15 28	16 31	17 37	18 10	19 32	21 07	22 48	
12		4 04.0	S13 30.9	292 09.0	7.5	S17 22.9	4.0	58.6	66	15 42	16 39	17 40	18 39	19 56	21 25	23 00	
13		19 04.1	31.7	306 35.5	7.4	17 18.9	4.1	58.6	64	15 54	16 46	17 42	19 02	20 15	21 40	23 10	
14		34 04.1	32.5	321 01.9	7.5	17 14.8	4.2	58.6	62	16 04	16 52	17 44	19 19	20 31	21 52	23 18	
15		49 04.2	33.3	335 28.4	7.4	17 10.6	4.4	58.6	60	16 12	16 57	17 46	19 34	20 44	22 02	23 26	
16		64 04.2	34.2	349 54.8	7.5	17 06.2	4.4	58.6	N 58	16 20	17 01	17 48	19 47	20 55	22 11	23 32	
17		79 04.2	35.0	4 21.3	7.5	17 01.8	4.5	58.7	56	16 26	17 06	17 49	19 58	21 05	22 19	23 37	
18		94 04.3	S13 35.8	18 47.8	7.5	S16 57.3	4.7	58.7	54	16 32	17 09	17 51	20 07	21 13	22 26	23 43	
19		109 04.3	36.6	33 14.3	7.5	16 52.6	4.8	58.7	52	16 38	17 13	17 52	20 16	21 21	22 32	23 47	
20		124 04.3	37.5	47 40.8	7.6	16 47.8	4.8	58.7	50	16 42	17 16	17 54	20 23	21 28	22 38	23 51	
21		139 04.4	38.3	62 07.4	7.5	16 43.0	5.0	58.7	45	16 53	17 23	17 58	20 39	21 43	22 50	24 00	
22		154 04.4	39.1	76 33.9	7.6	16 38.0	5.1	58.7	N 40	17 01	17 29	18 01	20 53	21 55	23 00	24 07	
23		169 04.5	39.9	91 00.5	7.5	16 32.9	5.1	58.7	35	17 09	17 35	18 05	21 04	22 05	23 08	24 14	
J U E V E S		30 00	184 04.5	S13 40.8	105 27.0	7.6	S16 27.8	5.3	58.8	30	17 16	17 40	18 08	21 14	22 14	23 16	24 19
	01	199 04.5	41.6	119 53.6	7.6	16 22.5	5.4	58.8	20	17 27	17 50	18 16	21 31	22 29	23 29	24 29	
	02	214 04.6	42.4	134 20.2	7.7	16 17.1	5.5	58.8	N 10	17 37	17 59	18 24	21 46	22 43	23 40	24 37	
	03	229 04.6	43.2	148 46.9	7.6	16 11.6	5.6	58.8	0	17 47	18 08	18 33	21 59	22 55	23 50	24 45	
	04	244 04.6	44.0	163 13.5	7.7	16 06.0	5.7	58.8	S 10	17 57	18 19	18 44	22 13	23 08	24 01	00 01	
	05	259 04.7	44.9	177 40.2	7.6	16 00.3	5.8	58.8	20	18 08	18 30	18 57	22 28	23 21	24 12	00 12	
	06	274 04.7	S13 45.7	192 06.8	7.7	S15 54.5	5.9	58.8	30	18 20	18 45	19 15	22 44	23 36	24 24	00 24	
	07	289 04.7	46.5	206 33.5	7.7	15 48.6	6.0	58.9	35	18 27	18 54	19 26	22 54	23 45	24 31	00 31	
	08	304 04.8	47.3	221 00.2	7.8	15 42.6	6.1	58.9	40	18 35	19 04	19 39	23 05	23 55	24 40	00 40	
	09	319 04.8	48.1	235 27.0	7.7	15 36.5	6.2	58.9	45	18 45	19 17	19 56	23 18	24 06	00 06	00 49	
	10	334 04.8	49.0	249 53.7	7.8	15 30.3	6.3	58.9	S 50	18 56	19 32	20 17	23 34	24 20	00 20	01 00	
	11	349 04.9	49.8	264 20.5	7.8	15 24.0	6.4	58.9	52	19 02	19 40	20 28	23 41	24 27	00 27	01 06	
	12	4 04.9	S13 50.6	278 47.3	7.8	S15 17.6	6.4	58.9	54	19 08	19 48	20 41	23 50	24 34	00 34	01 11	
	13	19 04.9	51.4	293 14.1	7.8	15 11.2	6.6	58.9	56	19 14	19 58	20 55	23 59	24 42	00 42	01 18	
	14	34 05.0	52.2	307 40.9	7.9	15 04.6	6.7	59.0	58	19 22	20 09	21 13	24 09	00 09	00 51	01 25	
	15	49 05.0	53.1	322 07.8	7.9	14 57.9	6.8	59.0	S 60	19 31	20 21	21 36	24 21	00 21	01 01	01 33	
	16	64 05.0	53.9	336 34.7	7.9	14 51.1	6.9	59.0	Día	SOL		Paso Mer.	LUNA				
	17	79 05.1	54.7	351 01.6	7.9	14 44.2	6.9	59.0		Ec. Tiempo			Paso Mer. Sup.	Inf.	Edad	Fase	
	18	94 05.1	S13 55.5	5 28.5	7.9	S14 37.3	7.1	59.0	d	m s	m s	h m	h m	h m	d	%	
	19	109 05.1	56.3	19 55.4	8.0	14 30.2	7.1	59.0	28	16 09	16 12	11 44	15 46	03 18	05 22		
	20	124 05.2	57.1	34 22.4	8.0	14 23.1	7.3	59.0	29	16 14	16 16	11 44	16 42	04 14	06 32		
	21	139 05.2	57.9	48 49.4	8.0	14 15.8	7.3	59.0	30	16 18	16 20	11 44	17 37	05 10	07 43		
	22	154 05.2	58.8	63 16.4	8.0	14 08.5	7.4	59.1									
	23																

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.9	JÚPITER -2.1	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
31 00	39 13.2	182 23.7 S13 40.7	125 30.1 S24 54.0	256 18.9 N15 18.2	167 20.5 S16 50.1	Acamar	315 17.3 S40 14.7	
01	54 15.7	197 23.1 41.8	140 30.5 53.9	271 21.0 18.2	182 22.7 50.2	Achernar	335 25.6 S57 09.8	
02	69 18.2	212 22.6 42.8	155 30.9 53.9	286 23.2 18.1	197 24.8 50.3	Acrux	173 08.7 S63 10.7	
03	84 20.6	227 22.0 . . 43.9	170 31.3 . . 53.8	301 25.4 . . 18.0	212 27.0 . . 50.3	Adhara	255 11.6 S28 59.5	
04	99 23.1	242 21.4 45.0	185 31.7 53.8	316 27.6 17.9	227 29.2 50.4	Aldebarán	290 48.0 N16 32.2	
05	114 25.6	257 20.9 46.1	200 32.1 53.7	331 29.8 17.8	242 31.3 50.5			
06	129 28.0	272 20.3 S13 47.1	215 32.5 S24 53.7	346 31.9 N15 17.7	257 33.5 S16 50.6	Alioth	166 20.5 N55 52.7	
07	144 30.5	287 19.7 48.2	230 33.0 53.6	1 34.1 17.7	272 35.7 50.6	Alkaid	152 58.7 N49 14.4	
08	159 33.0	302 19.1 49.3	245 33.4 53.6	16 36.3 17.6	287 37.9 50.7	Al Na'ir	62 07.4 N 8 54.8	
09	174 35.4	317 18.6 . . 50.3	260 33.8 . . 53.5	31 38.5 . . 17.5	302 40.0 . . 50.8	Alnilam	275 45.2 S 1 11.6	
10	189 37.9	332 18.0 51.4	275 34.2 53.4	46 40.7 17.4	317 42.2 50.9	Alphard	217 55.2 S 8 43.4	
11	204 40.3	347 17.4 52.5	290 34.6 53.4	61 42.9 17.3	332 44.4 50.9			
12	219 42.8	2 16.9 S13 53.5	305 35.0 S24 53.3	76 45.0 N15 17.2	347 46.5 S16 51.0	Alphecca	126 10.6 N26 40.2	
13	234 45.3	17 16.3 54.6	320 35.4 53.3	91 47.2 17.2	2 48.7 51.1	Alpheratz	357 42.2 N29 10.6	
14	249 47.7	32 15.7 55.7	335 35.9 53.2	106 49.4 17.1	17 50.9 51.2	Altair	62 07.4 N 8 54.8	
15	264 50.2	47 15.1 . . 56.7	350 36.3 . . 53.2	121 51.6 . . 17.0	32 53.1 . . 51.2	Ankaa	353 14.5 S42 13.6	
16	279 52.7	62 14.6 57.8	5 36.7 53.1	136 53.8 16.9	47 55.2 51.3	Antares	112 25.4 S26 27.7	
17	294 55.1	77 14.0 58.9	20 37.1 53.0	151 56.0 16.8	62 57.4 51.4			
18	309 57.6	92 13.4 S13 59.9	35 37.5 S24 53.0	166 58.2 N15 16.8	77 59.6 S16 51.5	Arcturus	145 55.3 N19 06.5	
19	325 00.1	107 12.8 14 01.0	50 37.9 52.9	182 00.3 16.7	93 01.7 51.5	Atria	107 26.8 S69 03.2	
20	340 02.5	122 12.3 02.1	65 38.3 52.8	197 02.5 16.6	108 03.9 51.6	Avior	234 17.5 S59 33.3	
21	355 05.0	137 11.7 . . 03.1	80 38.8 . . 52.8	212 04.7 . . 16.5	123 06.1 . . 51.7	Bellatrix	278 30.8 N 6 21.7	
22	10 07.5	152 11.1 04.2	95 39.2 52.7	227 06.9 16.4	138 08.2 51.8	Betelgeuse	271 00.1 N 7 24.5	
23	25 09.9	167 10.5 05.2	110 39.6 52.7	242 09.1 16.4	153 10.4 51.8			
1 00	40 12.4	182 10.0 S14 06.3	125 40.0 S24 52.6	257 11.3 N15 16.3	168 12.6 S16 51.9	Canopus	263 55.4 S52 42.1	
01	55 14.8	197 09.4 07.4	140 40.4 52.5	272 13.5 16.2	183 14.8 52.0	Capella	280 32.7 N46 00.5	
02	70 17.3	212 08.8 08.4	155 40.8 52.5	287 15.7 16.1	198 16.9 52.1	Deneb	49 30.8 N45 20.5	
03	85 19.8	227 08.2 . . 09.5	170 41.2 . . 52.4	302 17.8 . . 16.0	213 19.1 . . 52.1	Denébola	182 33.0 N14 29.4	
04	100 22.2	242 07.6 10.5	185 41.6 52.3	317 20.0 16.0	228 21.3 52.2	Diphda	348 54.7 S17 54.3	
05	115 24.7	257 07.1 11.6	200 42.1 52.3	332 22.2 15.9	243 23.4 52.3			
06	130 27.2	272 06.5 S14 12.6	215 42.5 S24 52.2	347 24.4 N15 15.8	258 25.6 S16 52.4	Dubhe	193 51.1 N61 40.0	
07	145 29.6	287 05.9 13.7	230 42.9 52.1	2 26.6 15.7	273 27.8 52.4	Elnath	278 11.2 N28 37.0	
08	160 32.1	302 05.3 14.8	245 43.3 52.1	17 28.8 15.6	288 30.0 52.5	Eltanin	90 46.1 N51 29.7	
09	175 34.6	317 04.7 . . 15.8	260 43.7 . . 52.0	32 31.0 . . 15.6	303 32.1 . . 52.6	Enif	33 46.1 N 9 56.9	
10	190 37.0	332 04.2 16.9	275 44.1 51.9	47 33.2 15.5	318 34.3 52.7	Fomalhaut	15 22.8 S29 32.6	
11	205 39.5	347 03.6 17.9	290 44.5 51.9	62 35.4 15.4	333 36.5 52.7			
12	220 41.9	2 03.0 S14 19.0	305 44.9 S24 51.8	77 37.5 N15 15.3	348 38.6 S16 52.8	Gacrux	172 00.2 S57 11.6	
13	235 44.4	17 02.4 20.0	320 45.4 51.7	92 39.7 15.2	3 40.8 52.9	Gienah	175 51.6 S17 37.3	
14	250 46.9	32 01.8 21.1	335 45.8 51.7	107 41.9 15.2	18 43.0 53.0	Hadar	148 47.1 S60 26.5	
15	265 49.3	47 01.2 . . 22.1	350 46.2 . . 51.6	122 44.1 . . 15.1	33 45.1 . . 53.0	Hamal	327 59.3 N23 32.0	
16	280 51.8	62 00.6 23.2	5 46.6 51.5	137 46.3 15.0	48 47.3 53.1	Kaus Aust.	83 42.8 S34 22.5	
17	295 54.3	77 00.1 24.2	20 47.0 51.4	152 48.5 14.9	63 49.5 53.2			
18	310 56.7	91 59.5 S14 25.3	35 47.4 S24 51.4	167 50.7 N15 14.8	78 51.6 S16 53.3	Kochab	137 21.4 N74 05.8	
19	325 59.2	106 58.9 26.3	50 47.8 51.3	182 52.9 14.8	93 53.8 53.3	Markab	13 37.2 N15 17.4	
20	341 01.7	121 58.3 27.4	65 48.2 51.2	197 55.1 14.7	108 56.0 53.4	Menkar	314 13.8 N 4 08.8	
21	356 04.1	136 57.7 . . 28.4	80 48.6 . . 51.2	212 57.3 . . 14.6	123 58.2 . . 53.5	Menkent	148 06.8 S36 26.4	
22	11 06.6	151 57.1 29.5	95 49.1 51.1	227 59.5 14.5	139 00.3 53.6	Miaplacidus	221 39.4 S69 46.5	
23	26 09.1	166 56.5 30.5	110 49.5 51.0	243 01.7 14.4	154 02.5 53.6			
2 00	41 11.5	181 55.9 S14 31.5	125 49.9 S24 50.9	258 03.8 N15 14.4	169 04.7 S16 53.7	Mirfak	308 38.5 N49 54.7	
01	56 14.0	196 55.4 32.6	140 50.3 50.9	273 06.0 14.3	184 06.8 53.8	Nunki	75 57.3 S26 16.5	
02	71 16.4	211 54.8 33.6	155 50.7 50.8	288 08.2 14.2	199 09.0 53.8	Peacock	53 17.9 S56 41.3	
03	86 18.9	226 54.2 . . 34.7	170 51.1 . . 50.7	303 10.4 . . 14.1	214 11.2 . . 53.9	Póllux	243 26.5 N27 59.2	
04	101 21.4	241 53.6 35.7	185 51.5 50.6	318 12.6 14.0	229 13.3 54.0	Procyon	244 58.7 N 5 11.1	
05	116 23.8	256 53.0 36.8	200 51.9 50.5	333 14.8 14.0	244 15.5 54.1			
06	131 26.3	271 52.4 S14 37.8	215 52.3 S24 50.5	348 17.0 N15 13.9	259 17.7 S16 54.1	Rasalhague	96 05.8 N12 33.3	
07	146 28.8	286 51.8 38.8	230 52.8 50.4	3 19.2 13.8	274 19.9 54.2	Régulus	207 42.7 N11 53.6	
08	161 31.2	301 51.2 39.9	245 53.2 50.3	18 21.4 13.7	289 22.0 54.3	Rigel	281 10.9 S 8 11.1	
09	176 33.7	316 50.6 . . 40.9	260 53.6 . . 50.2	33 23.6 . . 13.7	304 24.2 . . 54.4	Rigel Kent.	139 51.0 S60 53.6	
10	191 36.2	331 50.0 42.0	275 54.0 50.2	48 25.8 13.6	319 26.4 54.4	Sabik	102 11.7 S15 44.3	
11	206 38.6	346 49.4 43.0	290 54.4 50.1	63 28.0 13.5	334 28.5 54.5			
12	221 41.1	1 48.8 S14 44.0	305 54.8 S24 50.0	78 30.2 N15 13.4	349 30.7 S16 54.6	Schedar	349 38.8 N56 37.3	
13	236 43.5	16 48.2 45.1	320 55.2 49.9	93 32.4 13.3	4 32.9 54.7	Shaula	96 21.0 S37 06.7	
14	251 46.0	31 47.6 46.1	335 55.6 49.8	108 34.6 13.3	19 35.0 54.7	Sirius	258 32.7 S16 44.2	
15	266 48.5	46 47.0 . . 47.1	350 56.0 . . 49.8	123 36.8 . . 13.2	34 37.2 . . 54.8	Spica	158 30.6 S11 14.1	
16	281 50.9	61 46.5 48.2	5 56.4 49.7	138 39.0 13.1	49 39.4 54.9	Suhail	222 51.8 S43 29.4	
17	296 53.4	76 45.9 49.2	20 56.9 49.6	153 41.2 13.0	64 41.5 55.0			
18	311 55.9	91 45.3 S14 50.2	35 57.3 S24 49.5	168 43.4 N15 13.0	79 43.7 S16 55.0	Vega	80 38.5 N38 48.3	
19	326 58.3	106 44.7 51.3	50 57.7 49.4	183 45.6 12.9	94 45.9 55.1	Zuben'ubi	137 04.7 S16 06.0	
20	342 00.8	121 44.1 52.3	65 58.1 49.3	198 47.8 12.8	109 48.1 55.2			
21	357 03.3	136 43.5 . . 53.3	80 58.5 . . 49.3	213 50.0 . . 12.7	124 50.2 . . 55.3			
22	12 05.7	151 42.9 54.4	95 58.9 49.2	228 52.2 12.7	139 52.4 55.3			
23	27 08.2	166 42.3 55.4	110 59.3 49.1	243 54.4 12.6	154 54.6 55.4			
h m								
Paso Mer. 21 15.7		v -0.6 d 1.1	v 0.4 d 0.1	v 2.2 d 0.1	v 2.2 d 0.1			
							AHS	Paso Mer.
								h m
							Venus	141 57.6 11 52
							Marte	85 27.6 15 37
							Júpiter	216 58.9 6 50
							Saturno	128 00.2 12 45

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		31	1	2	3	
d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m		
31	00	184 05.3	S14 00.4	92 10.5	8.1	S13 53.6	7.6	59.1	N 72	06 06	07 29	08 56	15 08	15 01	14 55	14 49
	01	199 05.3		106 37.6	8.1	13 46.0	7.7	59.1	N 70	06 02	07 16	08 30	14 47	14 49	14 49	14 50
	02	214 05.3		121 04.7	8.1	13 38.3	7.8	59.1	66	05 55	06 56	07 55	14 18	14 31	14 41	14 51
	03	229 05.4	02.8	135 31.8	8.2	13 30.5	7.8	59.1	64	05 52	06 49	07 42	14 07	14 24	14 38	14 52
	04	244 05.4	03.6	149 59.0	8.1	13 22.7	8.0	59.1	62	05 50	06 42	07 31	13 57	14 18	14 36	14 52
	05	259 05.4	04.4	164 26.1	8.2	13 14.7	8.0	59.1	60	05 47	06 37	07 22	13 49	14 13	14 33	14 53
	06	274 05.4	S14 05.3	178 53.3	8.3	S13 06.7	8.1	59.2	N 58	05 45	06 32	07 14	13 42	14 08	14 31	14 53
	07	289 05.5		193 20.6	8.2	12 58.6	8.2	59.2	56	05 43	06 27	07 07	13 36	14 04	14 29	14 53
	08	304 05.5	06.9	207 47.8	8.3	12 50.4	8.3	59.2	54	05 41	06 23	07 00	13 30	14 00	14 28	14 54
	09	319 05.5	07.7	222 15.1	8.3	12 42.1	8.3	59.2	52	05 39	06 19	06 55	13 25	13 57	14 26	14 54
V I E R N E S	10	334 05.5	08.5	236 42.4	8.3	12 33.8	8.4	59.2	50	05 37	06 15	06 49	13 21	13 54	14 25	14 54
	11	349 05.6	09.3	251 09.7	8.4	12 25.4	8.5	59.2	45	05 33	06 08	06 38	13 11	13 47	14 21	14 55
	12	4 05.6	S14 10.1	265 37.1	8.3	S12 16.9	8.6	59.2	N 40	05 29	06 01	06 29	13 02	13 42	14 19	14 55
	13	19 05.6		280 04.4	8.4	12 08.3	8.7	59.2	35	05 25	05 55	06 21	12 55	13 37	14 17	14 56
	14	34 05.6	11.7	294 31.8	8.5	11 59.6	8.7	59.3	30	05 21	05 49	06 14	12 49	13 33	14 15	14 56
	15	49 05.7	12.5	308 59.3	8.4	11 50.9	8.9	59.3	20	05 13	05 39	06 01	12 38	13 25	14 11	14 57
	16	64 05.7	13.3	323 26.7	8.5	11 42.0	8.8	59.3	N 10	05 04	05 29	05 50	12 28	13 19	14 08	14 57
	17	79 05.7	14.1	337 54.2	8.5	11 33.2	9.0	59.3	0	04 54	05 19	05 40	12 19	13 13	14 05	14 58
	18	94 05.7	S14 14.9	352 21.7	8.5	S11 24.2	9.0	59.3	S 10	04 43	05 08	05 30	12 10	13 06	14 03	14 58
	19	109 05.8	15.8	6 49.2	8.5	11 15.2	9.1	59.3	20	04 29	04 56	05 18	12 00	13 00	14 00	14 59
S Á B A D O	20	124 05.8	16.6	21 16.7	8.6	11 06.1	9.2	59.3	30	04 10	04 40	05 05	11 49	12 52	13 56	15 00
	21	139 05.8	17.4	35 44.3	8.6	10 56.9	9.3	59.3	35	03 59	04 31	04 58	11 42	12 48	13 54	15 00
	22	154 05.8	18.2	50 11.9	8.6	10 47.6	9.3	59.3	40	03 45	04 20	04 49	11 35	12 43	13 52	15 01
	23	169 05.8	19.0	64 39.5	8.6	10 38.3	9.4	59.3	45	03 27	04 07	04 39	11 27	12 37	13 49	15 02
	00	184 05.9	S14 19.8	79 07.1	8.7	S10 28.9	9.4	59.4	S 50	03 05	03 51	04 27	11 16	12 31	13 46	15 02
	01	199 05.9	20.6	93 34.8	8.7	10 19.5	9.5	59.4	52	02 53	03 43	04 21	11 11	12 27	13 45	15 03
	02	214 05.9	21.4	108 02.5	8.7	10 10.0	9.6	59.4	54	02 40	03 34	04 15	11 06	12 24	13 43	15 03
	03	229 05.9	22.2	122 30.2	8.7	10 00.4	9.7	59.4	56	02 25	03 24	04 08	11 00	12 20	13 42	15 04
	04	244 05.9	23.0	136 57.9	8.7	9 50.7	9.7	59.4	58	02 05	03 12	04 00	10 54	12 16	13 40	15 04
	05	259 06.0	23.8	151 25.6	8.8	9 41.0	9.7	59.4	S 60	01 41	02 59	03 50	10 46	12 11	13 38	15 05
D O M I N G O	06	274 06.0	S14 24.6	165 53.4	8.8	S 9 31.3	9.8	59.4	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
	07	289 06.0	25.4	180 21.2	8.8	9 21.5	9.9	59.4				Civil	Náut.	31	1	2	3
	08	304 06.0	26.2	194 49.0	8.9	9 11.6	10.0	59.4								
	09	319 06.0	27.0	209 16.9	8.8	9 01.6	10.0	59.4	°	h m	h m	h m	h m	h m	h m	h m
	10	334 06.0	27.8	223 44.7	8.9	8 51.6	10.0	59.4								
	11	349 06.1	28.6	238 12.6	8.9	8 41.6	10.1	59.4	N 72	14 30	15 57	17 20	22 14	24 12	00 12	02 08
	12	4 06.1	S14 29.4	252 40.5	8.9	S 8 31.5	10.2	59.5	N 70	14 56	16 10	17 24	22 33	24 22	00 22	02 11
	13	19 06.1	30.2	267 08.4	8.9	8 21.3	10.2	59.5	68	15 16	16 21	17 28	22 48	24 30	00 30	02 13
	14	34 06.1	31.0	281 36.3	9.0	8 11.1	10.3	59.5	66	15 31	16 30	17 31	23 00	24 37	00 37	02 15
	15	49 06.1	31.8	296 04.3	9.0	8 00.8	10.3	59.5	64	15 44	16 37	17 34	23 10	24 43	00 43	02 16
V I E R N E S	16	64 06.1	32.6	310 32.3	9.0	7 50.5	10.4	59.5	62	15 55	16 44	17 36	23 18	24 47	00 47	02 17
	17	79 06.2	33.4	325 00.3	9.0	7 40.1	10.4	59.5	60	16 04	16 50	17 39	23 26	24 51	00 51	02 18
	18	94 06.2	S14 34.2	339 28.3	9.0	S 7 29.7	10.5	59.5	N 58	16 13	16 55	17 41	23 32	24 55	00 55	02 19
	19	109 06.2	35.0	353 56.3	9.1	7 19.2	10.5	59.5	56	16 20	16 59	17 43	23 37	24 58	00 58	02 20
	20	124 06.2	35.8	8 24.4	9.0	7 08.7	10.6	59.5	54	16 26	17 04	17 45	23 43	25 01	01 01	02 21
	21	139 06.2	36.6	22 52.4	9.1	6 58.1	10.6	59.5	52	16 32	17 07	17 47	23 47	25 04	01 04	02 22
	22	154 06.2	37.4	37 20.5	9.1	6 47.5	10.6	59.5	50	16 37	17 11	17 49	23 51	25 06	01 06	02 22
	23	169 06.2	38.1	51 48.6	9.1	6 36.9	10.7	59.5	45	16 48	17 19	17 54	24 00	00 00	01 11	02 24
	00	184 06.2	S14 38.9	66 16.7	9.2	S 6 26.2	10.7	59.5	N 40	16 58	17 26	17 58	24 07	00 07	01 16	02 25
	01	199 06.3	39.7	80 44.9	9.1	6 15.5	10.8	59.5	35	17 06	17 32	18 02	24 14	00 14	01 19	02 26
02	214 06.3	40.5	95 13.0	9.2	6 04.7	10.8	59.5	30	17 13	17 38	18 06	24 19	00 19	01 23	02 27	
03	229 06.3	41.3	109 41.2	9.1	5 53.9	10.9	59.6	20	17 26	17 48	18 14	24 29	00 29	01 28	02 28	
04	244 06.3	42.1	124 09.3	9.2	5 43.0	10.8	59.6	N 10	17 37	17 58	18 23	24 37	00 37	01 33	02 29	
05	259 06.3	42.9	138 37.5	9.2	5 32.2	10.9	59.6	0	17 47	18 08	18 33	24 45	00 45	01 38	02 30	
D O M I N G O	06	274 06.3	S14 43.7	153 05.7	9.3	S 5 21.3	11.0	59.6	S 10	17 58	18 19	18 45	00 01	00 52	01 42	02 31
	07	289 06.3	44.5	167 34.0	9.2	5 10.3	11.0	59.6	20	18 09	18 32	18 59	00 12	01 00	01 47	02 33
	08	304 06.3	45.3	182 02.2	9.2	4 59.3	11.0	59.6	30	18 22	18 47	19 17	00 24	01 09	01 52	02 34
	09	319 06.3	46.1	196 30.4	9.3	4 48.3	11.0	59.6	35	18 30	18 57	19 29	00 31	01 15	01 55	02 35
	10	334 06.4	46.9	210 58.7	9.3	4 37.3	11.1	59.6	40	18 39	19 08	19 43	00 40	01 21	01 59	02 35
	11	349 06.4	47.6	225 27.0	9.2	4 26.2	11.1	59.6	45	18 49	19 21	20 01	00 49	01 27	02 03	02 36
	12	4 06.4	S14 48.4	239 55.2	9.3	S 4 15.1	11.2	59.6	S 50	19 01	19 38	20 24	01 00	01 36	02 07	02 37
	13	19 06.4	49.2	254 23.5	9.3	4 03.9	11.1	59.6	52	19 07	19 46	20 36	01 06	01 39	02 10	02 38
	14	34 06.4	50.0	268 51.8	9.3	3 52.8	11.2	59.6	54	19 14	19 55	20 49	01 11	01 44	02 12	02 38
	15	49 06.4	50.8	283 20.1	9.4	3 41.6	11.2	59.6	56	19 21	20 05	21 05	01 18	01 48	02 15	02 39
V I E R N E S	16	64 06.4	51.6	297 48.5	9.3	3 30.4	11.2	59.6	58	19 29	20 17	21 25	01 25	01 53	02 17	02 40
	17	79 06.4	52.4	312 16.8	9.3	3 19.2	11.3	59.6	S 60	19 39	20 31	21 51	01 33	01 59	02 21	02 40
	18	94 06.4	S14 53.2	326 45.1	9.4	S 3 07.9	11.2	59.6	Día	SOL		Paso Mer.	LUNA			
	19	109 06.4	53.9	341 13.5	9.3	2 56.7	11.3	59.6		Ec. Tiempo	Paso Mer.		Paso Mer. Sup.	Mer. Inf.	Edad	Fase
	20	124 06.4	54.7	355 41.8	9.4	2 45.4	11.3	59.6	00 ^h			12 ^h				
	21	139 06.4	55.5	10 10.2	9.3	2 34.1	11.4	59.6		d	m s		m s	h m	h m	d
	22	154 06.4	56.3	24 38.5	9.4	2 22.7	11.3	59.6	31							

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.9	JÚPITER -2.1	SATURNO +0.5	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
3 00	42 10.7	181 41.7 S14 56.4	125 59.7 S24 49.0	258 56.6 N15 12.5	169 56.7 S16 55.5	Acamar 315 17.3 S40 14.8
01	57 13.1	196 41.1 57.5	141 00.1 48.9	273 58.8 12.4	184 58.9 55.6	Achernar 335 25.6 S57 09.8
02	72 15.6	211 40.5 58.5	156 00.5 48.8	289 01.0 12.3	200 01.1 55.6	Acrux 173 08.7 S63 10.7
03	87 18.0	226 39.9 14 59.5	171 00.9 . . 48.7	304 03.2 . . 12.3	215 03.2 . . 55.7	Adhara 255 11.6 S28 59.5
04	102 20.5	241 39.2 15 00.5	186 01.4 48.7	319 05.4 12.2	230 05.4 55.8	Aldebarán 290 48.0 N16 32.2
05	117 23.0	256 38.6 01.6	201 01.8 48.6	334 07.6 12.1	245 07.6 55.9	
06	132 25.4	271 38.0 S15 02.6	216 02.2 S24 48.5	349 09.8 N15 12.0	260 09.7 S16 55.9	Alioth 166 20.5 N55 52.7
07	147 27.9	286 37.4 03.6	231 02.6 48.4	4 12.0 12.0	275 11.9 56.0	Alkaid 152 58.7 N49 14.4
08	162 30.4	301 36.8 04.6	246 03.0 48.3	19 14.2 11.9	290 14.1 56.1	Al Na'ir 27 42.5 S46 53.4
09	177 32.8	316 36.2 . . 05.7	261 03.4 . . 48.2	34 16.4 . . 11.8	305 16.2 . . 56.2	Alnilam 275 45.2 S 1 11.6
10	192 35.3	331 35.6 06.7	276 03.8 48.1	49 18.6 11.7	320 18.4 56.2	Alphard 217 55.2 S 8 43.4
11	207 37.8	346 35.0 07.7	291 04.2 48.0	64 20.8 11.7	335 20.6 56.3	
12	222 40.2	1 34.4 S15 08.7	306 04.6 S24 47.9	79 23.0 N15 11.6	350 22.7 S16 56.4	Alphecca 126 10.6 N26 40.1
13	237 42.7	16 33.8 09.7	321 05.0 47.8	94 25.2 11.5	5 24.9 56.5	Alpheratz 357 42.2 N29 10.6
14	252 45.2	31 33.2 10.8	336 05.4 47.7	109 27.4 11.4	20 27.1 56.5	Altair 62 07.4 N 8 54.8
15	267 47.6	46 32.6 . . 11.8	351 05.8 . . 47.7	124 29.6 . . 11.4	35 29.3 . . 56.6	Ankaa 353 14.5 S42 13.6
16	282 50.1	61 32.0 12.8	6 06.3 47.6	139 31.8 11.3	50 31.4 56.7	Antares 112 25.4 S26 27.7
17	297 52.5	76 31.4 13.8	21 06.7 47.5	154 34.0 11.2	65 33.6 56.8	
18	312 55.0	91 30.8 S15 14.8	36 07.1 S24 47.4	169 36.2 N15 11.1	80 35.8 S16 56.8	Arcturus 145 55.2 N19 06.5
19	327 57.5	106 30.1 15.9	51 07.5 47.3	184 38.4 11.1	95 37.9 56.9	Atria 107 26.9 S69 03.1
20	342 59.9	121 29.5 16.9	66 07.9 47.2	199 40.6 11.0	110 40.1 57.0	Avior 234 17.5 S59 33.3
21	358 02.4	136 28.9 . . 17.9	81 08.3 . . 47.1	214 42.8 . . 10.9	125 42.3 . . 57.0	Bellatrix 278 30.7 N 6 21.7
22	13 04.9	151 28.3 18.9	96 08.7 47.0	229 45.0 10.8	140 44.4 57.1	Betelgeuse 271 00.1 N 7 24.4
23	28 07.3	166 27.7 19.9	111 09.1 46.9	244 47.2 10.8	155 46.6 57.2	
4 00	43 09.8	181 27.1 S15 20.9	126 09.5 S24 46.8	259 49.4 N15 10.7	170 48.8 S16 57.3	Canopus 263 55.4 S52 42.1
01	58 12.3	196 26.5 21.9	141 09.9 46.7	274 51.6 10.6	185 50.9 57.3	Capella 280 32.7 N46 00.5
02	73 14.7	211 25.9 23.0	156 10.3 46.6	289 53.8 10.5	200 53.1 57.4	Deneb 49 30.8 N45 20.5
03	88 17.2	226 25.2 . . 24.0	171 10.7 . . 46.5	304 56.1 . . 10.5	215 55.3 . . 57.5	Denébola 182 33.0 N14 29.3
04	103 19.6	241 24.6 25.0	186 11.1 46.4	319 58.3 10.4	230 57.4 57.6	Diphda 348 54.7 S17 54.3
05	118 22.1	256 24.0 26.0	201 11.6 46.3	335 00.5 10.3	245 59.6 57.6	
06	133 24.6	271 23.4 S15 27.0	216 12.0 S24 46.2	350 02.7 N15 10.2	261 01.8 S16 57.7	Dubhe 193 51.1 N61 40.0
07	148 27.0	286 22.8 28.0	231 12.4 46.1	5 04.9 10.2	276 03.9 57.8	Elnath 278 11.1 N28 37.0
08	163 29.5	301 22.2 29.0	246 12.8 46.0	20 07.1 10.1	291 06.1 57.9	Eltanin 90 46.1 N51 29.6
09	178 32.0	316 21.5 . . 30.0	261 13.2 . . 45.9	35 09.3 . . 10.0	306 08.3 . . 57.9	Enif 33 46.1 N 9 56.9
10	193 34.4	331 20.9 31.0	276 13.6 45.8	50 11.5 09.9	321 10.4 58.0	Fomalhaut 15 22.8 S29 32.6
11	208 36.9	346 20.3 32.0	291 14.0 45.7	65 13.7 09.9	336 12.6 58.1	
12	223 39.4	1 19.7 S15 33.0	306 14.4 S24 45.6	80 15.9 N15 09.8	351 14.8 S16 58.2	Gacrux 172 00.2 S57 11.6
13	238 41.8	16 19.1 34.0	321 14.8 45.5	95 18.1 09.7	6 16.9 58.2	Gienah 175 51.6 S17 37.3
14	253 44.3	31 18.5 35.0	336 15.2 45.4	110 20.3 09.6	21 19.1 58.3	Hadar 148 47.1 S60 26.5
15	268 46.8	46 17.8 . . 36.0	351 15.6 . . 45.3	125 22.6 . . 09.6	36 21.3 . . 58.4	Hamal 327 59.3 N23 32.0
16	283 49.2	61 17.2 37.1	6 16.0 45.2	140 24.8 09.5	51 23.4 58.5	Kaus Aust. 83 42.8 S34 22.5
17	298 51.7	76 16.6 38.1	21 16.4 45.1	155 27.0 09.4	66 25.6 58.5	
18	313 54.1	91 16.0 S15 39.1	36 16.8 S24 45.0	170 29.2 N15 09.3	81 27.8 S16 58.6	Kochab 137 21.4 N74 05.8
19	328 56.6	106 15.3 40.1	51 17.2 44.9	185 31.4 09.3	96 29.9 58.7	Markab 13 37.2 N15 17.4
20	343 59.1	121 14.7 41.1	66 17.6 44.8	200 33.6 09.2	111 32.1 58.8	Menkar 314 13.7 N 4 08.8
21	359 01.5	136 14.1 . . 42.1	81 18.1 . . 44.7	215 35.8 . . 09.1	126 34.3 . . 58.8	Menkent 148 06.8 S36 26.4
22	14 04.0	151 13.5 43.1	96 18.5 44.6	230 38.0 09.1	141 36.4 58.9	Miaplacidus 221 39.4 S69 46.5
23	29 06.5	166 12.9 44.0	111 18.9 44.4	245 40.2 09.0	156 38.6 59.0	
5 00	44 08.9	181 12.2 S15 45.0	126 19.3 S24 44.3	260 42.4 N15 08.9	171 40.8 S16 59.0	Mirfak 308 38.5 N49 54.7
01	59 11.4	196 11.6 46.0	141 19.7 44.2	275 44.7 08.8	186 43.0 59.1	Nunki 75 57.4 S26 16.5
02	74 13.9	211 11.0 47.0	156 20.1 44.1	290 46.9 08.8	201 45.1 59.2	Peacock 53 17.9 S56 41.3
03	89 16.3	226 10.4 . . 48.0	171 20.5 . . 44.0	305 49.1 . . 08.7	216 47.3 . . 59.3	Póllux 243 26.5 N27 59.2
04	104 18.8	241 09.7 49.0	186 20.9 43.9	320 51.3 08.6	231 49.5 59.3	Procyon 244 58.7 N 5 11.1
05	119 21.2	256 09.1 50.0	201 21.3 43.8	335 53.5 08.5	246 51.6 59.4	
06	134 23.7	271 08.5 S15 51.0	216 21.7 S24 43.7	350 55.7 N15 08.5	261 53.8 S16 59.5	Rasalhague 96 05.9 N12 33.3
07	149 26.2	286 07.8 52.0	231 22.1 43.6	5 57.9 08.4	276 56.0 59.6	Régulus 207 42.6 N11 53.6
08	164 28.6	301 07.2 53.0	246 22.5 43.5	21 00.2 08.3	291 58.1 59.6	Rigel 281 10.9 S 8 11.1
09	179 31.1	316 06.6 . . 54.0	261 22.9 . . 43.3	36 02.4 . . 08.3	307 00.3 . . 59.7	Rigel Kent. 139 51.0 S60 53.6
10	194 33.6	331 06.0 55.0	276 23.3 43.2	51 04.6 08.2	322 02.5 59.8	Sabik 102 11.8 S15 44.3
11	209 36.0	346 05.3 56.0	291 23.7 43.1	66 06.8 08.1	337 04.6 59.9	
12	224 38.5	1 04.7 S15 57.0	306 24.1 S24 43.0	81 09.0 N15 08.0	352 06.8 S16 59.9	Schedar 349 38.8 N56 37.3
13	239 41.0	16 04.1 57.9	321 24.5 42.9	96 11.2 08.0	7 09.0 17 00.0	Shaula 96 21.0 S37 06.7
14	254 43.4	31 03.4 58.9	336 24.9 42.8	111 13.4 07.9	22 11.1 00.1	Sirius 258 32.7 S16 44.2
15	269 45.9	46 02.8 15 59.9	351 25.3 . . 42.7	126 15.7 . . 07.8	37 13.3 . . 00.2	Spica 158 30.6 S11 14.1
16	284 48.4	61 02.2 16 00.9	6 25.8 42.5	141 17.9 07.7	52 15.5 00.2	Suhail 222 51.7 S43 29.4
17	299 50.8	76 01.5 01.9	21 26.2 42.4	156 20.1 07.7	67 17.6 00.3	
18	314 53.3	91 00.9 S16 02.9	36 26.6 S24 42.3	171 22.3 N15 07.6	82 19.8 S17 00.4	Vega 80 38.6 N38 48.3
19	329 55.7	106 00.3 03.8	51 27.0 42.2	186 24.5 07.5	97 22.0 00.5	Zuben'ubi 137 04.7 S16 06.0
20	344 58.2	120 59.6 04.8	66 27.4 42.1	201 26.7 07.5	112 24.1 00.5	
21	0 00.7	135 59.0 . . 05.8	81 27.8 . . 42.0	216 29.0 . . 07.4	127 26.3 . . 00.6	AHS Paso Mer.
22	15 03.1	150 58.4 06.8	96 28.2 41.8	231 31.2 07.3	142 28.5 00.7	Venus 138 17.3 11 55
23	30 05.6	165 57.7 07.8	111 28.6 41.7	246 33.4 07.3	157 30.6 00.8	Marte 82 59.7 15 35
						Júpiter 216 39.6 6 40
						Saturno 127 39.0 12 35
Paso Mer. 21 03.9	v -0.6 d 1.0		v 0.4 d 0.1	v 2.2 d 0.1	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		3	4	5	6	
<i>d</i> <i>h</i>	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
3	00	184 06.4	S14 57.9	53 35.3	9.4 S	2 00.1	11.4	59.6	N 72	06 18	07 42	09 16	14 49	14 43	14 37	14 31
	01	199 06.5	58.6	68 03.7	9.4	1 48.7	11.4	59.6	N 68	06 07	07 16	08 23	14 50	14 56	15 03	15 12
	02	214 06.5	14 59.4	82 32.1	9.4	1 37.3	11.4	59.6	66	06 03	07 06	08 06	14 51	15 01	15 12	15 27
	03	229 06.5	15 00.2	97 00.5	9.4	1 25.9	11.4	59.6	64	06 00	06 57	07 51	14 52	15 05	15 20	15 39
	04	244 06.5	01.0	111 28.9	9.4	1 14.5	11.4	59.6	62	05 57	06 50	07 40	14 52	15 09	15 27	15 49
	05	259 06.5	01.8	125 57.3	9.4	1 03.1	11.4	59.6	60	05 54	06 44	07 30	14 53	15 12	15 33	15 58
	06	274 06.5	S15 02.6	140 25.7	9.4 S	0 51.7	11.4	59.6	N 58	05 51	06 38	07 21	14 53	15 15	15 39	16 06
	07	289 06.5	03.3	154 54.1	9.4	0 40.3	11.4	59.6	56	05 48	06 33	07 13	14 53	15 17	15 43	16 13
	08	304 06.5	04.1	169 22.5	9.4	0 28.9	11.4	59.6	54	05 46	06 28	07 06	14 54	15 20	15 48	16 19
	09	319 06.5	.. 04.9	183 50.9	9.4	0 17.5	11.4	59.6	52	05 44	06 24	07 00	14 54	15 22	15 52	16 24
L U N E S	10	334 06.5	05.7	198 19.3	9.4 S	0 06.1	11.5	59.6	50	05 42	06 20	06 54	14 54	15 24	15 55	16 29
	11	349 06.5	06.5	212 47.7	9.4 N	0 05.4	11.4	59.6	45	05 37	06 11	06 42	14 55	15 28	16 03	16 40
	12	4 06.5	S15 07.2	227 16.1	9.4 N	0 16.8	11.4	59.6	N 40	05 32	06 04	06 32	14 55	15 31	16 09	16 49
	13	19 06.5	08.0	241 44.5	9.4	0 28.2	11.4	59.6	35	05 27	05 57	06 24	14 56	15 35	16 15	16 57
	14	34 06.5	08.8	256 12.9	9.5	0 39.6	11.4	59.6	30	05 23	05 51	06 16	14 56	15 37	16 20	17 04
	15	49 06.5	.. 09.6	270 41.4	9.4	0 51.0	11.5	59.6	20	05 14	05 40	06 03	14 57	15 42	16 28	17 16
	16	64 06.5	10.3	285 09.8	9.4	1 02.5	11.4	59.6	N 10	05 04	05 29	05 51	14 57	15 46	16 36	17 27
	17	79 06.5	11.1	299 38.2	9.4	1 13.9	11.4	59.6	0	04 54	05 19	05 40	14 58	15 50	16 43	17 37
	18	94 06.5	S15 11.9	314 06.6	9.4 N	1 25.3	11.3	59.6	S 10	04 42	05 07	05 29	14 58	15 54	16 50	17 47
	19	109 06.5	12.7	328 35.0	9.4	1 36.6	11.4	59.6	20	04 27	04 54	05 17	14 59	15 59	16 58	17 57
M A R T E S	20	124 06.5	13.5	343 03.4	9.4	1 48.0	11.4	59.6	30	04 07	04 38	05 03	15 00	16 04	17 07	18 10
	21	139 06.5	.. 14.2	357 31.8	9.4	1 59.4	11.3	59.6	35	03 55	04 28	04 55	15 00	16 07	17 12	18 17
	22	154 06.5	15.0	12 00.2	9.3	2 10.7	11.4	59.5	40	03 41	04 16	04 46	15 01	16 10	17 18	18 25
	23	169 06.4	15.8	26 28.5	9.4	2 22.1	11.3	59.5	45	03 22	04 02	04 35	15 02	16 14	17 25	18 35
	400	184 06.4	S15 16.5	40 56.9	9.4 N	2 33.4	11.3	59.5	S 50	02 58	03 45	04 22	15 02	16 18	17 33	18 46
	01	199 06.4	17.3	55 25.3	9.4	2 44.7	11.3	59.5	52	02 46	03 36	04 15	15 03	16 20	17 37	18 52
	02	214 06.4	18.1	69 53.7	9.3	2 56.0	11.2	59.5	54	02 31	03 27	04 09	15 03	16 23	17 42	18 58
	03	229 06.4	.. 18.9	84 22.0	9.4	3 07.2	11.3	59.5	56	02 14	03 16	04 01	15 04	16 25	17 46	19 04
	04	244 06.4	19.6	98 50.4	9.3	3 18.5	11.2	59.5	58	01 53	03 04	03 52	15 04	16 28	17 52	19 12
	05	259 06.4	20.4	113 18.7	9.4	3 29.7	11.2	59.5	S 60	01 24	02 49	03 42	15 05	16 32	17 57	19 21
A R T E S	06	274 06.4	S15 21.2	127 47.1	9.3 N	3 40.9	11.2	59.5	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
	07	289 06.4	21.9	142 15.4	9.3	3 52.1	11.2	59.5					3		4	
	08	304 06.4	22.7	156 43.7	9.3	4 03.3	11.1	59.5					4		5	
	09	319 06.4	.. 23.5	171 12.0	9.4	4 14.4	11.1	59.5					5		6	
	10	334 06.4	24.3	185 40.4	9.3	4 25.5	11.1	59.5					6			
	11	349 06.4	25.0	200 08.7	9.3	4 36.6	11.0	59.4	N 72	14 10	15 43	17 08	02 08	04 04	06 00	07 58
	12	4 06.4	S15 25.8	214 37.0	9.2 N	4 47.6	11.0	59.4	N 70	14 41	15 58	17 13	02 11	03 59	05 48	07 36
	13	19 06.4	26.6	229 05.2	9.3	4 58.6	11.0	59.4	68	15 03	16 10	17 18	02 13	03 56	05 38	07 19
	14	34 06.4	27.3	243 33.5	9.3	5 09.6	11.0	59.4	66	15 20	16 20	17 22	02 15	03 52	05 30	07 06
	15	49 06.3	.. 28.1	258 01.8	9.2	5 20.6	10.9	59.4	64	15 35	16 29	17 26	02 16	03 50	05 23	06 54
M I É R C O L E S	16	64 06.3	28.9	272 30.0	9.3	5 31.5	10.8	59.4	62	15 47	16 36	17 29	02 17	03 48	05 17	06 45
	17	79 06.3	29.6	286 58.3	9.2	5 42.3	10.9	59.4	60	15 57	16 43	17 32	02 18	03 46	05 12	06 37
	18	94 06.3	S15 30.4	301 26.5	9.2 N	5 53.2	10.8	59.4	N 58	16 06	16 48	17 35	02 19	03 44	05 08	06 30
	19	109 06.3	31.2	315 54.7	9.2	6 04.0	10.7	59.4	56	16 13	16 53	17 38	02 20	03 42	05 04	06 23
	20	124 06.3	31.9	330 22.9	9.2	6 14.7	10.8	59.4	54	16 20	16 58	17 40	02 21	03 41	05 00	06 18
	21	139 06.3	.. 32.7	344 51.1	9.2	6 25.5	10.6	59.3	52	16 26	17 02	17 43	02 22	03 40	04 57	06 13
	22	154 06.3	33.5	359 19.3	9.2	6 36.1	10.7	59.3	50	16 32	17 06	17 45	02 22	03 38	04 54	06 08
	23	169 06.3	34.2	13 47.5	9.1	6 46.8	10.6	59.3	45	16 44	17 15	17 50	02 24	03 36	04 48	05 58
	500	184 06.2	S15 35.0	28 15.6	9.2 N	6 57.4	10.5	59.3	N 40	16 54	17 23	17 55	02 25	03 34	04 42	05 50
	01	199 06.2	35.7	42 43.8	9.1	7 07.9	10.5	59.3	35	17 03	17 29	17 59	02 26	03 32	04 38	05 43
02	214 06.2	36.5	57 11.9	9.1	7 18.4	10.5	59.3	30	17 11	17 36	18 04	02 27	03 30	04 34	05 37	
03	229 06.2	.. 37.3	71 40.0	9.1	7 28.9	10.4	59.3	20	17 24	17 47	18 13	02 28	03 28	04 27	05 27	
04	244 06.2	38.0	86 08.1	9.1	7 39.3	10.3	59.2	N 10	17 36	17 58	18 23	02 29	03 25	04 21	05 17	
05	259 06.2	38.8	100 36.2	9.1	7 49.6	10.4	59.2	0	17 47	18 08	18 33	02 30	03 23	04 15	05 09	
06	274 06.2	S15 39.5	115 04.3	9.1 N	8 00.0	10.2	59.2	S 10	17 58	18 20	18 46	02 31	03 20	04 10	05 00	
07	289 06.1	40.3	129 32.4	9.0	8 10.2	10.2	59.2	20	18 10	18 34	19 01	02 33	03 18	04 04	04 51	
08	304 06.1	41.1	144 00.4	9.1	8 20.4	10.2	59.2	30	18 25	18 50	19 20	02 34	03 15	03 57	04 40	
09	319 06.1	.. 41.8	158 28.5	9.0	8 30.6	10.1	59.2	35	18 33	19 00	19 33	02 35	03 13	03 53	04 34	
10	334 06.1	42.6	172 56.5	9.0	8 40.7	10.0	59.2	40	18 42	19 12	19 48	02 35	03 12	03 48	04 27	
11	349 06.1	43.3	187 24.5	9.0	8 50.7	10.0	59.1	45	18 53	19 26	20 06	02 36	03 09	03 43	04 19	
12	4 06.1	S15 44.1	201 52.5	9.0 N	9 00.7	9.9	59.1	S 50	19 07	19 44	20 31	02 37	03 07	03 37	04 10	
13	19 06.0	44.9	216 20.5	9.0	9 10.6	9.8	59.1	52	19 13	19 52	20 43	02 38	03 06	03 34	04 05	
14	34 06.0	45.6	230 48.5	8.9	9 20.4	9.8	59.1	54	19 20	20 02	20 58	02 38	03 04	03 31	04 00	
15	49 06.0	.. 46.4	245 16.4	9.0	9 30.2	9.8	59.1	56	19 28	20 13	21 15	02 39	03 03	03 28	03 55	
16	64 06.0	47.1	259 44.4	8.9	9 40.0	9.7	59.1	58	19 37	20 26	21 38	02 40	03 01	03 24	03 49	
17	79 06.0	47.9	274 12.3	8.9	9 49.7	9.6	59.0	S 60	19 47	20 41	22 08	02 40	03 00	03 20	03 42	
18	94 06.0	S15 48.6	288 40.2	8.9 N	9 59.3	9.5	59.0	Dia		SOL		LUNA				
19	109 05.9	49.4	303 08.1	8.9	10 08.8	9.5	59.0			Ec. Tiempo		Paso Mer.				

UT (HmGr)	ARIES	VENUS -4.0	MARTE +0.9	JÚPITER -2.1	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
d h	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "
6 00	45 08.1	180 57.1 S16 08.8	126 29.0 S24 41.6	261 35.6 N15 07.2	172 32.8 S17 00.8	Acamar 315 17.2 S40 14.8
01	60 10.5	195 56.4 09.7	141 29.4 41.5	276 37.8 07.1	187 35.0 00.9	Achernar 335 25.6 S57 09.8
02	75 13.0	210 55.8 10.7	156 29.8 41.4	291 40.1 07.0	202 37.1 01.0	Acrux 173 08.6 S63 10.7
03	90 15.5	225 55.2 . . 11.7	171 30.2 . . 41.2	306 42.3 . . 07.0	217 39.3 . . 01.0	Adhara 255 11.6 S28 59.5
04	105 17.9	240 54.5 12.7	186 30.6 41.1	321 44.5 06.9	232 41.5 01.1	Aldebarán 290 48.0 N16 32.2
05	120 20.4	255 53.9 13.6	201 31.0 41.0	336 46.7 06.8	247 43.6 01.2	
06	135 22.9	270 53.2 S16 14.6	216 31.4 S24 40.9	351 48.9 N15 06.8	262 45.8 S17 01.3	Alioth 166 20.5 N55 52.7
07	150 25.3	285 52.6 15.6	231 31.8 40.8	6 51.2 06.7	277 47.9 01.3	Alkaid 152 58.7 N49 14.4
08	165 27.8	300 52.0 16.6	246 32.2 40.6	21 53.4 06.6	292 50.1 01.4	Al Na'ir 27 42.5 S46 53.4
09	180 30.2	315 51.3 . . 17.5	261 32.6 . . 40.5	36 55.6 . . 06.5	307 52.3 . . 01.5	Alnilam 275 45.2 S 1 11.7
10	195 32.7	330 50.7 18.5	276 33.0 40.4	51 57.8 06.5	322 54.4 01.6	Alphard 217 55.2 S 8 43.4
11	210 35.2	345 50.0 19.5	291 33.4 40.3	67 00.0 06.4	337 56.6 01.6	
12	225 37.6	0 49.4 S16 20.5	306 33.8 S24 40.1	82 02.3 N15 06.3	352 58.8 S17 01.7	Alphecca 126 10.6 N26 40.1
13	240 40.1	15 48.7 21.4	321 34.2 40.0	97 04.5 06.3	8 00.9 01.8	Alpheratz 357 42.2 N29 10.6
14	255 42.6	30 48.1 22.4	336 34.6 39.9	112 06.7 06.2	23 03.1 01.9	Altair 62 07.4 N 8 54.8
15	270 45.0	45 47.5 . . 23.4	351 35.0 . . 39.8	127 08.9 . . 06.1	38 05.3 . . 01.9	Ankaa 353 14.5 S42 13.6
16	285 47.5	60 46.8 24.3	6 35.4 39.6	142 11.2 06.1	53 07.4 02.0	Antares 112 25.4 S26 27.7
17	300 50.0	75 46.2 25.3	21 35.9 39.5	157 13.4 06.0	68 09.6 02.1	
18	315 52.4	90 45.5 S16 26.3	36 36.3 S24 39.4	172 15.6 N15 05.9	83 11.8 S17 02.2	Arcturus 145 55.2 N19 06.5
19	330 54.9	105 44.9 27.2	51 36.7 39.3	187 17.8 05.8	98 13.9 02.2	Atria 107 26.9 S69 03.1
20	345 57.3	120 44.2 28.2	66 37.1 39.1	202 20.0 05.8	113 16.1 02.3	Avior 234 17.4 S59 33.3
21	0 59.8	135 43.6 . . 29.2	81 37.5 . . 39.0	217 22.3 . . 05.7	128 18.3 . . 02.4	Bellatrix 278 30.7 N 6 21.7
22	16 02.3	150 42.9 30.1	96 37.9 38.9	232 24.5 05.6	143 20.4 02.4	Betelgeuse 271 00.0 N 7 24.4
23	31 04.7	165 42.3 31.1	111 38.3 38.7	247 26.7 05.6	158 22.6 02.5	
7 00	46 07.2	180 41.6 S16 32.0	126 38.7 S24 38.6	262 28.9 N15 05.5	173 24.8 S17 02.6	Canopus 263 55.4 S52 42.2
01	61 09.7	195 41.0 33.0	141 39.1 38.5	277 31.2 05.4	188 26.9 02.7	Capella 280 32.6 N46 00.5
02	76 12.1	210 40.3 34.0	156 39.5 38.4	292 33.4 05.4	203 29.1 02.7	Deneb 49 30.8 N45 20.5
03	91 14.6	225 39.7 . . 34.9	171 39.9 . . 38.2	307 35.6 . . 05.3	218 31.3 . . 02.8	Denébola 182 33.0 N14 29.3
04	106 17.1	240 39.0 35.9	186 40.3 38.1	322 37.8 05.2	233 33.4 02.9	Diphda 348 54.7 S17 54.3
05	121 19.5	255 38.4 36.8	201 40.7 38.0	337 40.1 05.2	248 35.6 03.0	
06	136 22.0	270 37.7 S16 37.8	216 41.1 S24 37.8	352 42.3 N15 05.1	263 37.8 S17 03.0	Dubhe 193 51.0 N61 40.0
07	151 24.5	285 37.1 38.8	231 41.5 37.7	7 44.5 05.0	278 39.9 03.1	Elnath 278 11.1 N28 37.0
08	166 26.9	300 36.4 39.7	246 41.9 37.6	22 46.8 05.0	293 42.1 03.2	Eltanin 90 46.1 N51 29.6
09	181 29.4	315 35.8 . . 40.7	261 42.3 . . 37.4	37 49.0 . . 04.9	308 44.3 . . 03.3	Enif 33 46.1 N 9 56.9
10	196 31.8	330 35.1 41.6	276 42.7 37.3	52 51.2 04.8	323 46.4 03.3	Fomalhaut 15 22.8 S29 32.6
11	211 34.3	345 34.5 42.6	291 43.1 37.1	67 53.4 04.7	338 48.6 03.4	
12	226 36.8	0 33.8 S16 43.5	306 43.5 S24 37.0	82 55.7 N15 04.7	353 50.8 S17 03.5	Gacrux 172 00.2 S57 11.5
13	241 39.2	15 33.1 44.5	321 43.9 36.9	97 57.9 04.6	8 52.9 03.6	Gienah 175 51.6 S17 37.3
14	256 41.7	30 32.5 45.4	336 44.3 36.7	113 00.1 04.5	23 55.1 03.6	Hadar 148 47.1 S60 26.4
15	271 44.2	45 31.8 . . 46.4	351 44.7 . . 36.6	128 02.4 . . 04.5	38 57.3 . . 03.7	Hamal 327 59.3 N23 32.0
16	286 46.6	60 31.2 47.3	6 45.1 36.5	143 04.6 04.4	53 59.4 03.8	Kaus Aust. 83 42.8 S34 22.5
17	301 49.1	75 30.5 48.3	21 45.5 36.3	158 06.8 04.3	69 01.6 03.8	
18	316 51.6	90 29.8 S16 49.2	36 45.9 S24 36.2	173 09.0 N15 04.3	84 03.7 S17 03.9	Kochab 137 21.4 N74 05.8
19	331 54.0	105 29.2 50.2	51 46.3 36.1	188 11.3 04.2	99 05.9 04.0	Markab 13 37.2 N15 17.4
20	346 56.5	120 28.5 51.1	66 46.7 35.9	203 13.5 04.1	114 08.1 04.1	Menkar 314 13.7 N 4 08.8
21	1 59.0	135 27.9 . . 52.1	81 47.1 . . 35.8	218 15.7 . . 04.1	129 10.2 . . 04.1	Menkent 148 06.8 S36 26.4
22	17 01.4	150 27.2 53.0	96 47.5 35.6	233 18.0 04.0	144 12.4 04.2	Miaplacidus 221 39.3 S69 46.5
23	32 03.9	165 26.5 54.0	111 47.9 35.5	248 20.2 03.9	159 14.6 04.3	
8 00	47 06.3	180 25.9 S16 54.9	126 48.3 S24 35.3	263 22.4 N15 03.9	174 16.7 S17 04.4	Mirfak 308 38.4 N49 54.7
01	62 08.8	195 25.2 55.8	141 48.7 35.2	278 24.7 03.8	189 18.9 04.4	Nunki 75 57.4 S26 16.5
02	77 11.3	210 24.6 56.8	156 49.1 35.1	293 26.9 03.7	204 21.1 04.5	Peacock 53 18.0 S56 41.3
03	92 13.7	225 23.9 . . 57.7	171 49.5 . . 34.9	308 29.1 . . 03.7	219 23.2 . . 04.6	Póllux 243 26.5 N27 59.1
04	107 16.2	240 23.2 58.7	186 49.9 34.8	323 31.4 03.6	234 25.4 04.7	Procyon 244 58.6 N 5 11.1
05	122 18.7	255 22.6 16 59.6	201 50.3 34.6	338 33.6 03.5	249 27.6 04.7	
06	137 21.1	270 21.9 S17 00.6	216 50.7 S24 34.5	353 35.8 N15 03.5	264 29.7 S17 04.8	Rasalhague 96 05.9 N12 33.3
07	152 23.6	285 21.2 01.5	231 51.2 34.3	8 38.1 03.4	279 31.9 04.9	Régulus 207 42.6 N11 53.6
08	167 26.1	300 20.6 02.4	246 51.6 34.2	23 40.3 03.3	294 34.1 05.0	Rigel 281 10.9 S 8 11.2
09	182 28.5	315 19.9 . . 03.4	261 52.0 . . 34.1	38 42.5 . . 03.3	309 36.2 . . 05.0	Rigel Kent. 139 51.0 S60 53.5
10	197 31.0	330 19.2 04.3	276 52.4 33.9	53 44.8 03.2	324 38.4 05.1	Sabik 102 11.8 S15 44.3
11	212 33.4	345 18.6 05.2	291 52.8 33.8	68 47.0 03.1	339 40.6 05.2	
12	227 35.9	0 17.9 S17 06.2	306 53.2 S24 33.6	83 49.2 N15 03.1	354 42.7 S17 05.2	Schedar 349 38.9 N56 37.3
13	242 38.4	15 17.2 07.1	321 53.6 33.5	98 51.5 03.0	9 44.9 05.3	Shaula 96 21.0 S37 06.7
14	257 40.8	30 16.6 08.0	336 54.0 33.3	113 53.7 02.9	24 47.0 05.4	Sirius 258 32.7 S16 44.2
15	272 43.3	45 15.9 . . 09.0	351 54.4 . . 33.2	128 55.9 . . 02.9	39 49.2 . . 05.5	Spica 158 30.6 S11 14.2
16	287 45.8	60 15.2 09.9	6 54.8 33.0	143 58.2 02.8	54 51.4 05.5	Suhail 222 51.7 S43 29.4
17	302 48.2	75 14.5 10.8	21 55.2 32.9	159 00.4 02.8	69 53.5 05.6	
18	317 50.7	90 13.9 S17 11.8	36 55.6 S24 32.7	174 02.6 N15 02.7	84 55.7 S17 05.7	Vega 80 38.6 N38 48.3
19	332 53.2	105 13.2 12.7	51 56.0 32.6	189 04.9 02.6	99 57.9 05.8	Zuben'ubi 137 04.7 S16 06.0
20	347 55.6	120 12.5 13.6	66 56.4 32.4	204 07.1 02.6	115 00.0 05.8	
21	2 58.1	135 11.9 . . 14.5	81 56.8 . . 32.3	219 09.3 . . 02.5	130 02.2 . . 05.9	AHS Paso Mer.
22	18 00.6	150 11.2 15.5	96 57.2 32.1	234 11.6 02.4	145 04.4 06.0	Venus 134 34.4 11 58
23	33 03.0	165 10.5 16.4	111 57.6 32.0	249 13.8 02.4	160 06.5 06.1	Marte 80 31.5 15 33
	h m					Júpiter 216 21.7 6 29
Paso Mer. 20 52.1	v -0.7 d 1.0		v 0.4 d 0.1	v 2.2 d 0.1	v 2.2 d 0.1	Saturno 127 17.6 12 25

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		6	7	8	9	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
J U E V E S	6 00	184 05.8	S15 53.1	15 27.4	8.9	N10 55.6	9.1	58.9	N 72	06 29	07 56	09 37	14 31	14 23	14 08	□
	01	199 05.8	53.9	29 55.3	8.8	11 04.7	9.1	58.9	N 70	06 22	07 39	09 01	14 54	15 00	15 13	15 42
	02	214 05.8	54.7	44 23.1	8.8	11 13.8	9.0	58.9	68	06 17	07 26	08 36	15 12	15 26	15 49	16 26
	03	229 05.8	55.4	58 50.9	8.7	11 22.8	8.9	58.8	66	06 12	07 15	08 17	15 27	15 46	16 15	16 56
	04	244 05.7	56.2	73 18.6	8.8	11 31.7	8.8	58.8	64	06 08	07 06	08 01	15 39	16 03	16 35	17 18
	05	259 05.7	56.9	87 46.4	8.8	11 40.5	8.8	58.8	62	06 04	06 58	07 48	15 49	16 16	16 51	17 36
	06	274 05.7	S15 57.9	102 14.2	8.7	N11 49.3	8.7	58.8	60	06 00	06 51	07 37	15 58	16 28	17 05	17 50
	07	289 05.7	58.4	116 41.9	8.7	11 58.0	8.6	58.8	N 58	05 57	06 44	07 28	16 06	16 38	17 17	18 03
	08	304 05.7	59.1	131 09.6	8.8	12 06.6	8.6	58.7	56	05 54	06 39	07 19	16 13	16 47	17 27	18 14
	09	319 05.6	15 59.9	145 37.4	8.7	12 15.2	8.4	58.7	54	05 51	06 34	07 12	16 19	16 54	17 36	18 23
	10	334 05.6	16 00.6	160 05.1	8.7	12 23.6	8.4	58.7	52	05 49	06 29	07 05	16 24	17 01	17 44	18 32
	11	349 05.6	01.4	174 32.8	8.6	12 32.0	8.3	58.7	50	05 46	06 25	06 59	16 29	17 08	17 51	18 40
	12	4 05.6	S16 02.1	189 00.4	8.7	N12 40.3	8.2	58.7	45	05 40	06 15	06 46	16 40	17 21	18 07	18 56
	13	19 05.5	02.9	203 28.1	8.7	12 48.5	8.2	58.6	N 40	05 35	06 07	06 36	16 49	17 33	18 19	19 09
	14	34 05.5	03.6	217 55.8	8.6	12 56.7	8.0	58.6	35	05 30	06 00	06 26	16 57	17 42	18 30	19 21
	15	49 05.5	04.4	232 23.4	8.7	13 04.7	8.0	58.6	30	05 25	05 53	06 18	17 04	17 51	18 40	19 31
	16	64 05.4	05.1	246 51.1	8.6	13 12.7	7.9	58.6	20	05 15	05 41	06 04	17 16	18 05	18 56	19 48
	17	79 05.4	05.9	261 18.7	8.6	13 20.6	7.8	58.5	N 10	05 05	05 30	05 52	17 27	18 18	19 11	20 03
	18	94 05.4	S16 06.6	275 46.3	8.6	N13 28.4	7.7	58.5	0	04 54	05 19	05 40	17 37	18 30	19 24	20 17
	19	109 05.4	07.3	290 13.9	8.6	13 36.1	7.6	58.5	S 10	04 41	05 06	05 28	17 47	18 43	19 38	20 31
	20	124 05.3	08.1	304 41.5	8.6	13 43.7	7.6	58.5	20	04 25	04 52	05 16	17 57	18 56	19 52	20 46
	21	139 05.3	08.8	319 09.1	8.6	13 51.3	7.4	58.4	30	04 05	04 35	05 01	18 10	19 11	20 09	21 03
	22	154 05.3	09.6	333 36.7	8.6	13 58.7	7.4	58.4	35	03 52	04 25	04 52	18 17	19 20	20 19	21 14
	23	169 05.2	10.3	348 04.3	8.5	14 06.1	7.2	58.4	40	03 36	04 13	04 42	18 25	19 30	20 30	21 25
									45	03 17	03 58	04 31	18 35	19 41	20 43	21 39
V I E R N E S	7 00	184 05.2	S16 11.1	2 31.8	8.6	N14 13.3	7.2	58.4	S 50	02 51	03 39	04 17	18 46	19 56	20 59	21 55
	01	199 05.2	11.8	16 59.4	8.6	14 20.5	7.1	58.3	52	02 38	03 30	04 10	18 52	20 02	21 07	22 03
	02	214 05.2	12.5	31 27.0	8.5	14 27.6	7.0	58.3	54	02 23	03 20	04 03	18 58	20 10	21 15	22 12
	03	229 05.1	13.3	45 54.5	8.6	14 34.6	6.9	58.3	56	02 04	03 09	03 54	19 04	20 18	21 24	22 21
	04	244 05.1	14.0	60 22.1	8.5	14 41.5	6.8	58.3	58	01 40	02 55	03 45	19 12	20 27	21 35	22 33
	05	259 05.1	14.8	74 49.6	8.5	14 48.3	6.8	58.2	S 60	01 06	02 39	03 34	19 21	20 38	21 47	22 45
	06	274 05.0	S16 15.5	89 17.1	8.6	N14 55.1	6.6	58.2	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
	07	289 05.0	16.2	103 44.7	8.5	15 01.7	6.5	58.2					6	7	8	9
	08	304 05.0	17.0	118 12.2	8.5	15 08.2	6.5	58.2			Civil	Náut.				
	09	319 04.9	17.7	132 39.7	8.5	15 14.7	6.3	58.1					h m	h m	h m	h m
	10	334 04.9	18.4	147 07.2	8.6	15 21.0	6.2	58.1	N 72	h m	h m	h m	h m	h m	h m	h m
	11	349 04.9	19.2	161 34.8	8.5	15 27.2	6.2	58.1		13 49	15 30	16 57	07 58	09 59	12 06	□
	12	4 04.8	S16 19.9	176 02.3	8.5	N15 33.4	6.0	58.0	N 70	14 25	15 47	17 03	07 36	09 22	11 02	12 23
	13	19 04.8	20.6	190 29.8	8.5	15 39.4	6.0	58.0	68	14 50	16 00	17 09	07 19	08 57	10 26	11 39
	14	34 04.8	21.4	204 57.3	8.5	15 45.4	5.8	58.0	66	15 10	16 11	17 14	07 06	08 37	10 00	11 10
	15	49 04.7	22.1	219 24.8	8.5	15 51.2	5.8	58.0	64	15 25	16 21	17 19	06 54	08 22	09 41	10 48
	16	64 04.7	22.8	233 52.3	8.6	15 57.0	5.7	57.9	62	15 38	16 29	17 23	06 45	08 09	09 25	10 30
	17	79 04.7	23.6	248 19.9	8.5	16 02.7	5.5	57.9	60	15 49	16 36	17 26	06 37	07 58	09 11	10 15
	18	94 04.6	S16 24.3	262 47.4	8.5	N16 08.2	5.5	57.9	N 58	15 59	16 42	17 29	06 30	07 48	09 00	10 03
	19	109 04.6	25.0	277 14.9	8.5	16 13.7	5.3	57.9	56	16 07	16 48	17 33	06 23	07 40	08 50	09 52
	20	124 04.5	25.8	291 42.4	8.6	16 19.0	5.3	57.8	54	16 15	16 53	17 35	06 18	07 32	08 41	09 42
	21	139 04.5	26.5	306 10.0	8.5	16 24.3	5.1	57.8	52	16 21	16 58	17 38	06 13	07 26	08 33	09 34
	22	154 04.5	27.2	320 37.5	8.5	16 29.4	5.1	57.8	50	16 27	17 02	17 41	06 08	07 20	08 26	09 26
	23	169 04.4	28.0	335 05.0	8.6	16 34.5	4.9	57.7	45	16 40	17 11	17 46	05 58	07 07	08 11	09 10
	S Á B A D O	8 00	184 04.4	S16 28.7	349 32.6	8.5	N16 39.4	4.9	57.7	N 40	16 51	17 20	17 52	05 50	06 56	07 59	08 57
01		199 04.4	29.4	4 00.1	8.6	16 44.3	4.7	57.7	35	17 00	17 27	17 57	05 43	06 47	07 48	08 45
02		214 04.3	30.2	18 27.7	8.6	16 49.0	4.7	57.7	30	17 09	17 34	18 02	05 37	06 39	07 39	08 36
03		229 04.3	30.9	32 55.3	8.5	16 53.7	4.5	57.6	20	17 23	17 46	18 12	05 27	06 25	07 23	08 18
04		244 04.2	31.6	47 22.8	8.6	16 58.2	4.4	57.6	N 10	17 35	17 57	18 22	05 17	06 14	07 09	08 04
05		259 04.2	32.3	61 50.4	8.6	17 02.6	4.4	57.6	0	17 47	18 09	18 34	05 09	06 02	06 56	07 50
06		274 04.2	S16 33.1	76 18.0	8.6	N17 07.0	4.2	57.5	S 10	17 59	18 21	18 47	05 00	05 51	06 43	07 36
07		289 04.1	33.8	90 45.6	8.6	17 11.2	4.1	57.5	20	18 12	18 35	19 03	04 51	05 39	06 29	07 21
08		304 04.1	34.5	105 13.2	8.7	17 15.3	4.0	57.5	30	18 27	18 53	19 23	04 40	05 26	06 14	07 04
09		319 04.0	35.2	119 40.9	8.6	17 19.3	4.0	57.4	35	18 36	19 03	19 36	04 34	05 18	06 04	06 54
10		334 04.0	36.0	134 08.5	8.7	17 23.3	3.8	57.4	40	18 46	19 15	19 52	04 27	05 09	05 54	06 43
11		349 03.9	36.7	148 36.2	8.6	17 27.1	3.7	57.4	45	18 57	19 30	20 12	04 19	04 58	05 42	06 29
12		4 03.9	S16 37.4	163 03.8	8.7	N17 30.8	3.6	57.4	S 50	19 12	19 49	20 38	04 10	04 46	05 27	06 13
13		19 03.9	38.1	177 31.5	8.7	17 34.4	3.5	57.3	52	19 18	19 58	20 51	04 05	04 40	05 20	06 05
14		34 03.8	38.9	191 59.2	8.7	17 37.9	3.4	57.3	54	19 26	20 09	21 07	04 00	04 34	05 12	05 57
15		49 03.8	39.6	206 26.9	8.8	17 41.3	3.2	57.3	56	19 34	20 21	21 26	03 55	04 27	05 03	05 47
16		64 03.7	40.3	220 54.7	8.7	17 44.5	3.2	57.2	58	19 44	20 34	21 51	03 49	04 18	04 54	05 36
17		79 03.7	41.0	235 22.4	8.8	17 47.7	3.1	57.2	S 60	19 55	20 51	22 28	03 42	04 09	04 43	05 24
18		94 03.6	S16 41.7	249 50.2	8.8	N17 50.8	3.0	57.2	SOL		LUNA					
19		109 03.6	42.5	264 18.0	8.8	17 53.8	2.8	57.1	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase
20		124 03.5	43.2	278 45.8	8.8	17 56.6	2.8	57.1		00 ^h 12 ^h			Sup.	Inf.		

UT (HmGr)	ARIES	VENUS -3.9	MARTE +0.9	JÚPITER -2.1	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
D O M I N G O								
9 00	48 05.5	180 09.8 S17 17.3	126 58.0 S24 31.8	264 16.1 N15 02.3	175 08.7 S17 06.1	Acamar	315 17.2 S40 14.8	
01	63 07.9	195 09.2 18.2	141 58.4 31.7	279 18.3 02.2	190 10.9 06.2	Achernar	335 25.6 S57 09.8	
02	78 10.4	210 08.5 19.2	156 58.8 31.5	294 20.5 02.2	205 13.0 06.3	Acrux	173 08.6 S63 10.6	
03	93 12.9	225 07.8 . . 20.1	171 59.2 . . 31.4	309 22.8 . . 02.1	220 15.2 . . 06.3	Adhara	255 11.6 S28 59.5	
04	108 15.3	240 07.1 21.0	186 59.6 31.2	324 25.0 02.0	235 17.3 06.4	Aldebarán	290 48.0 N16 32.2	
05	123 17.8	255 06.4 21.9	202 00.0 31.0	339 27.3 02.0	250 19.5 06.5			
06	138 20.3	270 05.8 S17 22.9	217 00.4 S24 30.9	354 29.5 N15 01.9	265 21.7 S17 06.6	Alioth	166 20.4 N55 52.7	
07	153 22.7	285 05.1 23.8	232 00.8 30.7	9 31.7 01.8	280 23.8 06.6	Alkaid	152 58.7 N49 14.4	
08	168 25.2	300 04.4 24.7	247 01.2 30.6	24 34.0 01.8	295 26.0 06.7	Al Na'ir	27 42.5 S46 53.4	
09	183 27.7	315 03.7 . . 25.6	262 01.6 . . 30.4	39 36.2 . . 01.7	310 28.2 . . 06.8	Alnilam	275 45.1 S 1 11.7	
10	198 30.1	330 03.1 26.5	277 02.0 30.3	54 38.5 01.7	325 30.3 06.9	Alphard	217 55.2 S 8 43.4	
11	213 32.6	345 02.4 27.4	292 02.4 30.1	69 40.7 01.6	340 32.5 06.9			
12	228 35.1	0 01.7 S17 28.4	307 02.8 S24 30.0	84 42.9 N15 01.5	355 34.7 S17 07.0	Alphecca	126 10.6 N26 40.1	
13	243 37.5	15 01.0 29.3	322 03.2 29.8	99 45.2 01.5	10 36.8 07.1	Alpheratz	357 42.2 N29 10.6	
14	258 40.0	30 00.3 30.2	337 03.6 29.6	114 47.4 01.4	25 39.0 07.2	Altair	62 07.4 N 8 54.8	
15	273 42.4	44 59.6 . . 31.1	352 04.0 . . 29.5	129 49.7 . . 01.3	40 41.2 . . 07.2	Ankaa	353 14.5 S42 13.6	
16	288 44.9	59 59.0 32.0	7 04.4 29.3	144 51.9 01.3	55 43.3 07.3	Antares	112 25.4 S26 27.7	
17	303 47.4	74 58.3 32.9	22 04.8 29.2	159 54.1 01.2	70 45.5 07.4			
18	318 49.8	89 57.6 S17 33.8	37 05.2 S24 29.0	174 56.4 N15 01.1	85 47.6 S17 07.4	Arcturus	145 55.2 N19 06.5	
19	333 52.3	104 56.9 34.7	52 05.6 28.8	189 58.6 01.1	100 49.8 07.5	Atria	107 26.9 S69 03.1	
20	348 54.8	119 56.2 35.7	67 06.0 28.7	205 00.9 01.0	115 52.0 07.6	Avior	234 17.4 S59 33.3	
21	3 57.2	134 55.5 . . 36.6	82 06.4 . . 28.5	220 03.1 . . 01.0	130 54.1 . . 07.7	Bellatrix	278 30.7 N 6 21.6	
22	18 59.7	149 54.8 37.5	97 06.8 28.3	235 05.4 00.9	145 56.3 07.7	Betelgeuse	271 00.0 N 7 24.4	
23	34 02.2	164 54.2 38.4	112 07.2 28.2	250 07.6 00.8	160 58.5 07.8			
L U N E S								
10 00	49 04.6	179 53.5 S17 39.3	127 07.6 S24 28.0	265 09.9 N15 00.8	176 00.6 S17 07.9	Canopus	263 55.3 S52 42.2	
01	64 07.1	194 52.8 40.2	142 08.0 27.9	280 12.1 00.7	191 02.8 08.0	Capella	280 32.6 N46 00.5	
02	79 09.6	209 52.1 41.1	157 08.4 27.7	295 14.3 00.6	206 05.0 08.0	Deneb	49 30.9 N45 20.5	
03	94 12.0	224 51.4 . . 42.0	172 08.8 . . 27.5	310 16.6 . . 00.6	221 07.1 . . 08.1	Denébola	182 32.9 N14 29.3	
04	109 14.5	239 50.7 42.9	187 09.2 27.4	325 18.8 00.5	236 09.3 08.2	Diphda	348 54.7 S17 54.3	
05	124 16.9	254 50.0 43.8	202 09.6 27.2	340 21.1 00.5	251 11.4 08.3			
06	139 19.4	269 49.3 S17 44.7	217 10.0 S24 27.0	355 23.3 N15 00.4	266 13.6 S17 08.3	Dubhe	193 51.0 N61 40.0	
07	154 21.9	284 48.6 45.6	232 10.4 26.9	10 25.6 00.3	281 15.8 08.4	Elnath	278 11.1 N28 37.0	
08	169 24.3	299 48.0 46.5	247 10.8 26.7	25 27.8 00.3	296 17.9 08.5	Eltanin	90 46.1 N51 29.6	
09	184 26.8	314 47.3 . . 47.4	262 11.2 . . 26.5	40 30.1 . . 00.2	311 20.1 . . 08.5	Enif	33 46.2 N 9 56.9	
10	199 29.3	329 46.6 48.3	277 11.6 26.4	55 32.3 00.1	326 22.3 08.6	Fomalhaut	15 22.8 S29 32.6	
11	214 31.7	344 45.9 49.2	292 12.0 26.2	70 34.6 00.1	341 24.4 08.7			
12	229 34.2	359 45.2 S17 50.1	307 12.4 S24 26.0	85 36.8 N15 00.0	356 26.6 S17 08.8	Gacrux	172 00.2 S57 11.5	
13	244 36.7	14 44.5 51.0	322 12.8 25.9	100 39.1 15 00.0	11 28.8 08.8	Gienah	175 51.5 S17 37.3	
14	259 39.1	29 43.8 51.9	337 13.2 25.7	115 41.3 14 59.9	26 30.9 08.9	Hadar	148 47.1 S60 26.4	
15	274 41.6	44 43.1 . . 52.8	352 13.6 . . 25.5	130 43.6 . . 59.8	41 33.1 . . 09.0	Hamal	327 59.3 N23 32.0	
16	289 44.0	59 42.4 53.7	7 14.0 25.3	145 45.8 59.8	56 35.2 09.1	Kaus Aust.	83 42.9 S34 22.5	
17	304 46.5	74 41.7 54.6	22 14.4 25.2	160 48.1 59.7	71 37.4 09.1			
18	319 49.0	89 41.0 S17 55.4	37 14.8 S24 25.0	175 50.3 N14 59.7	86 39.6 S17 09.2	Kochab	137 21.4 N74 05.7	
19	334 51.4	104 40.3 56.3	52 15.2 24.8	190 52.6 59.6	101 41.7 09.3	Markab	13 37.2 N15 17.4	
20	349 53.9	119 39.6 57.2	67 15.6 24.6	205 54.8 59.5	116 43.9 09.3	Menkar	314 13.7 N 4 08.8	
21	4 56.4	134 38.9 . . 58.1	82 16.0 . . 24.5	220 57.1 . . 59.5	131 46.1 . . 09.4	Menkent	148 06.8 S36 26.3	
22	19 58.8	149 38.2 59.0	97 16.4 24.3	235 59.3 59.4	146 48.2 09.5	Miaplacidus	221 39.3 S69 46.5	
23	35 01.3	164 37.5 17 59.9	112 16.8 24.1	251 01.6 59.4	161 50.4 09.6			
M A R T E S								
11 00	50 03.8	179 36.8 S18 00.8	127 17.2 S24 24.0	266 03.8 N14 59.3	176 52.6 S17 09.6	Mirfak	308 38.4 N49 54.7	
01	65 06.2	194 36.1 01.7	142 17.6 23.8	281 06.1 59.2	191 54.7 09.7	Nunki	75 57.4 S26 16.5	
02	80 08.7	209 35.4 02.5	157 18.0 23.6	296 08.3 59.2	206 56.9 09.8	Peacock	53 18.0 S56 41.3	
03	95 11.2	224 34.7 . . 03.4	172 18.4 . . 23.4	311 10.6 . . 59.1	221 59.0 . . 09.9	Póllux	243 26.5 N27 59.1	
04	110 13.6	239 34.0 04.3	187 18.8 23.3	326 12.8 59.1	237 01.2 09.9	Procyon	244 58.6 N 5 11.1	
05	125 16.1	254 33.3 05.2	202 19.2 23.1	341 15.1 59.0	252 03.4 10.0			
06	140 18.5	269 32.6 S18 06.1	217 19.6 S24 22.9	356 17.3 N14 58.9	267 05.5 S17 10.1	Rasalhague	96 05.9 N12 33.3	
07	155 21.0	284 31.9 07.0	232 20.0 22.7	11 19.6 58.9	282 07.7 10.2	Régulus	207 42.6 N11 53.6	
08	170 23.5	299 31.2 07.8	247 20.4 22.5	26 21.8 58.8	297 09.9 10.2	Rigel	281 10.9 S 8 11.2	
09	185 25.9	314 30.5 . . 08.7	262 20.8 . . 22.4	41 24.1 . . 58.8	312 12.0 . . 10.3	Rigel Kent.	139 51.0 S60 53.5	
10	200 28.4	329 29.8 09.6	277 21.2 22.2	56 26.3 58.7	327 14.2 10.4	Sabik	102 11.8 S15 44.3	
11	215 30.9	344 29.1 10.5	292 21.6 22.0	71 28.6 58.6	342 16.3 10.4			
12	230 33.3	359 28.4 S18 11.3	307 22.0 S24 21.8	86 30.8 N14 58.6	357 18.5 S17 10.5	Schedar	349 38.9 N56 37.3	
13	245 35.8	14 27.7 12.2	322 22.4 21.6	101 33.1 58.5	12 20.7 10.6	Shaula	96 21.0 S37 06.7	
14	260 38.3	29 26.9 13.1	337 22.8 21.5	116 35.4 58.5	27 22.8 10.7	Sirius	258 32.7 S16 44.2	
15	275 40.7	44 26.2 . . 14.0	352 23.2 . . 21.3	131 37.6 . . 58.4	42 25.0 . . 10.7	Spica	158 30.5 S11 14.2	
16	290 43.2	59 25.5 14.8	7 23.6 21.1	146 39.9 58.3	57 27.2 10.8	Suhail	222 51.7 S43 29.4	
17	305 45.7	74 24.8 15.7	22 24.0 20.9	161 42.1 58.3	72 29.3 10.9			
18	320 48.1	89 24.1 S18 16.6	37 24.4 S24 20.7	176 44.4 N14 58.2	87 31.5 S17 11.0	Vega	80 38.6 N38 48.3	
19	335 50.6	104 23.4 17.4	52 24.8 20.5	191 46.6 58.2	102 33.7 11.0	Zuben'ubi	137 04.7 S16 06.0	
20	350 53.0	119 22.7 18.3	67 25.2 20.4	206 48.9 58.1	117 35.8 11.1			
21	5 55.5	134 22.0 . . 19.2	82 25.6 . . 20.2	221 51.2 . . 58.0	132 38.0 . . 11.2	AHS Paso Mer.		
22	20 58.0	149 21.3 20.1	97 26.0 20.0	236 53.4 58.0	147 40.1 11.2	Venus	130 48.9 12 01	
23	36 00.4	164 20.5 20.9	112 26.4 19.8	251 55.7 57.9	162 42.3 11.3	Marte	78 03.0 15 31	
						Júpiter	216 05.2 6 18	
						Saturno	126 56.0 12 14	
Paso Mer. 20	40.3	v -0.7 d 0.9	v 0.4 d 0.2	v 2.2 d 0.1	v 2.2 d 0.1			

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		9	10	11	12	
DOMINGO	d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
	9 00	184 03.4	S16 46.1	336 37.2	8.9	N18 07.0	2.4	57.0	N 72	06 41	08 10	10 01			17 03	18 54
	01	199 03.3	46.8	351 05.1	8.9	18 09.4	2.2	57.0	N 70	06 33	07 51	09 18	15 42	16 40	18 00	19 29
	02	214 03.3	47.5	5 33.0	9.0	18 11.6	2.2	56.9	68	06 26	07 36	08 49	16 26	17 23	18 34	19 54
	03	229 03.2	48.2	20 01.0	9.0	18 13.8	2.0	56.9	66	06 20	07 24	08 28	16 56	17 51	18 58	20 13
	04	244 03.2	48.9	34 29.0	9.0	18 15.8	1.9	56.9	64	06 15	07 14	08 11	17 18	18 13	19 17	20 28
	05	259 03.1	49.6	48 57.0	9.1	18 17.7	1.8	56.8	62	06 11	07 05	07 57	17 36	18 30	19 33	20 41
	06	274 03.1	S16 50.4	63 25.1	9.0	N18 19.5	1.7	56.8	60	06 06	06 57	07 45	17 50	18 45	19 46	20 52
	07	289 03.0	51.1	77 53.1	9.1	18 21.2	1.6	56.8	N 58	06 03	06 51	07 35	18 03	18 57	19 57	21 01
	08	304 03.0	51.8	92 21.2	9.1	18 22.8	1.5	56.8	56	05 59	06 44	07 26	18 14	19 08	20 07	21 09
	09	319 02.9	52.5	106 49.3	9.2	18 24.3	1.4	56.7	54	05 56	06 39	07 18	18 23	19 17	20 15	21 19
	10	334 02.9	53.2	121 17.5	9.2	18 25.7	1.3	56.7	52	05 53	06 34	07 11	18 32	19 25	20 23	21 23
	11	349 02.8	53.9	135 45.7	9.2	18 27.0	1.2	56.7	50	05 50	06 29	07 04	18 40	19 33	20 30	21 29
	12	4 02.8	S16 54.6	150 13.9	9.2	N18 28.2	1.1	56.6	45	05 44	06 19	06 51	18 56	19 49	20 45	21 42
	13	19 02.7	55.3	164 42.1	9.3	18 29.3	1.0	56.6	N 40	05 38	06 10	06 39	19 09	20 02	20 57	21 52
	14	34 02.7	56.1	179 10.4	9.3	18 30.3	0.9	56.6	35	05 32	06 03	06 29	19 21	20 13	21 07	22 01
	15	49 02.6	56.8	193 38.7	9.4	18 31.2	0.7	56.5	30	05 27	05 56	06 21	19 31	20 23	21 16	22 09
	16	64 02.5	57.5	208 07.1	9.3	18 31.9	0.7	56.5	20	05 16	05 43	06 06	19 48	20 40	21 31	22 22
	17	79 02.5	58.2	222 35.4	9.4	18 32.6	0.6	56.5	N 10	05 06	05 31	05 53	20 03	20 55	21 45	22 34
	18	94 02.4	S16 58.9	237 03.8	9.5	N18 33.2	0.4	56.5	0	04 54	05 19	05 40	20 17	21 08	21 58	22 45
	19	109 02.4	16 59.6	251 32.3	9.5	18 33.6	0.4	56.4	S 10	04 40	05 06	05 28	20 31	21 22	22 10	22 56
	20	124 02.3	17 00.3	266 00.8	9.5	18 34.0	0.3	56.4	20	04 24	04 51	05 14	20 46	21 37	22 24	23 08
	21	139 02.3	01.0	280 29.3	9.5	18 34.3	0.1	56.4	30	04 02	04 33	04 59	21 03	21 54	22 39	23 21
	22	154 02.2	01.7	294 57.8	9.6	18 34.4	0.1	56.3	35	03 49	04 22	04 50	21 14	22 03	22 48	23 29
	23	169 02.2	02.4	309 26.4	9.7	18 34.5	0.0	56.3	40	03 33	04 09	04 39	21 25	22 15	22 58	23 37
LUNES	10 00	184 02.1	S17 03.1	323 55.1	9.6	N18 34.5	0.2	56.3	S 50	02 45	03 34	04 12	21 55	22 44	23 25	24 00
	01	199 02.0	03.8	338 23.7	9.7	18 34.3	0.2	56.3	52	02 31	03 25	04 05	22 03	22 51	23 32	24 06
	02	214 02.0	04.5	352 52.4	9.8	18 34.1	0.3	56.2	54	02 14	03 14	03 57	22 12	23 00	23 39	24 12
	03	229 01.9	05.3	7 21.2	9.8	18 33.8	0.5	56.2	56	01 53	03 01	03 48	22 21	23 09	23 48	24 19
	04	244 01.9	06.0	21 50.0	9.8	18 33.3	0.5	56.2	58	01 26	02 47	03 38	22 33	23 19	23 57	24 27
	05	259 01.8	06.7	36 18.8	9.9	18 32.8	0.6	56.1	S 60	00 43	02 29	03 27	22 45	23 32	24 08	24 08
	06	274 01.8	S17 07.4	50 47.7	9.9	N18 32.2	0.8	56.1	Lat.		Ocaso Sol	Crepúsculo		Ocaso Luna		
	07	289 01.7	08.1	65 16.6	9.9	18 31.4	0.8	56.1								
	08	304 01.6	08.8	79 45.5	10.0	18 30.6	0.9	56.1								
	09	319 01.6	09.5	94 14.5	10.0	18 29.7	1.0	56.0								
	10	334 01.5	10.2	108 43.5	10.1	18 28.7	1.2	56.0								
	11	349 01.5	10.9	123 12.6	10.1	18 27.5	1.2	56.0								
	12	4 01.4	S17 11.6	137 41.7	10.2	N18 26.3	1.3	55.9	N 72	13 25	15 16	16 46			14 34	14 22
	13	19 01.3	12.3	152 10.9	10.2	18 25.0	1.4	55.9	N 70	14 09	15 35	16 54	12 23	13 13	13 36	13 46
	14	34 01.3	13.0	166 40.1	10.3	18 23.6	1.5	55.9	68	14 37	15 50	17 01	11 39	12 30	13 02	13 21
	15	49 01.2	13.7	181 09.4	10.3	18 22.1	1.6	55.9	66	14 59	16 03	17 07	11 10	12 01	12 37	13 01
	16	64 01.2	14.4	195 38.7	10.3	18 20.5	1.6	55.8	64	15 16	16 13	17 12	10 48	11 40	12 18	12 45
	17	79 01.1	15.1	210 08.0	10.4	18 18.9	1.8	55.8	62	15 30	16 22	17 16	10 30	11 22	12 02	12 32
	18	94 01.0	S17 15.8	224 37.4	10.5	N18 17.1	1.9	55.8	60	15 42	16 30	17 20	10 15	11 08	11 49	12 21
	19	109 01.0	16.5	239 06.9	10.5	18 15.2	2.0	55.7	N 58	15 52	16 36	17 24	10 03	10 55	11 37	12 11
	20	124 00.9	17.2	253 36.4	10.5	18 13.2	2.0	55.7	56	16 01	16 43	17 28	09 52	10 44	11 27	12 02
	21	139 00.8	17.8	268 05.9	10.6	18 11.2	2.2	55.7	54	16 09	16 48	17 31	09 42	10 35	11 19	11 55
	22	154 00.8	18.5	282 35.5	10.6	18 09.0	2.2	55.7	52	16 16	16 53	17 34	09 34	10 26	11 11	11 48
	23	169 00.7	19.2	297 05.1	10.7	18 06.8	2.3	55.6	50	16 23	16 58	17 37	09 26	10 19	11 04	11 42
	MARTES	11 00	184 00.6	S17 19.9	311 34.8	10.7	N18 04.5	2.4	55.6	45	16 37	17 08	17 43	09 10	10 03	10 48	11 28
01		199 00.6	20.6	326 04.5	10.8	18 02.1	2.5	55.6	N 40	16 48	17 17	17 49	08 57	09 49	10 36	11 17
02		214 00.5	21.3	340 34.3	10.8	17 59.6	2.6	55.6	35	16 58	17 25	17 55	08 45	09 38	10 25	11 08
03		229 00.4	22.0	355 04.1	10.9	17 57.0	2.7	55.5	30	17 07	17 32	18 00	08 36	09 28	10 16	11 00
04		244 00.4	22.7	9 34.0	10.9	17 54.3	2.8	55.5	20	17 22	17 45	18 11	08 18	09 11	10 00	10 45
05		259 00.3	23.4	24 03.9	11.0	17 51.5	2.8	55.5	N 10	17 35	17 57	18 22	08 04	08 56	09 46	10 33
06		274 00.2	S17 24.1	38 33.9	11.0	N17 48.7	3.0	55.5	0	17 47	18 09	18 34	07 50	08 42	09 32	10 21
07		289 00.2	24.8	53 03.9	11.1	17 45.7	3.0	55.4	S 10	18 00	18 22	18 48	07 36	08 28	09 19	10 09
08		304 00.1	25.5	67 34.0	11.1	17 42.7	3.1	55.4	20	18 14	18 37	19 05	07 21	08 13	09 05	09 56
09		319 00.0	26.1	82 04.1	11.1	17 39.6	3.2	55.4	30	18 29	18 55	19 26	07 04	07 56	08 48	09 41
10		334 00.0	26.8	96 34.2	11.3	17 36.4	3.3	55.4	35	18 39	19 06	19 40	06 54	07 46	08 39	09 33
11		348 59.9	27.5	111 04.5	11.2	17 33.1	3.4	55.3	40	18 49	19 19	19 56	06 43	07 34	08 28	09 23
12		3 59.8	S17 28.2	125 34.7	11.4	N17 29.7	3.4	55.3	45	19 02	19 35	20 17	06 29	07 21	08 15	09 12
13		18 59.8	28.9	140 05.1	11.3	17 26.3	3.5	55.3	S 50	19 17	19 55	20 45	06 13	07 04	07 59	08 58
14		33 59.7	29.6	154 35.4	11.4	17 22.8	3.6	55.3	52	19 24	20 05	20 59	06 05	06 56	07 52	08 51
15		48 59.6	30.3	169 05.8	11.5	17 19.2	3.7	55.2	54	19 32	20 16	21 16	05 57	06 48	07 44	08 44
16		63 59.5	31.0	183 36.3	11.5	17 15.5	3.8	55.2	56	19 41	20 28	21 37	05 47	06 38	07 35	08 36
17		78 59.5	31.6	198 06.8	11.6	17 11.7	3.9	55.2	58	19 51	20 43	22 06	05 36	06 27	07 24	08 27
18		93 59.4	S17 32.3	212 37.4	11.6	N17 07.8	3.9	55.2	S 60	20 03	21 01	22 53	05 24	06 14	07 12	08 16
19		108 59.3	33.0	227 08.0	11.7	17 03.9	4.0	55.2	SOL		LUNA					
20		123 59.3	33.7	241 38.7	11.7	16 59.9	4.1	55.1	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase
21		138 59.2	34.4	256 09.4	11.8	16 55.8	4.2	55.1		00h	12h		Sup.	Inf.		
22		153 59.1	35.1	270 40.2	11.8	16 51.6	4.2	55.1	d	m s	m s	h m	h m	h m	d	%
23		168														

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.1	SATURNO +0.5	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
12 00	51 02.9	179 19.8 S18 21.8	127 26.8 S24 19.6	266 57.9 N14 57.9	177 44.5 S17 11.4	Acamar 315 17.2 S40 14.8
01	66 05.4	194 19.1 22.7	142 27.2 19.4	282 00.2 57.8	192 46.6 11.5	Achernar 335 25.6 S57 09.8
02	81 07.8	209 18.4 23.5	157 27.6 19.2	297 02.4 57.8	207 48.8 11.5	Acrux 173 08.6 S63 10.6
03	96 10.3	224 17.7 . . 24.4	172 28.0 . . 19.1	312 04.7 . . 57.7	222 51.0 . . 11.6	Adhara 255 11.5 S28 59.5
04	111 12.8	239 17.0 25.2	187 28.4 18.9	327 07.0 57.6	237 53.1 11.7	Aldebarán 290 47.9 N16 32.2
05	126 15.2	254 16.3 26.1	202 28.8 18.7	342 09.2 57.6	252 55.3 11.8	
06	141 17.7	269 15.5 S18 27.0	217 29.2 S24 18.5	357 11.5 N14 57.5	267 57.4 S17 11.8	Alioth 166 20.4 N55 52.6
07	156 20.2	284 14.8 27.8	232 29.6 18.3	12 13.7 57.5	282 59.6 11.9	Alkaid 152 58.7 N49 14.4
08	171 22.6	299 14.1 28.7	247 30.0 18.1	27 16.0 57.4	298 01.8 12.0	Al Na'ir 27 42.5 S46 53.4
09	186 25.1	314 13.4 . . 29.5	262 30.4 . . 17.9	42 18.3 . . 57.4	313 03.9 . . 12.0	Alnilam 275 45.1 S 1 11.7
10	201 27.5	329 12.7 30.4	277 30.8 17.7	57 20.5 57.3	328 06.1 12.1	Alphard 217 55.1 S 8 43.4
11	216 30.0	344 11.9 31.3	292 31.2 17.5	72 22.8 57.2	343 08.3 12.2	
12	231 32.5	359 11.2 S18 32.1	307 31.6 S24 17.4	87 25.0 N14 57.2	358 10.4 S17 12.3	Alphecca 126 10.6 N26 40.1
13	246 34.9	14 10.5 33.0	322 32.0 17.2	102 27.3 57.1	13 12.6 12.3	Alpheratz 357 42.2 N29 10.6
14	261 37.4	29 09.8 33.8	337 32.4 17.0	117 29.6 57.1	28 14.7 12.4	Altair 62 07.5 N 8 54.8
15	276 39.9	44 09.1 . . 34.7	352 32.8 . . 16.8	132 31.8 . . 57.0	43 16.9 . . 12.5	Ankaa 353 14.5 S42 13.6
16	291 42.3	59 08.3 35.5	7 33.2 16.6	147 34.1 57.0	58 19.1 12.6	Antares 112 25.4 S26 27.7
17	306 44.8	74 07.6 36.4	22 33.6 16.4	162 36.4 56.9	73 21.2 12.6	
18	321 47.3	89 06.9 S18 37.2	37 34.0 S24 16.2	177 38.6 N14 56.8	88 23.4 S17 12.7	Arcturus 145 55.2 N19 06.4
19	336 49.7	104 06.2 38.1	52 34.4 16.0	192 40.9 56.8	103 25.6 12.8	Atria 107 26.9 S69 03.1
20	351 52.2	119 05.4 38.9	67 34.8 15.8	207 43.1 56.7	118 27.7 12.8	Avior 234 17.4 S59 33.3
21	6 54.6	134 04.7 . . 39.8	82 35.2 . . 15.6	222 45.4 . . 56.7	133 29.9 . . 12.9	Bellatrix 278 30.7 N 6 21.6
22	21 57.1	149 04.0 40.6	97 35.6 15.4	237 47.7 56.6	148 32.0 13.0	Betelgeuse 271 00.0 N 7 24.4
23	36 59.6	164 03.3 41.5	112 36.0 15.2	252 49.9 56.6	163 34.2 13.1	
13 00	52 02.0	179 02.5 S18 42.3	127 36.4 S24 15.0	267 52.2 N14 56.5	178 36.4 S17 13.1	Canopus 263 55.3 S52 42.2
01	67 04.5	194 01.8 43.1	142 36.8 14.8	282 54.5 56.4	193 38.5 13.2	Capella 280 32.6 N46 00.5
02	82 07.0	209 01.1 44.0	157 37.2 14.6	297 56.7 56.4	208 40.7 13.3	Deneb 49 30.9 N45 20.5
03	97 09.4	224 00.4 . . 44.8	172 37.6 . . 14.4	312 59.0 . . 56.3	223 42.9 . . 13.4	Denébola 182 32.9 N14 29.3
04	112 11.9	238 59.6 45.7	187 38.0 14.2	328 01.3 56.3	238 45.0 13.4	Diphda 348 54.7 S17 54.3
05	127 14.4	253 58.9 46.5	202 38.4 14.0	343 03.5 56.2	253 47.2 13.5	
06	142 16.8	268 58.2 S18 47.3	217 38.8 S24 13.8	358 05.8 N14 56.2	268 49.3 S17 13.6	Dubhe 193 51.0 N61 39.9
07	157 19.3	283 57.4 48.2	232 39.2 13.6	13 08.1 56.1	283 51.5 13.6	Elnath 278 11.1 N28 37.0
08	172 21.8	298 56.7 49.0	247 39.6 13.4	28 10.3 56.1	298 53.7 13.7	Eltanin 90 46.1 N51 29.6
09	187 24.2	313 56.0 . . 49.9	262 40.0 . . 13.2	43 12.6 . . 56.0	313 55.8 . . 13.8	Enif 33 46.2 N 9 56.9
10	202 26.7	328 55.3 50.7	277 40.4 13.0	58 14.9 55.9	328 58.0 13.9	Fomalhaut 15 22.8 S29 32.6
11	217 29.1	343 54.5 51.5	292 40.8 12.8	73 17.1 55.9	344 00.2 13.9	
12	232 31.6	358 53.8 S18 52.4	307 41.2 S24 12.6	88 19.4 N14 55.8	359 02.3 S17 14.0	Gacrux 172 00.1 S57 11.5
13	247 34.1	13 53.1 53.2	322 41.6 12.4	103 21.7 55.8	14 04.5 14.1	Gienah 175 51.5 S17 37.3
14	262 36.5	28 52.3 54.0	337 42.0 12.2	118 23.9 55.7	29 06.6 14.1	Hadar 148 47.0 S60 26.4
15	277 39.0	43 51.6 . . 54.9	352 42.4 . . 12.0	133 26.2 . . 55.7	44 08.8 . . 14.2	Hamal 327 59.3 N23 32.0
16	292 41.5	58 50.9 55.7	7 42.8 11.8	148 28.5 55.6	59 11.0 14.3	Kaus Aust. 83 42.9 S34 22.5
17	307 43.9	73 50.1 56.5	22 43.2 11.6	163 30.8 55.6	74 13.1 14.4	
18	322 46.4	88 49.4 S18 57.4	37 43.6 S24 11.4	178 33.0 N14 55.5	89 15.3 S17 14.4	Kochab 137 21.4 N74 05.7
19	337 48.9	103 48.6 58.2	52 44.0 11.2	193 35.3 55.5	104 17.5 14.5	Markab 13 37.2 N15 17.4
20	352 51.3	118 47.9 59.0	67 44.4 11.0	208 37.6 55.4	119 19.6 14.6	Menkar 314 13.7 N 4 08.8
21	7 53.8	133 47.2 18 59.8	82 44.8 . . 10.8	223 39.8 . . 55.3	134 21.8 . . 14.7	Menkent 148 06.8 S36 26.3
22	22 56.3	148 46.4 19 00.7	97 45.2 10.6	238 42.1 55.3	149 23.9 14.7	Miaplacidus 221 39.2 S69 46.5
23	37 58.7	163 45.7 01.5	112 45.6 10.4	253 44.4 55.2	164 26.1 14.8	
14 00	53 01.2	178 45.0 S19 02.3	127 46.0 S24 10.2	268 46.6 N14 55.2	179 28.3 S17 14.9	Mirfak 308 38.4 N49 54.7
01	68 03.6	193 44.2 03.1	142 46.4 09.9	283 48.9 55.1	194 30.4 14.9	Nunki 75 57.4 S26 16.5
02	83 06.1	208 43.5 03.9	157 46.8 09.7	298 51.2 55.1	209 32.6 15.0	Peacock 53 18.0 S56 41.3
03	98 08.6	223 42.7 . . 04.8	172 47.2 . . 09.5	313 53.5 . . 55.0	224 34.7 . . 15.1	Póllux 243 26.4 N27 59.1
04	113 11.0	238 42.0 05.6	187 47.6 09.3	328 55.7 55.0	239 36.9 15.2	Procyon 244 58.6 N 5 11.1
05	128 13.5	253 41.2 06.4	202 48.0 09.1	343 58.0 54.9	254 39.1 15.2	
06	143 16.0	268 40.5 S19 07.2	217 48.4 S24 08.9	359 00.3 N14 54.9	269 41.2 S17 15.3	Rasalhague 96 05.9 N12 33.3
07	158 18.4	283 39.8 08.0	232 48.8 08.7	14 02.6 54.8	284 43.4 15.4	Régulus 207 42.6 N11 53.6
08	173 20.9	298 39.0 08.9	247 49.2 08.5	29 04.8 54.8	299 45.6 15.4	Rigel 281 10.8 S 8 11.2
09	188 23.4	313 38.3 . . 09.7	262 49.6 . . 08.3	44 07.1 . . 54.7	314 47.7 . . 15.5	Rigel Kent. 139 51.0 S60 53.5
10	203 25.8	328 37.5 10.5	277 50.0 08.1	59 09.4 54.7	329 49.9 15.6	Sabik 102 11.8 S15 44.3
11	218 28.3	343 36.8 11.3	292 50.4 07.8	74 11.7 54.6	344 52.0 15.7	
12	233 30.7	358 36.0 S19 12.1	307 50.8 S24 07.6	89 13.9 N14 54.5	359 54.2 S17 15.7	Schedar 349 38.9 N56 37.4
13	248 33.2	13 35.3 12.9	322 51.2 07.4	104 16.2 54.5	14 56.4 15.8	Shaula 96 21.0 S37 06.7
14	263 35.7	28 34.5 13.7	337 51.6 07.2	119 18.5 54.4	29 58.5 15.9	Sirius 258 32.6 S16 44.3
15	278 38.1	43 33.8 . . 14.5	352 52.0 . . 07.0	134 20.8 . . 54.4	45 00.7 . . 16.0	Spica 158 30.5 S11 14.2
16	293 40.6	58 33.0 15.4	7 52.4 06.8	149 23.0 54.3	60 02.9 16.0	Suhail 222 51.6 S43 29.4
17	308 43.1	73 32.3 16.2	22 52.8 06.6	164 25.3 54.3	75 05.0 16.1	
18	323 45.5	88 31.6 S19 17.0	37 53.2 S24 06.3	179 27.6 N14 54.2	90 07.2 S17 16.2	Vega 80 38.6 N38 48.3
19	338 48.0	103 30.8 17.8	52 53.6 06.1	194 29.9 54.2	105 09.3 16.2	Zuben'ubi 137 04.7 S16 06.0
20	353 50.5	118 30.1 18.6	67 54.0 05.9	209 32.1 54.1	120 11.5 16.3	
21	8 52.9	133 29.3 . . 19.4	82 54.4 . . 05.7	224 34.4 . . 54.1	135 13.7 . . 16.4	AHS Paso Mer.
22	23 55.4	148 28.5 20.2	97 54.8 05.5	239 36.7 54.0	150 15.8 16.5	Venus 127 00.5 12 04
23	38 57.9	163 27.8 21.0	112 55.2 05.2	254 39.0 54.0	165 18.0 16.5	Marte 75 34.3 15 29
						Júpiter 215 50.2 6 08
						Saturno 126 34.3 12 04
Paso Mer. 20 28.5	v -0.7 d 0.8		v 0.4 d 0.2	v 2.3 d 0.1	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	ν	Dec	d		Ph	Náut.		Civil	12	13	14	15	
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	h m	
M I É R C O L E S	N 72	06 52	08 24	10 32	18 54	20 37	22 14	23 49								
	N 70	06 42	08 03	09 36	19 29	20 59	22 28	23 57								
	68	06 35	07 47	09 03	19 54	21 17	22 40	24 03								
	66	06 28	07 33	08 39	20 13	21 30	22 49	24 08								
	64	06 22	07 22	08 20	20 28	21 42	22 57	24 12								
	62	06 17	07 12	08 05	20 41	21 52	23 04	24 16								
	60	06 13	07 04	07 53	20 52	22 00	23 09	24 19								
	N 58	06 09	06 57	07 42	21 01	22 07	23 14	24 22								
	56	06 05	06 50	07 32	21 09	22 14	23 19	24 25								
	54	06 01	06 44	07 24	21 17	22 19	23 23	24 27								
	52	05 58	06 39	07 16	21 23	22 24	23 27	24 29								
	50	05 55	06 34	07 09	21 29	22 29	23 30	24 31								
	45	05 48	06 23	06 55	21 42	22 39	23 37	24 35								
	N 40	05 41	06 14	06 43	21 52	22 48	23 43	24 39								
	35	05 35	06 05	06 32	22 01	22 55	23 48	24 42								
	30	05 29	05 58	06 23	22 09	23 01	23 53	24 44								
	20	05 18	05 44	06 08	22 22	23 12	24 01	00 01								
	N 10	05 06	05 32	05 54	22 34	23 21	24 07	00 07								
	0	04 54	05 19	05 41	22 45	23 30	24 14	00 14								
	S 10	04 39	05 05	05 28	22 56	23 39	24 20	00 20								
	20	04 22	04 50	05 13	23 08	23 48	24 27	00 27								
	30	04 00	04 31	04 57	23 21	23 59	24 35	00 35								
	35	03 46	04 20	04 47	23 29	24 05	00 05	00 39								
	40	03 29	04 06	04 36	23 37	24 12	00 12	00 44								
	45	03 07	03 50	04 23	23 48	24 21	00 21	00 50								
J U E V E S	S 50	02 38	03 29	04 08	24 00	00 00	00 30	00 57								
	52	02 23	03 19	04 00	24 06	00 06	00 35	01 00								
	54	02 05	03 07	03 52	24 12	00 12	00 40	01 04								
	56	01 43	02 54	03 42	24 19	00 19	00 45	01 08								
	58	01 11	02 39	03 32	24 27	00 27	00 51	01 12								
	S 60	00 06	02 19	03 19	00 08	00 36	00 58	01 17								
	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna											
			Civil	Náut.	12	13	14	15								
	N 72	12 56	15 03	16 35	14 22	14 14	14 08	14 02								
	N 70	13 52	15 24	16 45	13 46	13 51	13 52	13 53								
	68	14 25	15 41	16 53	13 21	13 32	13 40	13 45								
	66	14 49	15 54	16 59	13 01	13 17	13 29	13 39								
	64	15 07	16 06	17 05	12 45	13 05	13 21	13 33								
	62	15 22	16 15	17 10	12 32	12 55	13 13	13 28								
	60	15 35	16 24	17 15	12 21	12 46	13 06	13 24								
	N 58	15 46	16 31	17 19	12 11	12 38	13 01	13 20								
	56	15 56	16 38	17 23	12 02	12 31	12 56	13 17								
	54	16 04	16 44	17 27	11 55	12 25	12 51	13 14								
	52	16 12	16 49	17 30	11 48	12 19	12 47	13 11								
	50	16 19	16 54	17 33	11 42	12 14	12 43	13 09								
	45	16 33	17 05	17 40	11 28	12 03	12 35	13 03								
	14 <															

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.2	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
15 00	54 00.3	178 27.0 S19 21.8	127 55.6 S24 05.0	269 41.3 N14 53.9	180 20.1 S17 16.6	Acamar 315 17.2 S40 14.8
01	69 02.8	193 26.3 22.6	142 56.0 04.8	284 43.5 53.9	195 22.3 16.7	Achernar 335 25.7 S57 09.8
02	84 05.2	208 25.5 23.4	157 56.3 04.6	299 45.8 53.8	210 24.5 16.7	Acrux 173 08.5 S63 10.6
03	99 07.7	223 24.8 . . 24.2	172 56.7 . . 04.4	314 48.1 . . 53.8	225 26.6 . . 16.8	Adhara 255 11.5 S28 59.5
04	114 10.2	238 24.0 25.0	187 57.1 04.1	329 50.4 53.7	240 28.8 16.9	Aldebarán 290 47.9 N16 32.2
05	129 12.6	253 23.3 25.8	202 57.5 03.9	344 52.7 53.7	255 31.0 17.0	
06	144 15.1	268 22.5 S19 26.6	217 57.9 S24 03.7	359 54.9 N14 53.6	270 33.1 S17 17.0	Alioth 166 20.4 N55 52.6
07	159 17.6	283 21.8 27.4	232 58.3 03.5	14 57.2 53.6	285 35.3 17.1	Alkaid 152 58.7 N49 14.3
08	174 20.0	298 21.0 28.2	247 58.7 03.3	29 59.5 53.5	300 37.4 17.2	Al Na'ir 62 07.5 N 8 54.8
09	189 22.5	313 20.3 . . 29.0	262 59.1 . . 03.0	45 01.8 . . 53.5	315 39.6 . . 17.2	Alnilam 275 45.1 S 1 11.7
10	204 25.0	328 19.5 29.7	277 59.5 02.8	60 04.1 53.4	330 41.8 17.3	Alphard 217 55.1 S 8 43.4
11	219 27.4	343 18.7 30.5	292 59.9 02.6	75 06.3 53.4	345 43.9 17.4	
12	234 29.9	358 18.0 S19 31.3	308 00.3 S24 02.4	90 08.6 N14 53.3	0 46.1 S17 17.5	Alphecca 126 10.6 N26 40.1
13	249 32.4	13 17.2 32.1	323 00.7 02.1	105 10.9 53.3	15 48.2 17.5	Alpheratz 357 42.2 N29 10.6
14	264 34.8	28 16.5 32.9	338 01.1 01.9	120 13.2 53.2	30 50.4 17.6	Altair 62 07.5 N 8 54.8
15	279 37.3	43 15.7 . . 33.7	353 01.5 . . 01.7	135 15.5 . . 53.2	45 52.6 . . 17.7	Ankaa 353 14.5 S42 13.6
16	294 39.7	58 14.9 34.5	8 01.9 01.5	150 17.8 53.1	60 54.7 17.8	Antares 112 25.4 S26 27.7
17	309 42.2	73 14.2 35.3	23 02.3 01.2	165 20.0 53.1	75 56.9 17.8	
18	324 44.7	88 13.4 S19 36.0	38 02.7 S24 01.0	180 22.3 N14 53.0	90 59.1 S17 17.9	Arcturus 145 55.2 N19 06.4
19	339 47.1	103 12.7 36.8	53 03.1 00.8	195 24.6 53.0	106 01.2 18.0	Atria 107 26.9 S69 03.1
20	354 49.6	118 11.9 37.6	68 03.5 00.5	210 26.9 52.9	121 03.4 18.0	Avior 234 17.3 S59 33.3
21	9 52.1	133 11.1 . . 38.4	83 03.9 . . 00.3	225 29.2 . . 52.9	136 05.5 . . 18.1	Bellatrix 278 30.7 N 6 21.6
22	24 54.5	148 10.4 39.2	98 04.3 24 00.1	240 31.5 52.8	151 07.7 18.2	Betelgeuse 271 00.0 N 7 24.4
23	39 57.0	163 09.6 40.0	113 04.7 23 59.9	255 33.8 52.8	166 09.9 18.3	
16 00	54 59.5	178 08.8 S19 40.7	128 05.1 S23 59.6	270 36.0 N14 52.7	181 12.0 S17 18.3	Canopus 263 55.3 S52 42.2
01	70 01.9	193 08.1 41.5	143 05.5 59.4	285 38.3 52.7	196 14.2 18.4	Capella 280 32.6 N46 00.5
02	85 04.4	208 07.3 42.3	158 05.9 59.2	300 40.6 52.6	211 16.3 18.5	Deneb 49 30.9 N45 20.5
03	100 06.8	223 06.5 . . 43.1	173 06.3 . . 58.9	315 42.9 . . 52.6	226 18.5 . . 18.5	Denébola 182 32.9 N14 29.3
04	115 09.3	238 05.8 43.8	188 06.7 58.7	330 45.2 52.5	241 20.7 18.6	Diphda 348 54.7 S17 54.3
05	130 11.8	253 05.0 44.6	203 07.1 58.5	345 47.5 52.5	256 22.8 18.7	
06	145 14.2	268 04.2 S19 45.4	218 07.5 S23 58.2	0 49.8 N14 52.4	271 25.0 S17 18.8	Dubhe 193 50.9 N61 39.9
07	160 16.7	283 03.5 46.2	233 07.9 58.0	15 52.1 52.4	286 27.2 18.8	Elnath 278 11.1 N28 37.0
08	175 19.2	298 02.7 46.9	248 08.3 57.8	30 54.3 52.3	301 29.3 18.9	Eltanin 90 46.2 N51 29.6
09	190 21.6	313 01.9 . . 47.7	263 08.7 . . 57.5	45 56.6 . . 52.3	316 31.5 . . 19.0	Enif 33 46.2 N 9 56.9
10	205 24.1	328 01.2 48.5	278 09.1 57.3	60 58.9 52.2	331 33.6 19.0	Fomalhaut 15 22.9 S29 32.6
11	220 26.6	343 00.4 49.2	293 09.5 57.1	76 01.2 52.2	346 35.8 19.1	
12	235 29.0	357 59.6 S19 50.0	308 09.9 S23 56.8	91 03.5 N14 52.1	1 38.0 S17 19.2	Gacrux 172 00.1 S57 11.5
13	250 31.5	12 58.8 50.8	323 10.3 56.6	106 05.8 52.1	16 40.1 19.3	Gienah 175 51.5 S17 37.3
14	265 34.0	27 58.1 51.5	338 10.7 56.4	121 08.1 52.0	31 42.3 19.3	Hadar 148 47.0 S60 26.4
15	280 36.4	42 57.3 . . 52.3	353 11.1 . . 56.1	136 10.4 . . 52.0	46 44.4 . . 19.4	Hamal 327 59.3 N23 32.0
16	295 38.9	57 56.5 53.1	8 11.5 55.9	151 12.7 51.9	61 46.6 19.5	Kaus Aust. 83 42.9 S34 22.5
17	310 41.3	72 55.7 53.8	23 11.9 55.6	166 14.9 51.9	76 48.8 19.5	
18	325 43.8	87 55.0 S19 54.6	38 12.3 S23 55.4	181 17.2 N14 51.9	91 50.9 S17 19.6	Kochab 137 21.4 N74 05.7
19	340 46.3	102 54.2 55.4	53 12.7 55.2	196 19.5 51.8	106 53.1 19.7	Markab 13 37.2 N15 17.4
20	355 48.7	117 53.4 56.1	68 13.1 54.9	211 21.8 51.8	121 55.2 19.8	Menkar 314 13.7 N 4 08.8
21	10 51.2	132 52.6 . . 56.9	83 13.5 . . 54.7	226 24.1 . . 51.7	136 57.4 . . 19.8	Menkent 148 06.8 S36 26.3
22	25 53.7	147 51.9 57.6	98 13.9 54.5	241 26.4 51.7	151 59.6 19.9	Miaplacidus 221 39.2 S69 46.5
23	40 56.1	162 51.1 58.4	113 14.3 54.2	256 28.7 51.6	167 01.7 20.0	
17 00	55 58.6	177 50.3 S19 59.1	128 14.7 S23 54.0	271 31.0 N14 51.6	182 03.9 S17 20.0	Mirfak 308 38.4 N49 54.8
01	71 01.1	192 49.5 19 59.9	143 15.1 53.7	286 33.3 51.5	197 06.1 20.1	Nunki 75 57.4 S26 16.5
02	86 03.5	207 48.8 20 00.6	158 15.5 53.5	301 35.6 51.5	212 08.2 20.2	Peacock 53 18.0 S56 41.3
03	101 06.0	222 48.0 . . 01.4	173 15.9 . . 53.2	316 37.9 . . 51.4	227 10.4 . . 20.3	Póllux 243 26.4 N27 59.1
04	116 08.5	237 47.2 02.2	188 16.3 53.0	331 40.2 51.4	242 12.5 20.3	Procyon 244 58.6 N 5 11.1
05	131 10.9	252 46.4 02.9	203 16.7 52.8	346 42.5 51.3	257 14.7 20.4	
06	146 13.4	267 45.6 S20 03.7	218 17.1 S23 52.5	1 44.8 N14 51.3	272 16.9 S17 20.5	Rasalhague 96 05.9 N12 33.3
07	161 15.8	282 44.9 04.4	233 17.5 52.3	16 47.1 51.2	287 19.0 20.5	Régulus 207 42.6 N11 53.6
08	176 18.3	297 44.1 05.2	248 17.9 52.0	31 49.3 51.2	302 21.2 20.6	Rigel 281 10.8 S 8 11.2
09	191 20.8	312 43.3 . . 05.9	263 18.3 . . 51.8	46 51.6 . . 51.2	317 23.3 . . 20.7	Rigel Kent. 139 51.0 S60 53.5
10	206 23.2	327 42.5 06.6	278 18.7 51.5	61 53.9 51.1	332 25.5 20.8	Sabik 102 11.8 S15 44.3
11	221 25.7	342 41.7 07.4	293 19.1 51.3	76 56.2 51.1	347 27.7 20.8	
12	236 28.2	357 40.9 S20 08.1	308 19.5 S23 51.0	91 58.5 N14 51.0	2 29.8 S17 20.9	Schedar 349 38.9 N56 37.4
13	251 30.6	12 40.2 08.9	323 19.9 50.8	107 00.8 51.0	17 32.0 21.0	Shaula 96 21.0 S37 06.7
14	266 33.1	27 39.4 09.6	338 20.3 50.5	122 03.1 50.9	32 34.1 21.0	Sirius 258 32.6 S16 44.3
15	281 35.6	42 38.6 . . 10.4	353 20.7 . . 50.3	137 05.4 . . 50.9	47 36.3 . . 21.1	Spica 158 30.5 S11 14.2
16	296 38.0	57 37.8 11.1	8 21.1 50.0	152 07.7 50.8	62 38.5 21.2	Suhail 222 51.6 S43 29.4
17	311 40.5	72 37.0 11.8	23 21.5 49.8	167 10.0 50.8	77 40.6 21.3	
18	326 42.9	87 36.2 S20 12.6	38 21.9 S23 49.5	182 12.3 N14 50.7	92 42.8 S17 21.3	Vega 80 38.6 N38 48.2
19	341 45.4	102 35.4 13.3	53 22.3 49.3	197 14.6 50.7	107 45.0 21.4	Zuben'ubi 137 04.7 S16 06.0
20	356 47.9	117 34.7 14.0	68 22.7 49.0	212 16.9 50.7	122 47.1 21.5	
21	11 50.3	132 33.9 . . 14.8	83 23.1 . . 48.8	227 19.2 . . 50.6	137 49.3 . . 21.5	AHS Paso Mer.
22	26 52.8	147 33.1 15.5	98 23.6 48.5	242 21.5 50.6	152 51.4 21.6	Venus 123 09.4 12 08
23	41 55.3	162 32.3 16.3	113 24.0 48.3	257 23.8 50.5	167 53.6 21.7	Marte 73 05.7 15 27
						Júpiter 215 36.6 5 57
						Saturno 126 12.6 11 53
Paso Mer. 20 16.7	v -0.8 d 0.8		v 0.4 d 0.2	v 2.3 d 0.0	v 2.2 d 0.1	

UT (HmGr)	SOL				LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec			AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	15	16	17	18
d h	° ′ ° ′	° ′ ° ′			° ′ ° ′		° ′ ° ′	° ′ ° ′	° ′ ° ′	h m	h m	h m	h m	h m	h m	h m	
S Á B A D O	15 00	183 52.6 S18 24.1			266 42.8 14.7 N	8	48.0 8.3 54.2		N 72	07 03	08 38	11 25	23 49	25 23	01 23	02 59	
	01	198 52.5			281 16.5 14.8	8	39.7 8.5 54.2		N 70	06 52	08 15	09 55	23 57	25 25	01 25	02 55	
	02	213 52.4			295 50.3 14.9	8	31.2 8.4 54.2		66	06 36	07 42	08 50	24 08	00 08	01 28	02 49	
	03	228 52.3			310 24.2 14.8	8	22.8 8.5 54.2		64	06 29	07 30	08 30	24 12	00 12	01 29	02 46	
	04	243 52.2			324 58.0 14.9	8	14.3 8.5 54.2		62	06 24	07 20	08 14	24 16	00 16	01 30	02 44	
	05	258 52.1			339 31.9 14.8	8	05.8 8.5 54.2		60	06 19	07 11	08 00	24 19	00 19	01 30	02 42	
	06	273 52.0 S18 27.9			354 05.7 14.9 N	7	57.3 8.6 54.2		N 58	06 14	07 03	07 48	24 22	00 22	01 31	02 41	
	07	288 51.9			8 39.6 14.9	7	48.7 8.6 54.2		56	06 10	06 56	07 38	24 25	00 25	01 32	02 40	
	08	303 51.8			23 13.5 15.0	7	40.1 8.7 54.2		54	06 06	06 49	07 29	24 27	00 27	01 32	02 38	
	09	318 51.7			37 47.5 14.9	7	31.4 8.6 54.2		52	06 02	06 44	07 21	24 29	00 29	01 33	02 37	
	10	333 51.6			52 21.4 15.0	7	22.8 8.8 54.2		50	05 59	06 38	07 14	24 31	00 31	01 33	02 36	
	11	348 51.5			66 55.4 14.9	7	14.0 8.7 54.2		45	05 51	06 27	06 59	24 35	00 35	01 34	02 34	
	12	3 51.4 S18 31.7			81 29.3 15.0 N	7	05.3 8.8 54.2		N 40	05 44	06 17	06 46	24 39	00 39	01 35	02 32	
	13	18 51.3			96 03.3 15.0	6	56.5 8.8 54.2		35	05 38	06 08	06 35	24 42	00 42	01 36	02 31	
	14	33 51.2			110 37.3 15.0	6	47.7 8.8 54.3		30	05 31	06 00	06 26	24 44	00 44	01 36	02 29	
	15	48 51.1			125 11.3 15.1	6	38.9 8.8 54.3		20	05 19	05 46	06 09	00 01	00 49	01 38	02 27	
	16	63 50.9			139 45.4 15.0	6	30.1 8.9 54.3		N 10	05 07	05 33	05 55	00 07	00 53	01 39	02 25	
	17	78 50.8			154 19.4 15.1	6	21.2 8.9 54.3		0	04 54	05 19	05 41	00 14	00 57	01 39	02 23	
	18	93 50.7 S18 35.5			168 53.5 15.0 N	6	12.3 9.0 54.3		S 10	04 39	05 05	05 27	00 20	01 01	01 40	02 21	
	19	108 50.6			183 27.5 15.1	6	03.3 8.9 54.3		20	04 21	04 49	05 13	00 27	01 05	01 41	02 19	
	20	123 50.5			198 01.6 15.0	5	54.4 9.0 54.3		30	03 58	04 29	04 55	00 35	01 09	01 43	02 17	
	21	138 50.4			212 35.6 15.1	5	45.4 9.0 54.3		35	03 43	04 17	04 45	00 39	01 12	01 43	02 15	
	22	153 50.3			227 09.7 15.1	5	36.4 9.1 54.3		40	03 26	04 03	04 34	00 44	01 15	01 44	02 14	
	23	168 50.2			241 43.8 15.1	5	27.3 9.1 54.3		45	03 03	03 46	04 20	00 50	01 18	01 45	02 12	
D O M I N G O	16 00	183 50.1 S18 39.3			256 17.9 15.1 N	5	18.2 9.1 54.3		S 50	02 32	03 24	04 04	00 57	01 22	01 46	02 10	
	01	198 50.0			270 52.0 15.1	5	09.1 9.1 54.3		52	02 16	03 14	03 56	01 00	01 24	01 47	02 09	
	02	213 49.9			285 26.1 15.1	5	00.0 9.1 54.3		54	01 57	03 02	03 47	01 04	01 26	01 47	02 08	
	03	228 49.7			300 00.2 15.2	4	50.9 9.2 54.3		56	01 31	02 47	03 37	01 08	01 28	01 48	02 07	
	04	243 49.6			314 34.4 15.1	4	41.7 9.2 54.3		58	00 54	02 31	03 26	01 12	01 31	01 48	02 06	
	05	258 49.5			329 08.5 15.1	4	32.5 9.2 54.3		S 60	////	02 10	03 12	01 17	01 34	01 49	02 05	
	06	273 49.4 S18 43.1			343 42.6 15.1 N	4	23.3 9.2 54.3		Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
	07	288 49.3			358 16.7 15.1	4	14.1 9.2 54.4				Civil	Náut.	15	16	17	18	
	08	303 49.2			12 50.8 15.2	4	04.9 9.3 54.4										
	09	318 49.1			27 25.0 15.1	3	55.6 9.3 54.4										
	10	333 49.0			41 59.1 15.1	3	46.3 9.3 54.4		N 72	12 03	14 50	16 26	14 02	13 57	13 51	13 46	
	11	348 48.8			56 33.2 15.1	3	37.0 9.3 54.4		N 70	13 33	15 14	16 36	13 53	13 53	13 52	13 52	
	12	3 48.7 S18 46.8			71 07.3 15.1 N	3	27.7 9.4 54.4		68	14 12	15 32	16 45	13 45	13 49	13 53	13 57	
	13	18 48.6			85 41.4 15.1	3	18.3 9.3 54.4		66	14 38	15 46	16 53	13 39	13 46	13 54	14 01	
	14	33 48.5			100 15.5 15.1	3	09.0 9.4 54.4		64	14 59	15 59	16 59	13 33	13 44	13 54	14 05	
	15	48 48.4			114 49.6 15.1	2	59.6 9.4 54.4		62	15 15	16 09	17 05	13 28	13 42	13 55	14 08	
	16	63 48.3			129 23.7 15.1	2	50.2 9.4 54.4		60	15 29	16 18	17 10	13 24	13 40	13 55	14 11	
	17	78 48.1			143 57.8 15.1	2	40.8 9.4 54.5		N 58	15 40	16 26	17 15	13 20	13 38	13 56	14 13	
	18	93 48.0 S18 50.5			158 31.9 15.1 N	2	31.4 9.5 54.5		56	15 51	16 33	17 19	13 17	13 37	13 56	14 16	
	19	108 47.9			173 06.0 15.1	2	21.9 9.4 54.5		54	16 00	16 39	17 23	13 14	13 35	13 56	14 18	
	20	123 47.8			187 40.1 15.1	2	12.5 9.5 54.5		52	16 08	16 45	17 26	13 11	13 34	13 57	14 20	
	21	138 47.7			202 14.2 15.0	2	03.0 9.5 54.5		50	16 15	16 51	17 30	13 09	13 33	13 57	14 21	
	22	153 47.6			216 48.2 15.1	1	53.5 9.5 54.5		45	16 30	17 02	17 38	13 03	13 31	13 57	14 25	
	23	168 47.4			231 22.3 15.0	1	44.0 9.5 54.5		N 40	16 43	17 12	17 45	12 59	13 28	13 58	14 28	
L U N E S	17 00	183 47.3 S18 54.2			245 56.3 15.0 N	1	34.5 9.5 54.5		35	16 54	17 21	17 52	12 55	13 27	13 58	14 31	
	01	198 47.2			260 30.3 15.0	1	25.0 9.6 54.6		30	17 04	17 29	17 58	12 51	13 25	13 59	14 33	
	02	213 47.1			275 04.3 15.0	1	15.4 9.5 54.6		20	17 20	17 43	18 10	12 45	13 22	13 59	14 37	
	03	228 47.0			289 38.3 15.0	1	05.9 9.6 54.6		N 10	17 35	17 57	18 22	12 40	13 20	14 00	14 41	
	04	243 46.8			304 12.3 15.0	0	56.3 9.5 54.6		0	17 48	18 10	18 36	12 35	13 17	14 00	14 44	
	05	258 46.7			318 46.3 14.9	0	46.8 9.6 54.6		S 10	18 02	18 24	18 51	12 30	13 15	14 01	14 47	
	06	273 46.6 S18 57.9			333 20.2 15.0 N	0	37.2 9.6 54.6		20	18 17	18 41	19 09	12 24	13 12	14 01	14 51	
	07	288 46.5			347 54.2 14.9	0	27.6 9.6 54.6		30	18 34	19 01	19 32	12 18	13 09	14 02	14 55	
	08	303 46.3			2 28.1 14.9	0	18.0 9.6 54.7		35	18 45	19 13	19 47	12 14	13 08	14 02	14 57	
	09	318 46.2			17 02.0 14.9 N	0	08.4 9.6 54.7		40	18 56	19 27	20 05	12 10	13 06	14 02	15 00	
	10	333 46.1			31 35.9 14.8 S	0	01.2 9.6 54.7		45	19 10	19 44	20 28	12 05	13 04	14 03	15 03	
	11	348 46.0			46 09.7 14.9	0	10.8 9.6 54.7		S 50	19 27	20 06	20 59	11 59	13 01	14 03	15 07	
	12	3 45.9 S19 01.5			60 43.6 14.8 S	0	20.4 9.6 54.7		52	19 35	20 17	21 15	11 57	13 00	14 03	15 09	
	13	18 45.7			75 17.4 14.8	0	30.0 9.6 54.7		54	19 44	20 29	21 35	11 54	12 58	14 04	15 10	
	14	33 45.6			89 51.2 14.8	0	39.6 9.7 54.8		56	19 54	20 44	22 01	11 50	12 57	14 04	15 12	
	15	48 45.5			104 25.0 14.8	0	49.3 9.6 54.8		58	20 05	21 01	22 42	11 47	12 55	14 04	15 15	
	16	63 45.4			118 58.8 14.7	0	58.9 9.6 54.8		S 60	20 19	21 22	////	11 43	12 53	14 05	15 17	
	17	78 45.2			133 32.5 14.7	1	08.5 9.7 54.8		SOL		LUNA						
	18	93 45.1 S19 05.2			148 06.2 14.7 S	1	18.2 9.6 54.8		Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase	
	19	108 45.0			162 39.9 14.7	1	27.8 9.7 54.8			00h	12h		Sup.	Inf.			
	20	123 44.9			177 13.6 14.6	1	37.5 9.6 54.9										
	21	138 44.7			191 47.2 14.6	1	47.1 9.7 54.9										
	22	153 44.6			206 20.8 14.6	1	56.8 9.6 54.9		d	m s	m s	h m	h m	h m	d %		
	23	168 44.5			220 54.4 14.6 S	2	06.4 9.6 54.9		15	15 31	15 26	11 45	06 24	18 46	23 42		
								16	15 21	15 15	11 45	07 07	19 28	24 33			

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.2	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
18 00	56 57.7	177 31.5 S20 17.0	128 24.4 S23 48.0	272 26.1 N14 50.5	182 55.8 S17 21.8	Acamar 315 17.2 S40 14.8
01	72 00.2	192 30.7 17.7	143 24.8 47.8	287 28.4 50.4	197 57.9 21.8	Achernar 335 25.7 S57 09.9
02	87 02.7	207 29.9 18.4	158 25.2 47.5	302 30.7 50.4	213 00.1 21.9	Acrux 173 08.5 S63 10.6
03	102 05.1	222 29.1 . . 19.2	173 25.6 . . 47.3	317 33.0 . . 50.3	228 02.2 . . 22.0	Adhara 255 11.5 S28 59.6
04	117 07.6	237 28.3 19.9	188 26.0 47.0	332 35.3 50.3	243 04.4 22.0	Aldebarán 290 47.9 N16 32.2
05	132 10.1	252 27.5 20.6	203 26.4 46.8	347 37.6 50.3	258 06.6 22.1	
06	147 12.5	267 26.7 S20 21.4	218 26.8 S23 46.5	2 39.9 N14 50.2	273 08.7 S17 22.2	Alioth 166 20.4 N55 52.6
07	162 15.0	282 25.9 22.1	233 27.2 46.3	17 42.2 50.2	288 10.9 22.2	Alkaid 152 58.7 N49 14.3
08	177 17.4	297 25.2 22.8	248 27.6 46.0	32 44.5 50.1	303 13.0 22.3	Al Na'ir 27 42.6 S46 53.4
09	192 19.9	312 24.4 . . 23.5	263 28.0 . . 45.8	47 46.8 . . 50.1	318 15.2 . . 22.4	Alnilam 275 45.1 S 1 11.7
10	207 22.4	327 23.6 24.3	278 28.4 45.5	62 49.1 50.0	333 17.4 22.5	Alphard 217 55.1 S 8 43.4
11	222 24.8	342 22.8 25.0	293 28.8 45.2	77 51.4 50.0	348 19.5 22.5	
12	237 27.3	357 22.0 S20 25.7	308 29.2 S23 45.0	92 53.7 N14 50.0	3 21.7 S17 22.6	Alphecca 126 10.6 N26 40.1
13	252 29.8	12 21.2 26.4	323 29.6 44.7	107 56.0 49.9	18 23.9 22.7	Alpheratz 357 42.3 N29 10.6
14	267 32.2	27 20.4 27.1	338 30.0 44.5	122 58.4 49.9	33 26.0 22.7	Altair 62 07.5 N 8 54.8
15	282 34.7	42 19.6 . . 27.8	353 30.4 . . 44.2	138 00.7 . . 49.8	48 28.2 . . 22.8	Ankaa 353 14.6 S42 13.6
16	297 37.2	57 18.8 28.6	8 30.8 43.9	153 03.0 49.8	63 30.3 22.9	Antares 112 25.4 S26 27.7
17	312 39.6	72 18.0 29.3	23 31.2 43.7	168 05.3 49.7	78 32.5 23.0	
18	327 42.1	87 17.2 S20 30.0	38 31.6 S23 43.4	183 07.6 N14 49.7	93 34.7 S17 23.0	Arcturus 145 55.2 N19 06.4
19	342 44.5	102 16.4 30.7	53 32.0 43.2	198 09.9 49.7	108 36.8 23.1	Atria 107 26.9 S69 03.1
20	357 47.0	117 15.6 31.4	68 32.4 42.9	213 12.2 49.6	123 39.0 23.2	Avior 234 17.3 S59 33.3
21	12 49.5	132 14.8 . . 32.1	83 32.8 . . 42.6	228 14.5 . . 49.6	138 41.1 . . 23.2	Bellatrix 278 30.7 N 6 21.6
22	27 51.9	147 14.0 32.8	98 33.2 42.4	243 16.8 49.5	153 43.3 23.3	Betelgeuse 271 00.0 N 7 24.4
23	42 54.4	162 13.2 33.6	113 33.6 42.1	258 19.1 49.5	168 45.5 23.4	
19 00	57 56.9	177 12.4 S20 34.3	128 34.0 S23 41.9	273 21.4 N14 49.4	183 47.6 S17 23.5	Canopus 263 55.3 S52 42.2
01	72 59.3	192 11.6 35.0	143 34.4 41.6	288 23.7 49.4	198 49.8 23.5	Capella 280 32.6 N46 00.5
02	88 01.8	207 10.8 35.7	158 34.8 41.3	303 26.0 49.4	213 51.9 23.6	Deneb 49 30.9 N45 20.5
03	103 04.3	222 10.0 . . 36.4	173 35.2 . . 41.1	318 28.3 . . 49.3	228 54.1 . . 23.7	Denébola 182 32.9 N14 29.3
04	118 06.7	237 09.2 37.1	188 35.6 40.8	333 30.6 49.3	243 56.3 23.7	Diphda 348 54.7 S17 54.3
05	133 09.2	252 08.4 37.8	203 36.0 40.5	348 33.0 49.2	258 58.4 23.8	
06	148 11.7	267 07.5 S20 38.5	218 36.4 S23 40.3	3 35.3 N14 49.2	274 00.6 S17 23.9	Dubhe 193 50.9 N61 39.9
07	163 14.1	282 06.7 39.2	233 36.8 40.0	18 37.6 49.2	289 02.7 24.0	Elnath 278 11.1 N28 37.0
08	178 16.6	297 05.9 39.9	248 37.2 39.7	33 39.9 49.1	304 04.9 24.0	Eltanin 90 46.2 N51 29.6
09	193 19.0	312 05.1 . . 40.6	263 37.6 . . 39.5	48 42.2 . . 49.1	319 07.1 . . 24.1	Enif 33 46.2 N 9 56.9
10	208 21.5	327 04.3 41.3	278 38.0 39.2	63 44.5 49.0	334 09.2 24.2	Fomalhaut 15 22.9 S29 32.6
11	223 24.0	342 03.5 42.0	293 38.4 38.9	78 46.8 49.0	349 11.4 24.2	
12	238 26.4	357 02.7 S20 42.7	308 38.8 S23 38.7	93 49.1 N14 49.0	4 13.6 S17 24.3	Gacrux 172 00.1 S57 11.5
13	253 28.9	12 01.9 43.4	323 39.2 38.4	108 51.4 48.9	19 15.7 24.4	Gienah 175 51.5 S17 37.3
14	268 31.4	27 01.1 44.1	338 39.6 38.1	123 53.7 48.9	34 17.9 24.4	Hadar 148 47.0 S60 26.4
15	283 33.8	42 00.3 . . 44.8	353 40.0 . . 37.9	138 56.1 . . 48.8	49 20.0 . . 24.5	Hamal 327 59.3 N23 32.0
16	298 36.3	56 59.5 45.5	8 40.4 37.6	153 58.4 48.8	64 22.2 24.6	Kaus Aust. 83 42.9 S34 22.5
17	313 38.8	71 58.7 46.1	23 40.8 37.3	169 00.7 48.7	79 24.4 24.7	
18	328 41.2	86 57.8 S20 46.8	38 41.2 S23 37.0	184 03.0 N14 48.7	94 26.5 S17 24.7	Kochab 137 21.4 N74 05.7
19	343 43.7	101 57.0 47.5	53 41.6 36.8	199 05.3 48.7	109 28.7 24.8	Markab 13 37.3 N15 17.3
20	358 46.2	116 56.2 48.2	68 42.0 36.5	214 07.6 48.6	124 30.8 24.9	Menkar 314 13.7 N 4 08.8
21	13 48.6	131 55.4 . . 48.9	83 42.4 . . 36.2	229 09.9 . . 48.6	139 33.0 . . 24.9	Menkent 148 06.8 S36 26.3
22	28 51.1	146 54.6 49.6	98 42.8 36.0	244 12.3 48.5	154 35.2 25.0	Miaplacidus 221 39.1 S69 46.5
23	43 53.5	161 53.8 50.3	113 43.2 35.7	259 14.6 48.5	169 37.3 25.1	
20 00	58 56.0	176 53.0 S20 51.0	128 43.6 S23 35.4	274 16.9 N14 48.5	184 39.5 S17 25.2	Mirfak 308 38.4 N49 54.8
01	73 58.5	191 52.1 51.6	143 44.0 35.1	289 19.2 48.4	199 41.6 25.2	Nunki 75 57.4 S26 16.5
02	89 00.9	206 51.3 52.3	158 44.4 34.9	304 21.5 48.4	214 43.8 25.3	Peacock 53 18.1 S56 41.2
03	104 03.4	221 50.5 . . 53.0	173 44.8 . . 34.6	319 23.8 . . 48.4	229 46.0 . . 25.4	Póllux 243 26.4 N27 59.1
04	119 05.9	236 49.7 53.7	188 45.2 34.3	334 26.1 48.3	244 48.1 25.4	Procyon 244 58.5 N 5 11.0
05	134 08.3	251 48.9 54.4	203 45.6 34.0	349 28.5 48.3	259 50.3 25.5	
06	149 10.8	266 48.1 S20 55.0	218 46.0 S23 33.7	4 30.8 N14 48.2	274 52.4 S17 25.6	Rasalhague 96 05.9 N12 33.3
07	164 13.3	281 47.2 55.7	233 46.4 33.5	19 33.1 48.2	289 54.6 25.6	Régulus 207 42.5 N11 53.5
08	179 15.7	296 46.4 56.4	248 46.9 33.2	34 35.4 48.2	304 56.8 25.7	Rigel 281 10.8 S 8 11.2
09	194 18.2	311 45.6 . . 57.1	263 47.3 . . 32.9	49 37.7 . . 48.1	319 58.9 . . 25.8	Rigel Kent. 139 51.0 S60 53.5
10	209 20.6	326 44.8 57.7	278 47.7 32.6	64 40.0 48.1	335 01.1 25.9	Sabik 102 11.8 S15 44.3
11	224 23.1	341 44.0 58.4	293 48.1 32.4	79 42.4 48.0	350 03.3 25.9	
12	239 25.6	356 43.1 S20 59.1	308 48.5 S23 32.1	94 44.7 N14 48.0	5 05.4 S17 26.0	Schedar 349 38.9 N56 37.4
13	254 28.0	11 42.3 20 59.7	323 48.9 31.8	109 47.0 48.0	20 07.6 26.1	Shaula 96 21.0 S37 06.7
14	269 30.5	26 41.5 21 00.4	338 49.3 31.5	124 49.3 47.9	35 09.7 26.1	Sirius 258 32.6 S16 44.3
15	284 33.0	41 40.7 . . 01.1	353 49.7 . . 31.2	139 51.6 . . 47.9	50 11.9 . . 26.2	Spica 158 30.5 S11 14.2
16	299 35.4	56 39.9 01.8	8 50.1 31.0	154 54.0 47.9	65 14.1 26.3	Suhail 222 51.6 S43 29.4
17	314 37.9	71 39.0 02.4	23 50.5 30.7	169 56.3 47.8	80 16.2 26.3	
18	329 40.4	86 38.2 S21 03.1	38 50.9 S23 30.4	184 58.6 N14 47.8	95 18.4 S17 26.4	Vega 80 38.6 N38 48.2
19	344 42.8	101 37.4 03.7	53 51.3 30.1	200 00.9 47.7	110 20.5 26.5	Zuben'ubi 137 04.7 S16 06.0
20	359 45.3	116 36.6 04.4	68 51.7 29.8	215 03.2 47.7	125 22.7 26.6	
21	14 47.8	131 35.7 . . 05.1	83 52.1 . . 29.5	230 05.6 . . 47.7	140 24.9 . . 26.6	AHS Paso Mer.
22	29 50.2	146 34.9 05.7	98 52.5 29.3	245 07.9 47.6	155 27.0 26.7	Venus 119 15.5 12 12
23	44 52.7	161 34.1 06.4	113 52.9 29.0	260 10.2 47.6	170 29.2 26.8	Marte 70 37.1 15 25
						Júpiter 215 24.5 5 46
						Saturno 125 50.8 11 43
Paso Mer. 20 04.9	v -0.8 d 0.7		v 0.4 d 0.3	v 2.3 d 0.0	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	18	19	20	21		
MARTES	d h	° /	° /		° /	° /		°	h m	h m	h m	h m	h m	h m	h m	h m	
	1800	183 44.3	S19 08.8	235 28.0	14.5 S	2 16.0	9.7	54.9	N 72	07 13	08 53	08 53	02 59	04 37	06 21	08 13	
	01	198 44.2	09.4	250 01.5	14.5	2 25.7	9.6	55.0	N 70	07 01	08 27	10 17	02 55	04 27	06 03	07 43	
	02	213 44.1	10.0	264 35.0	14.5	2 35.3	9.7	55.0	66	06 43	07 51	09 02	02 49	04 12	05 37	07 03	
	03	228 44.0	10.6	279 08.5	14.4	2 45.0	9.6	55.0	64	06 36	07 38	08 40	02 46	04 06	05 27	06 49	
	04	243 43.8	11.2	293 41.9	14.4	2 54.6	9.6	55.0	62	06 30	07 27	08 22	02 44	04 01	05 19	06 38	
	05	258 43.7	11.8	308 15.3	14.4	3 04.2	9.6	55.0	60	06 25	07 17	08 07	02 42	03 56	05 12	06 28	
	06	273 43.6	S19 12.4	322 48.7	14.3 S	3 13.8	9.6	55.1	N 58	06 20	07 09	07 55	02 41	03 52	05 05	06 19	
	07	288 43.4	13.0	337 22.0	14.3	3 23.4	9.6	55.1	56	06 15	07 01	07 44	02 40	03 49	05 00	06 12	
	08	303 43.3	13.6	351 55.3	14.3	3 33.0	9.7	55.1	54	06 11	06 55	07 35	02 38	03 46	04 55	06 05	
	09	318 43.2	14.2	6 28.6	14.2	3 42.7	9.5	55.1	52	06 07	06 48	07 26	02 37	03 43	04 50	05 59	
	10	333 43.0	14.8	21 01.8	14.2	3 52.2	9.6	55.1	50	06 03	06 43	07 19	02 36	03 41	04 46	05 53	
	11	348 42.9	15.4	35 35.0	14.2	4 01.8	9.6	55.2	45	05 55	06 31	07 03	02 34	03 35	04 38	05 42	
	12	3 42.8	S19 15.9	50 08.2	14.1 S	4 11.4	9.6	55.2	N 40	05 47	06 20	06 49	02 32	03 31	04 31	05 32	
	13	18 42.6	16.5	64 41.3	14.1	4 21.0	9.5	55.2	35	05 40	06 11	06 38	02 31	03 27	04 24	05 24	
	14	33 42.5	17.1	79 14.4	14.0	4 30.5	9.6	55.2	30	05 34	06 03	06 28	02 29	03 23	04 19	05 16	
	15	48 42.4	17.7	93 47.4	14.0	4 40.1	9.5	55.3	20	05 21	05 48	06 11	02 27	03 17	04 10	05 04	
	16	63 42.2	18.3	108 20.4	14.0	4 49.6	9.5	55.3	N 10	05 08	05 34	05 56	02 25	03 12	04 01	04 53	
	17	78 42.1	18.9	122 53.4	13.9	4 59.1	9.5	55.3	0	04 54	05 20	05 42	02 23	03 07	03 54	04 43	
	18	93 42.0	S19 19.5	137 26.3	13.9 S	5 08.6	9.5	55.3	S 10	04 39	05 05	05 27	02 21	03 02	03 46	04 33	
	19	108 41.8	20.1	151 59.2	13.8	5 18.1	9.5	55.3	20	04 20	04 48	05 12	02 19	02 57	03 38	04 22	
	20	123 41.7	20.7	166 32.0	13.8	5 27.6	9.5	55.4	30	03 56	04 28	04 54	02 17	02 52	03 29	04 10	
	21	138 41.6	21.3	181 04.8	13.8	5 37.1	9.4	55.4	35	03 41	04 15	04 44	02 15	02 48	03 24	04 03	
	22	153 41.4	21.8	195 37.6	13.7	5 46.5	9.5	55.4	40	03 22	04 01	04 32	02 14	02 45	03 18	03 55	
	23	168 41.3	22.4	210 10.3	13.7	5 56.0	9.4	55.4	45	02 59	03 43	04 17	02 12	02 40	03 11	03 46	
MIÉRCOLES	1900	183 41.2	S19 23.0	224 43.0	13.6 S	6 05.4	9.4	55.5	S 50	02 26	03 20	04 00	02 10	02 35	03 03	03 35	
	01	198 41.0	23.6	239 15.6	13.6	6 14.8	9.3	55.5	52	02 09	03 09	03 52	02 09	02 33	02 59	03 29	
	02	213 40.9	24.2	253 48.2	13.5	6 24.1	9.4	55.5	54	01 48	02 56	03 42	02 08	02 30	02 55	03 24	
	03	228 40.7	24.8	268 20.7	13.5	6 33.5	9.3	55.5	56	01 20	02 41	03 32	02 07	02 28	02 51	03 18	
	04	243 40.6	25.4	282 53.2	13.4	6 42.8	9.3	55.6	58	00 32	02 23	03 20	02 06	02 25	02 46	03 11	
	05	258 40.5	25.9	297 25.6	13.4	6 52.1	9.3	55.6	S 60	////	02 00	03 06	02 05	02 21	02 40	03 03	
	06	273 40.3	S19 26.5	311 58.0	13.3 S	7 01.4	9.3	55.6	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
	07	288 40.2	27.1	326 30.3	13.3	7 10.7	9.3	55.6			Civil	Náut.	18	19	20	21	
	08	303 40.0	27.7	341 02.6	13.3	7 20.0	9.2	55.6		h m	h m	h m	h m	h m	h m	h m	
	09	318 39.9	28.3	355 34.9	13.1	7 29.2	9.2	55.7	N 72	14 37	16 16	16 16	13 46	13 39	13 33	13 24	
	10	333 39.8	28.8	10 07.0	13.2	7 38.4	9.1	55.7	N 70	13 13	15 03	16 28	13 52	13 52	13 52	13 55	
	11	348 39.6	29.4	24 39.2	13.1	7 47.5	9.2	55.7	68	13 58	15 23	16 38	13 57	14 02	14 08	14 18	
	12	3 39.5	S19 30.0	39 11.3	13.0 S	7 56.7	9.1	55.7	66	14 28	15 39	16 46	14 01	14 10	14 21	14 36	
	13	18 39.3	30.6	53 43.3	13.0	8 05.8	9.1	55.8	64	14 50	15 52	16 53	14 05	14 17	14 32	14 51	
	14	33 39.2	31.2	68 15.3	12.9	8 14.9	9.1	55.8	62	15 08	16 03	17 00	14 08	14 23	14 41	15 03	
	15	48 39.1	31.7	82 47.2	12.9	8 24.0	9.0	55.8	60	15 23	16 13	17 05	14 11	14 28	14 49	15 14	
	16	63 38.9	32.3	97 19.1	12.8	8 33.0	9.0	55.9	N 58	15 35	16 21	17 10	14 13	14 33	14 55	15 23	
	17	78 38.8	32.9	111 50.9	12.7	8 42.0	9.0	55.9	56	15 46	16 29	17 15	14 16	14 37	15 02	15 31	
	18	93 38.6	S19 33.5	126 22.6	12.7 S	8 51.0	8.9	55.9	54	15 55	16 36	17 19	14 18	14 41	15 07	15 38	
	19	108 38.5	34.0	140 54.3	12.7	8 59.9	8.9	55.9	52	16 04	16 42	17 23	14 20	14 44	15 12	15 45	
	20	123 38.3	34.6	155 26.0	12.6	9 08.8	8.9	56.0	50	16 11	16 47	17 27	14 21	14 47	15 17	15 51	
	21	138 38.2	35.2	169 57.6	12.5	9 17.7	8.8	56.0	45	16 28	17 00	17 36	14 25	14 54	15 26	16 03	
	22	153 38.1	35.8	184 29.1	12.5	9 26.5	8.8	56.0	N 40	16 41	17 10	17 43	14 28	15 00	15 35	16 14	
	23	168 37.9	36.3	199 00.6	12.4	9 35.3	8.7	56.0	35	16 52	17 19	17 50	14 31	15 05	15 42	16 23	
	JUEVES	2000	183 37.8	S19 36.9	213 32.0	12.4 S	9 44.0	8.8	56.1	30	17 02	17 28	17 57	14 33	15 09	15 48	16 30
01		198 37.6	37.5	228 03.4	12.3	9 52.8	8.6	56.1	20	17 19	17 43	18 10	14 37	15 17	15 59	16 44	
02		213 37.5	38.0	242 34.7	12.2	10 01.4	8.7	56.1	N 10	17 35	17 57	18 23	14 41	15 23	16 08	16 56	
03		228 37.3	38.6	257 05.9	12.2	10 10.1	8.6	56.1	0	17 49	18 11	18 36	14 44	15 29	16 17	17 07	
04		243 37.2	39.2	271 37.1	12.1	10 18.7	8.5	56.2	S 10	18 03	18 26	18 52	14 47	15 36	16 26	17 19	
05		258 37.0	39.8	286 08.2	12.1	10 27.2	8.6	56.2	20	18 19	18 43	19 11	14 51	15 42	16 35	17 31	
06		273 36.9	S19 40.3	300 39.3	12.0 S	10 35.8	8.4	56.2	30	18 37	19 03	19 35	14 55	15 50	16 46	17 44	
07		288 36.7	40.9	315 10.3	11.9	10 44.2	8.5	56.2	35	18 48	19 16	19 50	14 57	15 54	16 53	17 52	
08		303 36.6	41.5	329 41.2	11.9	10 52.7	8.4	56.3	40	19 00	19 31	20 09	15 00	15 59	17 00	18 01	
09		318 36.4	42.0	344 12.1	11.8	11 01.1	8.3	56.3	45	19 14	19 49	20 33	15 03	16 05	17 08	18 12	
10		333 36.3	42.6	358 42.9	11.7	11 09.4	8.3	56.3	S 50	19 32	20 12	21 06	15 07	16 12	17 18	18 25	
11		348 36.1	43.2	13 13.6	11.7	11 17.7	8.2	56.4	52	19 40	20 23	21 23	15 09	16 15	17 23	18 31	
12		3 36.0	S19 43.7	27 44.3	11.7 S	11 25.9	8.2	56.4	54	19 50	20 36	21 45	15 10	16 19	17 28	18 38	
13		18 35.8	44.3	42 15.0	11.5	11 34.1	8.2	56.4	56	20 00	20 52	22 15	15 12	16 22	17 34	18 45	
14		33 35.7	44.8	56 45.5	11.5	11 42.3	8.1	56.4	58	20 12	21 10	23 08	15 15	16 27	17 40	18 54	
15		48 35.5	45.4	71 16.0	11.4	11 50.4	8.0	56.5	S 60	20 27	21 33	////	15 17	16 32	17 47	19 03	
16		63 35.4	46.0	85 46.4	11.4	12 00.0	8.0	56.5	SOL		LUNA						
17		78 35.2	46.5	100 16.8	11.3	12 06.4	8.0	56.5	Día	Ec. Tiempo	Paso Mer.	Paso Mer.	Paso Mer.	Edad	Fase		
18		93 35.1	S19 47.1	114 47.1	11.3 S	12 14.4	7.9	56.5		00h	12h						
19		108 34.9	47.6	129 17.4	11.1	12 22.3	7.8	56.6	d	m s	m s	h m	h m	h m	d	%	
20		123 34.8	48.2	143 47.5	11.1	12 30.1	7.8	56.6	18	14 58	14 51	11 45	08 33	20 56	26 16		
21		138 34.6	48.8	158 17.6	11.1	12 37.9	7.7	56.6	1								

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.2	SATURNO +0.5	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
21 00	59 55.1	176 33.3 S21 07.0	128 53.3 S23 28.7	275 12.5 N14 47.6	185 31.3 S17 26.8	Acamar 315 17.2 S40 14.8
01	74 57.6	191 32.4 07.7	143 53.7 28.4	290 14.9 47.5	200 33.5 26.9	Achernar 335 25.7 S57 09.9
02	90 00.1	206 31.6 08.4	158 54.1 28.1	305 17.2 47.5	215 35.7 27.0	Acrux 173 08.5 S63 10.6
03	105 02.5	221 30.8 . . 09.0	173 54.5 . . 27.8	320 19.5 . . 47.4	230 37.8 . . 27.1	Adhara 255 11.5 S28 59.6
04	120 05.0	236 29.9 09.7	188 54.9 27.5	335 21.8 47.4	245 40.0 27.1	Aldebarán 290 47.9 N16 32.2
05	135 07.5	251 29.1 10.3	203 55.3 27.3	350 24.1 47.4	260 42.1 27.2	
06	150 09.9	266 28.3 S21 11.0	218 55.7 S23 27.0	5 26.5 N14 47.3	275 44.3 S17 27.3	Alioth 166 20.4 N55 52.6
07	165 12.4	281 27.5 11.6	233 56.1 26.7	20 28.8 47.3	290 46.5 27.3	Alkaid 152 58.6 N49 14.3
08	180 14.9	296 26.6 12.3	248 56.5 26.4	35 31.1 47.3	305 48.6 27.4	Al Na'ir 27 42.6 S46 53.4
09	195 17.3	311 25.8 . . 12.9	263 56.9 . . 26.1	50 33.4 . . 47.2	320 50.8 . . 27.5	Alnilam 275 45.1 S 1 11.7
10	210 19.8	326 25.0 13.6	278 57.3 25.8	65 35.8 47.2	335 52.9 27.5	Alphard 217 55.1 S 8 43.4
11	225 22.3	341 24.1 14.2	293 57.7 25.5	80 38.1 47.1	350 55.1 27.6	
12	240 24.7	356 23.3 S21 14.9	308 58.2 S23 25.2	95 40.4 N14 47.1	5 57.3 S17 27.7	Alphecca 126 10.6 N26 40.1
13	255 27.2	11 22.5 15.5	323 58.6 24.9	110 42.8 47.1	20 59.4 27.8	Alpheratz 357 42.3 N29 10.6
14	270 29.6	26 21.6 16.2	338 59.0 24.7	125 45.1 47.0	36 01.6 27.8	Altair 62 07.5 N 8 54.8
15	285 32.1	41 20.8 . . 16.8	353 59.4 . . 24.4	140 47.4 . . 47.0	51 03.7 . . 27.9	Ankaa 353 14.6 S42 13.6
16	300 34.6	56 20.0 17.4	8 59.8 24.1	155 49.7 47.0	66 05.9 28.0	Antares 112 25.4 S26 27.7
17	315 37.0	71 19.1 18.1	24 00.2 23.8	170 52.1 46.9	81 08.1 28.0	
18	330 39.5	86 18.3 S21 18.7	39 00.6 S23 23.5	185 54.4 N14 46.9	96 10.2 S17 28.1	Arcturus 145 55.2 N19 06.4
19	345 42.0	101 17.5 19.4	54 01.0 23.2	200 56.7 46.9	111 12.4 28.2	Atria 107 26.9 S69 03.1
20	0 44.4	116 16.6 20.0	69 01.4 22.9	215 59.0 46.8	126 14.6 28.2	Avior 234 17.2 S59 33.3
21	15 46.9	131 15.8 . . 20.6	84 01.8 . . 22.6	231 01.4 . . 46.8	141 16.7 . . 28.3	Bellatrix 278 30.7 N 6 21.6
22	30 49.4	146 14.9 21.3	99 02.2 22.3	246 03.7 46.8	156 18.9 28.4	Betelgeuse 271 00.0 N 7 24.4
23	45 51.8	161 14.1 21.9	114 02.6 22.0	261 06.0 46.7	171 21.0 28.5	
22 00	60 54.3	176 13.3 S21 22.5	129 03.0 S23 21.7	276 08.4 N14 46.7	186 23.2 S17 28.5	Canopus 263 55.2 S52 42.2
01	75 56.7	191 12.4 23.2	144 03.4 21.4	291 10.7 46.7	201 25.4 28.6	Capella 280 32.5 N46 00.5
02	90 59.2	206 11.6 23.8	159 03.8 21.1	306 13.0 46.6	216 27.5 28.7	Deneb 49 30.9 N45 20.4
03	106 01.7	221 10.8 . . 24.4	174 04.2 . . 20.8	321 15.4 . . 46.6	231 29.7 . . 28.7	Denébola 182 32.9 N14 29.3
04	121 04.1	236 09.9 25.1	189 04.6 20.5	336 17.7 46.6	246 31.8 28.8	Diphda 348 54.7 S17 54.3
05	136 06.6	251 09.1 25.7	204 05.0 20.2	351 20.0 46.5	261 34.0 28.9	
06	151 09.1	266 08.2 S21 26.3	219 05.4 S23 19.9	6 22.3 N14 46.5	276 36.2 S17 28.9	Dubhe 193 50.9 N61 39.9
07	166 11.5	281 07.4 26.9	234 05.8 19.6	21 24.7 46.5	291 38.3 29.0	Elnath 278 11.0 N28 37.0
08	181 14.0	296 06.5 27.6	249 06.3 19.3	36 27.0 46.4	306 40.5 29.1	Eltanin 90 46.2 N51 29.6
09	196 16.5	311 05.7 . . 28.2	264 06.7 . . 19.0	51 29.3 . . 46.4	321 42.6 . . 29.1	Enif 33 46.2 N 9 56.9
10	211 18.9	326 04.9 28.8	279 07.1 18.7	66 31.7 46.4	336 44.8 29.2	Fomalhaut 15 22.9 S29 32.6
11	226 21.4	341 04.0 29.4	294 07.5 18.4	81 34.0 46.3	351 47.0 29.3	
12	241 23.9	356 03.2 S21 30.1	309 07.9 S23 18.1	96 36.3 N14 46.3	6 49.1 S17 29.4	Gacrux 172 00.1 S57 11.5
13	256 26.3	11 02.3 30.7	324 08.3 17.8	111 38.7 46.3	21 51.3 29.4	Gienah 175 51.5 S17 37.3
14	271 28.8	26 01.5 31.3	339 08.7 17.5	126 41.0 46.2	36 53.4 29.5	Hadar 148 47.0 S60 26.4
15	286 31.2	41 00.6 . . 31.9	354 09.1 . . 17.2	141 43.3 . . 46.2	51 55.6 . . 29.6	Hamal 327 59.3 N23 32.0
16	301 33.7	55 59.8 32.5	9 09.5 16.9	156 45.7 46.2	66 57.8 29.6	Kaus Aust. 83 42.9 S34 22.5
17	316 36.2	70 58.9 33.1	24 09.9 16.6	171 48.0 46.1	81 59.9 29.7	
18	331 38.6	85 58.1 S21 33.8	39 10.3 S23 16.3	186 50.3 N14 46.1	97 02.1 S17 29.8	Kochab 137 21.4 N74 05.7
19	346 41.1	100 57.3 34.4	54 10.7 16.0	201 52.7 46.1	112 04.2 29.8	Markab 13 37.3 N15 17.3
20	1 43.6	115 56.4 35.0	69 11.1 15.7	216 55.0 46.0	127 06.4 29.9	Menkar 314 13.7 N 4 08.8
21	16 46.0	130 55.6 . . 35.6	84 11.5 . . 15.4	231 57.4 . . 46.0	142 08.6 . . 30.0	Menkent 148 06.7 S36 26.3
22	31 48.5	145 54.7 36.2	99 11.9 15.1	246 59.7 46.0	157 10.7 30.1	Miaplacidus 221 39.1 S69 46.5
23	46 51.0	160 53.9 36.8	114 12.3 14.8	262 02.0 45.9	172 12.9 30.1	
23 00	61 53.4	175 53.0 S21 37.4	129 12.7 S23 14.5	277 04.4 N14 45.9	187 15.1 S17 30.2	Mirfak 308 38.4 N49 54.8
01	76 55.9	190 52.2 38.0	144 13.2 14.2	292 06.7 45.9	202 17.2 30.3	Nunki 75 57.4 S26 16.5
02	91 58.4	205 51.3 38.6	159 13.6 13.9	307 09.0 45.8	217 19.4 30.3	Peacock 53 18.1 S56 41.2
03	107 00.8	220 50.5 . . 39.2	174 14.0 . . 13.6	322 11.4 . . 45.8	232 21.5 . . 30.4	Póllux 243 26.4 N27 59.1
04	122 03.3	235 49.6 39.8	189 14.4 13.3	337 13.7 45.8	247 23.7 30.5	Procyon 244 58.5 N 5 11.0
05	137 05.7	250 48.8 40.4	204 14.8 12.9	352 16.1 45.7	262 25.9 30.5	
06	152 08.2	265 47.9 S21 41.0	219 15.2 S23 12.6	7 18.4 N14 45.7	277 28.0 S17 30.6	Rasalhague 96 05.9 N12 33.3
07	167 10.7	280 47.1 41.6	234 15.6 12.3	22 20.7 45.7	292 30.2 30.7	Régulus 207 42.5 N11 53.5
08	182 13.1	295 46.2 42.2	249 16.0 12.0	37 23.1 45.6	307 32.3 30.7	Rigel 281 10.8 S 8 11.2
09	197 15.6	310 45.3 . . 42.8	264 16.4 . . 11.7	52 25.4 . . 45.6	322 34.5 . . 30.8	Rigel Kent. 139 50.9 S60 53.5
10	212 18.1	325 44.5 43.4	279 16.8 11.4	67 27.8 45.6	337 36.7 30.9	Sabik 102 11.8 S15 44.3
11	227 20.5	340 43.6 44.0	294 17.2 11.1	82 30.1 45.5	352 38.8 31.0	
12	242 23.0	355 42.8 S21 44.6	309 17.6 S23 10.8	97 32.4 N14 45.5	7 41.0 S17 31.0	Schedar 349 38.9 N56 37.4
13	257 25.5	10 41.9 45.2	324 18.0 10.5	112 34.8 45.5	22 43.1 31.1	Shaula 96 21.0 S37 06.7
14	272 27.9	25 41.1 45.8	339 18.4 10.2	127 37.1 45.5	37 45.3 31.2	Sirius 258 32.6 S16 44.3
15	287 30.4	40 40.2 . . 46.4	354 18.8 . . 09.8	142 39.5 . . 45.4	52 47.5 . . 31.2	Spica 158 30.5 S11 14.2
16	302 32.9	55 39.4 47.0	9 19.3 09.5	157 41.8 45.4	67 49.6 31.3	Suhail 222 51.6 S43 29.4
17	317 35.3	70 38.5 47.6	24 19.7 09.2	172 44.1 45.4	82 51.8 31.4	
18	332 37.8	85 37.6 S21 48.2	39 20.1 S23 08.9	187 46.5 N14 45.3	97 53.9 S17 31.4	Vega 80 38.6 N38 48.2
19	347 40.2	100 36.8 48.8	54 20.5 08.6	202 48.8 45.3	112 56.1 31.5	Zuben'ubi 137 04.7 S16 06.0
20	2 42.7	115 35.9 49.3	69 20.9 08.3	217 51.2 45.3	127 58.3 31.6	
21	17 45.2	130 35.1 . . 49.9	84 21.3 . . 07.9	232 53.5 . . 45.2	143 00.4 . . 31.6	AHS Paso Mer.
22	32 47.6	145 34.2 50.5	99 21.7 07.6	247 55.9 45.2	158 02.6 31.7	Venus 115 19.0 12 16
23	47 50.1	160 33.3 51.1	114 22.1 07.3	262 58.2 45.2	173 04.8 31.8	Marte 68 08.7 15 23
						Júpiter 215 14.1 5 35
						Saturno 125 28.9 11 33
Paso Mer. 19 53.1	v -0.8 d 0.6		v 0.4 d 0.3	v 2.3 d 0.0	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		21	22	23	24	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
21	00	183 34.2	S19 50.4	201 47.6	10.8	S13 00.9	7.5 56.7	N 72	07 23	09 07	10 44	08 13	10 17	11 01	12 11	
	01	198 34.0	51.0	216 17.4	10.8	13 08.4	7.5 56.7	N 70	07 10	08 38	10 44	07 43	09 25	11 01	12 11	
	02	213 33.8	51.5	230 47.2	10.7	13 15.9	7.4 56.8	66	06 51	07 59	09 13	07 03	08 29	09 48	10 52	
	03	228 33.7	52.1	245 16.9	10.7	13 23.3	7.4 56.8	64	06 43	07 45	08 49	06 49	08 11	09 26	10 29	
	04	243 33.5	52.7	259 46.6	10.6	13 30.7	7.3 56.8	62	06 36	07 34	08 30	06 38	07 56	09 08	10 10	
	05	258 33.4	53.2	274 16.2	10.5	13 38.0	7.2 56.8	60	06 30	07 23	08 15	06 28	07 43	08 53	09 55	
	06	273 33.2	S19 53.8	288 45.7	10.4	S13 45.2	7.2 56.9	N 58	06 25	07 14	08 02	06 19	07 32	08 41	09 42	
	07	288 33.1	54.3	303 15.1	10.4	13 52.4	7.1 56.9	56	06 20	07 07	07 50	06 12	07 23	08 30	09 31	
	08	303 32.9	54.9	317 44.5	10.3	13 59.5	7.0 56.9	54	06 15	06 59	07 40	06 05	07 14	08 21	09 21	
	09	318 32.8	55.4	332 13.8	10.3	14 06.5	7.0 56.9	52	06 11	06 53	07 31	05 59	07 07	08 12	09 12	
V I E R N E S	10	333 32.6	56.0	346 43.1	10.1	14 13.5	6.8 57.0	50	06 07	06 47	07 24	05 53	07 00	08 05	09 04	
	11	348 32.4	56.5	1 12.2	10.2	14 20.3	6.9 57.0	45	05 58	06 34	07 07	05 42	06 46	07 48	08 48	
	12	3 32.3	S19 57.1	15 41.4	10.0	S14 27.2	6.7 57.0	N 40	05 50	06 23	06 53	05 32	06 34	07 35	08 34	
	13	18 32.1	57.6	30 10.4	10.0	14 33.9	6.7 57.1	35	05 43	06 14	06 41	05 24	06 24	07 24	08 22	
	14	33 32.0	58.2	44 39.4	9.9	14 40.6	6.6 57.1	30	05 36	06 05	06 31	05 16	06 15	07 14	08 12	
	15	48 31.8	58.7	59 08.3	9.9	14 47.2	6.5 57.1	20	05 23	05 49	06 13	05 04	06 00	06 57	07 55	
	16	63 31.6	59.3	73 37.2	9.8	14 53.7	6.5 57.1	N 10	05 09	05 35	05 57	04 53	05 47	06 43	07 40	
	17	78 31.5	19 59.8	88 06.0	9.7	15 00.2	6.4 57.2	0	04 55	05 20	05 42	04 43	05 35	06 29	07 26	
	18	93 31.3	S20 00.3	102 34.7	9.6	S15 06.6	6.3 57.2	S 10	04 39	05 05	05 28	04 33	05 23	06 16	07 11	
	19	108 31.2	00.9	117 03.3	9.6	15 12.9	6.2 57.2	20	04 19	04 48	05 12	04 22	05 10	06 01	06 56	
S Á B A D O	20	123 31.0	01.4	131 31.9	9.5	15 19.1	6.1 57.2	30	03 55	04 27	04 53	04 10	04 55	05 44	06 39	
	21	138 30.8	02.0	146 00.4	9.5	15 25.2	6.1 57.3	35	03 39	04 14	04 42	04 03	04 46	05 35	06 29	
	22	153 30.7	02.5	160 28.9	9.4	15 31.3	6.0 57.3	40	03 20	03 58	04 30	03 55	04 37	05 24	06 17	
	23	168 30.5	03.1	174 57.3	9.3	15 37.3	5.9 57.3	45	02 55	03 40	04 15	03 46	04 25	05 11	06 04	
	2200	183 30.4	S20 03.6	189 25.6	9.3	S15 43.2	5.8 57.3	S 50	02 21	03 16	03 56	03 35	04 12	04 55	05 48	
	01	198 30.2	04.1	203 53.9	9.2	15 49.0	5.7 57.4	52	02 03	03 04	03 48	03 29	04 05	04 48	05 40	
	02	213 30.0	04.7	218 22.1	9.1	15 54.7	5.7 57.4	54	01 40	02 51	03 38	03 24	03 58	04 40	05 31	
	03	228 29.9	05.2	232 50.2	9.1	16 00.4	5.6 57.4	56	01 07	02 35	03 27	03 18	03 50	04 31	05 22	
	04	243 29.7	05.8	247 18.3	9.0	16 06.0	5.4 57.4	58	////	02 15	03 14	03 11	03 41	04 21	05 11	
	05	258 29.5	06.3	261 46.3	8.9	16 11.4	5.4 57.5	S 60	////	01 51	02 59	03 03	03 31	04 09	04 58	
S Á B A D O	06	273 29.4	S20 06.8	276 14.2	8.9	S16 16.8	5.3 57.5	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna					
	07	288 29.2	07.4	290 42.1	8.9	16 22.1	5.2 57.5				21	22	23	24		
	08	303 29.0	07.9	305 10.0	8.7	16 27.3	5.2 57.6	N 72	h m	h m	h m	h m	h m	h m	h m	h m
	09	318 28.9	08.5	319 37.7	8.7	16 32.5	5.0 57.6									
	10	333 28.7	09.0	334 05.4	8.7	16 37.5	4.9 57.6	N 70	12 48	14 53	16 21	13 55	14 02	14 20	15 08	
	11	348 28.5	09.5	348 33.1	8.5	16 42.4	4.9 57.6	68	13 45	15 15	16 32	14 18	14 35	15 05	15 57	
	12	3 28.4	S20 10.1	3 00.6	8.6	S16 47.3	4.7 57.6	66	14 18	15 32	16 41	14 36	14 59	15 34	16 28	
	13	18 28.2	10.6	17 28.2	8.4	16 52.0	4.7 57.7	64	14 42	15 46	16 48	14 51	15 18	15 56	16 51	
	14	33 28.0	11.1	31 55.6	8.4	16 56.7	4.6 57.7	62	15 01	15 58	16 55	15 03	15 33	16 14	17 09	
	D O M I N G O	15	48 27.9	11.7	46 23.0	8.4	17 01.3	4.4 57.7	60	15 17	16 08	17 01	15 14	15 46	16 29	17 24
16		63 27.7	12.2	60 50.4	8.3	17 05.7	4.4 57.7	N 58	15 30	16 17	17 07	15 23	15 57	16 42	17 37	
17		78 27.5	12.7	75 17.7	8.2	17 10.1	4.3 57.8	56	15 41	16 25	17 12	15 31	16 07	16 53	17 48	
18		93 27.4	S20 13.2	89 44.9	8.2	S17 14.4	4.1 57.8	54	15 51	16 32	17 16	15 38	16 16	17 02	17 58	
19		108 27.2	13.8	104 12.1	8.1	17 18.5	4.1 57.8	52	16 00	16 39	17 21	15 45	16 24	17 11	18 07	
20		123 27.0	14.3	118 39.2	8.1	17 22.6	4.0 57.8	50	16 08	16 45	17 25	15 51	16 31	17 18	18 15	
21		138 26.9	14.8	133 06.3	8.0	17 26.6	3.9 57.9	45	16 25	16 58	17 34	16 03	16 46	17 35	18 31	
22		153 26.7	15.4	147 33.3	8.0	17 30.5	3.7 57.9	N 40	16 39	17 09	17 42	16 14	16 58	17 48	18 45	
23		168 26.5	15.9	162 00.3	7.9	17 34.2	3.7 57.9	35	16 51	17 18	17 49	16 23	17 08	18 00	18 56	
2300		183 26.4	S20 16.4	176 27.2	7.8	S17 37.9	3.6 57.9	30	17 01	17 27	17 56	16 30	17 18	18 10	19 06	
D O M I N G O	01	198 26.2	16.9	190 54.0	7.8	17 41.5	3.4 58.0	20	17 19	17 43	18 10	16 44	17 34	18 27	19 24	
	02	213 26.0	17.5	205 20.8	7.8	17 44.9	3.4 58.0	N 10	17 35	17 57	18 23	16 56	17 47	18 42	19 39	
	03	228 25.8	18.0	219 47.6	7.7	17 48.3	3.3 58.0	0	17 50	18 12	18 37	17 07	18 00	18 56	19 53	
	04	243 25.7	18.5	234 14.3	7.7	17 51.6	3.1 58.0	S 10	18 05	18 27	18 54	17 19	18 13	19 10	20 07	
	05	258 25.5	19.0	248 41.0	7.6	17 54.7	3.0 58.0	20	18 21	18 45	19 13	17 31	18 27	19 25	20 22	
	06	273 25.3	S20 19.6	263 07.6	7.6	S17 57.7	3.0 58.1	30	18 40	19 06	19 38	17 44	18 43	19 42	20 39	
	07	288 25.1	20.1	277 34.2	7.5	18 00.7	2.8 58.1	35	18 50	19 19	19 54	17 52	18 53	19 52	20 49	
	08	303 25.0	20.6	292 00.7	7.5	18 03.5	2.7 58.1	40	19 03	19 34	20 13	18 01	19 03	20 03	21 00	
	09	318 24.8	21.1	306 27.2	7.4	18 06.2	2.6 58.1	45	19 18	19 53	20 38	18 12	19 16	20 17	21 14	
	10	333 24.6	21.6	320 53.6	7.4	18 08.8	2.5 58.2	S 50	19 37	20 17	21 13	18 25	19 31	20 33	21 30	
D O M I N G O	11	348 24.4	22.2	335 20.0	7.3	18 11.3	2.4 58.2	52	19 45	20 29	21 32	18 31	19 38	20 41	21 37	
	12	3 24.3	S20 22.7	349 46.3	7.3	S18 13.7	2.3 58.2	54	19 55	20 43	21 55	18 38	19 46	20 49	21 46	
	13	18 24.1	23.2	4 12.6	7.3	18 16.0	2.2 58.2	56	20 06	20 59	22 29	18 45	19 55	20 59	21 55	
	14	33 23.9	23.7	18 38.9	7.2	18 18.2	2.0 58.2	58	20 19	21 19	////	18 54	20 05	21 10	22 06	
	15	48 23.7	24.2	33 05.1	7.2	18 20.2	1.9 58.3	S 60	20 34	21 44	////	19 03	20 16	21 22	22 19	
	16	63 23.6	24.7	47 31.3	7.2	18 22.1	1.9 58.3	Día	SOL		Paso Mer.	LUNA				
	17	78 23.4	25.3	61 57.5	7.1	18 24.0	1.7 58.3		Ec. Tiempo	12h		Paso Mer. Sup.	Mer. Inf.	Edad	Fase	
	18	93 23.2	S20 25.8	76 23.6	7.1	S18 25.7	1.6 58.3	d	m s	m s	h m	h m	h m	d	%	
	19	108 23.0	26.3	90 49.7	7.0	18 27.3	1.5 58.3	21	14 17	14 09	11 46	10 55	23 21	29 1		
	20	123 22.9	26.8	105 15.7	7.1	18 28.8	1.3 58.4	22	14 02	13 54	11 46	11 48	24 15	30 0		
21	138 22.7	27.3	119 41.8	6.9	18 30.1	1.3 58.4	23	13 46	13 37	11 46	12 43	00 15	01 1			
22	153 22.5	27.8	134 07.7	7.0	18 31.4	1.1 58.4										

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.2	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
LUNES						
24 00	62 52.6	175 32.5 S21 51.7	129 22.5 S23 07.0	278 00.6 N14 45.2	188 06.9 S17 31.9	Acamar 315 17.2 S40 14.9
01	77 55.0	190 31.6 52.3	144 22.9 06.7	293 02.9 45.1	203 09.1 31.9	Achernar 335 25.7 S57 09.9
02	92 57.5	205 30.8 52.8	159 23.3 06.4	308 05.2 45.1	218 11.2 32.0	Acrux 173 08.4 S63 10.6
03	108 00.0	220 29.9 . . 53.4	174 23.7 . . 06.0	323 07.6 . . 45.1	233 13.4 . . 32.1	Adhara 255 11.5 S28 59.6
04	123 02.4	235 29.0 54.0	189 24.2 05.7	338 09.9 45.0	248 15.6 32.1	Aldebarán 290 47.9 N16 32.2
05	138 04.9	250 28.2 54.6	204 24.6 05.4	353 12.3 45.0	263 17.7 32.2	
06	153 07.4	265 27.3 S21 55.1	219 25.0 S23 05.1	8 14.6 N14 45.0	278 19.9 S17 32.3	Alioth 166 20.3 N55 52.6
07	168 09.8	280 26.4 55.7	234 25.4 04.8	23 17.0 44.9	293 22.0 32.3	Alkaid 152 58.6 N49 14.3
08	183 12.3	295 25.6 56.3	249 25.8 04.4	38 19.3 44.9	308 24.2 32.4	Al Na'ir 27 42.6 S64 53.4
09	198 14.7	310 24.7 . . 56.9	264 26.2 . . 04.1	53 21.7 . . 44.9	323 26.4 . . 32.5	Alnilam 275 45.1 S 1 11.7
10	213 17.2	325 23.9 57.4	279 26.6 03.8	68 24.0 44.9	338 28.5 32.5	Alphard 217 55.0 S 8 43.4
11	228 19.7	340 23.0 58.0	294 27.0 03.5	83 26.4 44.8	353 30.7 32.6	
12	243 22.1	355 22.1 S21 58.6	309 27.4 S23 03.2	98 28.7 N14 44.8	8 32.8 S17 32.7	Alphecca 126 10.6 N26 40.0
13	258 24.6	10 21.3 59.1	324 27.8 02.8	113 31.1 44.8	23 35.0 32.8	Alpheratz 357 42.3 N29 10.6
14	273 27.1	25 20.4 21 59.7	339 28.2 02.5	128 33.4 44.7	38 37.2 32.8	Altair 62 07.5 N 8 54.8
15	288 29.5	40 19.5 22 00.3	354 28.6 . . 02.2	143 35.8 . . 44.7	53 39.3 . . 32.9	Ankaa 353 14.6 S42 13.6
16	303 32.0	55 18.7 00.8	9 29.1 01.9	158 38.1 44.7	68 41.5 33.0	Antares 112 25.4 S26 27.7
17	318 34.5	70 17.8 01.4	24 29.5 01.5	173 40.5 44.7	83 43.6 33.0	
18	333 36.9	85 16.9 S22 01.9	39 29.9 S23 01.2	188 42.8 N14 44.6	98 45.8 S17 33.1	Arcturus 145 55.2 N19 06.4
19	348 39.4	100 16.0 02.5	54 30.3 00.9	203 45.2 44.6	113 48.0 33.2	Atria 107 26.9 S69 03.1
20	3 41.8	115 15.2 03.1	69 30.7 00.6	218 47.5 44.6	128 50.1 33.2	Avior 234 17.2 S59 33.3
21	18 44.3	130 14.3 . . 03.6	84 31.1 23 00.2	233 49.9 . . 44.6	143 52.3 . . 33.3	Bellatrix 278 30.6 N 6 21.6
22	33 46.8	145 13.4 04.2	99 31.5 22 59.9	248 52.2 44.5	158 54.5 33.4	Betelgeuse 270 59.9 N 7 24.4
23	48 49.2	160 12.6 04.7	114 31.9 59.6	263 54.6 44.5	173 56.6 33.4	
MARTES						
25 00	63 51.7	175 11.7 S22 05.3	129 32.3 S22 59.3	278 56.9 N14 44.5	188 58.8 S17 33.5	Canopus 263 55.2 S52 42.2
01	78 54.2	190 10.8 05.8	144 32.7 58.9	293 59.3 44.4	204 00.9 33.6	Capella 280 32.5 N46 00.5
02	93 56.6	205 09.9 06.4	159 33.2 58.6	309 01.6 44.4	219 03.1 33.6	Deneb 49 31.0 N45 20.4
03	108 59.1	220 09.1 . . 06.9	174 33.6 . . 58.3	324 04.0 . . 44.4	234 05.3 . . 33.7	Denébola 182 32.8 N14 29.3
04	124 01.6	235 08.2 07.5	189 34.0 57.9	339 06.3 44.4	249 07.4 33.8	Diphda 348 54.7 S17 54.3
05	139 04.0	250 07.3 08.0	204 34.4 57.6	354 08.7 44.3	264 09.6 33.9	
06	154 06.5	265 06.5 S22 08.6	219 34.8 S22 57.3	9 11.0 N14 44.3	279 11.7 S17 33.9	Dubhe 193 50.8 N61 39.9
07	169 09.0	280 05.6 09.1	234 35.2 57.0	24 13.4 44.3	294 13.9 34.0	Elnath 278 11.0 N28 37.0
08	184 11.4	295 04.7 09.7	249 35.6 56.6	39 15.7 44.3	309 16.1 34.1	Eltanin 90 46.2 N51 29.6
09	199 13.9	310 03.8 . . 10.2	264 36.0 . . 56.3	54 18.1 . . 44.2	324 18.2 . . 34.1	Enif 33 46.2 N 9 56.9
10	214 16.3	325 03.0 10.8	279 36.4 56.0	69 20.5 44.2	339 20.4 34.2	Fomalhaut 15 22.9 S29 32.6
11	229 18.8	340 02.1 11.3	294 36.8 55.6	84 22.8 44.2	354 22.5 34.3	
12	244 21.3	355 01.2 S22 11.9	309 37.3 S22 55.3	99 25.2 N14 44.2	9 24.7 S17 34.3	Gacrux 172 00.0 S57 11.5
13	259 23.7	10 00.3 12.4	324 37.7 55.0	114 27.5 44.1	24 26.9 34.4	Gienah 175 51.4 S17 37.3
14	274 26.2	24 59.4 12.9	339 38.1 54.6	129 29.9 44.1	39 29.0 34.5	Hadar 148 46.9 S60 26.4
15	289 28.7	39 58.6 . . 13.5	354 38.5 . . 54.3	144 32.2 . . 44.1	54 31.2 . . 34.5	Hamal 327 59.3 N23 32.0
16	304 31.1	54 57.7 14.0	9 38.9 54.0	159 34.6 44.1	69 33.4 34.6	Kaus Aust. 83 42.9 S34 22.5
17	319 33.6	69 56.8 14.5	24 39.3 53.6	174 37.0 44.0	84 35.5 34.7	
18	334 36.1	84 55.9 S22 15.1	39 39.7 S22 53.3	189 39.3 N14 44.0	99 37.7 S17 34.7	Kochab 137 21.4 N74 05.6
19	349 38.5	99 55.1 15.6	54 40.1 52.9	204 41.7 44.0	114 39.8 34.8	Markab 13 37.3 N15 17.3
20	4 41.0	114 54.2 16.1	69 40.5 52.6	219 44.0 44.0	129 42.0 34.9	Menkar 314 13.7 N 4 08.8
21	19 43.5	129 53.3 . . 16.7	84 41.0 . . 52.3	234 46.4 . . 43.9	144 44.2 . . 35.0	Menkent 148 06.7 S36 26.3
22	34 45.9	144 52.4 17.2	99 41.4 51.9	249 48.8 43.9	159 46.3 35.0	Miaplacidus 221 39.0 S69 46.5
23	49 48.4	159 51.5 17.7	114 41.8 51.6	264 51.1 43.9	174 48.5 35.1	
MIÉRCOLES						
26 00	64 50.8	174 50.7 S22 18.3	129 42.2 S22 51.3	279 53.5 N14 43.9	189 50.6 S17 35.2	Mirfak 308 38.4 N49 54.8
01	79 53.3	189 49.8 18.8	144 42.6 50.9	294 55.8 43.8	204 52.8 35.2	Nunki 75 57.4 S26 16.5
02	94 55.8	204 48.9 19.3	159 43.0 50.6	309 58.2 43.8	219 55.0 35.3	Peacock 53 18.1 S56 41.2
03	109 58.2	219 48.0 . . 19.8	174 43.4 . . 50.2	325 00.6 . . 43.8	234 57.1 . . 35.4	Póllux 243 26.3 N27 59.1
04	125 00.7	234 47.1 20.4	189 43.8 49.9	340 02.9 43.8	249 59.3 35.4	Procyon 244 58.5 N 5 11.0
05	140 03.2	249 46.2 20.9	204 44.3 49.6	355 05.3 43.7	265 01.5 35.5	
06	155 05.6	264 45.4 S22 21.4	219 44.7 S22 49.2	10 07.6 N14 43.7	280 03.6 S17 35.6	Rasalhague 96 05.9 N12 33.2
07	170 08.1	279 44.5 21.9	234 45.1 48.9	25 10.0 43.7	295 05.8 35.6	Régulus 207 42.5 N11 53.5
08	185 10.6	294 43.6 22.4	249 45.5 48.5	40 12.4 43.7	310 07.9 35.7	Rigel 281 10.8 S 8 11.2
09	200 13.0	309 42.7 . . 23.0	264 45.9 . . 48.2	55 14.7 . . 43.6	325 10.1 . . 35.8	Rigel Kent. 139 50.9 S60 53.5
10	215 15.5	324 41.8 23.5	279 46.3 47.9	70 17.1 43.6	340 12.3 35.8	Sabik 102 11.8 S15 44.3
11	230 18.0	339 40.9 24.0	294 46.7 47.5	85 19.5 43.6	355 14.4 35.9	
12	245 20.4	354 40.0 S22 24.5	309 47.1 S22 47.2	100 21.8 N14 43.6	10 16.6 S17 36.0	Schedar 349 38.9 N56 37.4
13	260 22.9	9 39.2 25.0	324 47.6 46.8	115 24.2 43.5	25 18.7 36.0	Shaula 96 21.0 S37 06.7
14	275 25.3	24 38.3 25.5	339 48.0 46.5	130 26.5 43.5	40 20.9 36.1	Sirius 258 32.6 S16 44.3
15	290 27.8	39 37.4 . . 26.0	354 48.4 . . 46.1	145 28.9 . . 43.5	55 23.1 . . 36.2	Spica 158 30.5 S11 14.2
16	305 30.3	54 36.5 26.5	9 48.8 45.8	160 31.3 43.5	70 25.2 36.2	Suhail 222 51.5 S43 29.5
17	320 32.7	69 35.6 27.0	24 49.2 45.4	175 33.6 43.5	85 27.4 36.3	
18	335 35.2	84 34.7 S22 27.6	39 49.6 S22 45.1	190 36.0 N14 43.4	100 29.6 S17 36.4	Vega 80 38.7 N38 48.2
19	350 37.7	99 33.8 28.1	54 50.0 44.8	205 38.4 43.4	115 31.7 36.5	Zuben'ubi 137 04.6 S16 06.0
20	5 40.1	114 32.9 28.6	69 50.4 44.4	220 40.7 43.4	130 33.9 36.5	
21	20 42.6	129 32.0 . . 29.1	84 50.9 . . 44.1	235 43.1 . . 43.4	145 36.0 . . 36.6	AHS Paso Mer.
22	35 45.1	144 31.2 29.6	99 51.3 43.7	250 45.5 43.3	160 38.2 36.7	Venus 111 20.0 12 20
23	50 47.5	159 30.3 30.1	114 51.7 43.4	265 47.8 43.3	175 40.4 36.7	Marte 65 40.6 15 21
						Júpiter 215 05.2 5 23
						Saturno 125 07.1 11 22
Paso Mer. 19 41.3	v -0.9 d 0.5	v 0.4 d 0.3	v 2.4 d 0.0	v 2.2 d 0.1		

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		24	25	26	27	
												h m	h m	h m	h m	h m
LUNES	d h	° /	° /	° /	° /	° /	° /	N 72	h m	h m	h m	h m	h m	h m	h m	
	24 00	183 22.1	S20 28.8	162 59.6	6.9	S18 33.6	0.9 58.4	N 70	07 33	09 21	11 29	12 11	12 44	12 56	13 01	
	01	198 22.0	29.4	177 25.5	6.9	18 34.5	0.8 58.5	68	07 07	08 49	10 02	11 23	12 05	12 29	12 43	
	02	213 21.8	29.9	191 51.4	6.8	18 35.3	0.6 58.5	66	06 58	08 08	09 25	10 52	11 38	12 08	12 28	
	03	228 21.6	30.4	206 17.2	6.8	18 35.9	0.6 58.5	64	06 49	07 53	08 58	10 29	11 17	11 51	12 15	
	04	243 21.4	30.9	220 43.0	6.8	18 36.5	0.4 58.5	62	06 42	07 40	08 38	10 10	11 00	11 37	12 05	
	05	258 21.3	31.4	235 08.8	6.8	18 36.9	0.4 58.5	60	06 36	07 29	08 22	09 55	10 45	11 25	11 56	
	06	273 21.1	S20 31.9	249 34.6	6.8	S18 37.3	0.2 58.5	N 58	06 30	07 20	08 08	09 42	10 33	11 15	11 48	
	07	288 20.9	32.4	264 00.4	6.7	18 37.5	0.0 58.6	56	06 25	07 12	07 56	09 31	10 23	11 06	11 41	
	08	303 20.7	32.9	278 26.1	6.7	18 37.5	0.0 58.6	54	06 20	07 04	07 46	09 21	10 14	10 58	11 34	
	09	318 20.5	33.4	292 51.8	6.7	18 37.5	0.1 58.6	52	06 15	06 57	07 36	09 12	10 05	10 50	11 29	
	10	333 20.3	33.9	307 17.5	6.6	18 37.4	0.3 58.6	50	06 11	06 51	07 28	09 04	09 58	10 44	11 24	
	11	348 20.2	34.4	321 43.1	6.7	18 37.1	0.4 58.6	45	06 02	06 38	07 10	08 48	09 42	10 30	11 12	
	12	3 20.0	S20 34.9	336 08.8	6.6	S18 36.7	0.5 58.6	N 40	05 53	06 26	06 56	08 34	09 29	10 18	11 03	
	13	18 19.8	35.4	350 34.4	6.7	18 36.2	0.6 58.7	35	05 45	06 16	06 44	08 22	09 18	10 09	10 55	
	14	33 19.6	35.9	5 00.1	6.6	18 35.6	0.8 58.7	30	05 38	06 07	06 33	08 12	09 08	10 00	10 48	
	15	48 19.4	36.4	19 25.7	6.6	18 34.8	0.9 58.7	20	05 24	05 51	06 15	07 55	08 51	09 45	10 36	
	16	63 19.2	36.9	33 51.3	6.6	18 33.9	0.9 58.7	N 10	05 10	05 36	05 59	07 40	08 37	09 32	10 25	
	17	78 19.1	37.4	48 16.9	6.6	18 33.0	1.2 58.7	0	04 55	05 21	05 43	07 26	08 23	09 20	10 15	
	18	93 18.9	S20 37.9	62 42.5	6.5	S18 31.8	1.2 58.7	S 10	04 39	05 05	05 28	07 11	08 09	09 07	10 05	
	19	108 18.7	38.4	77 08.0	6.6	18 30.6	1.3 58.8	20	04 19	04 47	05 11	06 56	07 54	08 54	09 55	
	20	123 18.5	38.9	91 33.6	6.6	18 29.3	1.5 58.8	30	03 53	04 26	04 52	06 39	07 38	08 39	09 43	
	21	138 18.3	39.4	105 59.2	6.5	18 27.8	1.6 58.8	35	03 37	04 12	04 41	06 29	07 28	08 31	09 35	
	22	153 18.1	39.9	120 24.7	6.6	18 26.2	1.7 58.8	40	03 17	03 56	04 28	06 17	07 17	08 21	09 27	
	23	168 17.9	40.4	134 50.3	6.5	18 24.5	1.8 58.8	45	02 52	03 37	04 13	06 04	07 04	08 09	09 18	
MARTES	25 00	183 17.8	S20 40.9	149 15.8	6.6	S18 22.7	1.9 58.8	S 50	02 16	03 12	03 53	05 48	06 48	07 55	09 06	
	01	198 17.6	41.4	163 41.4	6.5	18 20.8	2.1 58.8	52	01 56	03 00	03 44	05 40	06 40	07 48	09 01	
	02	213 17.4	41.9	178 06.9	6.6	18 18.7	2.2 58.9	54	01 31	02 46	03 34	05 31	06 32	07 41	08 55	
	03	228 17.2	42.4	192 32.5	6.6	18 16.5	2.3 58.9	56	00 54	02 29	03 23	05 22	06 23	07 33	08 49	
	04	243 17.0	42.9	206 58.1	6.5	18 14.2	2.4 58.9	58	////	02 08	03 09	05 11	06 12	07 23	08 41	
	05	258 16.8	43.4	221 23.6	6.6	18 11.8	2.5 58.9	S 60	////	01 41	02 54	04 58	06 00	07 13	08 33	
	06	273 16.6	S20 43.8	235 49.2	6.5	S18 09.3	2.7 58.9	Lat.		Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	288 16.4	44.3	250 14.7	6.6	18 06.6	2.8 58.9				Civil	Náut.	24	25	26	27
	08	303 16.3	44.8	264 40.3	6.6	18 03.8	2.8 58.9						h m	h m	h m	h m
	09	318 16.1	45.3	279 05.9	6.6	18 01.0	3.1 58.9	N 72	h m	h m	h m	h m	h m	h m	h m	h m
	10	333 15.9	45.8	293 31.5	6.6	17 57.9	3.1 59.0	N 70	14 12	14 12	16 00	15 11	17 42	19 48	21 48	23 48
	11	348 15.7	46.3	307 57.1	6.6	17 54.8	3.2 59.0	68	13 31	15 07	16 26	15 57	17 14	18 48	20 29	22 29
	12	3 15.5	S20 46.8	322 22.7	6.6	S17 51.6	3.4 59.0	66	14 09	15 26	16 35	16 28	17 41	19 08	20 43	22 43
	13	18 15.3	47.3	336 48.3	6.7	17 48.2	3.4 59.0	64	14 35	15 41	16 44	16 51	18 01	19 24	20 54	22 54
	14	33 15.1	47.7	351 14.0	6.6	17 44.8	3.6 59.0	62	14 55	15 53	16 51	17 09	18 18	19 38	21 04	23 04
	15	48 14.9	48.2	5 39.6	6.7	17 41.2	3.7 59.0	60	15 12	16 04	16 58	17 24	18 32	19 49	21 12	23 12
	16	63 14.7	48.7	20 05.3	6.6	17 37.5	3.8 59.0	N 58	15 26	16 13	17 03	17 37	18 44	19 59	21 19	23 19
	17	78 14.5	49.2	34 30.9	6.7	17 33.7	4.0 59.0	56	15 37	16 22	17 09	17 48	18 54	20 08	21 26	23 26
	18	93 14.3	S20 49.7	48 56.6	6.7	S17 29.7	4.0 59.0	54	15 48	16 29	17 14	17 58	19 03	20 15	21 31	23 31
	19	108 14.1	50.2	63 22.3	6.8	17 25.7	4.2 59.1	52	15 57	16 36	17 18	18 07	19 11	20 22	21 37	23 37
	20	123 14.0	50.6	77 48.1	6.7	17 21.5	4.2 59.1	50	16 05	16 42	17 22	18 15	19 18	20 28	21 41	23 41
	21	138 13.8	51.1	92 13.8	6.8	17 17.3	4.4 59.1	45	16 23	16 56	17 32	18 31	19 34	20 41	21 51	23 51
	22	153 13.6	51.6	106 39.6	6.8	17 12.9	4.5 59.1	N 40	16 37	17 07	17 40	18 45	19 47	20 52	21 59	23 59
	23	168 13.4	52.1	121 05.4	6.8	17 08.4	4.6 59.1	35	16 50	17 17	17 48	18 56	19 57	21 01	22 07	24 07
	MIÉRCOLES	26 00	183 13.2	S20 52.6	135 31.2	6.8	S17 03.8	4.7 59.1	30	17 01	17 26	17 56	19 06	20 07	21 09	22 13	24 13
01		198 13.0	53.0	149 57.0	6.9	16 59.1	4.8 59.1	20	17 19	17 43	18 10	19 24	20 23	21 23	22 23	24 23
02		213 12.8	53.5	164 22.9	6.9	16 54.3	5.0 59.1	N 10	17 35	17 58	18 24	19 39	20 37	21 35	22 33	24 33
03		228 12.6	54.0	178 48.8	6.9	16 49.3	5.0 59.1	0	17 51	18 13	18 38	19 53	20 50	21 46	22 41	24 41
04		243 12.4	54.5	193 14.7	6.9	16 44.3	5.1 59.1	S 10	18 06	18 29	18 55	20 07	21 03	21 58	22 50	24 50
05		258 12.2	54.9	207 40.6	7.0	16 39.2	5.3 59.1	20	18 23	18 47	19 15	20 22	21 17	22 10	22 59	24 59
06		273 12.0	S20 55.4	222 06.6	7.0	S16 33.9	5.4 59.1	30	18 42	19 09	19 41	20 39	21 33	22 23	23 09	24 09
07		288 11.8	55.9	236 32.6	7.0	16 28.5	5.4 59.2	35	18 53	19 22	19 57	20 49	21 42	22 31	23 15	24 15
08		303 11.6	56.4	250 58.6	7.0	16 23.1	5.6 59.2	40	19 06	19 38	20 17	21 00	21 53	22 40	23 22	24 22
09		318 11.4	56.8	265 24.6	7.1	16 17.5	5.7 59.2	45	19 22	19 58	20 43	21 14	22 05	22 50	23 30	24 30
10		333 11.2	57.3	279 50.7	7.1	16 11.8	5.7 59.2	S 50	19 41	20 23	21 20	21 30	22 20	23 02	23 39	24 39
11		348 11.0	57.8	294 16.8	7.1	16 06.1	5.9 59.2	52	19 50	20 35	21 40	21 37	22 27	23 08	23 44	24 44
12		3 10.8	S20 58.3	308 42.9	7.2	S16 00.2	6.0 59.2	54	20 01	20 49	22 05	21 46	22 34	23 14	23 48	24 48
13		18 10.6	58.7	323 09.1	7.2	15 54.2	6.1 59.2	56	20 12	21 07	22 45	21 55	22 43	23 21	23 53	24 53
14		33 10.4	59.2	337 35.3	7.2	15 48.1	6.2 59.2	58	20 26	21 28	22 45	22 06	22 52	23 29	23 59	24 59
15		48 10.2	20 59.7	352 01.5	7.3	15 41.9	6.3 59.2	S 60	20 42	21 55	22 45	22 19	23 03	23 38	24 06	25 06
16		63 10.0	21 00.1	6 27.8	7.3	15 35.6	6.4 59.2	SOL		LUNA						
17		78 09.8	00.6	20 54.1	7.3	15 29.2	6.4 59.2	Día	Ec. Tiempo	Paso Mer.	Paso Mer.	Paso Mer.	Edad	Fase		
18		93 09.6	S21 01.1	35 20.4	7.3	S15 22.8	6.6 59.2	00h	12h		Sup.	Inf.				
19		108 09.4	01.5	49 46.7	7.4	15 16.2	6.7 59.2									
20		123 09.2	02.0	64 13.1	7.5	15 09.5	6.8 59.2									
21		138 09.0	02.5	78 39.6	7.4	15 02.7	6.8 59.2									

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.2	SATURNO +0.5	ESTRELLAS
d h	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
27 00	65 50.0	174 29.4 S22 30.6	129 52.1 S22 43.0	280 50.2 N14 43.3	190 42.5 S17 36.8	Acamar 315 17.2 S40 14.9
01	80 52.5	189 28.5 31.1	144 52.5 42.7	295 52.6 43.3	205 44.7 36.9	Achernar 335 25.7 S57 09.9
02	95 54.9	204 27.6 31.6	159 52.9 42.3	310 54.9 43.3	220 46.8 36.9	Acrux 173 08.4 S63 10.6
03	110 57.4	219 26.7 . . 32.1	174 53.3 . . 42.0	325 57.3 . . 43.2	235 49.0 . . 37.0	Adhara 255 11.4 S28 59.6
04	125 59.8	234 25.8 32.6	189 53.8 41.6	340 59.7 43.2	250 51.2 37.1	Aldebarán 290 47.9 N16 32.2
05	141 02.3	249 24.9 33.1	204 54.2 41.3	356 02.0 43.2	265 53.3 37.1	
06	156 04.8	264 24.0 S22 33.5	219 54.6 S22 40.9	11 04.4 N14 43.2	280 55.5 S17 37.2	Alioth 166 20.3 N55 52.6
07	171 07.2	279 23.1 34.0	234 55.0 40.6	26 06.8 43.1	295 57.7 37.3	Alkaid 152 58.6 N49 14.3
08	186 09.7	294 22.2 34.5	249 55.4 40.2	41 09.2 43.1	310 59.8 37.3	Al Na'ir 27 42.6 S46 53.4
09	201 12.2	309 21.3 . . 35.0	264 55.8 . . 39.9	56 11.5 . . 43.1	326 02.0 . . 37.4	Alnilam 275 45.0 S 1 11.7
10	216 14.6	324 20.4 35.5	279 56.2 39.5	71 13.9 43.1	341 04.1 37.5	Alphard 217 55.0 S 8 43.4
11	231 17.1	339 19.5 36.0	294 56.7 39.1	86 16.3 43.1	356 06.3 37.5	
12	246 19.6	354 18.6 S22 36.5	309 57.1 S22 38.8	101 18.6 N14 43.0	11 08.5 S17 37.6	Alphecca 126 10.6 N26 40.0
13	261 22.0	9 17.7 37.0	324 57.5 38.4	116 21.0 43.0	26 10.6 37.7	Alpheratz 357 42.3 N29 10.6
14	276 24.5	24 16.9 37.4	339 57.9 38.1	131 23.4 43.0	41 12.8 37.7	Altair 62 07.5 N 8 54.8
15	291 26.9	39 16.0 . . 37.9	354 58.3 . . 37.7	146 25.8 . . 43.0	56 14.9 . . 37.8	Ankaa 353 14.6 S42 13.7
16	306 29.4	54 15.1 38.4	9 58.7 37.4	161 28.1 43.0	71 17.1 37.9	Antares 112 25.4 S26 27.7
17	321 31.9	69 14.2 38.9	24 59.2 37.0	176 30.5 42.9	86 19.3 37.9	
18	336 34.3	84 13.3 S22 39.4	39 59.6 S22 36.7	191 32.9 N14 42.9	101 21.4 S17 38.0	Arcturus 145 55.2 N19 06.4
19	351 36.8	99 12.4 39.8	55 00.0 36.3	206 35.3 42.9	116 23.6 38.1	Atria 107 26.9 S69 03.0
20	6 39.3	114 11.5 40.3	70 00.4 35.9	221 37.6 42.9	131 25.8 38.1	Avior 234 17.2 S59 33.3
21	21 41.7	129 10.6 . . 40.8	85 00.8 . . 35.6	236 40.0 . . 42.9	146 27.9 . . 38.2	Bellatrix 278 30.6 N 6 21.6
22	36 44.2	144 09.7 41.3	100 01.2 35.2	251 42.4 42.8	161 30.1 38.3	Betelgeuse 270 59.9 N 7 24.4
23	51 46.7	159 08.8 41.7	115 01.7 34.9	266 44.7 42.8	176 32.2 38.4	
28 00	66 49.1	174 07.9 S22 42.2	130 02.1 S22 34.5	281 47.1 N14 42.8	191 34.4 S17 38.4	Canopus 263 55.2 S52 42.3
01	81 51.6	189 07.0 42.7	145 02.5 34.2	296 49.5 42.8	206 36.6 38.5	Capella 280 32.5 N46 00.5
02	96 54.1	204 06.1 43.2	160 02.9 33.8	311 51.9 42.8	221 38.7 38.6	Deneb 49 31.0 N45 20.4
03	111 56.5	219 05.2 . . 43.6	175 03.3 . . 33.4	326 54.3 . . 42.7	236 40.9 . . 38.6	Denébola 182 32.8 N14 29.3
04	126 59.0	234 04.3 44.1	190 03.7 33.1	341 56.6 42.7	251 43.1 38.7	Diphda 348 54.7 S17 54.3
05	142 01.4	249 03.4 44.6	205 04.2 32.7	356 59.0 42.7	266 45.2 38.8	
06	157 03.9	264 02.5 S22 45.0	220 04.6 S22 32.4	12 01.4 N14 42.7	281 47.4 S17 38.8	Dubhe 193 50.8 N61 39.9
07	172 06.4	279 01.5 45.5	235 05.0 32.0	27 03.8 42.7	296 49.5 38.9	Elnath 278 11.0 N28 37.0
08	187 08.8	294 00.6 46.0	250 05.4 31.6	42 06.1 42.7	311 51.7 39.0	Eltanin 90 46.2 N51 29.5
09	202 11.3	308 59.7 . . 46.4	265 05.8 . . 31.3	57 08.5 . . 42.6	326 53.9 . . 39.0	Enif 33 46.2 N 9 56.9
10	217 13.8	323 58.8 46.9	280 06.2 30.9	72 10.9 42.6	341 56.0 39.1	Fomalhaut 15 22.9 S29 32.6
11	232 16.2	338 57.9 47.3	295 06.7 30.5	87 13.3 42.6	356 58.2 39.2	
12	247 18.7	353 57.0 S22 47.8	310 07.1 S22 30.2	102 15.7 N14 42.6	12 00.3 S17 39.2	Gacrux 172 00.0 S57 11.5
13	262 21.2	8 56.1 48.2	325 07.5 29.8	117 18.0 42.6	27 02.5 39.3	Gienah 175 51.4 S17 37.3
14	277 23.6	23 55.2 48.7	340 07.9 29.4	132 20.4 42.5	42 04.7 39.4	Hadar 148 46.9 S60 26.4
15	292 26.1	38 54.3 . . 49.2	355 08.3 . . 29.1	147 22.8 . . 42.5	57 06.8 . . 39.4	Hamal 327 59.3 N23 32.0
16	307 28.6	53 53.4 49.6	10 08.7 28.7	162 25.2 42.5	72 09.0 39.5	Kaus Aust. 83 42.9 S34 22.5
17	322 31.0	68 52.5 50.1	25 09.2 28.3	177 27.6 42.5	87 11.2 39.6	
18	337 33.5	83 51.6 S22 50.5	40 09.6 S22 28.0	192 29.9 N14 42.5	102 13.3 S17 39.6	Kochab 137 21.4 N74 05.6
19	352 35.9	98 50.7 51.0	55 10.0 27.6	207 32.3 42.5	117 15.5 39.7	Markab 13 37.3 N15 17.3
20	7 38.4	113 49.8 51.4	70 10.4 27.2	222 34.7 42.4	132 17.6 39.8	Menkar 314 13.7 N 4 08.8
21	22 40.9	128 48.9 . . 51.9	85 10.8 . . 26.9	237 37.1 . . 42.4	147 19.8 . . 39.8	Menkent 148 06.7 S36 26.3
22	37 43.3	143 48.0 52.3	100 11.3 26.5	252 39.5 42.4	162 22.0 39.9	Miaplacidus 221 39.0 S69 46.5
23	52 45.8	158 47.0 52.7	115 11.7 26.1	267 41.8 42.4	177 24.1 40.0	
29 00	67 48.3	173 46.1 S22 53.2	130 12.1 S22 25.8	282 44.2 N14 42.4	192 26.3 S17 40.0	Mirfak 308 38.4 N49 54.8
01	82 50.7	188 45.2 53.6	145 12.5 25.4	297 46.6 42.4	207 28.5 40.1	Nunki 75 57.4 S26 16.5
02	97 53.2	203 44.3 54.1	160 12.9 25.0	312 49.0 42.3	222 30.6 40.2	Peacock 53 18.1 S56 41.2
03	112 55.7	218 43.4 . . 54.5	175 13.3 . . 24.7	327 51.4 . . 42.3	237 32.8 . . 40.2	Póllux 243 26.3 N27 59.1
04	127 58.1	233 42.5 55.0	190 13.8 24.3	342 53.8 42.3	252 34.9 40.3	Procyon 244 58.5 N 5 11.0
05	143 00.6	248 41.6 55.4	205 14.2 23.9	357 56.1 42.3	267 37.1 40.4	
06	158 03.0	263 40.7 S22 55.8	220 14.6 S22 23.5	12 58.5 N14 42.3	282 39.3 S17 40.4	Rasalhague 96 05.9 N12 33.2
07	173 05.5	278 39.8 56.3	235 15.0 23.2	28 00.9 42.3	297 41.4 40.5	Régulus 207 42.5 N11 53.5
08	188 08.0	293 38.8 56.7	250 15.4 22.8	43 03.3 42.2	312 43.6 40.6	Rigel 281 10.8 S 8 11.2
09	203 10.4	308 37.9 . . 57.1	265 15.9 . . 22.4	58 05.7 . . 42.2	327 45.8 . . 40.6	Rigel Kent. 139 50.9 S60 53.5
10	218 12.9	323 37.0 57.6	280 16.3 22.1	73 08.1 42.2	342 47.9 40.7	Sabik 102 11.8 S15 44.3
11	233 15.4	338 36.1 58.0	295 16.7 21.7	88 10.5 42.2	357 50.1 40.8	
12	248 17.8	353 35.2 S22 58.4	310 17.1 S22 21.3	103 12.8 N14 42.2	12 52.2 S17 40.8	Schedar 349 38.9 N56 37.4
13	263 20.3	8 34.3 58.9	325 17.5 20.9	118 15.2 42.2	27 54.4 40.9	Shaula 96 21.0 S37 06.7
14	278 22.8	23 33.4 59.3	340 18.0 20.6	133 17.6 42.2	42 56.6 41.0	Sirius 258 32.6 S16 44.3
15	293 25.2	38 32.4 22 59.7	355 18.4 . . 20.2	148 20.0 . . 42.1	57 58.7 . . 41.0	Spica 158 30.4 S11 14.2
16	308 27.7	53 31.5 23 00.1	10 18.8 19.8	163 22.4 42.1	73 00.9 41.1	Suhail 222 51.5 S43 29.5
17	323 30.2	68 30.6 00.6	25 19.2 19.4	178 24.8 42.1	88 03.1 41.2	
18	338 32.6	83 29.7 S23 01.0	40 19.7 S22 19.0	193 27.2 N14 42.1	103 05.2 S17 41.2	Vega 80 38.7 N38 48.2
19	353 35.1	98 28.8 01.4	55 20.1 18.7	208 29.6 42.1	118 07.4 41.3	Zuben'ubi 137 04.6 S16 06.0
20	8 37.5	113 27.9 01.8	70 20.5 18.3	223 32.0 42.1	133 09.5 41.4	
21	23 40.0	128 26.9 . . 02.2	85 20.9 . . 17.9	238 34.3 . . 42.0	148 11.7 . . 41.4	AHS Paso Mer.
22	38 42.5	143 26.0 02.6	100 21.3 17.5	253 36.7 42.0	163 13.9 41.5	Venus 107 18.7 12 24
23	53 44.9	158 25.1 03.1	115 21.8 17.2	268 39.1 42.0	178 16.0 41.6	Marte 63 12.9 15 19
						Júpiter 214 58.0 5 12
						Saturno 124 45.3 11 12
Paso Mer. 19 29.5	v -0.9 d 0.5		v 0.4 d 0.4	v 2.4 d 0.0	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d		Ph	Náut.		Civil	27	28	29	30
d h	°	°	°	°	°	°	°	h m	h m	h m	h m	h m	h m	h m	h m
J U E V E S	N 72	07 42	09 36	█	13 25	13 18	13 11	13 05							
	N 70	07 27	09 00	█	13 01	13 03	13 04	13 04							
	68	07 15	08 35		10 18	12 43	12 51	12 58	13 03						
	66	07 04	08 15		09 36	12 28	12 42	12 52	13 02						
	64	06 55	08 00		09 07	12 15	12 33	12 48	13 01						
	62	06 48	07 46		08 46	12 05	12 26	12 44	13 00						
	60	06 41	07 35		08 28	11 56	12 20	12 41	13 00						
	N 58	06 35	07 25		08 14	11 48	12 15	12 38	12 59						
	56	06 29	07 17		08 01	11 41	12 10	12 35	12 59						
	54	06 24	07 09		07 51	11 34	12 05	12 33	12 59						
	52	06 19	07 02		07 41	11 29	12 02	12 31	12 58						
	50	06 15	06 55		07 32	11 24	11 58	12 29	12 58						
	45	06 05	06 41		07 14	11 12	11 50	12 25	12 57						
	N 40	05 56	06 29		06 59	11 03	11 44	12 21	12 56						
	35	05 48	06 19		06 47	10 55	11 38	12 18	12 56						
	30	05 40	06 10		06 36	10 48	11 33	12 15	12 55						
	20	05 26	05 53		06 17	10 36	11 24	12 10	12 55						
	N 10	05 11	05 37		06 00	10 25	11 17	12 06	12 54						
	0	04 56	05 22		05 44	10 15	11 09	12 02	12 53						
	S 10	04 39	05 06		05 28	10 05	11 02	11 58	12 53						
	20	04 19	04 47		05 11	09 55	10 55	11 54	12 52						
	30	03 52	04 25		04 52	09 43	10 46	11 49	12 52						
	35	03 36	04 11		04 40	09 35	10 41	11 46	12 51						
	40	03 15	03 55		04 27	09 27	10 35	11 43	12 51						
	45	02 49	03 35		04 11	09 18	10 28	11 39	12 50						
	S 50	02 11	03 09		03 51	09 06	10 20	11 35	12 50						
52	01 50	02 56		03 41	09 01	10 17	11 33	12 49							
54	01 23	02 41		03 31	08 55	10 13	11 31	12 49							
56	00 39	02 24		03 19	08 49	10 08	11 28	12 49							
S 60	////	02 02		03 05	08 41	10 03	11 26	12 48							
////	////	01 32		02 48	08 33	09 57	11 23	12 48							
V I E R N E S	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna										
			Civil	Náut.	27	28	29	30							
	N 72	█	h m	h m	h m	h m	h m	h m							
	N 70	█	14 35	16 08	20 11	22 00	23 48	25 34							
	68	13 17	15 00	16 21	20 29	22 11	23 52	25 32							
	66	14 00	15 20	16 31	20 43	22 19	23 55	25 31							
	64	14 28	15 36	16 40	20 54	22 26	23 58	25 30							
	62	14 50	15 49	16 48	21 04	22 32	24 01	00 01							
	60	15 07	16 00	16 55	21 12	22 37	24 03	00 03							
	N 58	15 22	16 10	17 01	21 19	22 42	24 05	00 05							
	56	15 34	16 19	17 06	21 26	22 46	24 06	00 06							
	54	15 45	16 27	17 11	21 31	22 49	24 08	00 08							
	52	15 54	16 34	17 16	21 37	22 53	24 09	00 09							
	50	16 03	16 40	17 21	21 41	22 56	24 10	00 10							
	45	16 21	16 54	17 31	21 51	23 02	24 13	00 13							
	N 40	16 36	17 06	17 40	21 59	23 07	24 15	00 15							
	35	16 49	17 17	17 48	22 07	23 12	24 17	00 17							
	30	17 00	17 26	17 55	22 13	23 16	24 19	00 19							
	20	17 19	17 43	18 10	22 23	23 23	24 22	00 22							
	N 10	17 36	17 58	18 24	22 33	23 29	24 24	00 24							
	0	17 52	18 14	18 40	22 41	23 35	24 27	00 27							
	S 10	18 07	18 30	18 57	22 50	23 40	24 29	00 29							
	20	18 25	18 49	19 17	22 59	23 46	24 31	00 31							
	30	18 45	19 11	19 44	23 09	23 53	24 34	00 34							
	35	18 56	19 25	20 01	23 15	23 57	24 35	00 35							
	40	19 10	19 42	20 21	23 22	24 01	00 01	00 37							
45	19 26	20 02	20 48	23 30	24 06	00 06	00 39								
S 50	19 46	20 28	21 26	23 39	24 12	00 12	00 42								
52	19 55	20 41	21 47	23 44	24 14	00 14	00 43								
54	20 06	20 56	22 16	23 48	24 17	00 17	00 44								
56	20 18	21 14	23 03	23 53	24 21	00 21	00 45								
58	20 32	21 36	////	23 59	24 24	00 24	00 47								
S 60	20 49	22 07	////	24 06	00 06	00 28	00 48								
S Á B A D O	92 54.4	S21 32.8	356 32.9	9.9	S 4 20.0	11.0	59.2	LUNA							
	107 54.2	33.2	11 01.8	9.9	4 09.0	11.0	59.2								
	122 54.0	33.6	25 30.7	9.9	3 58.0	11.0	59.2								
	137 53.8	34.0	39 59.6	9.9	3 47.0	11.1	59.1								
	152 53.5	34.5	54 28.5	9.9	3 35.9	11.0	59.1								
	167 53.3	34.9	68 57.4	10.0	S 3 24.9	11.1	59.1								
	S/D 16.2	d 0.4	S/D 16.2	16.2	16.1										
	27	28	29	28	29	28	29	28	29	28					
	12 34	12 24	12 04	11 48	16 28	04 01	05 29	06 40	07 51						
	12 14	12 04	11 43	11 48	17 22	04 55	06 40	07 51							
11 54	11 43	11 48	18 14	05 48	07 51										

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.3	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
DOMINGO								
30 00	68 47.4	173 24.2 S23 03.5	130 22.2 S22 16.8	283 41.5 N14 42.0	193 18.2 S17 41.6	Acamar	315 17.2 S40 14.9	
01	83 49.9	188 23.3 03.9	145 22.6 16.4	298 43.9 42.0	208 20.4 41.7	Achernar	335 25.7 S57 09.9	
02	98 52.3	203 22.4 04.3	160 23.0 16.0	313 46.3 42.0	223 22.5 41.8	Acrux	173 08.3 S63 10.6	
03	113 54.8	218 21.4 . . 04.7	175 23.4 . . 15.6	328 48.7 . . 42.0	238 24.7 . . 41.8	Adhara	255 11.4 S28 59.6	
04	128 57.3	233 20.5 05.1	190 23.9 15.3	343 51.1 42.0	253 26.8 41.9	Aldebarán	290 47.9 N16 32.2	
05	143 59.7	248 19.6 05.5	205 24.3 14.9	358 53.5 41.9	268 29.0 42.0			
06	159 02.2	263 18.7 S23 05.9	220 24.7 S22 14.5	13 55.9 N14 41.9	283 31.2 S17 42.0	Alioth	166 20.3 N55 52.5	
07	174 04.7	278 17.8 06.4	235 25.1 14.1	28 58.3 41.9	298 33.3 42.1	Alkaid	152 58.6 N49 14.2	
08	189 07.1	293 16.8 06.8	250 25.6 13.7	44 00.7 41.9	313 35.5 42.2	Al Na'ir	62 07.5 N 8 54.8	
09	204 09.6	308 15.9 . . 07.2	265 26.0 . . 13.3	59 03.1 . . 41.9	328 37.7 . . 42.2	Alnilam	275 45.0 S 1 11.7	
10	219 12.0	323 15.0 07.6	280 26.4 13.0	74 05.4 41.9	343 39.8 42.3	Alphard	217 55.0 S 8 43.5	
11	234 14.5	338 14.1 08.0	295 26.8 12.6	89 07.8 41.9	358 42.0 42.4			
12	249 17.0	353 13.2 S23 08.4	310 27.2 S22 12.2	104 10.2 N14 41.8	13 44.2 S17 42.4	Alphecca	126 10.6 N26 40.0	
13	264 19.4	8 12.2 08.8	325 27.7 11.8	119 12.6 41.8	28 46.3 42.5	Alpheratz	357 42.3 N29 10.6	
14	279 21.9	23 11.3 09.2	340 28.1 11.4	134 15.0 41.8	43 48.5 42.6	Altair	62 07.5 N 8 54.8	
15	294 24.4	38 10.4 . . 09.6	355 28.5 . . 11.0	149 17.4 . . 41.8	58 50.6 . . 42.6	Ankaa	353 14.6 S42 13.7	
16	309 26.8	53 09.5 10.0	10 28.9 10.6	164 19.8 41.8	73 52.8 42.7	Antares	112 25.4 S26 27.7	
17	324 29.3	68 08.5 10.4	25 29.4 10.3	179 22.2 41.8	88 55.0 42.8			
18	339 31.8	83 07.6 S23 10.7	40 29.8 S22 09.9	194 24.6 N14 41.8	103 57.1 S17 42.8	Arcturus	145 55.1 N19 06.4	
19	354 34.2	98 06.7 11.1	55 30.2 09.5	209 27.0 41.8	118 59.3 42.9	Atria	107 26.9 S69 03.0	
20	9 36.7	113 05.8 11.5	70 30.6 09.1	224 29.4 41.7	134 01.5 43.0	Avior	234 17.1 S59 33.3	
21	24 39.1	128 04.8 . . 11.9	85 31.1 . . 08.7	239 31.8 . . 41.7	149 03.6 . . 43.0	Bellatrix	278 30.6 N 6 21.6	
22	39 41.6	143 03.9 12.3	100 31.5 08.3	254 34.2 41.7	164 05.8 43.1	Betelgeuse	270 59.9 N 7 24.4	
23	54 44.1	158 03.0 12.7	115 31.9 07.9	269 36.6 41.7	179 07.9 43.2			
LUNES								
1 00	69 46.5	173 02.1 S23 13.1	130 32.3 S22 07.5	284 39.0 N14 41.7	194 10.1 S17 43.2	Canopus	263 55.2 S52 42.3	
01	84 49.0	188 01.1 13.5	145 32.8 07.1	299 41.4 41.7	209 12.3 43.3	Capella	280 32.5 N46 00.5	
02	99 51.5	203 00.2 13.8	160 33.2 06.8	314 43.8 41.7	224 14.4 43.4	Deneb	49 31.0 N45 20.4	
03	114 53.9	217 59.3 . . 14.2	175 33.6 . . 06.4	329 46.2 . . 41.7	239 16.6 . . 43.4	Denébola	182 32.8 N14 29.2	
04	129 56.4	232 58.4 14.6	190 34.0 06.0	344 48.6 41.7	254 18.8 43.5	Diphda	348 54.7 S17 54.3	
05	144 58.9	247 57.4 15.0	205 34.5 05.6	359 51.0 41.6	269 20.9 43.6			
06	160 01.3	262 56.5 S23 15.4	220 34.9 S22 05.2	14 53.4 N14 41.6	284 23.1 S17 43.6	Dubhe	193 50.7 N61 39.9	
07	175 03.8	277 55.6 15.7	235 35.3 04.8	29 55.8 41.6	299 25.3 43.7	Elnath	278 11.0 N28 37.0	
08	190 06.3	292 54.6 16.1	250 35.7 04.4	44 58.2 41.6	314 27.4 43.8	Eltanin	90 46.2 N51 29.5	
09	205 08.7	307 53.7 . . 16.5	265 36.2 . . 04.0	60 00.6 . . 41.6	329 29.6 . . 43.8	Enif	33 46.2 N 9 56.9	
10	220 11.2	322 52.8 16.9	280 36.6 03.6	75 03.0 41.6	344 31.7 43.9	Fomalhaut	15 22.9 S29 32.6	
11	235 13.6	337 51.9 17.2	295 37.0 03.2	90 05.4 41.6	359 33.9 44.0			
12	250 16.1	352 50.9 S23 17.6	310 37.4 S22 02.8	105 07.8 N14 41.6	14 36.1 S17 44.0	Gacrux	172 00.0 S57 11.5	
13	265 18.6	7 50.0 18.0	325 37.9 02.4	120 10.2 41.6	29 38.2 44.1	Gienah	175 51.4 S17 37.4	
14	280 21.0	22 49.1 18.4	340 38.3 02.0	135 12.6 41.6	44 40.4 44.2	Hadar	148 46.9 S60 26.4	
15	295 23.5	37 48.1 . . 18.7	355 38.7 . . 01.6	150 15.0 . . 41.5	59 42.6 . . 44.2	Hamal	327 59.3 N23 32.0	
16	310 26.0	52 47.2 19.1	10 39.1 01.2	165 17.4 41.5	74 44.7 44.3	Kaus Aust.	83 42.9 S34 22.5	
17	325 28.4	67 46.3 19.5	25 39.6 00.8	180 19.8 41.5	89 46.9 44.4			
18	340 30.9	82 45.3 S23 19.8	40 40.0 S22 00.5	195 22.2 N14 41.5	104 49.1 S17 44.4	Kochab	137 21.4 N74 05.6	
19	355 33.4	97 44.4 20.2	55 40.4 22 00.1	210 24.6 41.5	119 51.2 44.5	Markab	13 37.3 N15 17.3	
20	10 35.8	112 43.5 20.5	70 40.8 21 59.7	225 27.0 41.5	134 53.4 44.6	Menkar	314 13.7 N 4 08.8	
21	25 38.3	127 42.5 . . 20.9	85 41.3 . . 59.3	240 29.4 . . 41.5	149 55.5 . . 44.6	Menkent	148 06.7 S36 26.3	
22	40 40.8	142 41.6 21.3	100 41.7 58.9	255 31.8 41.5	164 57.7 44.7	Miaplacidus	221 38.9 S69 46.5	
23	55 43.2	157 40.7 21.6	115 42.1 58.5	270 34.3 41.5	179 59.9 44.8			
MARTE								
2 00	70 45.7	172 39.7 S23 22.0	130 42.6 S21 58.1	285 36.7 N14 41.5	195 02.0 S17 44.8	Mirfak	308 38.4 N49 54.8	
01	85 48.1	187 38.8 22.3	145 43.0 57.7	300 39.1 41.4	210 04.2 44.9	Nunki	75 57.4 S26 16.5	
02	100 50.6	202 37.9 22.7	160 43.4 57.3	315 41.5 41.4	225 06.4 44.9	Peacock	53 18.1 S56 41.2	
03	115 53.1	217 36.9 . . 23.0	175 43.8 . . 56.9	330 43.9 . . 41.4	240 08.5 . . 45.0	Póllux	243 26.3 N27 59.1	
04	130 55.5	232 36.0 23.4	190 44.3 56.5	345 46.3 41.4	255 10.7 45.1	Procyon	244 58.5 N 5 11.0	
05	145 58.0	247 35.1 23.7	205 44.7 56.1	0 48.7 41.4	270 12.9 45.1			
06	161 00.5	262 34.1 S23 24.1	220 45.1 S21 55.7	15 51.1 N14 41.4	285 15.0 S17 45.2	Rasalhague	96 05.9 N12 33.2	
07	176 02.9	277 33.2 24.4	235 45.5 55.2	30 53.5 41.4	300 17.2 45.3	Régulus	207 42.4 N11 53.5	
08	191 05.4	292 32.3 24.8	250 46.0 54.8	45 55.9 41.4	315 19.3 45.3	Rigel	281 10.8 S 8 11.2	
09	206 07.9	307 31.3 . . 25.1	265 46.4 . . 54.4	60 58.3 . . 41.4	330 21.5 . . 45.4	Rigel Kent.	139 50.9 S60 53.5	
10	221 10.3	322 30.4 25.5	280 46.8 54.0	76 00.7 41.4	345 23.7 45.5	Sabik	102 11.8 S15 44.4	
11	236 12.8	337 29.5 25.8	295 47.3 53.6	91 03.2 41.4	0 25.8 45.5			
12	251 15.2	352 28.5 S23 26.2	310 47.7 S21 53.2	106 05.6 N14 41.4	15 28.0 S17 45.6	Schedar	349 39.0 N56 37.4	
13	266 17.7	7 27.6 26.5	325 48.1 52.8	121 08.0 41.4	30 30.2 45.7	Shaula	96 21.0 S37 06.7	
14	281 20.2	22 26.6 26.8	340 48.5 52.4	136 10.4 41.3	45 32.3 45.7	Sirius	258 32.5 S16 44.3	
15	296 22.6	37 25.7 . . 27.2	355 49.0 . . 52.0	151 12.8 . . 41.3	60 34.5 . . 45.8	Spica	158 30.4 S11 14.2	
16	311 25.1	52 24.8 27.5	10 49.4 51.6	166 15.2 41.3	75 36.7 45.9	Suhail	222 51.5 S43 29.5	
17	326 27.6	67 23.8 27.9	25 49.8 51.2	181 17.6 41.3	90 38.8 45.9			
18	341 30.0	82 22.9 S23 28.2	40 50.3 S21 50.8	196 20.0 N14 41.3	105 41.0 S17 46.0	Vega	80 38.7 N38 48.2	
19	356 32.5	97 22.0 28.5	55 50.7 50.4	211 22.4 41.3	120 43.2 46.1	Zuben'ubi	137 04.6 S16 06.0	
20	11 35.0	112 21.0 28.9	70 51.1 50.6	226 24.9 41.3	135 45.3 46.1			
21	26 37.4	127 20.1 . . 29.2	85 51.6 . . 49.0	241 27.3 . . 41.3	150 47.5 . . 46.2			
22	41 39.9	142 19.1 29.5	100 52.0 49.2	256 29.7 41.3	165 49.6 46.3			
23	56 42.4	157 18.2 29.8	115 52.4 48.7	271 32.1 41.3	180 51.8 46.3			
Paso Mer. 19 17.7	v -0.9 d 0.4		v 0.4 d 0.4	v 2.4 d 0.0	v 2.2 d 0.1			
						AHS Paso Mer.		
						Venus	103 15.5 12 29	
						Marte	60 45.8 15 17	
						Júpiter	214 52.5 5 01	
						Saturno	124 23.6 11 02	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph		Náut.	Civil		30	1	2	3
d h	°	°	°	°	°	°	°	°	h m	h m	h m	h m	h m	h m	h m
DOMINGO	182 53.1	S21 35.3	83 26.4	10.0	S 3 13.8	11.1	59.1	N 72	07 51	09 50	13 05	12 59	12 53	12 47	
	197 52.9	35.7	97 55.4	9.9	3 02.7	11.1	59.1	N 70	07 34	09 10	13 04	13 04	13 04	13 06	
	212 52.6	36.1	112 24.3	10.1	2 51.6	11.1	59.1	68	07 21	08 43	10 36	13 03	13 08	13 13	
	227 52.4	36.5	126 53.4	10.0	2 40.5	11.2	59.1	66	07 10	08 23	09 46	13 02	13 11	13 21	
	242 52.2	36.9	141 22.4	10.0	2 29.3	11.1	59.1	64	07 01	08 06	09 16	13 01	13 14	13 27	
	257 52.0	37.3	155 51.4	10.1	2 18.2	11.2	59.1	62	06 53	07 52	08 53	13 00	13 16	13 33	
	272 51.8	S21 37.7	170 20.5	10.1	S 2 07.0	11.1	59.1	60	06 46	07 40	08 35	13 00	13 18	13 38	
	287 51.5	38.1	184 49.6	10.1	1 55.9	11.2	59.1	N 58	06 39	07 30	08 19	12 59	13 20	13 42	
	302 51.3	38.5	199 18.7	10.1	1 44.7	11.2	59.1	56	06 33	07 21	08 07	12 59	13 22	13 46	
	317 51.1	39.0	213 47.8	10.1	1 33.5	11.2	59.1	54	06 28	07 13	07 55	12 59	13 24	13 50	
	332 50.8	39.4	228 16.9	10.1	1 22.3	11.2	59.1	52	06 23	07 06	07 45	12 58	13 25	13 53	
	347 50.6	39.8	242 46.0	10.2	1 11.1	11.2	59.0	50	06 18	06 59	07 36	12 58	13 26	13 56	
	2 50.4	S21 40.2	257 15.2	10.1	S 0 59.9	11.2	59.0	45	06 08	06 45	07 18	12 57	13 29	14 02	
	17 50.2	40.6	271 44.3	10.2	0 48.7	11.2	59.0	N 40	05 59	06 32	07 02	12 56	13 32	14 07	
	32 49.9	41.0	286 13.5	10.2	0 37.5	11.2	59.0	35	05 50	06 22	06 49	12 56	13 34	14 12	
	47 49.7	41.4	300 42.7	10.2	0 26.3	11.2	59.0	30	05 43	06 12	06 38	12 55	13 36	14 16	
	62 49.5	41.8	315 11.9	10.2	0 15.1	11.2	59.0	20	05 28	05 55	06 19	12 55	13 39	14 23	
	77 49.3	42.2	329 41.1	10.2	S 0 03.9	11.2	59.0	N 10	05 13	05 39	06 01	12 54	13 42	14 30	
	92 49.0	S21 42.6	344 10.3	10.2	N 0 07.3	11.2	59.0	0	04 57	05 23	05 45	12 53	13 44	14 35	
	107 48.8	43.0	358 39.5	10.2	0 18.5	11.2	59.0	S 10	04 40	05 06	05 29	12 53	13 47	14 41	
	122 48.6	43.4	373 08.7	10.2	0 29.7	11.2	59.0	20	04 19	04 47	05 12	12 52	13 50	14 48	
	137 48.3	43.8	387 37.9	10.2	0 40.9	11.2	59.0	30	03 52	04 24	04 51	12 52	13 54	14 55	
	152 48.1	44.2	402 07.1	10.3	0 52.1	11.1	59.0	35	03 35	04 10	04 39	12 51	13 56	15 00	
	167 47.9	44.6	416 36.4	10.2	1 03.2	11.2	58.9	40	03 13	03 54	04 26	12 51	13 58	15 04	
	45	02 46	03 33					45	02 46	03 33	04 09	12 50	14 00	15 10	
S 50	02 07	03 06					S 50	02 07	03 06	03 49	12 50	14 04	15 17		
52	01 45	02 53					52	01 45	02 53	03 39	12 49	14 05	15 20		
54	01 15	02 38					54	01 15	02 38	03 28	12 49	14 07	15 24		
56	00 18	02 19					56	00 18	02 19	03 16	12 49	14 09	15 28		
58	////	01 55					S 60	////	01 55	03 01	12 48	14 11	15 32		
60	01 23	02 44					60	01 23	02 44	03 41	12 48	14 13	15 37		
LUNES	182 47.7	S21 44.9	71 05.6	10.3	N 1 14.4	11.2	58.9	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	197 47.4	45.3	85 34.9	10.2	1 25.6	11.1	58.9								
	212 47.2	45.7	100 04.1	10.3	1 36.7	11.1	58.9								
	227 47.0	46.1	114 33.4	10.2	1 47.8	11.2	58.9								
	242 46.7	46.5	129 02.6	10.3	1 59.0	11.1	58.9								
	257 46.5	46.9	143 31.9	10.2	2 10.1	11.1	58.9								
	272 46.3	S21 47.3	158 01.1	10.3	N 2 21.2	11.0	58.9								
	287 46.0	47.7	172 30.4	10.2	2 32.2	11.1	58.9								
	302 45.8	48.1	186 59.6	10.3	2 43.3	11.0	58.9								
	317 45.6	48.5	201 28.9	10.2	2 54.3	11.1	58.8								
	332 45.3	48.8	215 58.1	10.3	3 05.4	11.0	58.8								
	347 45.1	49.2	230 27.4	10.3	3 16.4	10.9	58.8								
	2 44.9	S21 49.6	244 56.7	10.2	N 3 27.3	11.0	58.8								
	17 44.6	50.0	259 25.9	10.2	3 38.3	10.9	58.8								
	32 44.4	50.4	273 55.1	10.3	3 49.2	10.9	58.8								
	47 44.2	50.8	288 24.4	10.2	4 00.1	10.9	58.8								
	62 43.9	51.2	302 53.6	10.3	4 11.0	10.9	58.8								
	77 43.7	51.5	317 22.9	10.2	4 21.9	10.8	58.8								
	92 43.5	S21 51.9	331 52.1	10.2	N 4 32.7	10.8	58.8								
	107 43.2	52.3	346 21.3	10.2	4 43.5	10.8	58.7								
	122 43.0	52.7	360 50.5	10.2	4 54.3	10.7	58.7								
	137 42.8	53.1	375 19.7	10.2	5 05.0	10.7	58.7								
	152 42.5	53.4	389 48.9	10.2	5 15.7	10.7	58.7								
	167 42.3	53.8	404 18.1	10.2	5 26.4	10.6	58.7								
	MARTES	182 42.1	S21 54.2	58 47.3	10.2	N 5 37.0	10.7	58.7	N 40	16 35	17 05	17 39	00 15	01 23	02 30
197 41.8		54.6	73 16.5	10.1	5 47.7	10.5	58.7	35	16 48	17 16	17 47	00 17	01 22	02 26	
212 41.6		54.9	87 45.6	10.2	5 58.2	10.6	58.7	30	17 00	17 26	17 55	00 19	01 21	02 23	
227 41.3		55.3	102 14.8	10.1	6 08.8	10.5	58.6	20	17 19	17 43	18 10	00 22	01 20	02 18	
242 41.1		55.7	116 43.9	10.2	6 19.3	10.4	58.6	N 10	17 37	17 59	18 25	00 24	01 19	02 13	
257 40.9		56.1	131 13.1	10.1	6 29.7	10.4	58.6	0	17 53	18 15	18 41	00 27	01 18	02 09	
272 40.6		S21 56.4	145 42.2	10.1	N 6 40.1	10.4	58.6	S 10	18 09	18 32	18 59	00 29	01 17	02 04	
287 40.4		56.8	160 11.3	10.1	6 50.5	10.3	58.6	20	18 27	18 51	19 20	00 31	01 15	02 00	
302 40.2		57.2	174 40.4	10.1	7 00.8	10.3	58.6	30	18 47	19 14	19 47	00 34	01 14	01 54	
317 39.9		57.6	189 09.5	10.0	7 11.1	10.3	58.6	35	18 59	19 28	20 04	00 35	01 13	01 51	
332 39.7		57.9	203 38.5	10.1	7 21.4	10.2	58.6	40	19 13	19 45	20 25	00 37	01 12	01 48	
347 39.4		58.3	218 07.6	10.1	7 31.6	10.2	58.5	45	19 29	20 06	20 53	00 39	01 11	01 44	
2 39.2		S21 58.7	232 36.7	10.0	N 7 41.8	10.1	58.5	S 50	19 50	20 32	21 32	00 42	01 10	01 39	
17 39.0		59.0	247 05.7	10.0	7 51.9	10.0	58.5	52	20 00	20 46	21 55	00 43	01 10	01 37	
32 38.7		59.4	261 34.7	10.0	8 01.9	10.0	58.5	54	20 11	21 02	22 26	00 44	01 09	01 34	
47 38.5		59.8	276 03.7	10.0	8 11.9	10.0	58.5	56	20 23	21 21	23 31	00 45	01 08	01 32	
62 38.2		60.1	290 32.7	10.0	8 21.9	9.9	58.5	58	20 38	21 44	////	00 47	01 08	01 29	
77 38.0		60.5	305 01.7	9.9	8 31.8	9.9	58.5	S 60	20 56	22 18	////	00 48	01 07	01 26	
92 37.8		S22 00.9	319 30.6	10.0	N 8 41.7	9.8	58.4	SOL		LUNA					
107 37.5		01.2	333 59.6	9.9	8 51.5	9.8	58.4	Día	Ec. Tiempo	Paso Mer.	Paso Mer.	Paso Mer.	Edad	Fase	
122 37.3		01.6	348 28.5	9.9	9 01.3	9.7	58.4		00h	12h		Sup.	Inf.		
137 37.0		01.9	362 57.4	9.9	9 11.0	9.6	58.4								
152 36.8		02.3	376 26.3	9.9	9 20.6	9.6	58.4								
167 36.6		02.7	390 55.2	9.9	N 9 30.2	9.5	58.4								
S/D		16.2	<i>d</i> 0.4	S/D	16.1	16.0	15.9	d	m s	m s	h m	h m	h m	d %	
							30	11 33	11 22	11 49	19 06	06 40	08 62		
							1	11 11	11 00	11 49	19 57	07 31	09 73		
							2	10 49	10 37	11 49	20 48	08 22	10 82		

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.3	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
M I É R C O L E S						
3 00	71 44.8	172 17.3 S23 30.2	130 52.8 S21 48.3	286 34.5 N14 41.3	195 54.0 S17 46.4	Acamar 315 17.3 S40 14.9
01	86 47.3	187 16.3 30.5	145 53.3 47.9	301 36.9 41.3	210 56.1 46.5	Achernar 335 25.7 S57 09.9
02	101 49.7	202 15.4 30.8	160 53.7 47.5	316 39.3 41.3	225 58.3 46.5	Acrux 173 08.3 S63 10.6
03	116 52.2	217 14.4 . . 31.1	175 54.1 . . 47.1	331 41.8 . . 41.3	241 00.5 . . 46.6	Adhara 255 11.4 S28 59.6
04	131 54.7	232 13.5 31.5	190 54.6 46.7	346 44.2 41.3	256 02.6 46.7	Aldebarán 290 47.9 N16 32.2
05	146 57.1	247 12.6 31.8	205 55.0 46.3	1 46.6 41.2	271 04.8 46.7	
06	161 59.6	262 11.6 S23 32.1	220 55.4 S21 45.9	16 49.0 N14 41.2	286 07.0 S17 46.8	Alioth 166 20.2 N55 52.5
07	177 02.1	277 10.7 32.4	235 55.9 45.5	31 51.4 41.2	301 09.1 46.8	Alkaid 152 58.6 N49 14.2
08	192 04.5	292 09.7 32.7	250 56.3 45.0	46 53.8 41.2	316 11.3 46.9	Al Na'ir 27 42.7 S46 53.4
09	207 07.0	307 08.8 . . 33.1	265 56.7 . . 44.6	61 56.3 . . 41.2	331 13.5 . . 47.0	Alnilam 275 45.0 S 1 11.7
10	222 09.5	322 07.8 33.4	280 57.2 44.2	76 58.7 41.2	346 15.6 47.0	Alphard 217 55.0 S 8 43.5
11	237 11.9	337 06.9 33.7	295 57.6 43.8	92 01.1 41.2	1 17.8 47.1	
12	252 14.4	352 06.0 S23 34.0	310 58.0 S21 43.4	107 03.5 N14 41.2	16 19.9 S17 47.2	Alphecca 126 10.6 N26 40.0
13	267 16.9	7 05.0 34.3	325 58.5 43.0	122 05.9 41.2	31 22.1 47.2	Alpheratz 357 42.3 N29 10.6
14	282 19.3	22 04.1 34.6	340 58.9 42.6	137 08.3 41.2	46 24.3 47.3	Altair 62 07.5 N 8 54.7
15	297 21.8	37 03.1 . . 34.9	355 59.3 . . 42.1	152 10.8 . . 41.2	61 26.4 . . 47.4	Ankaa 353 14.6 S42 13.7
16	312 24.2	52 02.2 35.2	10 59.7 41.7	167 13.2 41.2	76 28.6 47.4	Antares 112 25.4 S26 27.6
17	327 26.7	67 01.2 35.5	26 00.2 41.3	182 15.6 41.2	91 30.8 47.5	
18	342 29.2	82 00.3 S23 35.8	41 00.6 S21 40.9	197 18.0 N14 41.2	106 32.9 S17 47.6	Arcturus 145 55.1 N19 06.3
19	357 31.6	96 59.3 36.1	56 01.0 40.5	212 20.4 41.2	121 35.1 47.6	Atria 107 26.9 S69 03.0
20	12 34.1	111 58.4 36.5	71 01.5 40.1	227 22.9 41.2	136 37.3 47.7	Avior 234 17.1 S59 33.4
21	27 36.6	126 57.5 . . 36.8	86 01.9 . . 39.6	242 25.3 . . 41.2	151 39.4 . . 47.8	Bellatrix 278 30.6 N 6 21.6
22	42 39.0	141 56.5 37.1	101 02.3 39.2	257 27.7 41.2	166 41.6 47.8	Betelgeuse 270 59.9 N 7 24.4
23	57 41.5	156 55.6 37.4	116 02.8 38.8	272 30.1 41.2	181 43.8 47.9	
J U E V E S						
4 00	72 44.0	171 54.6 S23 37.6	131 03.2 S21 38.4	287 32.6 N14 41.2	196 45.9 S17 48.0	Canopus 263 55.2 S52 42.3
01	87 46.4	186 53.7 37.9	146 03.6 38.0	302 35.0 41.2	211 48.1 48.0	Capella 280 32.5 N46 00.6
02	102 48.9	201 52.7 38.2	161 04.1 37.5	317 37.4 41.2	226 50.3 48.1	Deneb 49 31.0 N45 20.4
03	117 51.3	216 51.8 . . 38.5	176 04.5 . . 37.1	332 39.8 . . 41.1	241 52.4 . . 48.1	Denébola 182 32.8 N14 29.2
04	132 53.8	231 50.8 38.8	191 04.9 36.7	347 42.2 41.1	256 54.6 48.2	Diphda 348 54.8 S17 54.4
05	147 56.3	246 49.9 39.1	206 05.4 36.3	2 44.7 41.1	271 56.8 48.3	
06	162 58.7	261 48.9 S23 39.4	221 05.8 S21 35.9	17 47.1 N14 41.1	286 58.9 S17 48.3	Dubhe 193 50.7 N61 39.9
07	178 01.2	276 48.0 39.7	236 06.3 35.4	32 49.5 41.1	302 01.1 48.4	Elnath 278 11.0 N28 37.0
08	193 03.7	291 47.0 40.0	251 06.7 35.0	47 51.9 41.1	317 03.2 48.5	Eltanin 90 46.2 N51 29.5
09	208 06.1	306 46.1 . . 40.3	266 07.1 . . 34.6	62 54.4 . . 41.1	332 05.4 . . 48.5	Enif 33 46.2 N 9 56.8
10	223 08.6	321 45.1 40.6	281 07.6 34.2	77 56.8 41.1	347 07.6 48.6	Fomalhaut 15 22.9 S29 32.6
11	238 11.1	336 44.2 40.8	296 08.0 33.7	92 59.2 41.1	2 09.7 48.7	
12	253 13.5	351 43.2 S23 41.1	311 08.4 S21 33.3	108 01.6 N14 41.1	17 11.9 S17 48.7	Gacrux 171 59.9 S57 11.5
13	268 16.0	6 42.3 41.4	326 08.9 32.9	123 04.1 41.1	32 14.1 48.8	Gienah 175 51.4 S17 37.4
14	283 18.5	21 41.3 41.7	341 09.3 32.5	138 06.5 41.1	47 16.2 48.9	Hadar 148 46.9 S60 26.4
15	298 20.9	36 40.4 . . 42.0	356 09.7 . . 32.0	153 08.9 . . 41.1	62 18.4 . . 48.9	Hamal 327 59.3 N23 32.0
16	313 23.4	51 39.4 42.2	11 10.2 31.6	168 11.4 41.1	77 20.6 49.0	Kaus Aust. 83 42.9 S34 22.5
17	328 25.8	66 38.5 42.5	26 10.6 31.2	183 13.8 41.1	92 22.7 49.1	
18	343 28.3	81 37.5 S23 42.8	41 11.0 S21 30.8	198 16.2 N14 41.1	107 24.9 S17 49.1	Kochab 137 21.3 N74 05.6
19	358 30.8	96 36.6 43.1	56 11.5 30.3	213 18.6 41.1	122 27.1 49.2	Markab 13 37.3 N15 17.3
20	13 33.2	111 35.6 43.3	71 11.9 29.9	228 21.1 41.1	137 29.2 49.2	Menkar 314 13.7 N 4 08.8
21	28 35.7	126 34.7 . . 43.6	86 12.3 . . 29.5	243 23.5 . . 41.1	152 31.4 . . 49.3	Menkent 148 06.7 S36 26.3
22	43 38.2	141 33.7 43.9	101 12.8 29.0	258 25.9 41.1	167 33.6 49.4	Miaplacidus 221 38.9 S69 46.5
23	58 40.6	156 32.8 44.1	116 13.2 28.6	273 28.4 41.1	182 35.7 49.4	
V I E R N E S						
5 00	73 43.1	171 31.8 S23 44.4	131 13.7 S21 28.2	288 30.8 N14 41.1	197 37.9 S17 49.5	Mirfak 308 38.4 N49 54.8
01	88 45.6	186 30.9 44.7	146 14.1 27.8	303 33.2 41.1	212 40.1 49.6	Nunki 75 57.4 S26 16.5
02	103 48.0	201 29.9 44.9	161 14.5 27.3	318 35.6 41.1	227 42.2 49.6	Peacock 53 18.1 S56 41.2
03	118 50.5	216 29.0 . . 45.2	176 15.0 . . 26.9	333 38.1 . . 41.1	242 44.4 . . 49.7	Póllux 243 26.3 N27 59.1
04	133 53.0	231 28.0 45.5	191 15.4 26.5	348 40.5 41.1	257 46.6 49.8	Procyon 244 58.4 N 5 11.0
05	148 55.4	246 27.1 45.7	206 15.8 26.0	3 42.9 41.1	272 48.7 49.8	
06	163 57.9	261 26.1 S23 46.0	221 16.3 S21 25.6	18 45.4 N14 41.1	287 50.9 S17 49.9	Rasalhague 96 05.9 N12 33.2
07	179 00.3	276 25.1 46.2	236 16.7 25.2	33 47.8 41.1	302 53.1 50.0	Régulus 207 42.4 N11 53.5
08	194 02.8	291 24.2 46.5	251 17.2 24.7	48 50.2 41.1	317 55.2 50.0	Rigel 281 10.8 S 8 11.2
09	209 05.3	306 23.2 . . 46.8	266 17.6 . . 24.3	63 52.7 . . 41.1	332 57.4 . . 50.1	Rigel Kent. 139 50.8 S60 53.5
10	224 07.7	321 22.3 47.0	281 18.0 23.9	78 55.1 41.1	347 59.6 50.1	Sabik 102 11.8 S15 44.4
11	239 10.2	336 21.3 47.3	296 18.5 23.4	93 57.5 41.1	3 01.7 50.2	
12	254 12.7	351 20.4 S23 47.5	311 18.9 S21 23.0	109 00.0 N14 41.1	18 03.9 S17 50.3	Schedar 349 39.0 N56 37.4
13	269 15.1	6 19.4 47.8	326 19.4 22.6	124 02.4 41.1	33 06.1 50.3	Shaula 96 21.0 S37 06.6
14	284 17.6	21 18.5 48.0	341 19.8 22.1	139 04.8 41.1	48 08.2 50.4	Sirius 258 32.5 S16 44.3
15	299 20.1	36 17.5 . . 48.3	356 20.2 . . 21.7	154 07.3 . . 41.1	63 10.4 . . 50.5	Spica 158 30.4 S11 14.2
16	314 22.5	51 16.6 48.5	11 20.7 21.3	169 09.7 41.1	78 12.5 50.5	Suhail 222 51.4 S43 29.5
17	329 25.0	66 15.6 48.8	26 21.1 20.8	184 12.1 41.1	93 14.7 50.6	
18	344 27.5	81 14.6 S23 49.0	41 21.5 S21 20.4	199 14.6 N14 41.1	108 16.9 S17 50.7	Vega 80 38.7 N38 48.2
19	359 29.9	96 13.7 49.2	56 22.0 19.9	214 17.0 41.1	123 19.0 50.7	Zuben'ubi 137 04.6 S16 06.0
20	14 32.4	111 12.7 49.5	71 22.4 19.5	229 19.4 41.1	138 21.2 50.8	
21	29 34.8	126 11.8 . . 49.7	86 22.9 . . 19.1	244 21.9 . . 41.1	153 23.4 . . 50.8	AHS Paso Mer.
22	44 37.3	141 10.8 50.0	101 23.3 18.6	259 24.3 41.1	168 25.5 50.9	Venus 99 10.7 12 33
23	59 39.8	156 09.9 50.2	116 23.7 18.2	274 26.8 41.1	183 27.7 51.0	Marte 58 19.3 15 15
						Júpiter 214 48.6 4 49
						Saturno 124 02.0 10 51
Paso Mer. 19 05.9	v -0.9 d 0.3		v 0.4 d 0.4	v 2.4 d 0.0	v 2.2 d 0.1	

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	v	Dec	d	Ph	Naut.		Civil	3		4	5	6	
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m		
M I É R C O L E S	3 00	182 36.3	S22 03.0	46 24.1	9.8 N	9 39.7	9.5 58.4	N 72	07 58	10 03	10 03	12 47	12 39	12 27	12 27	
	01	197 36.1	03.4	60 52.9	9.8	9 49.2	9.4 58.3	68	07 41	09 20	10 55	13 06	13 09	13 17	13 37	
	02	212 35.8	03.7	75 21.7	9.9	9 58.6	9.4 58.3	66	07 27	08 51	10 55	13 21	13 32	13 49	14 18	
	03	227 35.6	04.1	89 50.6	9.7	10 08.0	9.3 58.3	64	07 16	08 29	09 57	13 33	13 50	14 13	14 47	
	04	242 35.3	04.4	104 19.3	9.8	10 17.3	9.2 58.3	62	07 06	08 12	09 24	13 44	14 04	14 31	15 09	
	05	257 35.1	04.8	118 48.1	9.8	10 26.5	9.2 58.3	60	06 58	07 58	09 00	13 52	14 16	14 47	15 26	
	06	272 34.8	S22 05.2	133 16.9	9.7 N10	35.7	9.1 58.3	58	06 50	07 45	08 40	14 00	14 27	14 59	15 40	
	07	287 34.6	05.5	147 45.6	9.7	10 44.8	9.0 58.2	N 56	06 43	07 35	08 25	14 07	14 36	15 10	15 53	
	08	302 34.4	05.9	162 14.3	9.7	10 53.8	9.0 58.2	56	06 37	07 25	08 11	14 13	14 44	15 20	16 03	
	09	317 34.1	06.2	176 43.0	9.7	11 02.8	8.9 58.2	54	06 32	07 17	08 00	14 18	14 51	15 29	16 13	
	10	332 33.9	06.6	191 11.7	9.7	11 11.7	8.9 58.2	52	06 26	07 10	07 49	14 23	14 57	15 36	16 21	
	11	347 33.6	06.9	205 40.4	9.7	11 20.6	8.7 58.2	50	06 22	07 03	07 40	14 28	15 03	15 43	16 29	
	12	2 33.4	S22 07.3	220 09.1	9.6 N11	29.3	8.7 58.2	45	06 11	06 48	07 21	14 37	15 16	15 58	16 45	
	13	17 33.1	07.6	234 37.7	9.6	11 38.0	8.7 58.2	N 40	06 01	06 35	07 05	14 45	15 26	16 10	16 58	
	14	32 32.9	08.0	249 06.3	9.6	11 46.7	8.5 58.1	35	05 53	06 24	06 52	14 52	15 35	16 21	17 10	
	15	47 32.6	08.3	263 34.9	9.6	11 55.2	8.5 58.1	30	05 45	06 14	06 40	14 58	15 43	16 30	17 20	
	16	62 32.4	08.7	278 03.5	9.5	12 03.7	8.5 58.1	20	05 29	05 57	06 20	15 09	15 56	16 46	17 37	
	17	77 32.1	09.0	292 32.0	9.6	12 12.2	8.3 58.1	N 10	05 14	05 40	06 03	15 18	16 08	17 00	17 52	
	18	92 31.9	S22 09.4	307 00.6	9.5 N12	20.5	8.3 58.1	0	04 58	05 24	05 46	15 27	16 20	17 13	18 06	
	19	107 31.7	09.7	321 29.1	9.5	12 28.8	8.2 58.1	S 10	04 40	05 07	05 30	15 36	16 31	17 26	18 20	
	20	122 31.4	10.1	335 57.6	9.5	12 37.0	8.1 58.0	20	04 19	04 48	05 12	15 46	16 43	17 40	18 35	
	21	137 31.2	10.4	350 26.1	9.4	12 45.1	8.1 58.0	30	03 51	04 24	04 51	15 57	16 57	17 56	18 52	
	22	152 30.9	10.7	4 54.5	9.5	12 53.2	7.9 58.0	35	03 34	04 10	04 39	16 03	17 05	18 05	19 02	
	23	167 30.7	11.1	19 23.0	9.4	13 01.1	7.9 58.0	40	03 12	03 53	04 25	16 10	17 14	18 16	19 13	
	J U E V E S	00	182 30.4	S22 11.4	33 51.4	9.4 N13	09.0	7.8 58.0	S 50	02 03	03 04	03 47	16 29	17 39	18 44	19 43
01		197 30.2	11.8	48 19.8	9.4	13 16.8	7.8 57.9	52	01 40	02 50	03 37	16 34	17 45	18 51	19 51	
02		212 29.9	12.1	62 48.2	9.4	13 24.6	7.6 57.9	54	01 07	02 34	03 26	16 39	17 52	18 59	20 00	
03		227 29.7	12.4	77 16.6	9.4	13 32.2	7.6 57.9	56	///	02 15	03 13	16 45	17 59	19 08	20 10	
04		242 29.4	12.8	91 45.0	9.3	13 39.8	7.5 57.9	58	///	01 50	02 58	16 52	18 08	19 18	20 21	
05		257 29.2	13.1	106 13.3	9.4	13 47.3	7.4 57.9	S 60	///	01 15	02 40	16 59	18 18	19 30	20 33	
06		272 28.9	S22 13.5	120 41.7	9.3 N13	54.7	7.3 57.9	Ocaso Sol		Crepúsculo		Ocaso Luna				
07		287 28.7	13.8	135 10.0	9.3	14 02.0	7.3 57.8	Lat.	h m	h m	h m	h m	h m	h m	h m	
08		302 28.4	14.1	149 38.3	9.3	14 09.3	7.1 57.8									
09		317 28.2	14.5	164 06.6	9.2	14 16.4	7.1 57.8	N 72	13 36	15 41	15 41	05 22	07 19	09 21	11 23	
10		332 27.9	14.8	178 34.8	9.2	14 23.5	7.0 57.8	N 70	12 45	14 20	15 58	05 05	06 50	08 32	10 03	
11		347 27.7	15.1	193 03.1	9.2	14 30.5	6.9 57.8	68	12 45	14 49	16 12	04 51	06 28	08 01	09 22	
12		2 27.4	S22 15.5	207 31.3	9.2 N14	37.4	6.8 57.7	66	13 43	15 10	16 24	04 40	06 11	07 38	08 54	
13		17 27.2	15.8	221 59.5	9.2	14 44.2	6.7 57.7	64	14 16	15 28	16 34	04 30	05 58	07 20	08 32	
14		32 26.9	16.1	236 27.7	9.2	14 50.9	6.7 57.7	62	14 40	15 42	16 42	04 23	05 46	07 05	08 15	
15		47 26.7	16.5	250 55.9	9.2	14 57.6	6.5 57.7	60	14 59	15 55	16 50	04 16	05 36	06 52	08 01	
16		62 26.4	16.8	265 24.1	9.2	15 04.1	6.5 57.7	N 58	15 15	16 05	16 57	04 10	05 28	06 42	07 48	
17		77 26.1	17.1	279 52.3	9.1	15 10.6	6.4 57.6	56	15 29	16 15	17 03	04 04	05 20	06 32	07 38	
18		92 25.9	S22 17.4	294 20.4	9.2 N15	17.0	6.2 57.6	54	15 40	16 23	17 08	04 00	05 14	06 24	07 28	
19		107 25.6	17.8	308 48.6	9.1	15 23.2	6.2 57.6	52	15 51	16 30	17 14	03 55	05 08	06 17	07 20	
20		122 25.4	18.1	323 16.7	9.1	15 29.4	6.1 57.6	50	16 00	16 37	17 18	03 51	05 02	06 10	07 13	
21		137 25.1	18.4	337 44.8	9.1	15 35.5	6.0 57.6	45	16 19	16 52	17 29	03 43	04 51	05 56	06 57	
22		152 24.9	18.7	352 12.9	9.1	15 41.5	5.9 57.5	N 40	16 35	17 05	17 39	03 36	04 41	05 44	06 44	
23		167 24.6	19.1	6 41.0	9.0	15 47.4	5.8 57.5	35	16 48	17 16	17 47	03 30	04 33	05 34	06 33	
V I E R N E S	00	182 24.4	S22 19.4	21 09.1	9.0 N15	53.2	5.8 57.5	30	17 00	17 26	17 55	03 25	04 26	05 25	06 23	
	01	197 24.1	19.7	35 37.1	9.1	15 59.0	5.6 57.5	20	17 20	17 44	18 11	03 16	04 13	05 10	06 06	
	02	212 23.9	20.0	50 05.2	9.1	16 04.6	5.5 57.5	N 10	17 37	18 00	18 26	03 08	04 02	04 57	05 52	
	03	227 23.6	20.4	64 33.3	9.0	16 10.1	5.5 57.4	0	17 54	18 16	18 42	03 00	03 52	04 45	05 38	
	04	242 23.3	20.7	79 01.3	9.1	16 15.6	5.3 57.4	S 10	18 11	18 33	19 00	02 53	03 42	04 33	05 24	
	05	257 23.1	21.0	93 29.4	9.0	16 20.9	5.2 57.4	20	18 28	18 53	19 22	02 45	03 31	04 20	05 10	
	06	272 22.8	S22 21.3	107 57.4	9.0 N16	26.1	5.2 57.4	30	18 49	19 16	19 49	02 36	03 19	04 05	04 53	
	07	287 22.6	21.6	122 25.4	9.0	16 31.3	5.0 57.4	35	19 02	19 31	20 07	02 30	03 12	03 56	04 43	
	08	302 22.3	22.0	136 53.4	9.0	16 36.3	5.0 57.3	40	19 16	19 48	20 29	02 24	03 04	03 46	04 32	
	09	317 22.1	22.3	151 21.4	9.0	16 41.3	4.9 57.3	45	19 33	20 09	20 57	02 18	02 54	03 35	04 19	
	10	332 21.8	22.6	165 49.4	9.1	16 46.2	4.7 57.3	S 50	19 54	20 37	21 38	02 09	02 43	03 21	04 04	
	11	347 21.6	22.9	180 17.5	9.0	16 50.9	4.7 57.3	52	20 04	20 51	22 02	02 06	02 38	03 14	03 56	
	12	2 21.3	S22 23.2	194 45.5	9.0 N16	55.6	4.5 57.2	54	20 15	21 07	22 36	02 02	02 32	03 07	03 48	
	13	17 21.0	23.5	209 13.5	8.9	17 00.1	4.5 57.2	56	20 28	21 27	///	01 57	02 25	02 59	03 39	
	14	32 20.8	23.8	223 41.4	9.0	17 04.6	4.3 57.2	58	20 44	21 52	///	01 52	02 18	02 50	03 28	
	15	47 20.5	24.2	238 09.4	9.0	17 08.9	4.3 57.2	S 60	21 02	22 28	///	01 46	02 10	02 39	03 16	
	16	62 20.3	24.5	252 37.4	9.0	17 13.2	4.2 57.2	SOL		LUNA						
	17	77 20.0	24.8	267 05.4	9.0	17 17.4	4.0 57.1	Día	Ec. Tiempo	Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase		
	18	92 19.7	S22 25.1	281 33.4	9.0 N17	21.4	4.0 57.1	d	m s	m s	h m	h m	h m	d	%	
	19	107 19.5	25.4	296 01.4	9.0	17 25.4	3.8 57.1	3	10 26	10 14	11 50	21 40	09 14	11 90		
	20	122 19.2	25.7	310 29.4	9.0	17 29.2	3.8 57.1	4	10 02	09 50	11 50	22 32	10 06	12 95		
	21	137 19.0	26.0	324 57.4	9.0	17 33.0	3.6 57.0	5	09 38	09 26	11 51	23 25	10 59	13 99		
	22	152 18.7	26.3	339 25.4	9.0	17 36.6	3.6 57.0									
23	167 18.4	26.6	353 53.4	9.0 N17	40.2	3.4 57.0										
	S/D	16.3	d 0.3	S/D	15.8	15.										

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.3	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
d h	° /	° /	° /	° /	° /	° /
6 00	74 42.2	171 08.9 S23 50.4	131 24.2 S21 17.8	289 29.2 N14 41.1	198 29.9 S17 51.0	Acamar 315 17.3 S40 14.9
01	89 44.7	186 07.9 50.7	146 24.6 17.3	304 31.6 41.1	213 32.0 51.1	Achernar 335 25.8 S57 09.9
02	104 47.2	201 07.0 50.9	161 25.1 16.9	319 34.1 41.1	228 34.2 51.2	Acrux 173 08.2 S63 10.6
03	119 49.6	216 06.0 . . 51.2	176 25.5 . . 16.4	334 36.5 . . 41.1	243 36.4 . . 51.2	Adhara 255 11.4 S28 59.6
04	134 52.1	231 05.1 51.4	191 25.9 16.0	349 39.0 41.1	258 38.5 51.3	Aldebarán 290 47.9 N16 32.2
05	149 54.6	246 04.1 51.6	206 26.4 15.6	4 41.4 41.1	273 40.7 51.4	
06	164 57.0	261 03.2 S23 51.8	221 26.8 S21 15.1	19 43.8 N14 41.1	288 42.9 S17 51.4	Alioth 166 20.2 N55 52.5
07	179 59.5	276 02.2 52.1	236 27.3 14.7	34 46.3 41.1	303 45.0 51.5	Alkaid 152 58.5 N49 14.2
08	195 01.9	291 01.2 52.3	251 27.7 14.2	49 48.7 41.1	318 47.2 51.6	Al Na'ir 27 42.7 S46 53.4
09	210 04.4	306 00.3 . . 52.5	266 28.2 . . 13.8	64 51.2 . . 41.1	333 49.4 . . 51.6	Alnilam 275 45.0 S 1 11.7
10	225 06.9	320 59.3 52.7	281 28.6 13.3	79 53.6 41.1	348 51.5 51.7	Alphard 217 55.0 S 8 43.5
11	240 09.3	335 58.4 53.0	296 29.0 12.9	94 56.0 41.1	3 53.7 51.7	
12	255 11.8	350 57.4 S23 53.2	311 29.5 S21 12.5	109 58.5 N14 41.1	18 55.9 S17 51.8	Alphecca 126 10.5 N26 40.0
13	270 14.3	5 56.4 53.4	326 29.9 12.0	125 00.9 41.1	33 58.0 51.9	Alpheratz 357 42.3 N29 10.6
14	285 16.7	20 55.5 53.6	341 30.4 11.6	140 03.4 41.2	49 00.2 51.9	Altair 62 07.5 N 8 54.7
15	300 19.2	35 54.5 . . 53.9	356 30.8 . . 11.1	155 05.8 . . 41.2	64 02.4 . . 52.0	Ankaa 353 14.6 S42 13.7
16	315 21.7	50 53.6 54.1	11 31.2 10.7	170 08.3 41.2	79 04.5 52.1	Antares 112 25.4 S26 27.6
17	330 24.1	65 52.6 54.3	26 31.7 10.2	185 10.7 41.2	94 06.7 52.1	
18	345 26.6	80 51.6 S23 54.5	41 32.1 S21 09.8	200 13.1 N14 41.2	109 08.9 S17 52.2	Arcturus 145 55.1 N19 06.3
19	0 29.1	95 50.7 54.7	56 32.6 09.3	215 15.6 41.2	124 11.0 52.3	Atria 107 26.8 S69 03.0
20	15 31.5	110 49.7 54.9	71 33.0 08.9	230 18.0 41.2	139 13.2 52.3	Avior 234 17.1 S59 33.4
21	30 34.0	125 48.7 . . 55.1	86 33.5 . . 08.4	245 20.5 . . 41.2	154 15.4 . . 52.4	Bellatrix 278 30.6 N 6 21.6
22	45 36.4	140 47.8 55.3	101 33.9 08.0	260 22.9 41.2	169 17.5 52.4	Betelgeuse 270 59.9 N 7 24.4
23	60 38.9	155 46.8 55.5	116 34.4 07.5	275 25.4 41.2	184 19.7 52.5	
7 00	75 41.4	170 45.9 S23 55.8	131 34.8 S21 07.1	290 27.8 N14 41.2	199 21.9 S17 52.6	Canopus 263 55.2 S52 42.3
01	90 43.8	185 44.9 56.0	146 35.2 06.6	305 30.3 41.2	214 24.0 52.6	Capella 280 32.5 N46 00.6
02	105 46.3	200 43.9 56.2	161 35.7 06.2	320 32.7 41.2	229 26.2 52.7	Deneb 49 31.0 N45 20.4
03	120 48.8	215 43.0 . . 56.4	176 36.1 . . 05.7	335 35.1 . . 41.2	244 28.4 . . 52.8	Denébola 182 32.7 N14 29.2
04	135 51.2	230 42.0 56.6	191 36.6 05.3	350 37.6 41.2	259 30.6 52.8	Diphda 348 54.8 S17 54.4
05	150 53.7	245 41.0 56.8	206 37.0 04.8	5 40.0 41.2	274 32.7 52.9	
06	165 56.2	260 40.1 S23 57.0	221 37.5 S21 04.4	20 42.5 N14 41.2	289 34.9 S17 52.9	Dubhe 193 50.6 N61 39.9
07	180 58.6	275 39.1 57.2	236 37.9 03.9	35 44.9 41.2	304 37.1 53.0	Elnath 278 11.0 N28 37.0
08	196 01.1	290 38.2 57.4	251 38.3 03.5	50 47.4 41.2	319 39.2 53.1	Eltanin 90 46.2 N51 29.5
09	211 03.6	305 37.2 . . 57.6	266 38.8 . . 03.0	65 49.8 . . 41.2	334 41.4 . . 53.1	Enif 33 46.2 N 9 56.8
10	226 06.0	320 36.2 57.8	281 39.2 02.6	80 52.3 41.2	349 43.6 53.2	Fomalhaut 15 22.9 S29 32.6
11	241 08.5	335 35.3 57.9	296 39.7 02.1	95 54.7 41.2	4 45.7 53.3	
12	256 10.9	350 34.3 S23 58.1	311 40.1 S21 01.7	110 57.2 N14 41.3	19 47.9 S17 53.3	Gacrux 171 59.9 S57 11.5
13	271 13.4	5 33.3 58.3	326 40.6 01.2	125 59.6 41.3	34 50.1 53.4	Gienah 175 51.4 S17 37.4
14	286 15.9	20 32.4 58.5	341 41.0 00.8	141 02.1 41.3	49 52.2 53.5	Hadar 148 46.8 S60 26.4
15	301 18.3	35 31.4 . . 58.7	356 41.5 21 00.3	156 04.5 . . 41.3	64 54.4 . . 53.5	Hamal 327 59.3 N23 32.0
16	316 20.8	50 30.4 58.9	11 41.9 20 59.9	171 07.0 41.3	79 56.6 53.6	Kaus Aust. 83 42.9 S34 22.4
17	331 23.3	65 29.5 59.1	26 42.4 59.4	186 09.4 41.3	94 58.7 53.6	
18	346 25.7	80 28.5 S23 59.3	41 42.8 S20 58.9	201 11.9 N14 41.3	110 00.9 S17 53.7	Kochab 137 21.3 N74 05.6
19	0 28.2	95 27.5 59.4	56 43.3 58.5	216 14.3 41.3	125 03.1 53.8	Markab 13 37.3 N15 17.3
20	16 30.7	110 26.6 59.6	71 43.7 58.0	231 16.8 41.3	140 05.2 53.8	Menkar 314 13.7 N 4 08.8
21	31 33.1	125 25.6 23 59.8	86 44.1 . . 57.6	246 19.2 . . 41.3	155 07.4 . . 53.9	Menkent 148 06.6 S36 26.3
22	46 35.6	140 24.7 24 00.0	101 44.6 57.1	261 21.7 41.3	170 09.6 54.0	Miaplacidus 221 38.8 S69 46.6
23	61 38.1	155 23.7 00.2	116 45.0 56.7	276 24.2 41.3	185 11.7 54.0	
8 00	76 40.5	170 22.7 S24 00.3	131 45.5 S20 56.2	291 26.6 N14 41.3	200 13.9 S17 54.1	Mirfak 308 38.4 N49 54.8
01	91 43.0	185 21.8 00.5	146 45.9 55.7	306 29.1 41.3	215 16.1 54.1	Nunki 75 57.4 S26 16.5
02	106 45.4	200 20.8 00.7	161 46.4 55.3	321 31.5 41.3	230 18.2 54.2	Peacock 53 18.2 S56 41.2
03	121 47.9	215 19.8 . . 00.9	176 46.8 . . 54.8	336 34.0 . . 41.4	245 20.4 . . 54.3	Póllux 243 26.2 N27 59.1
04	136 50.4	230 18.9 01.0	191 47.3 54.4	351 36.4 41.4	260 22.6 54.3	Procyon 244 58.4 N 5 11.0
05	151 52.8	245 17.9 01.2	206 47.7 53.9	6 38.9 41.4	275 24.7 54.4	
06	166 55.3	260 16.9 S24 01.4	221 48.2 S20 53.4	21 41.3 N14 41.4	290 26.9 S17 54.5	Rasalhague 96 05.9 N12 33.2
07	181 57.8	275 16.0 01.5	236 48.6 53.0	36 43.8 41.4	305 29.1 54.5	Régulus 207 42.4 N11 53.5
08	197 00.2	290 15.0 01.7	251 49.1 52.5	51 46.2 41.4	320 31.2 54.6	Rigel 281 10.8 S 8 11.2
09	212 02.7	305 14.0 . . 01.9	266 49.5 . . 52.1	66 48.7 . . 41.4	335 33.4 . . 54.6	Rigel Kent. 139 50.8 S60 53.5
10	227 05.2	320 13.1 02.0	281 50.0 51.6	81 51.2 41.4	350 35.6 54.7	Sabik 102 11.7 S15 44.4
11	242 07.6	335 12.1 02.2	296 50.4 51.1	96 53.6 41.4	5 37.8 54.8	
12	257 10.1	350 11.1 S24 02.3	311 50.9 S20 50.7	111 56.1 N14 41.4	20 39.9 S17 54.8	Schedar 349 39.0 N56 37.4
13	272 12.6	5 10.1 02.5	326 51.3 50.2	126 58.5 41.4	35 42.1 54.9	Shaula 96 21.0 S37 06.6
14	287 15.0	20 09.2 02.7	341 51.8 49.7	142 01.0 41.4	50 44.3 55.0	Sirius 258 32.5 S16 44.3
15	302 17.5	35 08.2 . . 02.8	356 52.2 . . 49.3	157 03.5 . . 41.4	65 46.4 . . 55.0	Spica 158 30.4 S11 14.2
16	317 19.9	50 07.2 03.0	11 52.7 48.8	172 05.9 41.5	80 48.6 55.1	Suhail 222 51.4 S43 29.5
17	332 22.4	65 06.3 03.1	26 53.1 48.4	187 08.4 41.5	95 50.8 55.1	
18	347 24.9	80 05.3 S24 03.3	41 53.6 S20 47.9	202 10.8 N14 41.5	110 52.9 S17 55.2	Vega 80 38.7 N38 48.2
19	2 27.3	95 04.3 03.4	56 54.0 47.4	217 13.3 41.5	125 55.1 55.3	Zuben'ubi 137 04.6 S16 06.0
20	17 29.8	110 03.4 03.6	71 54.5 47.0	232 15.8 41.5	140 57.3 55.3	
21	32 32.3	125 02.4 . . 03.7	86 54.9 . . 46.5	247 18.2 . . 41.5	155 59.4 . . 55.4	AHS Paso Mer.
22	47 34.7	140 01.4 03.9	101 55.4 46.0	262 20.7 41.5	171 01.6 55.5	Venus 95 04.5 12 38
23	62 37.2	155 00.5 04.0	116 55.8 45.6	277 23.1 41.5	186 03.8 55.5	Marte 55 53.4 15 13
	h m					Júpiter 214 46.4 4 37
Paso Mer. 18 54.1	v -1.0 d 0.2		v 0.4 d 0.5	v 2.4 d 0.0	v 2.2 d 0.1	Saturno 123 40.5 10 41

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		6	7	8	9	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
S Á B A D O	6 00	182 18.2	S22 26.9	8 21.4	9.0	N17 43.6	3.4	57.0	N 72	08 06	10 17	10 17	13 37	14 20	15 32	16 59
	01	197 17.9	27.2	22 49.4	9.0	17 47.0	3.2	57.0	N 70	07 47	09 29	11 18	14 18	15 05	16 11	17 29
	02	212 17.7	27.5	37 17.4	9.1	17 50.2	3.2	56.9	68	07 33	08 58	11 18	14 18	15 05	16 11	17 29
	03	227 17.4	27.8	51 45.5	9.0	17 53.4	3.0	56.9	66	07 21	08 36	10 06	14 47	15 35	16 38	17 50
	04	242 17.1	28.1	66 13.5	9.0	17 56.4	2.9	56.9	64	07 11	08 18	09 31	15 09	15 58	16 58	18 08
	05	257 16.9	28.4	80 41.5	9.1	17 59.3	2.9	56.9	62	07 02	08 03	09 06	15 26	16 16	17 15	18 22
	06	272 16.6	S22 28.8	95 09.6	9.0	N18 02.2	2.7	56.8	60	06 54	07 50	08 46	15 40	16 31	17 29	18 34
	07	287 16.4	29.1	109 37.6	9.1	18 04.9	2.6	56.8	N 58	06 47	07 39	08 30	15 53	16 43	17 41	18 44
	08	302 16.1	29.4	124 05.7	9.1	18 07.5	2.5	56.8	56	06 41	07 29	08 16	16 03	16 54	17 51	18 53
	09	317 15.8	29.6	138 33.8	9.1	18 10.0	2.5	56.8	54	06 35	07 21	08 04	16 13	17 04	18 00	19 01
	10	332 15.6	29.9	153 01.9	9.1	18 12.5	2.3	56.7	52	06 30	07 13	07 53	16 21	17 12	18 08	19 08
	11	347 15.3	30.2	167 30.0	9.1	18 14.8	2.2	56.7	50	06 25	07 06	07 44	16 29	17 20	18 16	19 15
	12	2 15.0	S22 30.5	181 58.1	9.1	N18 17.0	2.1	56.7	45	06 14	06 51	07 24	16 45	17 36	18 31	19 28
	13	17 14.8	30.8	196 26.2	9.2	18 19.1	2.0	56.7	N 40	06 04	06 38	07 08	16 58	17 50	18 44	19 40
	14	32 14.5	31.1	210 54.4	9.1	18 21.1	1.9	56.7	35	05 55	06 27	06 55	17 10	18 01	18 55	19 49
	15	47 14.3	31.4	225 22.5	9.2	18 23.0	1.8	56.6	30	05 47	06 16	06 43	17 20	18 11	19 04	19 58
	16	62 14.0	31.7	239 50.7	9.2	18 24.8	1.7	56.6	20	05 31	05 58	06 22	17 37	18 29	19 21	20 12
	17	77 13.7	32.0	254 18.9	9.2	18 26.5	1.6	56.6	N 10	05 16	05 42	06 04	17 52	18 44	19 35	20 25
	18	92 13.5	S22 32.3	268 47.1	9.2	N18 28.1	1.5	56.6	0	04 59	05 25	05 48	18 06	18 58	19 48	20 37
	19	107 13.2	32.6	283 15.3	9.3	18 29.6	1.3	56.5	S 10	04 41	05 08	05 31	18 20	19 12	20 02	20 49
	20	122 12.9	32.9	297 43.6	9.2	18 30.9	1.3	56.5	20	04 19	04 48	05 13	18 35	19 27	20 16	21 02
	21	137 12.7	33.2	312 11.8	9.3	18 32.2	1.2	56.5	30	03 51	04 24	04 51	18 52	19 44	20 32	21 16
	22	152 12.4	33.5	326 40.1	9.3	18 33.4	1.1	56.5	35	03 33	04 10	04 39	19 02	19 54	20 42	21 25
	23	167 12.1	33.7	341 08.4	9.4	18 34.5	1.0	56.4	40	03 11	03 52	04 25	19 13	20 06	20 53	21 34
	D O M I N G O	7 00	182 11.9	S22 34.0	355 36.8	9.3	N18 35.5	0.8	56.4	S 50	02 00	03 02	03 46	19 43	20 36	21 21	21 59
01		197 11.6	34.3	10 05.1	9.4	18 36.3	0.8	56.4	52	01 36	02 48	03 36	19 51	20 43	21 28	22 05
02		212 11.3	34.6	24 33.5	9.4	18 37.1	0.6	56.4	54	01 00	02 32	03 24	20 00	20 52	21 36	22 12
03		227 11.1	34.9	39 01.9	9.4	18 37.7	0.6	56.4	56	///	02 11	03 11	20 10	21 02	21 45	22 20
04		242 10.8	35.2	53 30.3	9.5	18 38.3	0.5	56.3	58	///	01 45	02 55	20 21	21 13	21 55	22 28
05		257 10.5	35.5	67 58.8	9.4	18 38.8	0.3	56.3	S 60	///	01 07	02 36	20 33	21 25	22 06	22 38
06		272 10.3	S22 35.7	82 27.2	9.6	N18 39.1	0.3	56.3	Ocaso Sol		Crepúsculo		Ocaso Luna			
07		287 10.0	36.0	96 55.8	9.5	18 39.4	0.1	56.3	Lat.	Civil	Náut.	6	7	8	9	
08		302 09.7	36.3	111 24.3	9.5	18 39.5	0.1	56.2				h m	h m	h m	h m	
09		317 09.5	36.6	125 52.8	9.6	18 39.6	0.1	56.2	N 72	h m	h m	h m	h m	h m	h m	h m
10		332 09.2	36.9	140 21.4	9.7	18 39.5	0.1	56.2	N 70	13 26	15 37	10 03	11 10	11 44	12 43	
11		347 08.9	37.1	154 50.1	9.6	18 39.4	0.3	56.2	N 70	12 25	14 14	15 55	10 03	11 10	11 44	11 58
12		2 08.7	S22 37.4	169 18.7	9.7	18 38.8	0.5	56.1	68	12 25	14 14	16 09	09 22	10 24	11 04	11 28
13		17 08.4	37.7	183 47.4	9.7	18 38.3	0.5	56.1	66	13 36	15 07	16 21	08 54	09 54	10 37	11 06
14		32 08.1	38.0	198 16.1	9.8	18 38.3	0.5	56.1	64	14 12	15 25	16 32	08 32	09 31	10 16	10 48
15		47 07.9	38.3	212 44.9	9.7	18 37.8	0.6	56.1	62	14 37	15 40	16 41	08 15	09 13	09 59	10 34
16		62 07.6	38.5	227 13.6	9.9	18 37.2	0.8	56.0	62	14 37	15 40	16 41	08 15	09 13	09 59	10 34
17		77 07.3	38.8	241 42.5	9.8	18 36.4	0.8	56.0	60	14 57	15 53	16 48	08 01	08 58	09 45	10 21
18		92 07.1	S22 39.1	256 11.3	9.9	N18 35.6	1.0	56.0	N 58	15 13	16 04	16 55	07 48	08 46	09 33	10 11
19		107 06.8	39.3	270 40.2	9.9	18 34.6	1.0	56.0	56	15 27	16 13	17 02	07 38	08 35	09 22	10 01
20		122 06.5	39.6	285 09.1	10.0	18 33.6	1.2	56.0	54	15 39	16 22	17 07	07 28	08 25	09 13	09 53
21		137 06.2	39.9	299 38.1	10.0	18 32.4	1.2	55.9	52	15 49	16 30	17 13	07 20	08 17	09 05	09 46
22		152 06.0	40.2	314 07.1	10.0	18 31.2	1.3	55.9	50	15 59	16 37	17 18	07 13	08 09	08 57	09 39
23		167 05.7	40.4	328 36.1	10.1	18 29.9	1.4	55.9	45	16 18	16 52	17 29	06 57	07 52	08 42	09 25
L U N E S		8 00	182 05.4	S22 40.7	343 05.2	10.1	N18 28.5	1.6	55.9	N 40	16 35	17 05	17 39	06 44	07 39	08 28	09 13
	01	197 05.2	41.0	357 34.3	10.1	18 26.9	1.6	55.8	35	16 48	17 16	17 48	06 33	07 27	08 17	09 03
	02	212 04.9	41.2	12 03.4	10.2	18 25.3	1.7	55.8	30	17 00	17 26	17 56	06 23	07 17	08 08	08 54
	03	227 04.6	41.5	26 32.6	10.2	18 23.6	1.8	55.8	20	17 20	17 44	18 12	06 06	07 00	07 51	08 38
	04	242 04.3	41.8	41 01.8	10.3	18 21.8	1.9	55.8	N 10	17 38	18 01	18 27	05 52	06 45	07 36	08 25
	05	257 04.1	42.0	55 31.1	10.3	18 19.9	2.0	55.7	0	17 55	18 18	18 44	05 38	06 31	07 22	08 12
	06	272 03.8	S22 42.3	70 00.4	10.4	N18 17.9	2.1	55.7	S 10	18 12	18 35	19 02	05 24	06 17	07 09	07 59
	07	287 03.5	42.6	84 29.8	10.4	18 15.8	2.2	55.7	20	18 30	18 55	19 24	05 10	06 01	06 54	07 46
	08	302 03.3	42.8	98 59.2	10.4	18 13.6	2.2	55.7	30	18 52	19 19	19 52	04 53	05 44	06 37	07 30
	09	317 03.0	43.1	113 28.6	10.5	18 11.4	2.4	55.7	35	19 04	19 34	20 10	04 43	05 34	06 27	07 21
	10	332 02.7	43.3	127 58.1	10.5	18 09.0	2.5	55.6	40	19 19	19 51	20 32	04 32	05 22	06 15	07 11
	11	347 02.4	43.6	142 27.6	10.6	18 06.5	2.5	55.6	45	19 36	20 13	21 01	04 19	05 09	06 02	06 58
	12	2 02.2	S22 43.9	156 57.2	10.6	N18 04.0	2.6	55.6	S 50	19 57	20 41	21 44	04 04	04 52	05 46	06 43
	13	17 01.9	44.1	171 26.8	10.6	18 01.4	2.8	55.6	52	20 08	20 55	22 09	03 56	04 44	05 38	06 36
	14	32 01.6	44.4	185 56.4	10.8	17 58.6	2.8	55.5	54	20 19	21 12	22 45	03 48	04 36	05 30	06 29
	15	47 01.3	44.6	200 26.2	10.7	17 55.8	2.9	55.5	56	20 33	21 33	///	03 39	04 26	05 20	06 20
	16	62 01.1	44.9	214 55.9	10.8	17 52.9	3.0	55.5	58	20 49	21 59	///	03 28	04 15	05 09	06 10
	17	77 00.8	45.1	229 25.7	10.8	17 49.9	3.0	55.5	S 60	21 08	22 39	///	03 16	04 02	04 57	05 59
	18	92 00.5	S22 45.4	243 55.5	10.9	N17 46.9	3.2	55.5	SOL		LUNA					
	19	107 00.2	45.7	258 25.4	11.0	17 43.7	3.3	55.4	Día	Ec. Tiempo		Paso Mer.	Paso Mer.		Edad	Fase
	20	122 00.0	45.9	272 55.4	10.9	17 40.4	3.3	55.4		00h	12h		Sup.	Inf.		
	21	136 59.7	46.2	287 25.3	11.1	17 37.1	3.4	55.4	d	m s	m s	h m	h m	h m	d	%
	22															

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.3	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
9 00	77 39.7	169 59.5 S24 04.2	131 56.3 S20 45.1	292 25.6 N14 41.5	201 05.9 S17 55.6	Acamar	315 17.3 S40 14.9	
01	92 42.1	184 58.5 04.3	146 56.7 44.6	307 28.1 41.5	216 08.1 55.6	Achernar	335 25.8 S57 09.9	
02	107 44.6	199 57.6 04.5	161 57.2 44.2	322 30.5 41.6	231 10.3 55.7	Acrux	173 08.2 S63 10.6	
03	122 47.0	214 56.6 . . 04.6	176 57.6 . . 43.7	337 33.0 . . 41.6	246 12.5 . . 55.8	Adhara	255 11.4 S28 59.7	
04	137 49.5	229 55.6 04.7	191 58.1 43.2	352 35.4 41.6	261 14.6 55.8	Aldebarán	290 47.9 N16 32.2	
05	152 52.0	244 54.6 04.9	206 58.5 42.7	7 37.9 41.6	276 16.8 55.9			
06	167 54.4	259 53.7 S24 05.0	221 59.0 S20 42.3	22 40.4 N14 41.6	291 19.0 S17 56.0	Alioth	166 20.2 N55 52.5	
07	182 56.9	274 52.7 05.1	236 59.4 41.8	37 42.8 41.6	306 21.1 56.0	Alkaid	152 58.5 N49 14.2	
08	197 59.4	289 51.7 05.3	251 59.9 41.3	52 45.3 41.6	321 23.3 56.1	Al Na'ir	27 42.7 S46 53.4	
09	213 01.8	304 50.8 . . 05.4	267 00.3 . . 40.9	67 47.8 . . 41.6	336 25.5 . . 56.1	Alnilam	275 45.0 S 1 11.7	
10	228 04.3	319 49.8 05.5	282 00.8 40.4	82 50.2 41.6	351 27.6 56.2	Alphard	217 54.9 S 8 43.5	
11	243 06.8	334 48.8 05.7	297 01.2 39.9	97 52.7 41.6	6 29.8 56.3			
12	258 09.2	349 47.9 S24 05.8	312 01.7 S20 39.4	112 55.2 N14 41.7	21 32.0 S17 56.3	Alphecca	126 10.5 N26 40.0	
13	273 11.7	4 46.9 05.9	327 02.1 39.0	127 57.6 41.7	36 34.1 56.4	Alpheratz	357 42.3 N29 10.6	
14	288 14.2	19 45.9 06.1	342 02.6 38.5	143 00.1 41.7	51 36.3 56.5	Altair	62 07.5 N 8 54.7	
15	303 16.6	34 44.9 . . 06.2	357 03.0 . . 38.0	158 02.6 . . 41.7	66 38.5 . . 56.5	Ankaa	353 14.6 S42 13.7	
16	318 19.1	49 44.0 06.3	12 03.5 37.6	173 05.0 41.7	81 40.7 56.6	Antares	112 25.4 S26 27.6	
17	333 21.5	64 43.0 06.4	27 04.0 37.1	188 07.5 41.7	96 42.8 56.6			
18	348 24.0	79 42.0 S24 06.6	42 04.4 S20 36.6	203 10.0 N14 41.7	111 45.0 S17 56.7	Arcturus	145 55.1 N19 06.3	
19	3 26.5	94 41.1 06.7	57 04.9 36.1	218 12.4 41.7	126 47.2 56.8	Atria	107 26.8 S69 03.0	
20	18 28.9	109 40.1 06.8	72 05.3 35.7	233 14.9 41.8	141 49.3 56.8	Avior	234 17.1 S59 33.4	
21	33 31.4	124 39.1 . . 06.9	87 05.8 . . 35.2	248 17.4 . . 41.8	156 51.5 . . 56.9	Bellatrix	278 30.6 N 6 21.6	
22	48 33.9	139 38.1 07.0	102 06.2 34.7	263 19.8 41.8	171 53.7 57.0	Betelgeuse	270 59.9 N 7 24.4	
23	63 36.3	154 37.2 07.2	117 06.7 34.2	278 22.3 41.8	186 55.8 57.0			
10 00	78 38.8	169 36.2 S24 07.3	132 07.1 S20 33.8	293 24.8 N14 41.8	201 58.0 S17 57.1	Canopus	263 55.1 S52 42.3	
01	93 41.3	184 35.2 07.4	147 07.6 33.3	308 27.2 41.8	217 00.2 57.1	Capella	280 32.4 N46 00.6	
02	108 43.7	199 34.2 07.5	162 08.0 32.8	323 29.7 41.8	232 02.3 57.2	Deneb	49 31.0 N45 20.4	
03	123 46.2	214 33.3 . . 07.6	177 08.5 . . 32.3	338 32.2 . . 41.8	247 04.5 . . 57.3	Denébola	182 32.7 N14 29.2	
04	138 48.7	229 32.3 07.7	192 09.0 31.8	353 34.7 41.9	262 06.7 57.3	Diphda	348 54.8 S17 54.4	
05	153 51.1	244 31.3 07.8	207 09.4 31.4	8 37.1 41.9	277 08.9 57.4			
06	168 53.6	259 30.4 S24 07.9	222 09.9 S20 30.9	23 39.6 N14 41.9	292 11.0 S17 57.4	Dubhe	193 50.6 N61 39.9	
07	183 56.0	274 29.4 08.0	237 10.3 30.4	38 42.1 41.9	307 13.2 57.5	Elnath	278 10.9 N28 37.0	
08	198 58.5	289 28.4 08.1	252 10.8 29.9	53 44.5 41.9	322 15.4 57.6	Eltanin	90 46.2 N51 29.5	
09	214 01.0	304 27.4 . . 08.2	267 11.2 . . 29.4	68 47.0 . . 41.9	337 17.5 . . 57.6	Enif	33 46.3 N 9 56.8	
10	229 03.4	319 26.5 08.3	282 11.7 29.0	83 49.5 41.9	352 19.7 57.7	Fomalhaut	15 23.0 S29 32.6	
11	244 05.9	334 25.5 08.4	297 12.1 28.5	98 52.0 41.9	7 21.9 57.8			
12	259 08.4	349 24.5 S24 08.5	312 12.6 S20 28.0	113 54.4 N14 42.0	22 24.0 S17 57.8	Gacrux	171 59.8 S57 11.5	
13	274 10.8	4 23.5 08.6	327 13.1 27.5	128 56.9 42.0	37 26.2 57.9	Gienah	175 51.3 S17 37.4	
14	289 13.3	19 22.6 08.7	342 13.5 27.0	143 59.4 42.0	52 28.4 57.9	Hadar	148 46.8 S60 26.4	
15	304 15.8	34 21.6 . . 08.8	357 14.0 . . 26.6	159 01.9 . . 42.0	67 30.6 . . 58.0	Hamal	327 59.3 N23 32.0	
16	319 18.2	49 20.6 08.9	12 14.4 26.1	174 04.3 42.0	82 32.7 58.1	Kaus Aust.	83 42.9 S34 22.4	
17	334 20.7	64 19.7 09.0	27 14.9 25.6	189 06.8 42.0	97 34.9 58.1			
18	349 23.2	79 18.7 S24 09.1	42 15.3 S20 25.1	204 09.3 N14 42.0	112 37.1 S17 58.2	Kochab	137 21.3 N74 05.6	
19	4 25.6	94 17.7 09.2	57 15.8 24.6	219 11.8 42.1	127 39.2 58.2	Markab	13 37.3 N15 17.3	
20	19 28.1	109 16.7 09.3	72 16.3 24.1	234 14.2 42.1	142 41.4 58.3	Menkar	314 13.7 N 4 08.8	
21	34 30.5	124 15.8 . . 09.4	87 16.7 . . 23.6	249 16.7 . . 42.1	157 43.6 . . 58.4	Menkent	148 06.6 S36 26.3	
22	49 33.0	139 14.8 09.5	102 17.2 23.2	264 19.2 42.1	172 45.8 58.4	Miaplacidus	221 38.8 S69 46.6	
23	64 35.5	154 13.8 09.5	117 17.6 22.7	279 21.7 42.1	187 47.9 58.5			
11 00	79 37.9	169 12.8 S24 09.6	132 18.1 S20 22.2	294 24.2 N14 42.1	202 50.1 S17 58.6	Mirfak	308 38.4 N49 54.8	
01	94 40.4	184 11.9 09.7	147 18.5 21.7	309 26.6 42.1	217 52.3 58.6	Nunki	75 57.4 S26 16.5	
02	109 42.9	199 10.9 09.8	162 19.0 21.2	324 29.1 42.2	232 54.4 58.7	Peacock	53 18.2 S56 41.2	
03	124 45.3	214 09.9 . . 09.9	177 19.5 . . 20.7	339 31.6 . . 42.2	247 56.6 . . 58.7	Póllux	243 26.2 N27 59.1	
04	139 47.8	229 08.9 09.9	192 19.9 20.2	354 34.1 42.2	262 58.8 58.8	Procyon	244 58.4 N 5 11.0	
05	154 50.3	244 08.0 10.0	207 20.4 19.8	9 36.5 42.2	278 00.9 58.9			
06	169 52.7	259 07.0 S24 10.1	222 20.8 S20 19.3	24 39.0 N14 42.2	293 03.1 S17 58.9	Rasalhague	96 05.9 N12 33.2	
07	184 55.2	274 06.0 10.2	237 21.3 18.8	39 41.5 42.2	308 05.3 59.0	Régulus	207 42.4 N11 53.5	
08	199 57.6	289 05.0 10.2	252 21.8 18.3	54 44.0 42.3	323 07.5 59.0	Rigel	281 10.7 S 8 11.2	
09	215 00.1	304 04.1 . . 10.3	267 22.2 . . 17.8	69 46.5 . . 42.3	338 09.6 . . 59.1	Rigel Kent.	139 50.8 S60 53.4	
10	230 02.6	319 03.1 10.4	282 22.7 17.3	84 48.9 42.3	353 11.8 59.2	Sabik	102 11.7 S15 44.4	
11	245 05.0	334 02.1 10.4	297 23.1 16.8	99 51.4 42.3	8 14.0 59.2			
12	260 07.5	349 01.1 S24 10.5	312 23.6 S20 16.3	114 53.9 N14 42.3	23 16.1 S17 59.3	Schedar	349 39.0 N56 37.4	
13	275 10.0	4 00.2 10.6	327 24.1 15.8	129 56.4 42.3	38 18.3 59.4	Shaula	96 21.0 S37 06.6	
14	290 12.4	18 59.2 10.6	342 24.5 15.3	144 58.9 42.4	53 20.5 59.4	Sirius	258 32.5 S16 44.4	
15	305 14.9	33 58.2 . . 10.7	357 25.0 . . 14.9	160 01.4 . . 42.4	68 22.7 . . 59.5	Spica	158 30.4 S11 14.2	
16	320 17.4	48 57.2 10.8	12 25.4 14.4	175 03.8 42.4	83 24.8 59.5	Suhail	222 51.4 S43 29.5	
17	335 19.8	63 56.3 10.8	27 25.9 13.9	190 06.3 42.4	98 27.0 59.6			
18	350 22.3	78 55.3 S24 10.9	42 26.4 S20 13.4	205 08.8 N14 42.4	113 29.2 S17 59.7	Vega	80 38.7 N38 48.2	
19	5 24.8	93 54.3 11.0	57 26.8 12.9	220 11.3 42.4	128 31.3 59.7	Zuben'ubi	137 04.6 S16 06.0	
20	20 27.2	108 53.3 11.0	72 27.3 12.4	235 13.8 42.5	143 33.5 59.8			
21	35 29.7	123 52.4 . . 11.1	87 27.8 . . 11.9	250 16.3 . . 42.5	158 35.7 . . 59.8			
22	50 32.1	138 51.4 11.1	102 28.2 11.4	265 18.7 42.5	173 37.9 17 59.9			
23	65 34.6	153 50.4 11.2	117 28.7 10.9	280 21.2 42.5	188 40.0 S18 00.0			
h m								
Paso Mer. 18 42.3	v -1.0 d 0.1		v 0.5 d 0.5	v 2.5 d 0.0	v 2.2 d 0.1			
						AHS Paso Mer.		
						Venus	90 57.4 12 42	
						Marte	53 28.3 15 11	
						Júpiter	214 46.0 4 26	
						Saturno	123 19.2 10 31	

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d		Ph	Náut.		Civil	9	10	11	12
d h	° /	° /	° /	° /	° /	° /	° /	h m	h m	h m	h m	h m	h m	h m	
M A R T E S	9 00	181 58.9	S22 46.9	330 55.6	11.1	N17 26.6	3.7 55.3	N 72	08 12	10 29		16 15	18 03	19 43	21 19
	01	196 58.6	47.2	345 25.7	11.3	17 22.9	3.7 55.3	N 70	07 53	09 37		16 59	18 31	20 01	21 30
	02	211 58.3	47.4	359 56.0	11.2	17 19.2	3.9 55.3	68	07 38	09 05		17 29	18 51	20 15	21 39
	03	226 58.0	47.7	14 26.2	11.4	17 15.3	3.9 55.3	66	07 25	08 41	10 15	17 50	19 08	20 27	21 46
	04	241 57.8	47.9	28 56.6	11.3	17 11.4	4.0 55.2	64	07 15	08 22	09 37	18 08	19 21	20 36	21 52
	05	256 57.5	48.2	43 26.9	11.4	17 07.4	4.1 55.2	62	07 06	08 07	09 11	18 22	19 32	20 44	21 57
	06	271 57.2	S22 48.4	57 57.3	11.5	N17 03.3	4.2 55.2	60	06 58	07 54	08 51	18 34	19 42	20 51	22 01
	07	286 56.9	48.6	72 27.8	11.5	16 59.1	4.2 55.2	N 58	06 51	07 43	08 34	18 44	19 50	20 57	22 05
	08	301 56.7	48.9	86 58.3	11.6	16 54.9	4.3 55.2	56	06 44	07 33	08 20	18 53	19 57	21 03	22 09
	09	316 56.4	49.1	101 28.9	11.6	16 50.6	4.4 55.1	54	06 38	07 24	08 07	19 01	20 04	21 08	22 12
	10	331 56.1	49.4	115 59.5	11.7	16 46.2	4.5 55.1	52	06 33	07 16	07 57	19 08	20 10	21 12	22 15
	11	346 55.8	49.6	130 30.2	11.7	16 41.7	4.5 55.1	50	06 28	07 09	07 47	19 15	20 15	21 16	22 17
	12	1 55.5	S22 49.9	145 00.9	11.8	N16 37.2	4.7 55.1	45	06 16	06 53	07 27	19 28	20 26	21 25	22 23
	13	16 55.3	50.1	159 31.7	11.8	16 32.5	4.7 55.1	N 40	06 06	06 40	07 11	19 40	20 36	21 32	22 27
	14	31 55.0	50.3	174 02.5	11.8	16 27.8	4.8 55.1	35	05 57	06 29	06 57	19 49	20 44	21 38	22 31
	15	46 54.7	50.6	188 33.3	12.0	16 23.0	4.8 55.0	30	05 49	06 19	06 45	19 58	20 51	21 43	22 35
	16	61 54.4	50.8	203 04.3	11.9	16 18.2	4.9 55.0	20	05 33	06 00	06 24	20 12	21 03	21 53	22 41
	17	76 54.1	51.0	217 35.2	12.1	16 13.3	5.0 55.0	N 10	05 17	05 43	06 06	20 25	21 14	22 01	22 47
	18	91 53.9	S22 51.3	232 06.3	12.0	N16 08.3	5.1 55.0	0	05 00	05 27	05 49	20 37	21 24	22 08	22 52
	19	106 53.6	51.5	246 37.3	12.1	16 03.2	5.2 55.0	S 10	04 42	05 09	05 32	20 49	21 34	22 16	22 57
	20	121 53.3	51.8	261 08.4	12.2	15 58.0	5.2 54.9	20	04 20	04 49	05 13	21 02	21 44	22 24	23 02
	21	136 53.0	52.0	275 39.6	12.2	15 52.8	5.3 54.9	30	03 51	04 25	04 52	21 16	21 56	22 33	23 08
	22	151 52.7	52.2	290 10.8	12.3	15 47.5	5.3 54.9	35	03 33	04 10	04 39	21 25	22 03	22 39	23 12
	23	166 52.5	52.5	304 42.1	12.3	15 42.2	5.4 54.9	40	03 11	03 52	04 25	21 34	22 11	22 45	23 15
	M I É R C O L E S	10 00	181 52.2	S22 52.7	319 13.4	12.4	N15 36.8	5.5 54.9	45	02 41	03 30	04 07	21 45	22 20	22 51	23 20
01		196 51.9	52.9	333 44.8	12.4	15 31.3	5.6 54.9	S 50	01 58	03 01	03 45	21 59	22 31	23 00	23 25
02		211 51.6	53.1	348 16.2	12.5	15 25.7	5.6 54.8	52	01 32	02 47	03 35	22 05	22 36	23 04	23 28
03		226 51.3	53.4	2 47.7	12.5	15 20.1	5.7 54.8	54	00 54	02 30	03 23	22 12	22 42	23 08	23 31
04		241 51.1	53.6	17 19.2	12.6	15 14.4	5.8 54.8	56	///	02 09	03 09	22 20	22 48	23 13	23 34
05		256 50.8	53.8	31 50.8	12.6	15 08.6	5.8 54.8	58	///	01 41	02 53	22 28	22 55	23 18	23 37
06		271 50.5	S22 54.1	46 22.4	12.7	N15 02.8	5.9 54.8	S 60	///	00 59	02 34	22 38	23 03	23 24	23 41
07		286 50.2	54.3	60 54.1	12.7	14 56.9	6.0 54.8								
08		301 49.9	54.5	75 25.8	12.8	14 50.9	6.0 54.7	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
09		316 49.7	54.7	89 57.6	12.8	14 44.9	6.1 54.7			Civil	Náut.	9	10	11	12
10		331 49.4	55.0	104 29.4	12.9	14 38.8	6.1 54.7								
11		346 49.1	55.2	119 01.3	12.9	14 32.7	6.3 54.7								
12		1 48.8	S22 55.4	133 33.2	12.9	N14 26.4	6.2 54.7	N 70	h m	h m	h m	h m	h m	h m	h m
13		16 48.5	55.6	148 05.1	13.0	14 20.2	6.4 54.7	N 72		13 16	15 33	12 43	12 33	12 26	12 20
14		31 48.2	55.8	162 37.1	13.1	14 13.8	6.3 54.6	N 70		14 08	15 52	11 58	12 04	12 07	12 08
15		46 48.0	56.1	177 09.2	13.1	14 07.5	6.5 54.6	68		14 40	16 07	11 28	11 43	11 52	11 58
16		61 47.7	56.3	191 41.3	13.2	14 01.0	6.5 54.6	66	13 30	15 04	16 20	11 06	11 26	11 39	11 49
17		76 47.4	56.5	206 13.5	13.2	13 54.5	6.6 54.6	64	14 08	15 23	16 30	10 48	11 12	11 29	11 42
18		91 47.1	S22 56.7	220 45.7	13.2	N13 47.9	6.6 54.6	62	14 34	15 38	16 39	10 34	11 00	11 20	11 36
19		106 46.8	56.9	235 17.9	13.3	13 41.3	6.7 54.6	60	14 55	15 51	16 47	10 21	10 50	11 12	11 31
20		121 46.5	57.2	249 50.2	13.3	13 34.6	6.7 54.6	N 58	15 11	16 02	16 55	10 11	10 41	11 05	11 26
21		136 46.3	57.4	264 22.5	13.4	13 27.9	6.8 54.5	56	15 26	16 12	17 01	10 01	10 33	10 59	11 22
22		151 46.0	57.6	278 54.9	13.4	13 21.1	6.9 54.5	54	15 38	16 21	17 07	09 53	10 26	10 54	11 18
23		166 45.7	57.8	293 27.3	13.5	13 14.2	6.9 54.5	52	15 49	16 29	17 13	09 46	10 20	10 49	11 15
J U E V E S		11 00	181 45.4	S22 58.0	307 59.8	13.5	N13 07.3	6.9 54.5	50	15 58	16 36	17 18	09 39	10 14	10 45	11 12
	01	196 45.1	58.2	322 32.3	13.6	13 00.4	7.0 54.5	45	16 18	16 52	17 29	09 25	10 02	10 35	11 05
	02	211 44.8	58.4	337 04.9	13.6	12 53.4	7.1 54.5	N 40	16 35	17 05	17 39	09 13	09 52	10 27	10 59
	03	226 44.5	58.6	351 37.5	13.7	12 46.3	7.1 54.5	35	16 48	17 17	17 48	09 03	09 43	10 20	10 54
	04	241 44.3	58.8	6 10.2	13.6	12 39.2	7.2 54.5	30	17 01	17 27	17 57	08 54	09 36	10 14	10 50
	05	256 44.0	59.1	20 42.8	13.8	12 32.0	7.2 54.4	20	17 21	17 45	18 13	08 38	09 22	10 04	10 42
	06	271 43.7	S22 59.3	35 15.6	13.8	N12 24.8	7.2 54.4	N 10	17 39	18 02	18 28	08 25	09 11	09 54	10 36
	07	286 43.4	59.5	49 48.4	13.8	12 17.6	7.4 54.4	0	17 56	18 19	18 45	08 12	09 00	09 45	10 29
	08	301 43.1	59.7	64 21.2	13.8	12 10.2	7.3 54.4	S 10	18 14	18 37	19 04	07 59	08 49	09 37	10 23
	09	316 42.8	22 59.9	78 54.0	13.9	12 02.9	7.4 54.4	20	18 32	18 57	19 26	07 46	08 37	09 27	10 16
	10	331 42.5	23 00.1	93 26.9	14.0	11 55.5	7.5 54.4	30	18 54	19 21	19 54	07 30	08 23	09 16	10 08
	11	346 42.3	00.3	107 59.9	14.0	11 48.0	7.5 54.4	35	19 07	19 36	20 13	07 21	08 16	09 10	10 04
	12	1 42.0	S23 00.5	122 32.9	14.0	N11 40.5	7.6 54.4	40	19 21	19 54	20 35	07 11	08 07	09 03	09 59
	13	16 41.7	00.7	137 05.9	14.1	11 32.9	7.6 54.4	45	19 39	20 16	21 05	06 58	07 56	08 54	09 53
	14	31 41.4	00.9	151 39.0	14.1	11 25.3	7.6 54.4	S 50	20 01	20 45	21 48	06 43	07 43	08 44	09 45
	15	46 41.1	01.1	166 12.1	14.1	11 17.7	7.7 54.3	52	20 11	20 59	22 14	06 36	07 37	08 39	09 42
	16	61 40.8	01.3	180 45.2	14.2	11 10.0	7.7 54.3	54	20 23	21 17	22 54	06 29	07 31	08 34	09 38
	17	76 40.5	01.5	195 18.4	14.2	11 02.3	7.8 54.3	56	20 37	21 38	///	06 20	07 23	08 29	09 34
	18	91 40.2	S23 01.7	209 51.6	14.2	N10 54.5	7.8 54.3	58	20 53	22 06	///	06 10	07 15	08 22	09 30
	19	106 40.0	01.9	224 24.8	14.3	10 46.7	7.9 54.3	S 60	21 13	22 49	///	05 59	07 06	08 15	09 25
	20	121 39.7	02.1	238 58.1	14.3	10 38.8	7.9 54.3								
	21	136 39.4	02.3	253 31.4	14.4	10 30.9	7.9 54.3	Día	SOL		LUNA				
	22	151 39.1	02.5	268 04.8	14.4	10 23.0	8.0 54.3				Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase
	2														

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.0	JÚPITER -2.3	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
12 00	80 37.1	168 49.4 S24 11.2	132 29.1 S20 10.4	295 23.7 N14 42.5	203 42.2 S18 00.0	Acamar	315 17.3 S40 14.9	
01	95 39.5	183 48.5 11.3	147 29.6 09.9	310 26.2 42.5	218 44.4 00.1	Achernar	335 25.8 S57 09.9	
02	110 42.0	198 47.5 11.3	162 30.1 09.4	325 28.7 42.6	233 46.5 00.1	Acrux	173 08.2 S63 10.6	
03	125 44.5	213 46.5 11.4	177 30.5 08.9	340 31.2 42.6	248 48.7 00.2	Adhara	255 11.4 S28 59.7	
04	140 46.9	228 45.5 11.4	192 31.0 08.4	355 33.7 42.6	263 50.9 00.3	Aldebarán	290 47.9 N16 32.2	
05	155 49.4	243 44.6 11.5	207 31.5 07.9	10 36.2 42.6	278 53.1 00.3			
06	170 51.9	258 43.6 S24 11.5	222 31.9 S20 07.4	25 38.6 N14 42.6	293 55.2 S18 00.4	Alioth	166 20.1 N55 52.5	
07	185 54.3	273 42.6 11.6	237 32.4 06.9	40 41.1 42.7	308 57.4 00.4	Alkaid	152 58.5 N49 14.2	
08	200 56.8	288 41.6 11.6	252 32.8 06.4	55 43.6 42.7	323 59.6 00.5	Al Na'ir	27 42.7 S46 53.4	
09	215 59.3	303 40.7 11.6	267 33.3 05.9	70 46.1 42.7	339 01.8 00.6	Alnilam	275 45.0 S 1 11.7	
10	231 01.7	318 39.7 11.7	282 33.8 05.4	85 48.6 42.7	354 03.9 00.6	Alphard	217 54.9 S 8 43.5	
11	246 04.2	333 38.7 11.7	297 34.2 04.9	100 51.1 42.7	9 06.1 00.7			
12	261 06.6	348 37.7 S24 11.7	312 34.7 S20 04.4	115 53.6 N14 42.8	24 08.3 S18 00.7	Alphecca	126 10.5 N26 40.0	
13	276 09.1	3 36.8 11.8	327 35.2 03.9	130 56.1 42.8	39 10.4 00.8	Alpheratz	357 42.3 N29 10.6	
14	291 11.6	18 35.8 11.8	342 35.6 03.4	145 58.6 42.8	54 12.6 00.9	Altair	62 07.5 N 8 54.7	
15	306 14.0	33 34.8 11.9	357 36.1 02.9	161 01.0 42.8	69 14.8 00.9	Ankaa	353 14.7 S42 13.7	
16	321 16.5	48 33.8 11.9	12 36.6 02.4	176 03.5 42.8	84 17.0 01.0	Antares	112 25.4 S26 27.6	
17	336 19.0	63 32.9 11.9	27 37.0 01.9	191 06.0 42.8	99 19.1 01.1			
18	351 21.4	78 31.9 S24 11.9	42 37.5 S20 01.4	206 08.5 N14 42.9	114 21.3 S18 01.1	Arcturus	145 55.1 N19 06.3	
19	6 23.9	93 30.9 12.0	57 37.9 00.9	221 11.0 42.9	129 23.5 01.2	Atria	107 26.8 S69 03.0	
20	21 26.4	108 29.9 12.0	72 38.4 20 00.4	236 13.5 42.9	144 25.6 01.2	Avior	234 17.0 S59 33.4	
21	36 28.8	123 28.9 12.0	87 38.9 19 59.9	251 16.0 42.9	159 27.8 01.3	Bellatrix	278 30.6 N 6 21.6	
22	51 31.3	138 28.0 12.0	102 39.3 59.4	266 18.5 43.0	174 30.0 01.4	Betelgeuse	270 59.9 N 7 24.4	
23	66 33.7	153 27.0 12.1	117 39.8 58.9	281 21.0 43.0	189 32.2 01.4			
13 00	81 36.2	168 26.0 S24 12.1	132 40.3 S19 58.4	296 23.5 N14 43.0	204 34.3 S18 01.5	Canopus	263 55.1 S52 42.3	
01	96 38.7	183 25.0 12.1	147 40.7 57.9	311 26.0 43.0	219 36.5 01.5	Capella	280 32.4 N46 00.6	
02	111 41.1	198 24.1 12.1	162 41.2 57.4	326 28.5 43.0	234 38.7 01.6	Deneb	49 31.1 N45 20.4	
03	126 43.6	213 23.1 12.1	177 41.7 56.9	341 31.0 43.1	249 40.9 01.7	Denébola	182 32.7 N14 29.2	
04	141 46.1	228 22.1 12.2	192 42.1 56.4	356 33.5 43.1	264 43.0 01.7	Diphda	348 54.8 S17 54.4	
05	156 48.5	243 21.1 12.2	207 42.6 55.9	11 36.0 43.1	279 45.2 01.8			
06	171 51.0	258 20.2 S24 12.2	222 43.1 S19 55.4	26 38.4 N14 43.1	294 47.4 S18 01.8	Dubhe	193 50.5 N61 39.8	
07	186 53.5	273 19.2 12.2	237 43.5 54.9	41 40.9 43.1	309 49.5 01.9	Elnath	278 10.9 N28 37.0	
08	201 55.9	288 18.2 12.2	252 44.0 54.4	56 43.4 43.2	324 51.7 02.0	Eltanin	90 46.2 N51 29.5	
09	216 58.4	303 17.2 12.2	267 44.5 53.9	71 45.9 43.2	339 53.9 02.0	Enif	33 46.3 N 9 56.8	
10	232 00.9	318 16.3 12.2	282 44.9 53.3	86 48.4 43.2	354 56.1 02.1	Fomalhaut	15 23.0 S29 32.6	
11	247 03.3	333 15.3 12.2	297 45.4 52.8	101 50.9 43.2	9 58.2 02.1			
12	262 05.8	348 14.3 S24 12.2	312 45.9 S19 52.3	116 53.4 N14 43.2	25 00.4 S18 02.2	Gacrux	171 59.8 S57 11.5	
13	277 08.2	3 13.3 12.2	327 46.4 51.8	131 55.9 43.3	40 02.6 02.3	Gienah	175 51.3 S17 37.4	
14	292 10.7	18 12.4 12.2	342 46.8 51.3	146 58.4 43.3	55 04.8 02.3	Hadar	148 46.7 S60 26.4	
15	307 13.2	33 11.4 12.2	357 47.3 50.8	162 00.9 43.3	70 06.9 02.4	Hamal	327 59.3 N23 32.0	
16	322 15.6	48 10.4 12.2	12 47.8 50.3	177 03.4 43.3	85 09.1 02.4	Kaus Aust.	83 42.9 S34 22.4	
17	337 18.1	63 09.4 12.2	27 48.2 49.8	192 05.9 43.4	100 11.3 02.5			
18	352 20.6	78 08.4 S24 12.2	42 48.7 S19 49.3	207 08.4 N14 43.4	115 13.5 S18 02.6	Kochab	137 21.2 N74 05.5	
19	7 23.0	93 07.5 12.2	57 49.2 48.8	222 10.9 43.4	130 15.6 02.6	Markab	13 37.3 N15 17.3	
20	22 25.5	108 06.5 12.2	72 49.6 48.2	237 13.4 43.4	145 17.8 02.7	Menkar	314 13.7 N 4 08.8	
21	37 28.0	123 05.5 12.2	87 50.1 47.7	252 15.9 43.4	160 20.0 02.7	Menkent	148 06.6 S36 26.3	
22	52 30.4	138 04.5 12.2	102 50.6 47.2	267 18.4 43.5	175 22.2 02.8	Miaplacidus	221 38.7 S69 46.6	
23	67 32.9	153 03.6 12.2	117 51.0 46.7	282 20.9 43.5	190 24.3 02.9			
14 00	82 35.4	168 02.6 S24 12.2	132 51.5 S19 46.2	297 23.4 N14 43.5	205 26.5 S18 02.9	Mirfak	308 38.4 N49 54.8	
01	97 37.8	183 01.6 12.2	147 52.0 45.7	312 25.9 43.5	220 28.7 03.0	Nunki	75 57.4 S26 16.5	
02	112 40.3	198 00.6 12.2	162 52.5 45.2	327 28.4 43.6	235 30.8 03.0	Peacock	53 18.2 S56 41.2	
03	127 42.7	212 59.7 12.2	177 52.9 44.7	342 30.9 43.6	250 33.0 03.1	Póllux	243 26.2 N27 59.1	
04	142 45.2	227 58.7 12.1	192 53.4 44.1	357 33.4 43.6	265 35.2 03.2	Procyon	244 58.4 N 5 11.0	
05	157 47.7	242 57.7 12.1	207 53.9 43.6	12 35.9 43.6	280 37.4 03.2			
06	172 50.1	257 56.7 S24 12.1	222 54.3 S19 43.1	27 38.4 N14 43.7	295 39.5 S18 03.3	Rasalhague	96 05.9 N12 33.2	
07	187 52.6	272 55.8 12.1	237 54.8 42.6	42 41.0 43.7	310 41.7 03.3	Régulus	207 42.3 N11 53.5	
08	202 55.1	287 54.8 12.1	252 55.3 42.1	57 43.5 43.7	325 43.9 03.4	Rigel	281 10.7 S 8 11.3	
09	217 57.5	302 53.8 12.0	267 55.7 41.6	72 46.0 43.7	340 46.1 03.4	Rigel Kent.	139 50.7 S60 53.4	
10	233 00.0	317 52.8 12.0	282 56.2 41.0	87 48.5 43.8	355 48.2 03.5	Sabik	102 11.7 S15 44.4	
11	248 02.5	332 51.9 12.0	297 56.7 40.5	102 51.0 43.8	10 50.4 03.6			
12	263 04.9	347 50.9 S24 12.0	312 57.2 S19 40.0	117 53.5 N14 43.8	25 52.6 S18 03.6	Schedar	349 39.0 N56 37.4	
13	278 07.4	2 49.9 11.9	327 57.6 39.5	132 56.0 43.8	40 54.8 03.7	Shaula	96 21.0 S37 06.6	
14	293 09.8	17 48.9 11.9	342 58.1 39.0	147 58.5 43.9	55 56.9 03.7	Sirius	258 32.5 S16 44.4	
15	308 12.3	32 48.0 11.9	357 58.6 38.5	163 01.0 43.9	70 59.1 03.8	Spica	158 30.3 S11 14.2	
16	323 14.8	47 47.0 11.9	12 59.1 37.9	178 03.5 43.9	86 01.3 03.9	Suhail	222 51.4 S43 29.5	
17	338 17.2	62 46.0 11.8	27 59.5 37.4	193 06.0 43.9	101 03.5 03.9			
18	353 19.7	77 45.0 S24 11.8	43 00.0 S19 36.9	208 08.5 N14 44.0	116 05.6 S18 04.0	Vega	80 38.7 N38 48.1	
19	8 22.2	92 44.0 11.8	58 00.5 36.4	223 11.0 44.0	131 07.8 04.0	Zuben'ubi	137 04.6 S16 06.0	
20	23 24.6	107 43.1 11.7	73 00.9 35.9	238 13.5 44.0	146 10.0 04.1			
21	38 27.1	122 42.1 11.7	88 01.4 35.3	253 16.0 44.0	161 12.2 04.2			
22	53 29.6	137 41.1 11.6	103 01.9 34.8	268 18.6 44.1	176 14.3 04.2			
23	68 32.0	152 40.1 11.6	118 02.4 34.3	283 21.1 44.1	191 16.5 04.3			
Paso Mer. 18 30.5	v -1.0 d 0.0		v 0.5 d 0.5	v 2.5 d 0.0	v 2.2 d 0.1			
						AHS Paso Mer.		
						Venus	86 49.8 12 47	
						Marte	51 04.1 15 09	
						Júpiter	214 47.3 4 14	
						Saturno	122 58.1 10 20	

UT (HmGr)	SOL				LUNA				Lat.	Aurora		Orto Sol	Orto Luna						
	AHGr	Dec			AHGr	v	Dec	d		Ph	Náut.		Civil	12	13	14	15		
d h	°	'	°	'	°	'	°	'	°	'	h m	h m	h m	h m	h m	h m			
V I E R N E S	12 00	181	38.5	S23 02.9	297	11.6	14.5	N10 07.0	8.1	54.3	N 72	08 17	10 40	■	21 19	22 53	24 27	00 27	
	01	196	38.2		03.1	311	45.1	14.5	9 58.9	8.1	54.3	N 70	07 58	09 44	■	21 30	22 58	24 26	00 26
	02	211	37.9		03.3	326	18.6	14.5	9 50.8	8.2	54.3	68	07 42	09 10	■	21 39	23 02	24 25	00 25
	03	226	37.6		03.4	340	52.1	14.5	9 42.6	8.1	54.3	66	07 29	08 46	10 23	21 46	23 05	24 24	00 24
	04	241	37.4		03.6	355	25.6	14.6	9 34.5	8.3	54.3	64	07 19	08 26	09 43	21 52	23 07	24 23	00 23
	05	256	37.1		03.8	9	59.2	14.6	9 26.2	8.2	54.2	62	07 09	08 11	09 16	21 57	23 10	24 23	00 23
	06	271	36.8	S23 04.0		24	32.8	14.7	N 9 18.0	8.3	54.2	60	07 01	07 58	08 55	22 01	23 11	24 22	00 22
	07	286	36.5		04.2	39	06.5	14.7	9 09.7	8.3	54.2	N 58	06 54	07 46	08 38	22 05	23 13	24 22	00 22
	08	301	36.2		04.4	53	40.2	14.7	9 01.4	8.4	54.2	56	06 47	07 36	08 23	22 09	23 15	24 21	00 21
	09	316	35.9		04.6	68	13.9	14.7	8 53.0	8.4	54.2	54	06 41	07 27	08 11	22 12	23 16	24 21	00 21
	10	331	35.6		04.8	82	47.6	14.8	8 44.6	8.4	54.2	52	06 35	07 19	08 00	22 15	23 17	24 21	00 21
	11	346	35.3		04.9	97	21.4	14.7	8 36.2	8.5	54.2	50	06 30	07 12	07 50	22 17	23 19	24 20	00 20
	12	1	35.0	S23 05.1		111	55.1	14.9	N 8 27.7	8.5	54.2	45	06 19	06 56	07 30	22 23	23 21	24 20	00 20
	13	16	34.7		05.3	126	29.0	14.8	8 19.2	8.5	54.2	N 40	06 09	06 43	07 13	22 27	23 23	24 19	00 19
	14	31	34.4		05.5	141	02.8	14.9	8 10.7	8.6	54.2	35	05 59	06 31	06 59	22 31	23 25	24 19	00 19
	15	46	34.2		05.7	155	36.7	14.8	8 02.1	8.6	54.2	30	05 51	06 21	06 47	22 35	23 27	24 18	00 18
	16	61	33.9		05.9	170	10.5	15.0	7 53.5	8.6	54.2	20	05 34	06 02	06 26	22 41	23 29	24 18	00 18
	17	76	33.6		06.0	184	44.5	14.9	7 44.9	8.7	54.2	N 10	05 19	05 45	06 08	22 47	23 32	24 17	00 17
	18	91	33.3	S23 06.2		199	18.4	14.9	N 7 36.2	8.7	54.2	0	05 02	05 28	05 50	22 52	23 34	24 16	00 16
	19	106	33.0		06.4	213	52.3	15.0	7 27.5	8.7	54.2	S 10	04 43	05 10	05 33	22 57	23 36	24 16	00 16
	20	121	32.7		06.6	228	26.3	15.0	7 18.8	8.7	54.2	20	04 21	04 50	05 14	23 02	23 39	24 15	00 15
	21	136	32.4		06.8	243	00.3	15.0	7 10.1	8.8	54.2	30	03 52	04 25	04 53	23 08	23 42	24 15	00 15
	22	151	32.1		06.9	257	34.3	15.1	7 01.3	8.8	54.2	35	03 34	04 10	04 40	23 12	23 43	24 14	00 14
	23	166	31.8		07.1	272	08.4	15.0	6 52.5	8.8	54.2	40	03 11	03 52	04 25	23 15	23 45	24 14	00 14
												45	02 41	03 30	04 07	23 20	23 47	24 14	00 14
	S Á B A D O	13 00	181	31.5	S23 07.3	286	42.4	15.1	N 6 43.7	8.9	54.2	S 50	01 56	03 01	03 45	23 25	23 50	24 13	00 13
01		196	31.2		07.5	301	16.5	15.1	6 34.8	8.8	54.2	52	01 30	02 46	03 34	23 28	23 51	24 13	00 13
02		211	30.9		07.6	315	50.6	15.1	6 26.0	9.0	54.2	54	00 48	02 28	03 22	23 31	23 52	24 13	00 13
03		226	30.6		07.8	330	24.7	15.2	6 17.0	8.9	54.2	56	///	02 07	03 08	23 34	23 53	24 12	00 12
04		241	30.3		08.0	344	58.9	15.1	6 08.1	8.9	54.2	58	///	01 38	02 52	23 37	23 55	24 12	00 12
05		256	30.1		08.1	359	33.0	15.2	5 59.2	9.0	54.2	S 60	///	00 53	02 32	23 41	23 57	24 12	00 12
06		271	29.8	S23 08.3		14	07.2	15.1	N 5 50.2	9.0	54.2	Ocaso Sol		Crepúsculo		Ocaso Luna			
07		286	29.5		08.5	28	41.3	15.2	5 41.2	9.1	54.2	Lat.				12	13	14	15
08		301	29.2		08.6	43	15.5	15.2	5 32.1	9.0	54.2			Civil	Náut.				
09		316	28.9		08.8	57	49.7	15.2	5 23.1	9.1	54.2								
10		331	28.6		09.0	72	23.9	15.3	5 14.0	9.1	54.2								
11		346	28.3		09.1	86	58.2	15.2	5 04.9	9.1	54.2								
12		1	28.0	S23 09.3		101	32.4	15.2	N 4 55.8	9.1	54.2	N 72	h m	h m	h m	h m	h m	h m	h m
13		16	27.7		09.5	116	06.6	15.3	4 46.7	9.2	54.2	N 70	■	14 04	15 50	12 08	12 08	12 07	12 06
14		31	27.4		09.6	130	40.9	15.2	4 37.5	9.2	54.2	68	■	14 38	16 06	11 58	12 02	12 06	12 09
15		46	27.1		09.8	145	15.1	15.3	4 28.3	9.2	54.2	66	13 25	15 02	16 19	11 49	11 58	12 05	12 12
16		61	26.8		10.0	159	49.4	15.3	4 19.1	9.2	54.2	64	14 05	15 22	16 29	11 42	11 54	12 04	12 14
17		76	26.5		10.1	174	23.7	15.3	4 09.9	9.2	54.2	62	14 32	15 37	16 39	11 36	11 50	12 03	12 16
18		91	26.2	S23 10.3		188	58.0	15.3	N 4 00.7	9.3	54.3	60	14 53	15 51	16 47	11 31	11 47	12 03	12 18
19		106	25.9		10.4	203	32.3	15.2	3 51.4	9.2	54.3	N 58	15 11	16 02	16 54	11 26	11 45	12 02	12 19
20		121	25.6		10.6	218	06.5	15.3	3 42.2	9.3	54.3	56	15 25	16 12	17 01	11 22	11 42	12 01	12 20
21		136	25.3		10.8	232	40.8	15.3	3 32.9	9.3	54.3	54	15 37	16 21	17 07	11 18	11 40	12 01	12 22
22		151	25.0		10.9	247	15.1	15.3	3 23.6	9.3	54.3	52	15 48	16 29	17 13	11 15	11 38	12 01	12 23
23		166	24.7		11.1	261	49.4	15.3	3 14.3	9.4	54.3	50	15 58	16 36	17 18	11 12	11 36	12 00	12 24
												45	16 19	16 52	17 29	11 05	11 33	11 59	12 26
D O M I N G O		14 00	181	24.4	S23 11.2	276	23.7	15.3	N 3 04.9	9.3	54.3	N 40	16 35	17 06	17 40	10 59	11 29	11 58	12 28
	01	196	24.2		11.4	290	58.0	15.4	2 55.6	9.4	54.3	35	16 49	17 17	17 49	10 54	11 27	11 58	12 29
	02	211	23.9		11.5	305	32.4	15.3	2 46.2	9.3	54.3	30	17 01	17 28	17 57	10 50	11 24	11 57	12 31
	03	226	23.6		11.7	320	06.7	15.3	2 36.9	9.4	54.3	20	17 22	17 46	18 14	10 42	11 20	11 56	12 33
	04	241	23.3		11.8	334	41.0	15.3	2 27.5	9.4	54.3	N 10	17 41	18 03	18 30	10 36	11 16	11 55	12 35
	05	256	23.0		12.0	349	15.3	15.3	2 18.1	9.4	54.3	0	17 58	18 20	18 47	10 29	11 12	11 54	12 37
	06	271	22.7	S23 12.1		3	49.6	15.2	N 2 08.7	9.5	54.3	S 10	18 15	18 38	19 05	10 23	11 08	11 54	12 39
	07	286	22.4		12.3	18	23.8	15.3	1 59.2	9.4	54.4	20	18 34	18 59	19 28	10 16	11 04	11 53	12 41
	08	301	22.1		12.4	32	58.1	15.3	1 49.8	9.5	54.4	30	18 56	19 23	19 56	10 08	11 00	11 51	12 44
	09	316	21.8		12.6	47	32.4	15.3	1 40.3	9.4	54.4	35	19 09	19 38	20 15	10 04	10 57	11 51	12 45
	10	331	21.5		12.7	62	06.7	15.3	1 30.9	9.5	54.4	40	19 24	19 56	20 38	09 59	10 54	11 50	12 46
	11	346	21.2		12.9	76	41.0	15.2	1 21.4	9.5	54.4	45	19 41	20 19	21 08	09 53	10 51	11 49	12 48
	12	1	20.9	S23 13.0		91	15.2	15.3	N 1 11.9	9.4	54.4	S 50	20 04	20 48	21 53	09 45	10 47	11 48	12 50
	13	16	20.6		13.2	105	49.5	15.2	1 02.5	9.5	54.4	52	20 14	21 03	22 19	09 42	10 45	11 48	12 51
	14	31	20.3		13.3	120	23.7	15.3	0 53.0	9.5	54.4	54	20 26	21 20	23 02	09 38	10 43	11 47	12 52
	15	46	20.0		13.5	134	58.0	15.2	0 43.5	9.5	54.4	56	20 40	21 42					

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.1	JÚPITER -2.4	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
15						
00	83 34.5	167 39.2 S24 11.6	133 02.8 S19 33.8	298 23.6 N14 44.1	206 18.7 S18 04.3	Acamar 315 17.3 S40 14.9
01	98 37.0	182 38.2 11.5	148 03.3 33.3	313 26.1 44.1	221 20.9 04.4	Achernar 335 25.8 S57 10.0
02	113 39.4	197 37.2 11.5	163 03.8 32.7	328 28.6 44.2	236 23.0 04.5	Acrux 173 08.1 S63 10.6
03	128 41.9	212 36.2 . . 11.4	178 04.3 . . 32.2	343 31.1 . . 44.2	251 25.2 . . 04.5	Adhara 255 11.3 S28 59.7
04	143 44.3	227 35.3 11.4	193 04.7 31.7	358 33.6 44.2	266 27.4 04.6	Aldebarán 290 47.9 N16 32.2
05	158 46.8	242 34.3 11.3	208 05.2 31.2	13 36.1 44.2	281 29.6 04.6	
06	173 49.3	257 33.3 S24 11.3	223 05.7 S19 30.6	28 38.6 N14 44.3	296 31.7 S18 04.7	Alioth 166 20.1 N55 52.5
07	188 51.7	272 32.3 11.2	238 06.2 30.1	43 41.2 44.3	311 33.9 04.8	Alkaid 152 58.5 N49 14.2
08	203 54.2	287 31.4 11.2	253 06.6 29.6	58 43.7 44.3	326 36.1 04.8	Al Na'ir 27 42.7 S46 53.4
09	218 56.7	302 30.4 . . 11.1	268 07.1 . . 29.1	73 46.2 . . 44.3	341 38.3 . . 04.9	Alnilam 275 45.0 S 1 11.7
10	233 59.1	317 29.4 11.1	283 07.6 28.5	88 48.7 44.4	356 40.4 04.9	Alphard 217 54.9 S 8 43.5
11	249 01.6	332 28.4 11.0	298 08.1 28.0	103 51.2 44.4	11 42.6 05.0	
12	264 04.1	347 27.5 S24 11.0	313 08.5 S19 27.5	118 53.7 N14 44.4	26 44.8 S18 05.0	Alphecca 126 10.5 N26 39.9
13	279 06.5	2 26.5 10.9	328 09.0 27.0	133 56.2 44.5	41 47.0 05.1	Alpheratz 357 42.3 N29 10.6
14	294 09.0	17 25.5 10.8	343 09.5 26.4	148 58.7 44.5	56 49.1 05.2	Altair 62 07.5 N 8 54.7
15	309 11.5	32 24.5 . . 10.8	358 10.0 . . 25.9	164 01.3 . . 44.5	71 51.3 . . 05.2	Ankaa 353 14.7 S42 13.7
16	324 13.9	47 23.6 10.7	13 10.4 25.4	179 03.8 44.5	86 53.5 05.3	Antares 112 25.4 S26 27.6
17	339 16.4	62 22.6 10.6	28 10.9 24.9	194 06.3 44.6	101 55.7 05.3	
18	354 18.8	77 21.6 S24 10.6	43 11.4 S19 24.3	209 08.8 N14 44.6	116 57.8 S18 05.4	Arcturus 145 55.1 N19 06.3
19	9 21.3	92 20.6 10.5	58 11.9 23.8	224 11.3 44.6	132 00.0 05.5	Atria 107 26.8 S69 03.0
20	24 23.8	107 19.7 10.5	73 12.4 23.3	239 13.8 44.6	147 02.2 05.5	Avior 234 17.0 S59 33.4
21	39 26.2	122 18.7 . . 10.4	88 12.8 . . 22.7	254 16.4 . . 44.7	162 04.4 . . 05.6	Bellatrix 278 30.6 N 6 21.6
22	54 28.7	137 17.7 10.3	103 13.3 22.2	269 18.9 44.7	177 06.6 05.6	Betelgeuse 270 59.9 N 7 24.4
23	69 31.2	152 16.8 10.2	118 13.8 21.7	284 21.4 44.7	192 08.7 05.7	
16						
00	84 33.6	167 15.8 S24 10.2	133 14.3 S19 21.1	299 23.9 N14 44.8	207 10.9 S18 05.7	Canopus 263 55.1 S52 42.4
01	99 36.1	182 14.8 10.1	148 14.7 20.6	314 26.4 44.8	222 13.1 05.8	Capella 280 32.4 N46 00.6
02	114 38.6	197 13.8 10.0	163 15.2 20.1	329 28.9 44.8	237 15.3 05.9	Deneb 49 31.1 N45 20.4
03	129 41.0	212 12.9 . . 09.9	178 15.7 . . 19.6	344 31.5 . . 44.8	252 17.4 . . 05.9	Denébola 182 32.7 N14 29.2
04	144 43.5	227 11.9 09.9	193 16.2 19.0	359 34.0 44.9	267 19.6 06.0	Diphda 348 54.8 S17 54.4
05	159 45.9	242 10.9 09.8	208 16.7 18.5	14 36.5 44.9	282 21.8 06.0	
06	174 48.4	257 09.9 S24 09.7	223 17.1 S19 18.0	29 39.0 N14 44.9	297 24.0 S18 06.1	Dubhe 193 50.5 N61 39.8
07	189 50.9	272 09.0 09.6	238 17.6 17.4	44 41.5 45.0	312 26.1 06.2	Elnath 278 10.9 N28 37.0
08	204 53.3	287 08.0 09.5	253 18.1 16.9	59 44.1 45.0	327 28.3 06.2	Eltanin 90 46.2 N51 29.4
09	219 55.8	302 07.0 . . 09.5	268 18.6 . . 16.4	74 46.6 . . 45.0	342 30.5 . . 06.3	Enif 33 46.3 N 9 56.8
10	234 58.3	317 06.0 09.4	283 19.1 15.8	89 49.1 45.1	357 32.7 06.3	Fomalhaut 15 23.0 S29 32.6
11	250 00.7	332 05.1 09.3	298 19.5 15.3	104 51.6 45.1	12 34.8 06.4	
12	265 03.2	347 04.1 S24 09.2	313 20.0 S19 14.8	119 54.2 N14 45.1	27 37.0 S18 06.4	Gacrux 171 59.8 S57 11.5
13	280 05.7	2 03.1 09.1	328 20.5 14.2	134 56.7 45.1	42 39.2 06.5	Gienah 175 51.3 S17 37.4
14	295 08.1	17 02.1 09.0	343 21.0 13.7	149 59.2 45.2	57 41.4 06.6	Hadar 148 46.7 S60 26.4
15	310 10.6	32 01.2 . . 08.9	358 21.5 . . 13.1	165 01.7 . . 45.2	72 43.6 . . 06.6	Hamal 327 59.3 N23 32.0
16	325 13.1	47 00.2 08.8	13 21.9 12.6	180 04.2 45.2	87 45.7 06.7	Kaus Aust. 83 42.9 S34 22.4
17	340 15.5	61 59.2 08.7	28 22.4 12.1	195 06.8 45.3	102 47.9 06.7	
18	355 18.0	76 58.3 S24 08.6	43 22.9 S19 11.5	210 09.3 N14 45.3	117 50.1 S18 06.8	Kochab 137 21.2 N74 05.5
19	10 20.4	91 57.3 08.5	58 23.4 11.0	225 11.8 45.3	132 52.3 06.9	Markab 13 37.3 N15 17.3
20	25 22.9	106 56.3 08.4	73 23.9 10.5	240 14.3 45.4	147 54.4 06.9	Menkar 314 13.7 N 4 08.8
21	40 25.4	121 55.3 . . 08.3	88 24.3 . . 09.9	255 16.9 . . 45.4	162 56.6 . . 07.0	Menkent 148 06.6 S36 26.3
22	55 27.8	136 54.4 08.2	103 24.8 09.4	270 19.4 45.4	177 58.8 07.0	Miaplacidus 221 38.7 S69 46.6
23	70 30.3	151 53.4 08.1	118 25.3 08.8	285 21.9 45.4	193 01.0 07.1	
17						
00	85 32.8	166 52.4 S24 08.0	133 25.8 S19 08.3	300 24.4 N14 45.5	208 03.1 S18 07.1	Mirfak 308 38.4 N49 54.8
01	100 35.2	181 51.5 07.9	148 26.3 07.8	315 27.0 45.5	223 05.3 07.2	Nunki 75 57.4 S26 16.5
02	115 37.7	196 50.5 07.8	163 26.7 07.2	330 29.5 45.5	238 07.5 07.3	Peacock 53 18.2 S56 41.2
03	130 40.2	211 49.5 . . 07.7	178 27.2 . . 06.7	345 32.0 . . 45.6	253 09.7 . . 07.3	Póllux 243 26.2 N27 59.1
04	145 42.6	226 48.5 07.6	193 27.7 06.2	0 34.5 45.6	268 11.9 07.4	Procyon 244 58.4 N 5 11.0
05	160 45.1	241 47.6 07.5	208 28.2 05.6	15 37.1 45.6	283 14.0 07.4	
06	175 47.6	256 46.6 S24 07.4	223 28.7 S19 05.1	30 39.6 N14 45.7	298 16.2 S18 07.5	Rasalhague 96 05.9 N12 33.2
07	190 50.0	271 45.6 07.3	238 29.2 04.5	45 42.1 45.7	313 18.4 07.6	Régulus 207 42.3 N11 53.5
08	205 52.5	286 44.7 07.2	253 29.6 04.0	60 44.7 45.7	328 20.6 07.6	Rigel 281 10.7 S 8 11.3
09	220 54.9	301 43.7 . . 07.0	268 30.1 . . 03.4	75 47.2 . . 45.8	343 22.7 . . 07.7	Rigel Kent. 139 50.7 S60 53.4
10	235 57.4	316 42.7 06.9	283 30.6 02.9	90 49.7 45.8	358 24.9 07.7	Sabik 102 11.7 S15 44.4
11	250 59.9	331 41.7 06.8	298 31.1 02.4	105 52.2 45.8	13 27.1 07.8	
12	266 02.3	346 40.8 S24 06.7	313 31.6 S19 01.8	120 54.8 N14 45.9	28 29.3 S18 07.8	Schedar 349 39.0 N56 37.4
13	281 04.8	1 39.8 06.6	328 32.1 01.3	135 57.3 45.9	43 31.5 07.9	Shaula 96 21.0 S37 06.6
14	296 07.3	16 38.8 06.4	343 32.5 00.7	150 59.8 45.9	58 33.6 08.0	Sirius 258 32.5 S16 44.4
15	311 09.7	31 37.9 . . 06.3	358 33.0 19 00.2	166 02.4 . . 46.0	73 35.8 . . 08.0	Spica 158 30.3 S11 14.2
16	326 12.2	46 36.9 06.2	13 33.5 18 59.6	181 04.9 46.0	88 38.0 08.1	Suhail 222 51.3 S43 29.5
17	341 14.7	61 35.9 06.1	28 34.0 59.1	196 07.4 46.0	103 40.2 08.1	
18	356 17.1	76 34.9 S24 05.9	43 34.5 S18 58.5	211 10.0 N14 46.1	118 42.4 S18 08.2	Vega 80 38.7 N38 48.1
19	11 19.6	91 34.0 05.8	58 35.0 58.0	226 12.5 46.1	133 44.5 08.2	Zuben'ubi 137 04.5 S16 06.0
20	26 22.0	106 33.0 05.7	73 35.5 57.5	241 15.0 46.1	148 46.7 08.3	
21	41 24.5	121 32.0 . . 05.5	88 35.9 . . 56.9	256 17.6 . . 46.2	163 48.9 . . 08.4	AHS Paso Mer.
22	56 27.0	136 31.1 05.4	103 36.4 56.4	271 20.1 46.2	178 51.1 08.4	Venus 82 42.1 12 52
23	71 29.4	151 30.1 05.3	118 36.9 55.8	286 22.6 46.2	193 53.2 08.5	Marte 48 40.6 15 07
	h m					Júpiter 214 50.3 4 02
Paso Mer. 18 18.7	v -1.0 d 0.1		v 0.5 d 0.5	v 2.5 d 0.0	v 2.2 d 0.1	Saturno 122 37.3 10 10

UT (HmGr)	SOL		LUNA				Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>		Ph	Náut.		Civil	15	16	17	18	
L U N E S	d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
	15 00	181 17.3	S23 14.7	266 05.5	15.1 S	0 42.3	9.6 54.6	N 72	08 21	10 49	00 27	02 03	03 43	05 29		
	01	196 17.0		280 39.6	15.1	0 51.9	9.5 54.6	N 70	08 01	09 49	00 26	01 56	03 29	05 06		
	02	211 16.7		295 13.7	15.0	1 01.4	9.6 54.6	66	07 33	08 49	10 29	00 24	01 45	03 08	04 33	
	03	226 16.4	15.1	309 47.7	15.1	1 11.0	9.5 54.6	64	07 22	08 30	09 47	00 23	01 41	03 00	04 22	
	04	241 16.1	15.3	324 21.8	15.0	1 20.5	9.6 54.6	62	07 12	08 14	09 19	00 23	01 37	02 54	04 12	
	05	256 15.8	15.4	338 55.8	15.0	1 30.1	9.5 54.6	60	07 04	08 00	08 58	00 22	01 34	02 48	04 03	
	06	271 15.5	S23 15.5	353 29.8	14.9 S	1 39.6	9.6 54.7	N 58	06 56	07 49	08 41	00 22	01 32	02 43	03 56	
	07	286 15.2	15.6	8 03.7	15.0	1 49.2	9.5 54.7	56	06 50	07 39	08 26	00 21	01 29	02 38	03 49	
	08	301 14.9	15.8	22 37.7	14.9	1 58.7	9.6 54.7	54	06 43	07 30	08 13	00 21	01 27	02 34	03 44	
	09	316 14.6	15.9	37 11.6	14.9	2 08.3	9.5 54.7	52	06 38	07 21	08 02	00 21	01 25	02 31	03 38	
	10	331 14.3	16.0	51 45.5	14.9	2 17.8	9.6 54.7	50	06 33	07 14	07 53	00 20	01 23	02 28	03 33	
	11	346 14.0	16.2	66 19.4	14.8	2 27.4	9.5 54.7	45	06 21	06 58	07 32	00 20	01 19	02 20	03 23	
	12	1 13.7	S23 16.3	80 53.2	14.8 S	2 36.9	9.5 54.8	N 40	06 11	06 45	07 15	00 19	01 16	02 15	03 15	
	13	16 13.4	16.4	95 27.0	14.8	2 46.4	9.6 54.8	35	06 01	06 33	07 01	00 19	01 13	02 10	03 07	
	14	31 13.1	16.5	110 00.8	14.8	2 56.0	9.5 54.8	30	05 53	06 22	06 49	00 18	01 11	02 05	03 01	
	15	46 12.8	16.7	124 34.6	14.7	3 05.5	9.5 54.8	20	05 36	06 04	06 28	00 18	01 07	01 57	02 50	
	16	61 12.5	16.8	139 08.3	14.7	3 15.0	9.5 54.8	N 10	05 20	05 46	06 09	00 17	01 03	01 51	02 41	
	17	76 12.2	16.9	153 42.0	14.7	3 24.5	9.6 54.9	0	05 03	05 29	05 52	00 16	01 00	01 44	02 32	
	18	91 11.9	S23 17.0	168 15.7	14.6 S	3 34.1	9.5 54.9	S 10	04 44	05 11	05 34	00 16	00 56	01 38	02 23	
	19	106 11.6	17.1	182 49.3	14.6	3 43.6	9.4 54.9	20	04 22	04 51	05 15	00 15	00 53	01 32	02 13	
	20	121 11.3	17.3	197 22.9	14.6	3 53.0	9.5 54.9	30	03 53	04 26	04 53	00 15	00 49	01 24	02 03	
	21	136 11.0	17.4	211 56.5	14.5	4 02.5	9.5 54.9	35	03 34	04 11	04 41	00 14	00 46	01 20	01 57	
	22	151 10.7	17.5	226 30.0	14.5	4 12.0	9.5 55.0	40	03 11	03 53	04 26	00 14	00 44	01 15	01 50	
	23	166 10.4	17.6	241 03.5	14.5	4 21.5	9.4 55.0	45	02 41	03 30	04 08	00 14	00 41	01 10	01 42	
M A R T E S	00	181 10.1	S23 17.7	255 37.0	14.4 S	4 30.9	9.5 55.0	S 50	01 56	03 01	03 45	00 13	00 37	01 03	01 32	
	01	196 09.8	17.9	270 10.4	14.4	4 40.4	9.4 55.0	52	01 28	02 46	03 34	00 13	00 36	01 00	01 28	
	02	211 09.5	18.0	284 43.8	14.4	4 49.8	9.4 55.0	54	00 44	02 28	03 22	00 13	00 34	00 57	01 23	
	03	226 09.2	18.1	299 17.2	14.3	4 59.2	9.4 55.1	56	////	02 06	03 08	00 12	00 32	00 53	01 17	
	04	241 08.9	18.2	313 50.5	14.3	5 08.6	9.4 55.1	58	////	01 37	02 51	00 12	00 30	00 49	01 11	
	05	256 08.6	18.3	328 23.8	14.2	5 18.0	9.4 55.1	S 60	////	00 48	02 31	00 12	00 27	00 44	01 05	
	06	271 08.3	S23 18.4	342 57.0	14.2 S	5 27.4	9.3 55.1	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna				
	07	286 07.9	18.5	357 30.2	14.1	5 36.7	9.4 55.2			Civil	Náut.	15	16	17	18	
	08	301 07.6	18.6	12 03.3	14.1	5 46.1	9.3 55.2					h m	h m	h m	h m	
	09	316 07.3	18.8	26 36.4	14.1	5 55.4	9.3 55.2	N 72	h m	h m	h m	h m	h m	h m	h m	
	10	331 07.0	18.9	41 09.5	14.0	6 04.7	9.3 55.2	N 70	13 02	15 30	12 03	11 57	11 50	11 43		
	11	346 06.7	19.0	55 42.5	14.0	6 14.0	9.3 55.3	68	14 02	15 50	12 06	12 06	12 06	12 07		
	12	1 06.4	S23 19.1	70 15.5	13.9 S	6 23.3	9.3 55.3	66	14 37	16 05	12 09	12 13	12 19	12 26		
	13	16 06.1	19.2	84 48.4	13.9	6 32.6	9.2 55.3	64	13 22	15 02	12 12	12 20	12 29	12 42		
	14	31 05.8	19.3	99 21.3	13.8	6 41.8	9.2 55.3	62	14 04	15 21	12 14	12 25	12 38	12 54		
	15	46 05.5	19.4	113 54.1	13.8	6 51.0	9.2 55.4	60	14 32	15 37	12 16	12 30	12 45	13 05		
	16	61 05.2	19.5	128 26.9	13.7	7 00.2	9.2 55.4	N 58	14 53	15 51	16 47	12 18	12 34	12 52	13 14	
	17	76 04.9	19.6	142 59.6	13.7	7 09.4	9.2 55.4	56	15 10	16 02	16 55	12 19	12 37	12 58	13 22	
	18	91 04.6	S23 19.7	157 32.3	13.6 S	7 18.6	9.1 55.4	54	15 25	16 12	17 01	12 20	12 41	13 03	13 29	
	19	106 04.3	19.8	172 04.9	13.6	7 27.7	9.1 55.5	52	15 38	16 21	17 08	12 22	12 43	13 08	13 36	
	20	121 04.0	19.9	186 37.5	13.5	7 36.8	9.1 55.5	50	15 49	16 30	17 13	12 23	12 46	13 12	13 41	
	21	136 03.7	20.0	201 10.0	13.5	7 45.9	9.0 55.5	45	15 58	16 37	17 18	12 24	12 48	13 16	13 47	
	22	151 03.4	20.1	215 42.5	13.4	7 54.9	9.1 55.5	40	16 19	16 53	17 30	12 26	12 54	13 24	13 58	
	23	166 03.1	20.2	230 14.9	13.4	8 04.0	9.0 55.6	N 40	16 36	17 06	17 40	12 28	12 58	13 31	14 07	
	M I É R C O L E S	00	181 02.8	S23 20.3	244 47.3	13.3 S	8 13.0	8.9 55.6	35	16 50	17 18	17 50	12 29	13 02	13 37	14 15
01		196 02.5	20.4	259 19.6	13.3	8 21.9	9.0 55.6	30	17 02	17 29	17 59	12 31	13 05	13 42	14 22	
02		211 02.2	20.5	273 51.9	13.2	8 30.9	8.9 55.6	20	17 23	17 47	18 15	12 33	13 11	13 51	14 34	
03		226 01.9	20.6	288 24.1	13.1	8 39.8	8.9 55.7	N 10	17 42	18 05	18 31	12 35	13 16	13 59	14 45	
04		241 01.6	20.7	302 56.2	13.1	8 48.7	8.8 55.7	0	17 59	18 22	18 48	12 37	13 21	14 07	14 55	
05		256 01.3	20.8	317 28.3	13.1	8 57.5	8.9 55.7	S 10	18 17	18 40	19 07	12 39	13 26	14 14	15 05	
06		271 00.9	S23 20.9	332 00.4	12.9 S	9 06.4	8.8 55.8	20	18 36	19 00	19 30	12 41	13 31	14 22	15 16	
07		286 00.6	21.0	346 32.3	12.9	9 15.2	8.7 55.8	30	18 58	19 25	19 59	12 44	13 37	14 32	15 29	
08		301 00.3	21.1	1 04.2	12.9	9 23.9	8.8 55.8	35	19 11	19 40	20 17	12 45	13 40	14 37	15 36	
09		316 00.0	21.1	15 36.1	12.8	9 32.7	8.7 55.9	40	19 26	19 59	20 40	12 46	13 44	14 43	15 44	
10		330 59.7	21.2	30 07.9	12.7	9 41.4	8.6 55.9	45	19 44	20 21	21 11	12 48	13 48	14 50	15 53	
11		345 59.4	21.3	44 39.6	12.7	9 50.0	8.6 55.9	S 50	20 06	20 51	21 56	12 50	13 54	14 59	16 05	
12		0 59.1	S23 21.4	59 11.3	12.6 S	9 58.6	8.6 55.9	52	20 17	21 06	22 23	12 51	13 56	15 03	16 10	
13		15 58.8	21.5	73 42.9	12.5	10 07.2	8.6 56.0	54	20 29	21 24	23 09	12 52	13 59	15 07	16 16	
14		30 58.5	21.6	88 14.4	12.5	10 15.8	8.5 56.0	56	20 43	21 46	////	12 54	14 02	15 12	16 23	
15		45 58.2	21.7	102 45.9	12.4	10 24.3	8.4 56.0	58	21 00	22 15	////	12 55	14 05	15 17	16 30	
16		60 57.9	21.7	117 17.3	12.4	10 32.7	8.5 56.1	S 60	21 20	23 04	////	12 57	14 09	15 23	16 39	
17		75 57.6	21.8	131 48.7	12.3	10 41.2	8.4 56.1	Día	SOL		LUNA					
18		90 57.3	S23 21.9	146 20.0	12.2 S	10 49.6	8.3 56.1		Ec. Tiempo	Paso Mer.	Paso Mer. Sup.	Mer. Inf.	Edad	Fase		
19		105 57.0	22.0	160 51.2	12.1	10 57.9	8.3 56.2	00h	12h							
20		120 56.7	22.1	175 22.3	12.1	11 06.2	8.3 56.2									
21		135 56.4	22.2	189 53.4	12.0	11 14.5	8.2 56.2	d	m s	m s	h m	h m	h m	d	%	
22		150 56.0	22.2	204 24.4	12.0											

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.1	JÚPITER -2.4	SATURNO +0.5	ESTRELLAS
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre AHS Dec
1800	86 31.9	166 29.1 S24 05.1	133 37.4 S18 55.3	301 25.2 N14 46.3	208 55.4 S18 08.5	Acamar 315 17.3 S40 15.0
01	101 34.4	181 28.2 05.0	148 37.9 54.7	316 27.7 46.3	223 57.6 08.6	Achernar 335 25.8 S57 10.0
02	116 36.8	196 27.2 04.9	163 38.4 54.2	331 30.2 46.3	238 59.8 08.6	Acrux 173 08.1 S63 10.6
03	131 39.3	211 26.2 . . 04.7	178 38.9 . . 53.6	346 32.8 . . 46.4	254 02.0 . . 08.7	Adhara 255 11.3 S28 59.7
04	146 41.8	226 25.3 04.6	193 39.3 53.1	1 35.3 46.4	269 04.1 08.8	Aldebarán 290 47.9 N16 32.2
05	161 44.2	241 24.3 04.4	208 39.8 52.5	16 37.8 46.4	284 06.3 08.8	
06	176 46.7	256 23.3 S24 04.3	223 40.3 S18 52.0	31 40.4 N14 46.5	299 08.5 S18 08.9	Alioth 166 20.1 N55 52.5
07	191 49.2	271 22.3 04.2	238 40.8 51.4	46 42.9 46.5	314 10.7 08.9	Alkaid 152 58.4 N49 14.2
08	206 51.6	286 21.4 04.0	253 41.3 50.9	61 45.4 46.5	329 12.9 09.0	Al Na'ir 27 42.7 S46 53.4
09	221 54.1	301 20.4 . . 03.9	268 41.8 . . 50.3	76 48.0 . . 46.6	344 15.0 . . 09.0	Alnilam 275 45.0 S 1 11.8
10	236 56.5	316 19.4 03.7	283 42.3 49.8	91 50.5 46.6	359 17.2 09.1	Alphard 217 54.9 S 8 43.5
11	251 59.0	331 18.5 03.6	298 42.8 49.2	106 53.1 46.6	14 19.4 09.2	
12	267 01.5	346 17.5 S24 03.4	313 43.2 S18 48.7	121 55.6 N14 46.7	29 21.6 S18 09.2	Alphecca 126 10.5 N26 39.9
13	282 03.9	1 16.5 03.3	328 43.7 48.1	136 58.1 46.7	44 23.8 09.3	Alpheratz 357 42.3 N29 10.6
14	297 06.4	16 15.6 03.1	343 44.2 47.6	152 00.7 46.7	59 25.9 09.3	Altair 62 07.5 N 8 54.7
15	312 08.9	31 14.6 . . 03.0	358 44.7 . . 47.0	167 03.2 . . 46.8	74 28.1 . . 09.4	Ankaa 353 14.7 S42 13.7
16	327 11.3	46 13.6 02.8	13 45.2 46.5	182 05.8 46.8	89 30.3 09.4	Antares 112 25.3 S26 27.6
17	342 13.8	61 12.7 02.6	28 45.7 45.9	197 08.3 46.9	104 32.5 09.5	
18	357 16.3	76 11.7 S24 02.5	43 46.2 S18 45.4	212 10.8 N14 46.9	119 34.7 S18 09.6	Arcturus 145 55.0 N19 06.3
19	12 18.7	91 10.7 02.3	58 46.7 44.8	227 13.4 46.9	134 36.8 09.6	Atria 107 26.7 S69 03.0
20	27 21.2	106 09.8 02.2	73 47.2 44.3	242 15.9 47.0	149 39.0 09.7	Avior 234 17.0 S59 33.4
21	42 23.7	121 08.8 . . 02.0	88 47.7 . . 43.7	257 18.5 . . 47.0	164 41.2 . . 09.7	Bellatrix 278 30.6 N 6 21.6
22	57 26.1	136 07.8 01.8	103 48.1 43.1	272 21.0 47.0	179 43.4 09.8	Betelgeuse 270 59.8 N 7 24.4
23	72 28.6	151 06.9 01.7	118 48.6 42.6	287 23.5 47.1	194 45.6 09.8	
1900	87 31.0	166 05.9 S24 01.5	133 49.1 S18 42.0	302 26.1 N14 47.1	209 47.7 S18 09.9	Canopus 263 55.1 S52 42.4
01	102 33.5	181 04.9 01.3	148 49.6 41.5	317 28.6 47.1	224 49.9 10.0	Capella 280 32.4 N46 00.6
02	117 36.0	196 04.0 01.2	163 50.1 40.9	332 31.2 47.2	239 52.1 10.0	Deneb 49 31.1 N45 20.4
03	132 38.4	211 03.0 . . 01.0	178 50.6 . . 40.4	347 33.7 . . 47.2	254 54.3 . . 10.1	Denébola 182 32.6 N14 29.2
04	147 40.9	226 02.0 00.8	193 51.1 39.8	2 36.2 47.3	269 56.5 10.1	Diphda 348 54.8 S17 54.4
05	162 43.4	241 01.1 00.7	208 51.6 39.2	17 38.8 47.3	284 58.6 10.2	
06	177 45.8	256 00.1 S24 00.5	223 52.1 S18 38.7	32 41.3 N14 47.3	300 00.8 S18 10.2	Dubhe 193 50.5 N61 39.8
07	192 48.3	270 59.1 00.3	238 52.6 38.1	47 43.9 47.4	315 03.0 10.3	Elnath 278 10.9 N28 37.0
08	207 50.8	285 58.2 00.1	253 53.0 37.6	62 46.4 47.4	330 05.2 10.4	Eltanin 90 46.2 N51 29.4
09	222 53.2	300 57.2 24 00.0	268 53.5 . . 37.0	77 49.0 . . 47.4	345 07.4 . . 10.4	Enif 33 46.3 N 9 56.8
10	237 55.7	315 56.3 23 59.8	283 54.0 36.5	92 51.5 47.5	0 09.5 10.5	Fomalhaut 15 23.0 S29 32.7
11	252 58.1	330 55.3 59.6	298 54.5 35.9	107 54.1 47.5	15 11.7 10.5	
12	268 00.6	345 54.3 S23 59.4	313 55.0 S18 35.3	122 56.6 N14 47.6	30 13.9 S18 10.6	Gacrux 171 59.7 S57 11.5
13	283 03.1	0 53.4 59.2	328 55.5 34.8	137 59.2 47.6	45 16.1 10.6	Gienah 175 51.3 S17 37.4
14	298 05.5	15 52.4 59.1	343 56.0 34.2	153 01.7 47.6	60 18.3 10.7	Hadar 148 46.7 S60 26.4
15	313 08.0	30 51.4 . . 58.9	358 56.5 . . 33.7	168 04.2 . . 47.7	75 20.4 . . 10.7	Hamal 327 59.4 N23 32.0
16	328 10.5	45 50.5 58.7	13 57.0 33.1	183 06.8 47.7	90 22.6 10.8	Kaus Aust. 83 42.9 S34 22.4
17	343 12.9	60 49.5 58.5	28 57.5 32.5	198 09.3 47.7	105 24.8 10.9	
18	358 15.4	75 48.5 S23 58.3	43 58.0 S18 32.0	213 11.9 N14 47.8	120 27.0 S18 10.9	Kochab 137 21.2 N74 05.5
19	13 17.9	90 47.6 58.1	58 58.5 31.4	228 14.4 47.8	135 29.2 11.0	Markab 13 37.4 N15 17.3
20	28 20.3	105 46.6 57.9	73 59.0 30.8	243 17.0 47.9	150 31.4 11.0	Menkar 314 13.7 N 4 08.8
21	43 22.8	120 45.7 . . 57.7	88 59.5 . . 30.3	258 19.5 . . 47.9	165 33.5 . . 11.1	Menkent 148 06.5 S36 26.3
22	58 25.3	135 44.7 57.5	104 00.0 29.7	273 22.1 47.9	180 35.7 11.1	Miaplacidus 221 38.6 S69 46.6
23	73 27.7	150 43.7 57.3	119 00.4 29.2	288 24.6 48.0	195 37.9 11.2	
2000	88 30.2	165 42.8 S23 57.1	134 00.9 S18 28.6	303 27.2 N14 48.0	210 40.1 S18 11.3	Mirfak 308 38.4 N49 54.9
01	103 32.6	180 41.8 56.9	149 01.4 28.0	318 29.7 48.1	225 42.3 11.3	Nunki 75 57.4 S26 16.5
02	118 35.1	195 40.8 56.7	164 01.9 27.5	333 32.3 48.1	240 44.4 11.4	Peacock 53 18.2 S56 41.2
03	133 37.6	210 39.9 . . 56.5	179 02.4 . . 26.9	348 34.8 . . 48.1	255 46.6 . . 11.4	Póllux 243 26.2 N27 59.1
04	148 40.0	225 38.9 56.3	194 02.9 26.3	3 37.4 48.2	270 48.8 11.5	Procyon 244 58.4 N 5 11.0
05	163 42.5	240 38.0 56.1	209 03.4 25.8	18 39.9 48.2	285 51.0 11.5	
06	178 45.0	255 37.0 S23 55.9	224 03.9 S18 25.2	33 42.5 N14 48.3	300 53.2 S18 11.6	Rasalhague 96 05.9 N12 33.2
07	193 47.4	270 36.0 55.7	239 04.4 24.6	48 45.0 48.3	315 55.4 11.6	Régulus 207 42.3 N11 53.5
08	208 49.9	285 35.1 55.5	254 04.9 24.1	63 47.6 48.3	330 57.5 11.7	Rigel 281 10.7 S 8 11.3
09	223 52.4	300 34.1 . . 55.3	269 05.4 . . 23.5	78 50.1 . . 48.4	345 59.7 . . 11.8	Rigel Kent. 139 50.7 S60 53.4
10	238 54.8	315 33.2 55.1	284 05.9 22.9	93 52.7 48.4	1 01.9 11.8	Sabik 102 11.7 S15 44.4
11	253 57.3	330 32.2 54.9	299 06.4 22.4	108 55.3 48.5	16 04.1 11.9	
12	268 59.8	345 31.2 S23 54.7	314 06.9 S18 21.8	123 57.8 N14 48.5	31 06.3 S18 11.9	Schedar 349 39.1 N56 37.4
13	284 02.2	0 30.3 54.5	329 07.4 21.2	139 00.4 48.5	46 08.4 12.0	Shaula 96 20.9 S37 06.6
14	299 04.7	15 29.3 54.2	344 07.9 20.7	154 02.9 48.6	61 10.6 12.0	Sirius 258 32.5 S16 44.4
15	314 07.1	30 28.4 . . 54.0	359 08.4 . . 20.1	169 05.5 . . 48.6	76 12.8 . . 12.1	Spica 158 30.3 S11 14.2
16	329 09.6	45 27.4 53.8	14 08.9 19.5	184 08.0 48.7	91 15.0 12.2	Suhail 222 51.3 S43 29.6
17	344 12.1	60 26.5 53.6	29 09.4 19.0	199 10.6 48.7	106 17.2 12.2	
18	359 14.5	75 25.5 S23 53.4	44 09.9 S18 18.4	214 13.1 N14 48.7	121 19.4 S18 12.3	Vega 80 38.7 N38 48.1
19	14 17.0	90 24.5 53.2	59 10.4 17.8	229 15.7 48.8	136 21.5 12.3	Zuben'ubi 137 04.5 S16 06.0
20	29 19.5	105 23.6 52.9	74 10.9 17.3	244 18.2 48.8	151 23.7 12.4	
21	44 21.9	120 22.6 . . 52.7	89 11.4 . . 16.7	259 20.8 . . 48.9	166 25.9 . . 12.4	AHS Paso Mer.
22	59 24.4	135 21.7 52.5	104 11.9 16.1	274 23.4 48.9	181 28.1 12.5	Venus 78 34.9 12 56
23	74 26.9	150 20.7 52.3	119 12.4 15.5	289 25.9 48.9	196 30.3 12.5	Marte 46 18.1 15 04
	h m					Júpiter 214 55.0 3 50
Paso Mer. 18 07.0		v -1.0 d 0.2	v 0.5 d 0.6	v 2.5 d 0.0	v 2.2 d 0.1	Saturno 122 16.7 9 59

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		18	19	20	21	
d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m		
J U E V E S	18 00	180 55.4	S23 22.4	233 26.3	11.8	S11 39.0	8.0	56.3	N 72	08 24	10 55	■	05 29	07 25	09 48	■
	01	195 55.1	22.5	247 57.1	11.7	11 47.0	8.1	56.3	N 70	08 04	09 53	■	05 06	06 47	08 28	09 57
	02	210 54.8	22.5	262 27.8	11.7	11 55.1	7.9	56.4	66	07 35	08 52	10 33	04 33	06 00	07 23	08 37
	03	225 54.5	22.6	276 58.5	11.6	12 03.0	8.0	56.4	64	07 24	08 33	09 50	04 22	05 44	07 03	08 14
	04	240 54.2	22.7	291 29.1	11.5	12 11.0	7.8	56.4	62	07 14	08 16	09 22	04 12	05 30	06 46	07 55
	05	255 53.9	22.8	305 59.6	11.5	12 18.8	7.9	56.5	60	07 06	08 03	09 01	04 03	05 19	06 33	07 40
	06	270 53.6	S23 22.8	320 30.1	11.4	S12 26.7	7.7	56.5	N 58	06 58	07 51	08 43	03 56	05 09	06 21	07 27
	07	285 53.3	22.9	335 00.5	11.3	12 34.4	7.7	56.5	56	06 52	07 41	08 28	03 49	05 01	06 11	07 16
	08	300 53.0	23.0	349 30.8	11.2	12 42.1	7.7	56.6	54	06 46	07 32	08 16	03 43	04 53	06 02	07 06
	09	315 52.7	23.1	4 01.0	11.2	12 49.8	7.6	56.6	52	06 40	07 24	08 05	03 38	04 46	05 54	06 58
	10	330 52.4	23.1	18 31.2	11.1	12 57.4	7.6	56.6	50	06 35	07 16	07 55	03 33	04 40	05 46	06 50
	11	345 52.0	23.2	33 01.3	11.0	13 05.0	7.4	56.7	45	06 23	07 00	07 34	03 23	04 27	05 31	06 33
	12	0 51.7	S23 23.3	47 31.3	11.0	S13 12.4	7.5	56.7	N 40	06 12	06 46	07 17	03 15	04 16	05 18	06 20
	13	15 51.4	23.3	62 01.3	10.9	13 19.9	7.4	56.7	35	06 03	06 35	07 03	03 07	04 07	05 08	06 08
	14	30 51.1	23.4	76 31.2	10.8	13 27.3	7.3	56.8	30	05 54	06 24	06 50	03 01	03 59	04 58	05 58
	15	45 50.8	23.5	91 01.0	10.7	13 34.6	7.2	56.8	20	05 38	06 05	06 29	02 50	03 45	04 42	05 41
	16	60 50.5	23.5	105 30.7	10.6	13 41.8	7.2	56.8	N 10	05 22	05 48	06 11	02 41	03 33	04 28	05 25
	17	75 50.2	23.6	120 00.3	10.6	13 49.0	7.1	56.9	0	05 05	05 31	05 53	02 32	03 22	04 15	05 11
	18	90 49.9	S23 23.7	134 29.9	10.5	S13 56.1	7.1	56.9	S 10	04 46	05 13	05 36	02 23	03 11	04 02	04 57
	19	105 49.6	23.7	148 59.4	10.4	14 03.2	7.0	56.9	20	04 23	04 52	05 17	02 13	02 59	03 48	04 42
	20	120 49.3	23.8	163 28.8	10.4	14 10.2	6.9	57.0	30	03 54	04 27	04 55	02 03	02 45	03 32	04 25
	21	135 49.0	23.8	177 58.2	10.3	14 17.1	6.9	57.0	35	03 35	04 12	04 42	01 57	02 37	03 23	04 15
	22	150 48.7	23.9	192 27.5	10.2	14 24.0	6.8	57.0	40	03 12	03 54	04 27	01 50	02 29	03 13	04 04
	23	165 48.3	24.0	206 56.7	10.1	14 30.8	6.7	57.1	45	02 41	03 31	04 09	01 42	02 18	03 01	03 51
	V I E R N E S	19 00	180 48.0	S23 24.0	221 25.8	10.0	S14 37.5	6.7	57.1	S 50	01 56	03 01	03 46	01 32	02 06	02 46	03 34
01		195 47.7	24.1	235 54.8	10.0	14 44.2	6.5	57.1	52	01 28	02 46	03 35	01 28	02 00	02 39	03 27
02		210 47.4	24.1	250 23.8	9.9	14 50.7	6.5	57.2	54	00 41	02 28	03 23	01 23	01 54	02 31	03 18
03		225 47.1	24.2	264 52.7	9.8	14 57.2	6.5	57.2	56	///	02 06	03 09	01 17	01 47	02 23	03 09
04		240 46.8	24.2	279 21.5	9.7	15 03.7	6.3	57.2	58	///	01 36	02 52	01 11	01 39	02 13	02 58
05		255 46.5	24.3	293 50.2	9.7	15 10.0	6.3	57.3	S 60	///	00 46	02 31	01 05	01 30	02 02	02 46
06		270 46.2	S23 24.4	308 18.9	9.6	S15 16.3	6.2	57.3	Lat.	Ocaso Sol	Crepúsculo	Ocaso Luna				
07		285 45.9	24.4	322 47.5	9.5	15 22.5	6.2	57.3				18	19	20	21	
08		300 45.6	24.5	337 16.0	9.4	15 28.7	6.0	57.4	N 72	h m	h m	h m	h m	h m	h m	h m
09		315 45.3	24.5	351 44.4	9.4	15 34.7	6.0	57.4									11 43	11 32	11 02	■
10		330 44.9	24.6	6 12.8	9.3	15 40.7	5.9	57.4	N 70	■	14 01	15 50	12 07	12 11	12 22	12 52
11		345 44.6	24.6	20 41.1	9.2	15 46.6	5.8	57.5	68	■	14 37	16 06	12 26	12 39	13 01	13 41
12		0 44.3	S23 24.7	35 09.3	9.1	S15 52.4	5.8	57.5	66	13 21	15 02	16 19	12 42	13 00	13 28	14 12
13		15 44.0	24.7	49 37.4	9.1	15 58.2	5.6	57.5	64	14 04	15 21	16 30	12 54	13 17	13 49	14 35
14		30 43.7	24.7	64 05.5	9.0	16 03.8	5.6	57.6	62	14 32	15 38	16 40	13 05	13 30	14 06	14 54
15		45 43.4	24.8	78 33.5	8.9	16 09.4	5.4	57.6	60	14 53	15 51	16 48	13 14	13 42	14 20	15 09
16		60 43.1	24.8	93 01.4	8.8	16 14.8	5.4	57.6	N 58	15 11	16 03	16 56	13 22	13 53	14 32	15 22
17		75 42.8	24.9	107 29.2	8.8	16 20.2	5.3	57.7	56	15 26	16 13	17 02	13 29	14 02	14 42	15 33
18		90 42.5	S23 24.9	121 57.0	8.6	S16 25.5	5.3	57.7	54	15 38	16 22	17 09	13 36	14 09	14 51	15 43
19		105 42.2	25.0	136 24.6	8.6	16 30.8	5.1	57.8	52	15 49	16 30	17 14	13 41	14 17	15 00	15 52
20		120 41.8	25.0	150 52.2	8.6	16 35.9	5.0	57.8	50	15 59	16 38	17 19	13 47	14 23	15 07	16 00
21		135 41.5	25.1	165 19.8	8.4	16 40.9	5.0	57.8	45	16 20	16 54	17 31	13 58	14 37	15 23	16 17
22		150 41.2	25.1	179 47.2	8.4	16 45.9	4.8	57.9	N 40	16 37	17 08	17 42	14 07	14 48	15 36	16 30
23		165 40.9	25.1	194 14.6	8.3	16 50.7	4.8	57.9	35	16 51	17 19	17 51	14 15	14 58	15 47	16 42
S Á B A D O		20 00	180 40.6	S23 25.2	208 41.9	8.3	S16 55.5	4.7	57.9	30	17 04	17 30	18 00	14 22	15 07	15 57	16 52
	01	195 40.3	25.2	223 09.2	8.2	17 00.2	4.5	58.0	20	17 25	17 49	18 16	14 34	15 22	16 13	17 10
	02	210 40.0	25.2	237 36.4	8.1	17 04.7	4.5	58.0	N 10	17 43	18 06	18 33	14 45	15 35	16 28	17 25
	03	225 39.7	25.3	252 03.5	8.0	17 09.2	4.4	58.0	0	18 01	18 23	18 50	14 55	15 47	16 42	17 39
	04	240 39.4	25.3	266 30.5	7.9	17 13.6	4.3	58.1	S 10	18 18	18 41	19 09	15 05	15 59	16 55	17 53
	05	255 39.1	25.4	280 57.4	7.9	17 17.9	4.1	58.1	20	18 37	19 02	19 31	15 16	16 12	17 10	18 08
	06	270 38.7	S23 25.4	295 24.3	7.8	S17 22.0	4.1	58.1	30	18 59	19 27	20 00	15 29	16 27	17 27	18 26
	07	285 38.4	25.4	309 51.1	7.8	17 26.1	4.0	58.1	35	19 12	19 42	20 19	15 36	16 36	17 36	18 36
	08	300 38.1	25.5	324 17.9	7.7	17 30.1	3.9	58.2	40	19 28	20 00	20 42	15 44	16 46	17 47	18 47
	09	315 37.8	25.5	338 44.6	7.6	17 34.0	3.8	58.2	45	19 46	20 23	21 13	15 53	16 57	18 00	19 01
	10	330 37.5	25.5	353 11.2	7.6	17 37.8	3.6	58.2	S 50	20 08	20 53	21 58	16 05	17 11	18 16	19 17
	11	345 37.2	25.5	7 37.8	7.4	17 41.4	3.6	58.3	52	20 19	21 08	22 26	16 10	17 18	18 24	19 25
	12	0 36.9	S23 25.6	22 04.2	7.5	S17 45.0	3.5	58.3	54	20 31	21 26	23 13	16 16	17 25	18 32	19 34
	13	15 36.6	25.6	36 30.7	7.3	17 48.5	3.3	58.3	56	20 46	21 48	///	16 23	17 34	18 41	19 43
	14	30 36.3	25.6	50 57.0	7.3	17 51.8	3.3	58.4	58	21 02	22 18	///	16 30	17 43	18 52	19 54
	15	45 36.0	25.7	65 23.3	7.2	17 55.1	3.1	58.4	S 60	21 23	23 09	///	16 39	17 53	19 04	20 07
	16	60 35.6	25.7	79 49.5	7.2	17 58.2	3.1	58.4	Día	SOL	Paso Mer.	LUNA				
	17	75 35.3	25.7	94 15.7	7.1	18 01.3	2.9	58.5				Paso Mer.	Sup.	Inf.	Edad	Fase
	18	90 35.0	S23 25.7	108 41.8	7.1	S18 04.2	2.8	58.5	d	m s	m s	h m	h m	h m	d %	
	19	105 34.7	25.8	123 07.9	7.0	18 07.0	2.7	58.5	18	03 42	03 28	11 57	08 43	21 08	26 15	
	20	120 34.4	25.8	137 33.9	6.9	18 09.7	2.6	58.6	19	03 13	02 58	11 57	09 34	22 01	27 8	
	21	135 34.1	25.8	151 59.8	6.9	18 12.3	2.5	58.6	20	02 43	02 28	11 58	10 28	22 56	28 3	
	22	150 33.8	25.8	166 25.7	6.8	18 14.8	2.									

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.1	JÚPITER -2.4	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
DOMINGO								
21 00	89 29.3	165 19.7 S23 52.0	134 12.9 S18 15.0	304 28.5 N14 49.0	211 32.5 S18 12.6	Acamar	315 17.3 S40 15.0	
01	104 31.8	180 18.8 51.8	149 13.4 14.4	319 31.0 49.0	226 34.6 12.7	Achernar	335 25.9 S57 10.0	
02	119 34.3	195 17.8 51.6	164 13.9 13.8	334 33.6 49.1	241 36.8 12.7	Acrux	173 08.0 S63 10.6	
03	134 36.7	210 16.9 . . 51.3	179 14.4 . . 13.3	349 36.2 . . 49.1	256 39.0 . . 12.8	Adhara	255 11.3 S28 59.7	
04	149 39.2	225 15.9 51.1	194 14.9 12.7	4 38.7 49.2	271 41.2 12.8	Aldebarán	290 47.8 N16 32.2	
05	164 41.6	240 15.0 50.9	209 15.4 12.1	19 41.3 49.2	286 43.4 12.9			
06	179 44.1	255 14.0 S23 50.6	224 15.9 S18 11.5	34 43.8 N14 49.2	301 45.6 S18 12.9	Alioth	166 20.0 N55 52.5	
07	194 46.6	270 13.1 50.4	239 16.4 11.0	49 46.4 49.3	316 47.7 13.0	Alkaid	152 58.4 N49 14.1	
08	209 49.0	285 12.1 50.2	254 16.9 10.4	64 49.0 49.3	331 49.9 13.0	Al Na'ir	27 42.8 N 8 54.7	
09	224 51.5	300 11.1 . . 49.9	269 17.4 . . 09.8	79 51.5 . . 49.4	346 52.1 . . 13.1	Alnilam	275 45.0 S 1 11.8	
10	239 54.0	315 10.2 49.7	284 17.9 09.2	94 54.1 49.4	1 54.3 13.2	Alphard	217 54.8 S 8 43.5	
11	254 56.4	330 09.2 49.4	299 18.4 08.7	109 56.6 49.5	16 56.5 13.2			
12	269 58.9	345 08.3 S23 49.2	314 18.9 S18 08.1	124 59.2 N14 49.5	31 58.7 S18 13.3	Alphecca	126 10.5 N26 39.9	
13	285 01.4	0 07.3 48.9	329 19.4 07.5	140 01.8 49.5	47 00.8 13.3	Alpheratz	357 42.4 N29 10.6	
14	300 03.8	15 06.4 48.7	344 19.9 06.9	155 04.3 49.6	62 03.0 13.4	Altair	62 07.5 N 8 54.7	
15	315 06.3	30 05.4 . . 48.5	359 20.4 . . 06.4	170 06.9 . . 49.6	77 05.2 . . 13.4	Ankaa	353 14.7 S42 13.7	
16	330 08.8	45 04.5 48.2	14 20.9 05.8	185 09.4 49.7	92 07.4 13.5	Antares	112 25.3 S26 27.6	
17	345 11.2	60 03.5 48.0	29 21.4 05.2	200 12.0 49.7	107 09.6 13.5			
18	0 13.7	75 02.6 S23 47.7	44 21.9 S18 04.6	215 14.6 N14 49.8	122 11.8 S18 13.6	Arcturus	145 55.0 N19 06.3	
19	15 16.1	90 01.6 47.5	59 22.4 04.0	230 17.1 49.8	137 13.9 13.6	Atria	107 26.7 S69 02.9	
20	30 18.6	105 00.7 47.2	74 22.9 03.5	245 19.7 49.8	152 16.1 13.7	Avior	234 17.0 S59 33.5	
21	45 21.1	119 59.7 . . 46.9	89 23.4 . . 02.9	260 22.3 . . 49.9	167 18.3 . . 13.8	Bellatrix	278 30.6 N 6 21.6	
22	60 23.5	134 58.7 46.7	104 23.9 02.3	275 24.8 49.9	182 20.5 13.8	Betelgeuse	270 59.8 N 7 24.4	
23	75 26.0	149 57.8 46.4	119 24.4 01.7	290 27.4 50.0	197 22.7 13.9			
LUNES								
22 00	90 28.5	164 56.8 S23 46.2	134 24.9 S18 01.1	305 30.0 N14 50.0	212 24.9 S18 13.9	Canopus	263 55.1 S52 42.4	
01	105 30.9	179 55.9 45.9	149 25.4 00.6	320 32.5 50.1	227 27.1 14.0	Capella	280 32.4 N46 00.6	
02	120 33.4	194 54.9 45.7	164 25.9 18 00.0	335 35.1 50.1	242 29.2 14.0	Deneb	49 31.1 N45 20.4	
03	135 35.9	209 54.0 . . 45.4	179 26.4 17 59.4	350 37.7 . . 50.2	257 31.4 . . 14.1	Denébola	182 32.6 N14 29.2	
04	150 38.3	224 53.0 45.1	194 26.9 58.8	5 40.2 50.2	272 33.6 14.1	Diphda	348 54.8 S17 54.4	
05	165 40.8	239 52.1 44.9	209 27.4 58.2	20 42.8 50.2	287 35.8 14.2			
06	180 43.3	254 51.1 S23 44.6	224 27.9 S17 57.7	35 45.4 N14 50.3	302 38.0 S18 14.3	Dubhe	193 50.4 N61 39.8	
07	195 45.7	269 50.2 44.3	239 28.4 57.1	50 47.9 50.3	317 40.2 14.3	Elnath	278 10.9 N28 37.0	
08	210 48.2	284 49.2 44.1	254 28.9 56.5	65 50.5 50.4	332 42.3 14.4	Eltanin	90 46.2 N51 29.4	
09	225 50.6	299 48.3 . . 43.8	269 29.4 . . 55.9	80 53.1 . . 50.4	347 44.5 . . 14.4	Enif	33 46.3 N 9 56.8	
10	240 53.1	314 47.3 43.5	284 29.9 55.3	95 55.6 50.5	2 46.7 14.5	Fomalhaut	15 23.0 S29 32.6	
11	255 55.6	329 46.4 43.3	299 30.4 54.8	110 58.2 50.5	17 48.9 14.5			
12	270 58.0	344 45.4 S23 43.0	314 30.9 S17 54.2	126 00.8 N14 50.6	32 51.1 S18 14.6	Gacrux	171 59.7 S57 11.5	
13	286 00.5	359 44.5 42.7	329 31.4 53.6	141 03.3 50.6	47 53.3 14.6	Gienah	175 51.2 S17 37.4	
14	301 03.0	14 43.5 42.4	344 31.9 53.0	156 05.9 50.6	62 55.5 14.7	Hadar	148 46.6 S60 26.4	
15	316 05.4	29 42.6 . . 42.1	359 32.4 . . 52.4	171 08.5 . . 50.7	77 57.6 . . 14.7	Hamal	327 59.4 N23 32.0	
16	331 07.9	44 41.7 41.9	14 33.0 51.8	186 11.1 50.7	92 59.8 14.8	Kaus Aust.	83 42.9 S34 22.4	
17	346 10.4	59 40.7 41.6	29 33.5 51.2	201 13.6 50.8	108 02.0 14.9			
18	1 12.8	74 39.8 S23 41.3	44 34.0 S17 50.7	216 16.2 N14 50.8	123 04.2 S18 14.9	Kochab	137 21.1 N74 05.5	
19	16 15.3	89 38.8 41.0	59 34.5 50.1	231 18.8 50.9	138 06.4 15.0	Markab	13 37.4 N15 17.3	
20	31 17.7	104 37.9 40.7	74 35.0 49.5	246 21.3 50.9	153 08.6 15.0	Menkar	314 13.7 N 4 08.8	
21	46 20.2	119 36.9 . . 40.5	89 35.5 . . 48.9	261 23.9 . . 51.0	168 10.8 . . 15.1	Menkent	148 06.5 S36 26.3	
22	61 22.7	134 36.0 40.2	104 36.0 48.3	276 26.5 51.0	183 12.9 15.1	Miaplacidus	221 38.6 S69 46.6	
23	76 25.1	149 35.0 39.9	119 36.5 47.7	291 29.1 51.1	198 15.1 15.2			
MARTE								
23 00	91 27.6	164 34.1 S23 39.6	134 37.0 S17 47.1	306 31.6 N14 51.1	213 17.3 S18 15.2	Mirfak	308 38.4 N49 54.9	
01	106 30.1	179 33.1 39.3	149 37.5 46.6	321 34.2 51.2	228 19.5 15.3	Nunki	75 57.4 S26 16.5	
02	121 32.5	194 32.2 39.0	164 38.0 46.0	336 36.8 51.2	243 21.7 15.3	Peacock	53 18.2 S56 41.2	
03	136 35.0	209 31.2 . . 38.7	179 38.5 . . 45.4	351 39.4 . . 51.3	258 23.9 . . 15.4	Póllux	243 26.1 N27 59.1	
04	151 37.5	224 30.3 38.4	194 39.0 44.8	6 41.9 51.3	273 26.1 15.5	Procyon	244 58.3 N 5 11.0	
05	166 39.9	239 29.4 38.1	209 39.5 44.2	21 44.5 51.3	288 28.3 15.5			
06	181 42.4	254 28.4 S23 37.8	224 40.1 S17 43.6	36 47.1 N14 51.4	303 30.4 S18 15.6	Rasalhague	96 05.8 N12 33.2	
07	196 44.9	269 27.5 37.5	239 40.6 43.0	51 49.7 51.4	318 32.6 15.6	Régulus	207 42.3 N11 53.4	
08	211 47.3	284 26.5 37.2	254 41.1 42.4	66 52.2 51.5	333 34.8 15.7	Rigel	281 10.7 S 8 11.3	
09	226 49.8	299 25.6 . . 36.9	269 41.6 . . 41.8	81 54.8 . . 51.5	348 37.0 . . 15.7	Rigil Kent.	139 50.6 S60 53.4	
10	241 52.2	314 24.6 36.6	284 42.1 41.3	96 57.4 51.6	3 39.2 15.8	Sabik	102 11.7 S15 44.4	
11	256 54.7	329 23.7 36.3	299 42.6 40.7	112 00.0 51.6	18 41.4 15.8			
12	271 57.2	344 22.8 S23 36.0	314 43.1 S17 40.1	127 02.5 N14 51.7	33 43.6 S18 15.9	Schedar	349 39.1 N56 37.4	
13	286 59.6	359 21.8 35.7	329 43.6 39.5	142 05.1 51.7	48 45.7 15.9	Shaula	96 20.9 S37 06.6	
14	302 02.1	14 20.9 35.4	344 44.1 38.9	157 07.7 51.8	63 47.9 16.0	Sirius	258 32.4 S16 44.4	
15	317 04.6	29 19.9 . . 35.1	359 44.6 . . 38.3	172 10.3 . . 51.8	78 50.1 . . 16.0	Spica	158 30.3 S11 14.3	
16	332 07.0	44 19.0 34.8	14 45.1 37.7	187 12.9 51.9	93 52.3 16.1	Suhail	222 51.3 S43 29.6	
17	347 09.5	59 18.0 34.5	29 45.7 37.1	202 15.4 51.9	108 54.5 16.2			
18	2 12.0	74 17.1 S23 34.2	44 46.2 S17 36.5	217 18.0 N14 52.0	123 56.7 S18 16.2	Vega	80 38.7 N38 48.1	
19	17 14.4	89 16.2 33.9	59 46.7 35.9	232 20.6 52.0	138 58.9 16.3	Zuben'ubi	137 04.5 S16 06.0	
20	32 16.9	104 15.2 33.6	74 47.2 35.3	247 23.2 52.1	154 01.1 16.3			
21	47 19.4	119 14.3 . . 33.2	89 47.7 . . 34.7	262 25.8 . . 52.1	169 03.2 . . 16.4			
22	62 21.8	134 13.3 32.9	104 48.2 34.1	277 28.3 52.2	184 05.4 16.4			
23	77 24.3	149 12.4 32.6	119 48.7 33.5	292 30.9 52.2	199 07.6 16.5			
	h m							
Paso Mer.	17 55.2	v -0.9 d 0.3	v 0.5 d 0.6	v 2.6 d 0.0	v 2.2 d 0.1			
						AHS	Paso Mer.	
						Venus	74 28.4 13 01	
						Marte	43 56.4 15 02	
						Júpiter	215 01.5 3 37	
						Saturno	121 56.4 9 49	

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		21	22	23	24	
d h	°	°	°	°	°	°	°	°	h m	h m	h m	h m	h m	h m	h m	h m
DOMINGO	21 00	180 33.2	S23 25.9	195 17.2	6.8	S18 19.4	2.1	58.7	N 72	08 26	10 58	■	■	■	12 01	11 45
	01	195 32.8	25.9	209 43.0	6.6	18 21.5	2.1	58.7	N 70	08 06	09 55	■	■	■	10 49	11 15
	02	210 32.5	25.9	224 08.6	6.6	18 23.6	1.9	58.7	68	07 50	09 19	■	■	■	10 03	10 53
	03	225 32.2	25.9	238 34.2	6.6	18 25.5	1.8	58.8	66	07 37	08 54	10 35	08 37	09 33	10 11	10 36
	04	240 31.9	25.9	252 59.8	6.5	18 27.3	1.7	58.8	64	07 26	08 34	09 52	08 14	09 11	09 52	10 21
	05	255 31.6	25.9	267 25.3	6.4	18 29.0	1.5	58.8	62	07 16	08 18	09 24	07 55	08 53	09 37	10 09
	06	270 31.3	S23 26.0	281 50.7	6.4	S18 30.5	1.5	58.9	60	07 08	08 05	09 02	07 40	08 38	09 24	09 59
	07	285 31.0	26.0	296 16.1	6.4	18 32.0	1.3	58.9	N 58	07 00	07 53	08 45	07 27	08 25	09 12	09 50
	08	300 30.7	26.0	310 41.5	6.3	18 33.3	1.2	58.9	56	06 53	07 43	08 30	07 16	08 14	09 02	09 42
	09	315 30.3	26.0	320 06.8	6.3	18 34.5	1.1	58.9	54	06 47	07 33	08 17	07 06	08 04	08 54	09 35
	10	330 30.0	26.0	325 06.8	6.3	18 35.6	0.9	59.0	52	06 41	07 25	08 06	06 58	07 56	08 46	09 29
	11	345 29.7	26.0	339 32.1	6.2	18 35.6	0.9	59.0	50	06 36	07 18	07 56	06 50	07 48	08 39	09 23
	12	0 29.4	S23 26.0	353 57.3	6.2	18 36.5	0.9	59.0	45	06 24	07 02	07 36	06 33	07 31	08 24	09 10
	13	15 29.1	26.0	8 22.5	6.1	S18 37.4	0.7	59.0	N 40	06 14	06 48	07 19	06 20	07 18	08 12	09 00
	14	30 28.8	26.0	22 47.6	6.1	18 38.1	0.6	59.0	35	06 05	06 36	07 04	06 08	07 06	08 01	08 51
	15	45 28.5	26.0	37 12.7	6.1	18 38.7	0.5	59.1	30	05 56	06 26	06 52	05 58	06 56	07 52	08 43
	16	60 28.2	26.1	51 37.8	6.0	18 39.2	0.3	59.1	20	05 39	06 07	06 31	05 41	06 39	07 36	08 30
	17	75 27.9	26.1	66 02.8	6.0	18 39.5	0.3	59.1	N 10	05 23	05 49	06 12	05 25	06 24	07 22	08 18
	18	90 27.5	S23 26.1	80 27.8	6.0	18 39.8	0.1	59.2	0	05 06	05 32	05 55	05 11	06 10	07 09	08 07
	19	105 27.2	26.1	94 52.8	5.9	S18 39.9	0.0	59.2	S 10	04 47	05 14	05 37	04 57	05 56	06 56	07 56
	20	120 26.9	26.1	109 17.7	5.9	18 39.9	0.2	59.2	20	04 24	04 54	05 18	04 42	05 41	06 42	07 44
	21	135 26.6	26.1	123 42.6	5.9	18 39.7	0.2	59.2	30	03 55	04 29	04 56	04 25	05 23	06 26	07 31
	22	150 26.3	26.1	138 07.5	5.8	18 39.5	0.4	59.3	35	03 37	04 13	04 43	04 15	05 13	06 16	07 23
	23	165 26.0	26.1	152 32.3	5.8	18 39.1	0.5	59.3	40	03 13	03 55	04 28	04 04	05 02	06 06	07 14
		165 26.0	26.1	166 57.1	5.8	18 38.6	0.7	59.3	45	02 43	03 32	04 10	03 51	04 48	05 53	07 03
LUNES	22 00	180 25.7	S23 26.1	181 21.9	5.8	S18 37.9	0.7	59.3	S 50	01 57	03 03	03 47	03 34	04 32	05 38	06 50
	01	195 25.4	26.1	195 46.7	5.7	18 37.2	0.9	59.4	52	01 29	02 47	03 36	03 27	04 24	05 31	06 44
	02	210 25.1	26.1	210 11.4	5.7	18 36.3	1.0	59.4	54	00 42	02 29	03 24	03 18	04 16	05 23	06 38
	03	225 24.7	26.1	224 36.1	5.7	18 35.3	1.2	59.4	56	///	02 07	03 10	03 09	04 06	05 14	06 31
	04	240 24.4	26.1	239 00.8	5.7	18 34.1	1.3	59.4	58	///	01 37	02 53	02 58	03 55	05 04	06 22
	05	255 24.1	26.1	253 25.5	5.6	18 32.8	1.3	59.4	S 60	///	00 46	02 32	02 46	03 42	04 53	06 13
	06	270 23.8	S23 26.1	267 50.1	5.7	S18 31.5	1.6	59.5	Lat.		Ocaso Sol		Crepúsculo		Ocaso Luna	
	07	285 23.5	26.0	282 14.8	5.6	18 29.9	1.6	59.5								
	08	300 23.2	26.0	296 39.4	5.6	18 28.3	1.8	59.5								
	09	315 22.9	26.0	311 04.0	5.6	18 26.5	1.9	59.5								
	10	330 22.6	26.0	325 28.6	5.6	18 24.6	2.0	59.5								
	11	345 22.2	26.0	339 53.2	5.5	18 22.6	2.1	59.6								
	12	0 21.9	S23 26.0	354 17.7	5.6	S18 20.5	2.3	59.6	N 72	h m	h m	h m	h m	h m	h m	h m
	13	15 21.6	26.0	8 42.3	5.6	18 18.2	2.4	59.6	N 70	■	12 59	15 31	■	■	14 54	17 11
	14	30 21.3	26.0	23 06.9	5.5	18 15.8	2.5	59.6	68	■	14 02	15 51	13 42	14 03	15 46	17 40
	15	45 21.0	26.0	37 31.4	5.6	18 13.3	2.7	59.6	66	■	14 38	16 07	13 17	14 48	16 19	18 01
	16	60 20.7	26.0	51 56.0	5.5	18 10.6	2.7	59.7	64	13 22	15 03	16 20	14 12	15 18	16 42	18 18
	17	75 20.4	25.9	66 20.5	5.6	18 07.9	2.9	59.7	62	14 05	15 23	16 31	14 35	15 40	17 01	18 31
	18	90 20.1	S23 25.9	80 45.1	5.5	S18 05.0	3.1	59.7	60	14 33	15 39	16 41	14 54	15 58	17 16	18 43
	19	105 19.7	25.9	95 09.6	5.5	18 01.9	3.1	59.7	60	14 55	15 53	16 49	15 09	16 13	17 28	18 52
	20	120 19.4	25.9	109 34.2	5.5	17 58.8	3.3	59.7	N 58	15 12	16 04	16 57	15 22	16 25	17 39	19 01
	21	135 19.1	25.9	123 58.7	5.6	17 55.5	3.4	59.7	56	15 27	16 14	17 04	15 33	16 36	17 49	19 08
	22	150 18.8	25.9	138 23.3	5.5	17 52.1	3.5	59.8	54	15 40	16 24	17 10	15 43	16 46	17 57	19 15
	23	165 18.5	25.8	152 47.8	5.6	17 48.6	3.6	59.8	52	15 51	16 32	17 16	15 52	16 54	18 05	19 20
	MARTES	00	180 18.2	S23 25.8	167 12.4	5.6	S17 45.0	3.8	59.8	50	16 01	16 39	17 21	16 00	17 02	18 11	19 26
01		195 17.9	25.8	181 37.0	5.5	17 41.2	3.9	59.8	45	16 22	16 55	17 33	16 17	17 18	18 26	19 37
02		210 17.6	25.8	196 01.5	5.6	17 37.3	4.0	59.8	N 40	16 38	17 09	17 43	16 30	17 31	18 37	19 47
03		225 17.3	25.8	210 26.1	5.6	17 33.3	4.1	59.8	35	16 53	17 21	17 52	16 42	17 43	18 47	19 55
04		240 16.9	25.7	224 50.7	5.7	17 29.2	4.3	59.9	30	17 05	17 31	18 01	16 52	17 52	18 56	20 02
05		255 16.6	25.7	239 15.4	5.6	17 24.9	4.4	59.9	20	17 26	17 50	18 18	17 10	18 09	19 11	20 14
06		270 16.3	S23 25.7	253 40.0	5.6	S17 20.5	4.4	59.9	N 10	17 45	18 08	18 34	17 25	18 24	19 24	20 24
07		285 16.0	25.7	268 04.6	5.7	17 16.1	4.6	59.9	0	18 02	18 25	18 51	17 39	18 38	19 37	20 34
08		300 15.7	25.6	282 29.3	5.7	17 11.5	4.8	59.9	S 10	18 20	18 43	19 10	17 53	18 52	19 49	20 44
09		315 15.4	25.6	296 54.0	5.7	17 06.7	4.8	59.9	20	18 39	19 03	19 33	18 08	19 06	20 02	20 54
10		330 15.1	25.6	311 18.7	5.7	17 01.9	5.0	59.9	30	19 01	19 28	20 02	18 26	19 23	20 16	21 06
11		345 14.8	25.5	325 43.4	5.7	16 56.9	5.1	59.9	35	19 14	19 44	20 21	18 36	19 32	20 25	21 13
12		0 14.4	S23 25.5	340 08.1	5.8	S16 51.8	5.2	60.0	40	19 29	20 02	20 44	18 47	19 43	20 35	21 20
13		15 14.1	25.5	354 32.9	5.8	16 46.6	5.3	60.0	45	19 47	20 25	21 14	19 01	19 56	20 46	21 29
14		30 13.8	25.5	8 57.7	5.8	16 41.3	5.4	60.0	S 50	20 10	20 54	22 00	19 17	20 12	20 59	21 40
15		45 13.5	25.4	23 22.5	5.8	16 35.9	5.5	60.0	52	20 21	21 10	22 28	19 25	20 19	21 06	21 45
16		60 13.2	25.4	37 47.3	5.9	16 30.4	5.7	60.0	54	20 33	21 28	23 15	19 34	20 27	21 13	21 50
17		75 12.9	25.4	52 12.2	5.9	16 24.7	5.8	60.0	56	20 47	21 50	///	19 43	20 37	21 21	21 56
18		90 12.6	S23 25.3	66 37.1	5.9	S16 18.9	5.8	60.0	58	21 04	22 20	///	19 54	20 47	21 29	22 03
19		105 12.3	25.3	81 02.0	6.0	16 13.1	6.0	60.0	S 60	21 25	23 11	///	20 07	20 59	21 39	22 11
20		120 12.0	25.2	95 27.0	5.9	16 07.1	6.1	60.0	SOL		LUNA					
21		135 11.6	25.2	109 51.9	6.0	16 01.0	6.2	60.0	Día	Ec. Tiempo	Paso Mer.	Paso Mer.		Edad	Fase	
22		150 11.3	25.2	124 16.9	6.1	15 54.8	6.3.									

UT (HmGr)		ARIES		VENUS -3.9		MARTE +1.1		JÚPITER -2.4		SATURNO +0.5		ESTRELLAS				
		AHGr	AHGr	Dec	AHGr	Dec	AHGr	Dec	AHGr	Dec	Nombre		AHS	Dec		
MÉRCURIO	24 00	92 26.7	164 11.5	S23 32.3	134 49.2	S17 33.0	307 33.5	N14 52.3	214 09.8	S18 16.5	Acamar	315 17.3	S40 15.0			
	01	107 29.2	179 10.5	32.0	149 49.7	32.4	322 36.1	52.3	229 12.0	16.6	Achernar	335 25.9	S57 10.0			
	02	122 31.7	194 09.6	31.6	164 50.3	31.8	337 38.7	52.4	244 14.2	16.6	Acrux	173 08.0	S63 10.6			
	03	137 34.1	209 08.7	31.3	179 50.8	31.2	352 41.2	52.4	259 16.4	16.7	Adhara	255 11.3	S28 59.7			
	04	152 36.6	224 07.7	31.0	194 51.3	30.6	7 43.8	52.5	274 18.6	16.7	Aldebarán	290 47.8	N16 32.2			
	05	167 39.1	239 06.8	30.7	209 51.8	30.0	22 46.4	52.5	289 20.8	16.8						
	06	182 41.5	254 05.8	S23 30.3	224 52.3	S17 29.4	37 49.0	N14 52.6	304 22.9	S18 16.9	Alioth	166 20.0	N55 52.4			
	07	197 44.0	269 04.9	30.0	239 52.8	28.8	52 51.6	52.6	319 25.1	16.9	Alkaid	152 58.4	N49 14.1			
	08	212 46.5	284 04.0	29.7	254 53.3	28.2	67 54.2	52.7	334 27.3	17.0	Al Na'ir	27 42.8	S46 53.4			
	09	227 48.9	299 03.0	29.4	269 53.9	27.6	82 56.7	52.7	349 29.5	17.0	Alnilam	275 45.0	S 1 11.8			
	10	242 51.4	314 02.1	29.0	284 54.4	27.0	97 59.3	52.8	4 31.7	17.1	Alphard	217 54.8	S 8 43.5			
	11	257 53.9	329 01.2	28.7	299 54.9	26.4	113 01.9	52.8	19 33.9	17.1						
	12	272 56.3	344 00.2	S23 28.4	314 55.4	S17 25.8	128 04.5	N14 52.9	34 36.1	S18 17.2	Alphecca	126 10.4	N26 39.9			
	13	287 58.8	358 59.3	28.0	329 55.9	25.2	143 07.1	52.9	49 38.3	17.2	Alpheratz	357 42.4	N29 10.6			
	14	303 01.2	13 58.4	27.7	344 56.4	24.6	158 09.7	53.0	64 40.5	17.3	Altair	62 07.5	N 8 54.7			
	15	318 03.7	28 57.4	27.4	359 56.9	24.0	173 12.3	53.0	79 42.6	17.3	Ankaa	353 14.7	S42 13.7			
	16	333 06.2	43 56.5	27.0	14 57.4	23.4	188 14.8	53.1	94 44.8	17.4	Antares	112 25.3	S26 27.6			
	17	348 08.6	58 55.6	26.7	29 58.0	22.8	203 17.4	53.1	109 47.0	17.4						
	18	3 11.1	73 54.6	S23 26.3	44 58.5	S17 22.2	218 20.0	N14 53.2	124 49.2	S18 17.5	Arcturus	145 55.0	N19 06.3			
	19	18 13.6	88 53.7	26.0	59 59.0	21.6	233 22.6	53.2	139 51.4	17.5	Atria	107 26.7	S69 02.9			
	20	33 16.0	103 52.8	25.6	74 59.5	21.0	248 25.2	53.3	154 53.6	17.6	Avior	234 16.9	S59 33.5			
	21	48 18.5	118 51.8	25.3	90 00.0	20.4	263 27.8	53.3	169 55.8	17.7	Bellatrix	278 30.5	N 6 21.6			
	22	63 21.0	133 50.9	25.0	105 00.5	19.8	278 30.4	53.4	184 58.0	17.7	Betelgeuse	270 59.8	N 7 24.4			
	23	78 23.4	148 50.0	24.6	120 01.1	19.2	293 33.0	53.4	200 00.2	17.8						
JÚPITER	25 00	93 25.9	163 49.0	S23 24.3	135 01.6	S17 18.6	308 35.5	N14 53.5	215 02.3	S18 17.8	Canopus	263 55.1	S52 42.4			
	01	108 28.4	178 48.1	23.9	150 02.1	18.0	323 38.1	53.5	230 04.5	17.9	Capella	280 32.4	N46 00.6			
	02	123 30.8	193 47.2	23.6	165 02.6	17.4	338 40.7	53.6	245 06.7	17.9	Deneb	49 31.1	N45 20.3			
	03	138 33.3	208 46.2	23.2	180 03.1	16.8	353 43.3	53.6	260 08.9	18.0	Denébola	182 32.6	N14 29.2			
	04	153 35.7	223 45.3	22.8	195 03.6	16.2	8 45.9	53.7	275 11.1	18.0	Diphda	348 54.8	S17 54.4			
	05	168 38.2	238 44.4	22.5	210 04.2	15.6	23 48.5	53.7	290 13.3	18.1						
	06	183 40.7	253 43.4	S23 22.1	225 04.7	S17 15.0	38 51.1	N14 53.8	305 15.5	S18 18.1	Dubhe	193 50.4	N61 39.8			
	07	198 43.1	268 42.5	21.8	240 05.2	14.4	53 53.7	53.8	320 17.7	18.2	Elmath	278 10.9	N28 37.0			
	08	213 45.6	283 41.6	21.4	255 05.7	13.8	68 56.3	53.9	335 19.9	18.2	Eltanin	90 46.2	N51 29.4			
	09	228 48.1	298 40.7	21.1	270 06.2	13.2	83 58.9	54.0	350 22.1	18.3	Enif	33 46.3	N 9 56.8			
	10	243 50.5	313 39.7	20.7	285 06.7	12.5	99 01.5	54.0	5 24.2	18.3	Fomalhaut	15 23.0	S29 32.6			
	11	258 53.0	328 38.8	20.3	300 07.3	11.9	114 04.1	54.1	20 26.4	18.4						
	12	273 55.5	343 37.9	S23 20.0	315 07.8	S17 11.3	129 06.6	N14 54.1	35 28.6	S18 18.4	Gacrux	171 59.6	S57 11.5			
	13	288 57.9	358 37.0	19.6	330 08.3	10.7	144 09.2	54.2	50 30.8	18.5	Gienah	175 51.2	S17 37.4			
	14	304 00.4	13 36.0	19.2	345 08.8	10.1	159 11.8	54.2	65 33.0	18.6	Hadar	148 46.6	S60 26.4			
	15	319 02.8	28 35.1	18.9	0 09.3	09.5	174 14.4	54.3	80 35.2	18.6	Hamal	327 59.4	N23 32.0			
	16	334 05.3	43 34.2	18.5	15 09.9	08.9	189 17.0	54.3	95 37.4	18.7	Kaus Aust.	83 42.8	S34 22.4			
	17	349 07.8	58 33.2	18.1	30 10.4	08.3	204 19.6	54.4	110 39.6	18.7						
	18	4 10.2	73 32.3	S23 17.8	45 10.9	S17 07.7	219 22.2	N14 54.4	125 41.8	S18 18.8	Kochab	137 21.1	N74 05.5			
	19	19 12.7	88 31.4	17.4	60 11.4	07.1	234 24.8	54.5	140 44.0	18.8	Markab	13 37.4	N15 17.3			
	20	34 15.2	103 30.5	17.0	75 11.9	06.5	249 27.4	54.5	155 46.2	18.9	Menkar	314 13.7	N 4 08.8			
	21	49 17.6	118 29.5	16.6	90 12.5	05.9	264 30.0	54.6	170 48.3	18.9	Menkent	148 06.5	S36 26.4			
	22	64 20.1	133 28.6	16.3	105 13.0	05.3	279 32.6	54.6	185 50.5	19.0	Miaplacidus	221 48.6	S69 46.6			
	23	79 22.6	148 27.7	15.9	120 13.5	04.7	294 35.2	54.7	200 52.7	19.0						
SATURNO	26 00	94 25.0	163 26.8	S23 15.5	135 14.0	S17 04.0	309 37.8	N14 54.8	215 54.9	S18 19.1	Mirfak	308 38.4	N49 54.9			
	01	109 27.5	178 25.9	15.1	150 14.5	03.4	324 40.4	54.8	230 57.1	19.1	Nunki	75 57.4	S26 16.5			
	02	124 30.0	193 24.9	14.8	165 15.1	02.8	339 43.0	54.9	245 59.3	19.2	Peacock	53 18.2	S56 41.2			
	03	139 32.4	208 24.0	14.4	180 15.6	02.2	354 45.6	54.9	261 01.5	19.2	Póllux	243 26.1	N27 59.1			
	04	154 34.9	223 23.1	14.0	195 16.1	01.6	9 48.2	55.0	276 03.7	19.3	Procyon	244 58.3	N 5 11.0			
	05	169 37.3	238 22.2	13.6	210 16.6	01.0	24 50.8	55.0	291 05.9	19.3						
	06	184 39.8	253 21.2	S23 13.2	225 17.1	S17 00.4	39 53.4	N14 55.1	306 08.1	S18 19.4	Rasalhague	96 05.8	N12 33.1			
	07	199 42.3	268 20.3	12.8	240 17.7	16 59.8	54 56.0	55.1	321 10.3	19.4	Régulus	207 42.2	N11 53.4			
	08	214 44.7	283 19.4	12.4	255 18.2	59.2	69 58.6	55.2	336 12.5	19.5	Rigel	281 10.7	S 8 11.3			
	09	229 47.2	298 18.5	12.0	270 18.7	58.5	85 01.2	55.2	351 14.6	19.6	Rigel Kent.	139 50.6	S60 53.4			
	10	244 49.7	313 17.6	11.7	285 19.2	57.9	100 03.8	55.3	6 16.8	19.6	Sabik	102 11.7	S15 44.4			
	11	259 52.1	328 16.6	11.3	300 19.8	57.3	115 06.4	55.4	21 19.0	19.7						
	12	274 54.6	343 15.7	S23 10.9	315 20.3	S16 56.7	130 09.0	N14 55.4	36 21.2	S18 19.7	Schedar	349 39.1	N56 37.4			
	13	289 57.1	358 14.8	10.5	330 20.8	56.1	145 11.6	55.5	51 23.4	19.8	Shaula	96 20.9	S37 06.6			
	14	304 59.5	13 13.9	10.1	345 21.3	55.5	160 14.2	55.5	66 25.6	19.8	Sirius	258 32.4	S16 44.4			
	15	320 02.0	28 13.0	09.7	0 21.8	54.9	175 16.8	55.6	81 27.8	19.9	Spica	158 30.2	S11 14.3			
	16	335 04.5	43 12.0	09.3	15 22.4	54.2	190 19.4	55.6	96 30.0	19.9	Suhail	222 51.3	S43 29.6			
	17	350 06.9	58 11.1	08.9	30 22.9	53.6	205 22.0	55.7	111 32.2	20.0						
	18	5 09.4	73 10.2	S23 08.5	45 23.4	S16 53.0	220 24.6	N14 55.8	126 34.4	S18 20.0	Vega	80 38.7	N38 48.1			
	19	20 11.8	88 09.3	08.1	60 23.9	52.4	235 27.2	55.8	141 36.6	20.1	Zuben'ubi	137 04.5	S16 06.0			
	20	35 14.3	103 08.4	07.7	75 24.5	51.8	250 29.8	55.9	156 38.8	20.1						
	21	50 16.8	118 07.5	07.3	90 25.0	51.2	265 32.4	55.9	171 41.0	20.2						
	22	65 19.2	133 06.5	06.9	105 25.5	50.6	280 35.0	56.0	186 43.2	20.2	Venus	0 23.1	h m			
	23	80 21.7	148 05.6	06.5	120 26.0	49.9	295 37.6	56.0	201 45.3	20.3	Marte	41 35.7	14 59			
												Paso Mer.				
												Júpiter		215 09.7	3 25	
														Saturno	121 36.5	9 38

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna					
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph	Náut.		Civil	24		25	26	27			
^d ^h	°	°	°		°	°	°		h	m	h	m	h	m	h	m	h	m
24	00	180 10.7	S23 25.1	153 07.1	6.1	S15 42.0	6.5	60.1	N 72	08 27	10 57	■	11 45	11 36	11 29	11 23		
	01	195 10.4	25.1	167 32.2	6.1	15 35.5	6.6	60.1	N 70	08 07	09 55	■	11 15	11 18	11 19	11 19		
	02	210 10.1	25.0	181 57.3	6.2	15 28.9	6.8	60.1	68	07 51	09 20	■	10 53	11 04	11 11	11 17		
	03	225 09.8	25.0	196 22.5	6.2	15 22.1	6.8	60.1	66	07 38	08 55	10 35	10 36	10 52	11 04	11 14		
	04	240 09.5	24.9	210 47.7	6.3	15 15.3	6.9	60.1	64	07 27	08 35	09 53	10 21	10 42	10 59	11 12		
	05	255 09.1	24.9	225 13.0	6.3	15 08.4	7.1	60.1	62	07 17	08 19	09 25	10 09	10 34	10 54	11 10		
	06	270 08.8	S23 24.8	239 38.3	6.3	S15 01.3	7.1	60.1	60	07 09	08 06	09 03	09 59	10 27	10 49	11 09		
	07	285 08.5	24.8	254 03.6	6.4	14 54.2	7.3	60.1	N 58	07 01	07 54	08 46	09 50	10 20	10 45	11 08		
	08	300 08.2	24.7	268 29.0	6.4	14 46.9	7.3	60.1	56	06 55	07 44	08 31	09 42	10 14	10 42	11 06		
	09	315 07.9	24.7	282 54.4	6.4	14 39.6	7.5	60.1	54	06 48	07 35	08 18	09 35	10 09	10 39	11 05		
M I É R C O L E S	10	330 07.6	24.7	297 19.8	6.5	14 32.1	7.5	60.1	52	06 43	07 26	08 07	09 29	10 05	10 36	11 04		
	11	345 07.3	24.6	311 45.3	6.5	14 24.6	7.6	60.1	50	06 37	07 19	07 58	09 23	10 00	10 33	11 03		
	12	0 07.0	S23 24.6	326 10.8	6.6	S14 17.0	7.8	60.1	45	06 26	07 03	07 37	09 10	09 51	10 28	11 01		
	13	15 06.7	24.5	340 36.4	6.6	14 09.2	7.8	60.1	N 40	06 15	06 49	07 20	09 00	09 43	10 23	11 00		
	14	30 06.3	24.5	355 02.0	6.7	14 01.4	7.9	60.1	35	06 06	06 38	07 06	08 51	09 37	10 19	10 58		
	15	45 06.0	24.4	9 27.7	6.7	13 53.5	8.0	60.1	30	05 57	06 27	06 53	08 43	09 31	10 15	10 57		
	16	60 05.7	24.4	23 53.4	6.8	13 45.5	8.1	60.1	20	05 41	06 08	06 32	08 30	09 21	10 09	10 55		
	17	75 05.4	24.3	38 19.2	6.7	13 37.4	8.2	60.1	N 10	05 25	05 51	06 14	08 18	09 12	10 03	10 53		
	18	90 05.1	S23 24.2	52 44.9	6.9	S13 29.2	8.3	60.1	0	05 08	05 34	05 56	08 07	09 04	09 58	10 51		
	19	105 04.8	24.2	67 10.8	6.9	13 20.9	8.3	60.1	S 10	04 49	05 16	05 39	07 56	08 55	09 53	10 49		
J U E V E S	20	120 04.5	24.1	81 36.7	6.9	13 12.6	8.5	60.1	20	04 26	04 55	05 20	07 44	08 46	09 47	10 47		
	21	135 04.2	24.1	96 02.6	7.0	13 04.1	8.5	60.1	30	03 57	04 30	04 58	07 31	08 36	09 41	10 45		
	22	150 03.9	24.0	110 28.6	7.0	12 55.6	8.6	60.1	35	03 38	04 15	04 45	07 23	08 30	09 38	10 44		
	23	165 03.5	24.0	124 54.6	7.1	12 47.0	8.7	60.1	40	03 15	03 57	04 30	07 14	08 23	09 33	10 42		
	24								45	02 44	03 34	04 12	07 03	08 16	09 29	10 41		
	25 00	180 03.2	S23 23.9	139 20.7	7.1	S12 38.3	8.7	60.1	S 50	01 59	03 04	03 49	06 50	08 06	09 23	10 39		
	01	195 02.9	23.8	153 46.8	7.2	12 29.6	8.9	60.1	52	01 31	02 49	03 38	06 44	08 02	09 20	10 38		
	02	210 02.6	23.8	168 13.0	7.2	12 20.7	8.9	60.1	54	00 45	02 31	03 26	06 38	07 57	09 17	10 37		
	03	225 02.3	23.7	182 39.2	7.2	12 11.8	9.0	60.1	56	///	02 09	03 12	06 31	07 52	09 14	10 36		
	04	240 02.0	23.7	197 05.4	7.3	12 02.8	9.1	60.1	58	///	01 39	02 55	06 22	07 46	09 10	10 35		
O C A S O	05	255 01.7	23.6	211 31.7	7.4	11 53.7	9.2	60.1	S 60	///	00 49	02 34	06 13	07 39	09 06	10 33		
	06	270 01.4	S23 23.5	225 58.1	7.4	S11 44.5	9.2	60.1	Lat.		Ocaso Sol		Crepúsculo					
	07	285 01.1	23.5	240 24.5	7.5	11 35.3	9.3	60.1			Civil		Ocaso Luna					
	08	300 00.7	23.4	254 51.0	7.5	11 26.0	9.4	60.1			Náut.		24	25	26	27		
	09	315 00.4	23.3	269 17.5	7.5	11 16.6	9.4	60.1					h m	h m	h m	h m		
	10	330 00.1	23.3	283 44.0	7.6	11 07.2	9.5	60.1	N 72	h m	h m	h m	h m	h m	h m	h m		
	11	344 59.8	23.2	298 10.6	7.7	10 57.7	9.6	60.1	13 03	15 33	17 11	19 18	21 17	23 12				
	12	359 59.5	S23 23.1	312 37.3	7.7	S10 48.1	9.6	60.0	N 70	■	14 05	15 53	17 40	19 34	21 25	23 13		
	13	14 59.2	23.1	327 04.0	7.7	10 38.5	9.7	60.0	68	■	14 40	16 09	18 01	19 47	21 31	23 13		
	14	29 58.9	23.0	341 30.7	7.8	10 28.8	9.8	60.0	66	13 25	15 05	16 22	18 18	19 57	21 36	23 13		
V I E R N E S	15	44 58.6	22.9	355 57.5	7.8	10 19.0	9.8	60.0	64	14 07	15 25	16 33	18 31	20 06	21 40	23 14		
	16	59 58.3	22.8	10 24.3	7.9	10 09.2	9.9	60.0	62	14 35	15 41	16 43	18 43	20 13	21 44	23 14		
	17	74 58.0	22.8	24 51.2	8.0	9 59.3	9.9	60.0	60	14 57	15 54	16 51	18 52	20 20	21 47	23 14		
	18	89 57.6	S23 22.7	39 18.2	8.0	S 9 49.4	10.1	60.0	N 58	15 14	16 06	16 59	19 01	20 25	21 50	23 14		
	19	104 57.3	22.6	53 45.2	8.0	9 39.3	10.0	60.0	56	15 29	16 16	17 06	19 08	20 30	21 53	23 14		
	20	119 57.0	22.5	68 12.2	8.1	9 29.3	10.1	60.0	54	15 42	16 25	17 12	19 15	20 35	21 55	23 14		
	21	134 56.7	22.5	82 39.3	8.1	9 19.2	10.2	60.0	52	15 53	16 34	17 17	19 20	20 39	21 57	23 14		
	22	149 56.4	22.4	97 06.4	8.2	9 09.0	10.2	60.0	50	16 03	16 41	17 23	19 26	20 42	21 59	23 14		
	23	164 56.1	22.3	111 33.6	8.2	8 58.8	10.3	60.0	45	16 23	16 57	17 34	19 37	20 50	22 03	23 15		
	26 00	179 55.8	S23 22.2	126 00.8	8.3	S 8 48.5	10.3	59.9	N 40	16 40	17 11	17 45	19 47	20 57	22 06	23 15		
D I A	01	194 55.5	22.2	140 28.1	8.3	8 38.2	10.4	59.9	35	16 54	17 22	17 54	19 55	21 02	22 09	23 15		
	02	209 55.2	22.1	154 55.4	8.4	8 27.8	10.4	59.9	30	17 07	17 33	18 03	20 02	21 07	22 12	23 15		
	03	224 54.9	22.0	169 22.8	8.4	8 17.4	10.5	59.9	20	17 28	17 52	18 19	20 14	21 16	22 16	23 15		
	04	239 54.5	21.9	183 50.2	8.4	8 06.9	10.5	59.9	N 10	17 46	18 09	18 36	20 24	21 23	22 20	23 15		
	05	254 54.2	21.8	198 17.6	8.5	7 56.4	10.6	59.9	0	18 04	18 26	18 53	20 34	21 30	22 23	23 15		
	06	269 53.9	S23 21.7	212 45.1	8.6	S 7 45.8	10.5	59.9	S 10	18 21	18 44	19 11	20 44	21 37	22 27	23 16		
	07	284 53.6	21.7	227 12.7	8.6	7 35.3	10.7	59.9	20	18 40	19 05	19 34	20 54	21 44	22 31	23 16		
	08	299 53.3	21.6	241 40.3	8.6	7 24.6	10.7	59.9	30	19 02	19 30	20 03	21 06	21 52	22 35	23 16		
	09	314 53.0	21.5	256 07.9	8.7	7 13.9	10.7	59.8	35	19 15	19 45	20 22	21 13	21 57	22 37	23 16		
	10	329 52.7	21.4	270 35.6	8.7	7 03.2	10.7	59.8	40	19 30	20 03	20 45	21 20	22 02	22 40	23 16		
F A S E	11	344 52.4	21.3	285 03.3	8.8	6 52.5	10.8	59.8	45	19 48	20 26	21 15	21 29	22 08	22 43	23 16		
	12	359 52.1	S23 21.2	299 31.1	8.8	S 6 41.7	10.9	59.8	S 50	20 11	20 55	22 01	21 40	22 15	22 47	23 16		
	13	14 51.8	21.1	313 58.9	8.9	6 30.8	10.8	59.8	52	20 22	21 11	22 29	21 45	22 18	22 48	23 16		
	14	29 51.4	21.0	328 26.8	8.9	6 20.0	10.9	59.8	54	20 34	21 28	23 15	21 50	22 22	22 50	23 16		
	15	44 51.1	21.0	342 54.7	8.9	6 09.1	10.9	59.8	56	20 48	21 51	///	21 56	22 26	22 52	23 16		
	16	59 50.8	20.9	357 22.6	9.0	5 58.2	11.0	59.7	58	21 05	22 20	///	22 03	22 31	22 54	23 16		
	17	74 50.5	20.8	11 50.6	9.0	5 47.2	11.0	59.7	S 60	21 25	23 10	///	22 11	22 36	22 57	23		

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.1	JÚPITER -2.4	SATURNO +0.5	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
d h	° /	° /	° /	° /	° /		° /	° /
27 00	95 24.2	163 04.7 S23 06.1	135 26.6 S16 49.3	310 40.2 N14 56.1	216 47.5 S18 20.3	Acamar	315 17.3 S40 15.0	
01	110 26.6	178 03.8 05.6	150 27.1 48.7	325 42.8 56.1	231 49.7 20.4	Achernar	335 25.9 S57 10.0	
02	125 29.1	193 02.9 05.2	165 27.6 48.1	340 45.4 56.2	246 51.9 20.4	Acrux	173 07.9 S63 10.6	
03	140 31.6	208 02.0 . . 04.8	180 28.1 . . 47.5	355 48.0 . . 56.3	261 54.1 . . 20.5	Adhara	255 11.3 S28 59.7	
04	155 34.0	223 01.1 04.4	195 28.7 46.9	10 50.6 56.3	276 56.3 20.5	Aldebarán	290 47.8 N16 32.2	
05	170 36.5	238 00.1 04.0	210 29.2 46.2	25 53.2 56.4	291 58.5 20.6			
06	185 38.9	252 59.2 S23 03.6	225 29.7 S16 45.6	40 55.8 N14 56.4	307 00.7 S18 20.6	Alioth	166 20.0 N55 52.4	
07	200 41.4	267 58.3 03.2	240 30.3 45.0	55 58.4 56.5	322 02.9 20.7	Alkaid	152 58.3 N49 14.1	
08	215 43.9	282 57.4 02.7	255 30.8 44.4	71 01.0 56.5	337 05.1 20.7	Al Na'ir	62 07.5 N 8 54.7	
09	230 46.3	297 56.5 . . 02.3	270 31.3 . . 43.8	86 03.6 . . 56.6	352 07.3 . . 20.8	Alnilam	275 45.0 S 1 11.8	
10	245 48.8	312 55.6 01.9	285 31.8 43.1	101 06.3 56.7	7 09.5 20.8	Alphard	217 54.8 S 8 43.6	
11	260 51.3	327 54.7 01.5	300 32.4 42.5	116 08.9 56.7	22 11.7 20.9			
12	275 53.7	342 53.8 S23 01.1	315 32.9 S16 41.9	131 11.5 N14 56.8	37 13.9 S18 20.9	Alphecca	126 10.4 N26 39.9	
13	290 56.2	357 52.9 00.6	330 33.4 41.3	146 14.1 56.8	52 16.1 21.0	Alpheratz	357 42.4 N29 10.6	
14	305 58.7	12 51.9 23 00.2	345 33.9 40.7	161 16.7 56.9	67 18.3 21.1	Altair	62 07.5 N 8 54.7	
15	321 01.1	27 51.0 22 59.8	0 34.5 . . 40.0	176 19.3 . . 57.0	82 20.4 . . 21.1	Ankaa	353 14.7 S42 13.7	
16	336 03.6	42 50.1 59.4	15 35.0 39.4	191 21.9 57.0	97 22.6 21.2	Antares	112 25.3 S26 27.7	
17	351 06.1	57 49.2 58.9	30 35.5 38.8	206 24.5 57.1	112 24.8 21.2			
18	6 08.5	72 48.3 S22 58.5	45 36.1 S16 38.2	221 27.1 N14 57.1	127 27.0 S18 21.3	Arcturus	145 55.0 N19 06.2	
19	21 11.0	87 47.4 58.1	60 36.6 37.6	236 29.7 57.2	142 29.2 21.3	Atria	107 26.6 S69 02.9	
20	36 13.4	102 46.5 57.6	75 37.1 36.9	251 32.3 57.2	157 31.4 21.4	Avior	234 16.9 S59 33.5	
21	51 15.9	117 45.6 . . 57.2	90 37.6 . . 36.3	266 35.0 . . 57.3	172 33.6 . . 21.4	Bellatrix	278 30.5 N 6 21.6	
22	66 18.4	132 44.7 56.8	105 38.2 35.7	281 37.6 57.4	187 35.8 21.5	Betelgeuse	270 59.8 N 7 24.4	
23	81 20.8	147 43.8 56.3	120 38.7 35.1	296 40.2 57.4	202 38.0 21.5			
28 00	96 23.3	162 42.9 S22 55.9	135 39.2 S16 34.4	311 42.8 N14 57.5	217 40.2 S18 21.6	Canopus	263 55.1 S52 42.4	
01	111 25.8	177 42.0 55.5	150 39.8 33.8	326 45.4 57.5	232 42.4 21.6	Capella	280 32.4 N46 00.6	
02	126 28.2	192 41.1 55.0	165 40.3 33.2	341 48.0 57.6	247 44.6 21.7	Deneb	49 31.1 N45 20.3	
03	141 30.7	207 40.2 . . 54.6	180 40.8 . . 32.6	356 50.6 . . 57.7	262 46.8 . . 21.7	Denébola	182 32.6 N14 29.2	
04	156 33.2	222 39.3 54.1	195 41.4 31.9	11 53.2 57.7	277 49.0 21.8	Diphda	348 54.8 S17 54.4	
05	171 35.6	237 38.4 53.7	210 41.9 31.3	26 55.9 57.8	292 51.2 21.8			
06	186 38.1	252 37.4 S22 53.2	225 42.4 S16 30.7	41 58.5 N14 57.8	307 53.4 S18 21.9	Dubhe	193 50.3 N61 39.8	
07	201 40.6	267 36.5 52.8	240 42.9 30.1	57 01.1 57.9	322 55.6 21.9	Elnath	278 10.9 N28 37.0	
08	216 43.0	282 35.6 52.4	255 43.5 29.4	72 03.7 58.0	337 57.8 22.0	Eltanin	90 46.2 N51 29.4	
09	231 45.5	297 34.7 . . 51.9	270 44.0 . . 28.8	87 06.3 . . 58.0	353 00.0 . . 22.0	Enif	33 46.3 N 9 56.8	
10	246 47.9	312 33.8 51.5	285 44.5 28.2	102 08.9 58.1	8 02.2 22.1	Fomalhaut	15 23.0 S29 32.7	
11	261 50.4	327 32.9 51.0	300 45.1 27.6	117 11.5 58.1	23 04.4 22.1			
12	276 52.9	342 32.0 S22 50.6	315 45.6 S16 26.9	132 14.2 N14 58.2	38 06.5 S18 22.2	Gacrux	171 59.6 S57 11.5	
13	291 55.3	357 31.1 50.1	330 46.1 26.3	147 16.8 58.3	53 08.7 22.2	Gienah	175 51.2 S17 37.4	
14	306 57.8	12 30.2 49.7	345 46.7 25.7	162 19.4 58.3	68 10.9 22.3	Hadar	148 46.5 S60 26.4	
15	322 00.3	27 29.3 . . 49.2	0 47.2 . . 25.0	177 22.0 . . 58.4	83 13.1 . . 22.3	Hamal	327 59.4 N23 32.0	
16	337 02.7	42 28.4 48.7	15 47.7 24.4	192 24.6 58.4	98 15.3 22.4	Kaus Aust.	83 42.8 S34 22.4	
17	352 05.2	57 27.5 48.3	30 48.3 23.8	207 27.2 58.5	113 17.5 22.4			
18	7 07.7	72 26.6 S22 47.8	45 48.8 S16 23.2	222 29.9 N14 58.6	128 19.7 S18 22.5	Kochab	137 21.0 N74 05.5	
19	22 10.1	87 25.7 47.4	60 49.3 22.5	237 32.5 58.6	143 21.9 22.5	Markab	13 37.4 N15 17.3	
20	37 12.6	102 24.8 46.9	75 49.9 21.9	252 35.1 58.7	158 24.1 22.6	Menkar	314 13.7 N 4 08.8	
21	52 15.0	117 23.9 . . 46.4	90 50.4 . . 21.3	267 37.7 . . 58.7	173 26.3 . . 22.6	Menkent	148 06.5 S36 26.4	
22	67 17.5	132 23.0 46.0	105 50.9 20.6	282 40.3 58.8	188 28.5 22.7	Miaplacidus	221 38.5 S69 46.7	
23	82 20.0	147 22.1 45.5	120 51.5 20.0	297 42.9 58.9	203 30.7 22.7			
29 00	97 22.4	162 21.3 S22 45.0	135 52.0 S16 19.4	312 45.6 N14 58.9	218 32.9 S18 22.8	Mirfak	308 38.4 N49 54.9	
01	112 24.9	177 20.4 44.6	150 52.5 18.8	327 48.2 59.0	233 35.1 22.8	Nunki	75 57.4 S26 16.5	
02	127 27.4	192 19.5 44.1	165 53.1 18.1	342 50.8 59.1	248 37.3 22.9	Peacock	53 18.2 S56 41.2	
03	142 29.8	207 18.6 . . 43.6	180 53.6 . . 17.5	357 53.4 . . 59.1	263 39.5 . . 22.9	Póllux	243 26.1 N27 59.1	
04	157 32.3	222 17.7 43.2	195 54.1 16.9	12 56.0 59.2	278 41.7 23.0	Procyon	244 58.3 N 5 10.9	
05	172 34.8	237 16.8 42.7	210 54.7 16.2	27 58.7 59.2	293 43.9 23.0			
06	187 37.2	252 15.9 S22 42.2	225 55.2 S16 15.6	43 01.3 N14 59.3	308 46.1 S18 23.1	Rasalhague	96 05.8 N12 33.1	
07	202 39.7	267 15.0 41.7	240 55.7 15.0	58 03.9 59.4	323 48.3 23.1	Régulus	207 42.2 N11 53.4	
08	217 42.2	282 14.1 41.3	255 56.3 14.3	73 06.5 59.4	338 50.5 23.2	Rigel	281 10.7 S 8 11.3	
09	232 44.6	297 13.2 . . 40.8	270 56.8 . . 13.7	88 09.2 . . 59.5	353 52.7 . . 23.2	Rigel Kent.	139 50.5 S60 53.4	
10	247 47.1	312 12.3 40.3	285 57.4 13.1	103 11.8 59.5	8 54.9 23.3	Sabik	102 11.7 S15 44.4	
11	262 49.5	327 11.4 39.8	300 57.9 12.4	118 14.4 59.6	23 57.1 23.3			
12	277 52.0	342 10.5 S22 39.4	315 58.4 S16 11.8	133 17.0 N14 59.7	38 59.3 S18 23.4	Schedar	349 39.1 N56 37.4	
13	292 54.5	357 09.6 38.9	330 59.0 11.2	148 19.6 59.7	54 01.5 23.4	Shaula	96 20.9 S37 06.6	
14	307 56.9	12 08.8 38.4	345 59.5 10.5	163 22.3 59.8	69 03.7 23.5	Sirius	258 32.4 S16 44.4	
15	322 59.4	27 07.9 . . 37.9	1 00.0 . . 09.9	178 24.9 . . 59.9	84 05.9 . . 23.5	Spica	158 30.2 S11 14.3	
16	338 01.9	42 07.0 37.4	16 00.6 09.3	193 27.5 14 59.9	99 08.1 23.6	Suhail	222 51.3 S43 29.6	
17	353 04.3	57 06.1 36.9	31 01.1 08.6	208 30.1 15 00.0	114 10.3 23.6			
18	8 06.8	72 05.2 S22 36.5	46 01.7 S16 08.0	223 32.8 N15 00.0	129 12.5 S18 23.7	Vega	80 38.7 N38 48.1	
19	23 09.3	87 04.3 36.0	61 02.2 07.4	238 35.4 00.1	144 14.7 23.7	Zuben'ubi	137 04.4 S16 06.1	
20	38 11.7	102 03.4 35.5	76 02.7 06.7	253 38.0 00.2	159 16.9 23.8			
21	53 14.2	117 02.5 . . 35.0	91 03.3 . . 06.1	268 40.6 . . 00.2	174 19.1 . . 23.8			
22	68 16.7	132 01.6 34.5	106 03.8 05.4	283 43.3 00.3	189 21.3 23.9			
23	83 19.1	147 00.8 34.0	121 04.3 04.8	298 45.9 00.4	204 23.5 23.9			
h m								
Paso Mer. 17 31.6	v -0.9	d 0.5	v 0.5	d 0.6	v 2.6	d 0.1		
							AHS	Paso Mer.
							° /	h m
							Venus	66 19.6 13 10
							Marte	39 15.9 14 57
							Júpiter	215 19.5 3 13
							Saturno	121 16.9 9 28

UT (HmGr)	SOL		LUNA						Lat.	Aurora		Orto Sol	Orto Luna			
	AHGr	Dec	AHGr	<i>v</i>	Dec	<i>d</i>	Ph	Náut.		Civil	27		28	29	30	
S Á B A D O	d h	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
	27 00	179 48.4	S23 20.1	113 07.6	9.3 S	4 29.8	11.1	59.6	N 72	08 26	10 53	■	11 23	11 17	11 11	11 04
	01	194 48.1	20.0	127 35.9	9.3	4 18.7	11.2	59.6	N 70	08 07	09 54	■	11 19	11 19	11 20	11 20
	02	209 47.7	19.9	142 04.2	9.4	4 07.5	11.2	59.6	68	07 51	09 20	■	11 17	11 21	11 27	11 33
	03	224 47.4	19.8	156 32.6	9.4	3 56.3	11.2	59.6	66	07 38	08 55	10 33	11 14	11 23	11 33	11 44
	04	239 47.1	19.7	171 01.0	9.4	3 45.1	11.2	59.6	64	07 27	08 35	09 52	11 12	11 25	11 38	11 53
	05	254 46.8	19.6	185 29.4	9.5	3 33.9	11.2	59.6	62	07 18	08 19	09 25	11 10	11 26	11 43	12 00
	06	269 46.5	S23 19.5	199 57.9	9.5 S	3 22.7	11.3	59.5	60	07 09	08 06	09 03	11 09	11 28	11 46	12 07
	07	284 46.2	19.4	214 26.4	9.5	3 11.4	11.2	59.5	N 58	07 02	07 55	08 46	11 08	11 29	11 50	12 13
	08	299 45.9	19.3	228 54.9	9.6	3 00.2	11.3	59.5	56	06 55	07 44	08 32	11 06	11 30	11 53	12 18
	09	314 45.6	19.2	243 23.5	9.6	2 48.9	11.2	59.5	54	06 49	07 35	08 19	11 05	11 30	11 56	12 23
	10	329 45.3	19.1	257 52.1	9.6	2 37.7	11.3	59.5	52	06 44	07 27	08 08	11 04	11 31	11 58	12 27
	11	344 45.0	19.0	272 20.7	9.7	2 26.4	11.3	59.4	50	06 38	07 20	07 58	11 03	11 32	12 01	12 31
	12	359 44.7	S23 18.9	286 49.4	9.7 S	2 15.1	11.3	59.4	45	06 27	07 04	07 38	11 01	11 34	12 06	12 40
	13	14 44.4	18.8	301 18.1	9.7	2 03.8	11.3	59.4	N 40	06 16	06 50	07 21	11 00	11 35	12 10	12 47
	14	29 44.1	18.6	315 46.8	9.8	1 52.5	11.3	59.4	35	06 07	06 39	07 07	10 58	11 36	12 14	12 53
	15	44 43.7	18.5	330 15.6	9.7	1 41.2	11.3	59.4	30	05 58	06 28	06 55	10 57	11 37	12 17	12 58
	16	59 43.4	18.4	344 44.3	9.9	1 29.9	11.3	59.4	20	05 42	06 10	06 34	10 55	11 39	12 23	13 08
	17	74 43.1	18.3	359 13.2	9.8	1 18.6	11.3	59.3	N 10	05 26	05 52	06 15	10 53	11 41	12 28	13 16
	18	89 42.8	S23 18.2	13 42.0	9.9 S	1 07.3	11.3	59.3	0	05 09	05 35	05 58	10 51	11 42	12 33	13 24
	19	104 42.5	18.1	28 10.9	9.8	0 56.0	11.3	59.3	S 10	04 50	05 17	05 40	10 49	11 44	12 38	13 32
	20	119 42.2	18.0	42 39.7	10.0	0 44.7	11.3	59.3	20	04 28	04 57	05 21	10 47	11 46	12 43	13 40
	21	134 41.9	17.9	57 08.7	9.9	0 33.4	11.3	59.3	30	03 59	04 32	04 59	10 45	11 48	12 49	13 50
	22	149 41.6	17.7	71 37.6	10.0	0 22.1	11.3	59.2	35	03 40	04 17	04 47	10 44	11 49	12 53	13 56
	23	164 41.3	17.6	86 06.6	10.0 S	0 10.8	11.3	59.2	40	03 17	03 59	04 32	10 42	11 50	12 57	14 02
24								45	02 47	03 36	04 14	10 41	11 52	13 01	14 09	
D O M I N G O	28 00	179 41.0	S23 17.5	100 35.6	10.0 N	0 00.5	11.2	59.2	S 50	02 02	03 07	03 51	10 39	11 54	13 07	14 19
	01	194 40.7	17.4	115 04.6	10.0	0 11.7	11.3	59.2	52	01 34	02 52	03 41	10 38	11 55	13 10	14 23
	02	209 40.4	17.3	129 33.6	10.0	0 23.0	11.3	59.2	54	00 50	02 34	03 28	10 37	11 56	13 12	14 27
	03	224 40.1	17.1	144 02.6	10.1	0 34.3	11.2	59.1	56	///	02 12	03 14	10 36	11 57	13 16	14 33
	04	239 39.8	17.0	158 31.7	10.1	0 45.5	11.2	59.1	58	///	01 43	02 58	10 35	11 58	13 19	14 38
	05	254 39.4	16.9	173 00.8	10.1	0 56.7	11.2	59.1	S 60	///	00 54	02 37	10 33	11 59	13 23	14 45
	06	269 39.1	S23 16.8	187 29.9	10.2 N	1 07.9	11.3	59.1	Lat.	Ocaso Sol	Crepúsculo		Ocaso Luna			
	07	284 38.8	16.7	201 59.1	10.1	1 19.2	11.1	59.1			Civil	Náut.	27	28	29	30
	08	299 38.5	16.5	216 28.2	10.2	1 30.3	11.2	59.1	N 72	h m	h m	h m	h m	h m	h m	h m
	09	314 38.2	16.4	230 57.4	10.2	1 41.5	11.2	59.0								
	10	329 37.9	16.3	245 26.6	10.2	1 52.7	11.1	59.0	N 70	13 11	15 37	23 12	25 05	01 05	02 57	
	11	344 37.6	16.2	259 55.8	10.2	2 03.8	11.1	59.0	N 68	14 09	15 56	23 13	24 58	00 58	02 43	
	12	359 37.3	S23 16.0	274 25.0	10.2 N	2 14.9	11.1	59.0	68	14 44	16 12	23 13	24 53	00 53	02 31	
	13	14 37.0	15.9	288 54.2	10.2	2 26.0	11.1	58.9	66	13 30	15 08	16 25	23 13	24 49	00 49	02 22
	14	29 36.7	15.8	303 23.4	10.3	2 37.1	11.0	58.9	64	14 11	15 28	16 36	23 14	24 45	00 45	02 14
	15	44 36.4	15.6	317 52.7	10.3	2 48.1	11.1	58.9	62	14 38	15 44	16 45	23 14	24 42	00 42	02 08
	16	59 36.1	15.5	332 22.0	10.3	2 59.2	11.0	58.9	60	15 00	15 57	16 54	23 14	24 39	00 39	02 02
	17	74 35.8	15.4	346 51.3	10.3	3 10.2	11.0	58.9	N 58	15 17	16 09	17 01	23 14	24 36	00 36	01 57
	18	89 35.5	S23 15.2	1 20.6	10.3 N	3 21.2	10.9	58.8	56	15 32	16 19	17 08	23 14	24 34	00 34	01 52
	19	104 35.2	15.1	15 49.9	10.3	3 32.1	10.9	58.8	54	15 44	16 28	17 14	23 14	24 32	00 32	01 48
	20	119 34.9	15.0	30 19.2	10.3	3 43.0	10.9	58.8	52	15 55	16 36	17 20	23 14	24 30	00 30	01 44
	21	134 34.6	14.8	44 48.5	10.3	3 53.9	10.9	58.8	50	16 05	16 43	17 25	23 14	24 29	00 29	01 41
	22	149 34.3	14.7	59 17.8	10.4	4 04.8	10.8	58.8	45	16 25	16 59	17 36	23 15	24 25	00 25	01 34
	23	164 34.0	14.6	73 47.2	10.3	4 15.6	10.8	58.7	N 40	16 42	17 13	17 47	23 15	24 22	00 22	01 28
	L U N E S	29 00	179 33.6	S23 14.4	88 16.5	10.4 N	4 26.4	10.8	58.7	35	16 56	17 24	17 56	23 15	24 19	00 19
01		194 33.3	14.3	102 45.9	10.4	4 37.2	10.8	58.7	30	17 08	17 35	18 05	23 15	24 17	00 17	01 18
02		209 33.0	14.2	117 15.3	10.3	4 48.0	10.7	58.7	20	17 30	17 54	18 21	23 15	24 13	00 13	01 11
03		224 32.7	14.0	131 44.6	10.4	4 58.7	10.6	58.7	N 10	17 48	18 11	18 37	23 15	24 10	00 10	01 04
04		239 32.4	13.9	146 14.0	10.4	5 09.3	10.7	58.6	0	18 05	18 28	18 54	23 15	24 07	00 07	00 57
05		254 32.1	13.7	160 43.4	10.4	5 20.0	10.6	58.6	S 10	18 23	18 46	19 13	23 16	24 03	00 03	00 51
06		269 31.8	S23 13.6	175 12.8	10.4 N	5 30.6	10.5	58.6	20	18 42	19 06	19 35	23 16	24 00	00 00	00 44
07		284 31.5	13.4	189 42.2	10.4	5 41.1	10.5	58.6	30	19 03	19 31	20 04	23 16	23 56	24 36	00 36
08		299 31.2	13.3	204 11.6	10.4	5 51.6	10.5	58.5	35	19 16	19 46	20 23	23 16	23 54	24 32	00 32
09		314 30.9	13.2	218 41.0	10.4	6 02.1	10.5	58.5	40	19 31	20 04	20 46	23 16	23 51	24 27	00 27
10		329 30.6	13.0	233 10.4	10.4	6 12.6	10.4	58.5	45	19 49	20 26	21 16	23 16	23 48	24 21	00 21
11		344 30.3	12.9	247 39.8	10.4	6 23.0	10.3	58.5	S 50	20 11	20 56	22 01	23 16	23 44	24 14	00 14
12		359 30.0	S23 12.7	262 09.2	10.4 N	6 33.3	10.3	58.5	52	20 22	21 11	22 28	23 16	23 43	24 11	00 11
13		14 29.7	12.6	276 38.6	10.4	6 43.6	10.3	58.4	54	20 34	21 28	23 12	23 16	23 41	24 07	00 07
14		29 29.4	12.4	291 08.0	10.4	6 53.9	10.2	58.4	56	20 48	21 50	///	23 16	23 39	24 03	00 03
15		44 29.1	12.3	305 37.4	10.4	7 04.1	10.2	58.4	58	21 05	22 19	///	23 16	23 37	23 59	24 24
16		59 28.8	12.1	320 06.8	10.4	7 14.3	10.1	58.4	S 60	21 25	23 07	///	23 16	23 34	23 54	24 16
17		74 28.5	12.0	334 36.2	10.4	7 24.4	10.1	58.4	Día	SOL		Paso Mer.	LUNA			
18		89 28.2	S23 11.8	349 05.6	10.4 N	7 34.5	10.1	58.3		Ec. Tiempo			Paso Mer.	Sup.	Inf.	Edad	Fase
19		104 27.9	11.7	3 35.0	10.4	7 44.6	9.9	58.3	d	m s	m s	h m	h m	h m	d	%
20		119 27.6	11.5	18 04.4	10.4	7 54.5	10.0	58.3								
21		134 27.3	11.4	32 33.8	10.4	8 04.5	9.9	58.3	27	00 46	01 01	12 01	17 03	04 37	05 36	

UT (HmGr)	ARIES	VENUS -3.9	MARTE +1.1	JÚPITER -2.4	SATURNO +0.6	ESTRELLAS		
	AHGr	AHGr Dec	AHGr Dec	AHGr Dec	AHGr Dec	Nombre	AHS	Dec
30 00	98 21.6	161 59.9 S22 33.5	136 04.9 S16 04.2	313 48.5 N15 00.4	219 25.7 S18 24.0	Acamar	315 17.3 S40 15.0	
01	113 24.0	176 59.0 33.0	151 05.4 03.5	328 51.1 00.5	234 27.9 24.0	Achernar	335 25.9 S57 10.0	
02	128 26.5	191 58.1 32.5	166 06.0 02.9	343 53.8 00.6	249 30.1 24.1	Acrux	173 07.9 S63 10.6	
03	143 29.0	206 57.2 . . 32.0	181 06.5 . . 02.3	358 56.4 . . 00.6	264 32.3 . . 24.1	Adhara	255 11.3 S28 59.8	
04	158 31.4	221 56.3 31.5	196 07.0 01.6	13 59.0 00.7	279 34.5 24.2	Aldebarán	290 47.8 N16 32.2	
05	173 33.9	236 55.4 31.0	211 07.6 01.0	29 01.7 00.8	294 36.7 24.2			
06	188 36.4	251 54.6 S22 30.5	226 08.1 S16 00.3	44 04.3 N15 00.8	309 38.9 S18 24.3	Alioth	166 19.9 N55 52.4	
07	203 38.8	266 53.7 30.0	241 08.7 15 59.7	59 06.9 00.9	324 41.1 24.3	Alkaid	152 58.3 N49 14.1	
08	218 41.3	281 52.8 29.5	256 09.2 59.1	74 09.5 00.9	339 43.3 24.4	Al Na'ir	27 42.8 S46 53.4	
09	233 43.8	296 51.9 . . 29.0	271 09.7 . . 58.4	89 12.2 . . 01.0	354 45.5 . . 24.4	Alnilam	275 45.0 S 1 11.8	
10	248 46.2	311 51.0 28.5	286 10.3 57.8	104 14.8 01.1	9 47.7 24.5	Alphard	217 54.8 S 8 43.6	
11	263 48.7	326 50.2 28.0	301 10.8 57.1	119 17.4 01.1	24 49.9 24.5			
12	278 51.1	341 49.3 S22 27.5	316 11.4 S15 56.5	134 20.1 N15 01.2	39 52.1 S18 24.6	Alphecca	126 10.4 N26 39.9	
13	293 53.6	356 48.4 27.0	331 11.9 55.9	149 22.7 01.3	54 54.3 24.6	Alpheratz	357 42.4 N29 10.6	
14	308 56.1	11 47.5 26.5	346 12.5 55.2	164 25.3 01.3	69 56.5 24.7	Altair	62 07.5 N 8 54.7	
15	323 58.5	26 46.6 . . 25.9	1 13.0 . . 54.6	179 27.9 . . 01.4	84 58.7 . . 24.7	Ankaa	353 14.7 S42 13.7	
16	339 01.0	41 45.8 25.4	16 13.5 53.9	194 30.6 01.5	100 00.9 24.8	Antares	112 25.3 S26 27.7	
17	354 03.5	56 44.9 24.9	31 14.1 53.3	209 33.2 01.5	115 03.1 24.8			
18	9 05.9	71 44.0 S22 24.4	46 14.6 S15 52.6	224 35.8 N15 01.6	130 05.3 S18 24.9	Arcturus	145 54.9 N19 06.2	
19	24 08.4	86 43.1 23.9	61 15.2 52.0	239 38.5 01.7	145 07.5 24.9	Atria	107 26.6 S69 02.9	
20	39 10.9	101 42.2 23.4	76 15.7 51.4	254 41.1 01.7	160 09.7 25.0	Avior	234 16.9 S59 33.5	
21	54 13.3	116 41.4 . . 22.8	91 16.2 . . 50.7	269 43.7 . . 01.8	175 11.9 . . 25.0	Bellatrix	278 30.5 N 6 21.6	
22	69 15.8	131 40.5 22.3	106 16.8 50.1	284 46.4 01.9	190 14.1 25.1	Betelgeuse	270 59.8 N 7 24.3	
23	84 18.3	146 39.6 21.8	121 17.3 49.4	299 49.0 01.9	205 16.3 25.1			
31 00	99 20.7	161 38.7 S22 21.3	136 17.9 S15 48.8	314 51.6 N15 02.0	220 18.5 S18 25.2	Canopus	263 55.1 S52 42.4	
01	114 23.2	176 37.9 20.8	151 18.4 48.1	329 54.3 02.1	235 20.7 25.2	Capella	280 32.4 N46 00.6	
02	129 25.6	191 37.0 20.2	166 19.0 47.5	344 56.9 02.1	250 22.9 25.3	Deneb	49 31.1 N45 20.3	
03	144 28.1	206 36.1 . . 19.7	181 19.5 . . 46.9	359 59.5 . . 02.2	265 25.1 . . 25.3	Denébola	182 32.5 N14 29.1	
04	159 30.6	221 35.2 19.2	196 20.1 46.2	15 02.2 02.3	280 27.3 25.4	Diphda	348 54.8 S17 54.4	
05	174 33.0	236 34.4 18.6	211 20.6 45.6	30 04.8 02.3	295 29.5 25.4			
06	189 35.5	251 33.5 S22 18.1	226 21.1 S15 44.9	45 07.4 N15 02.4	310 31.7 S18 25.5	Dubhe	193 50.3 N61 39.8	
07	204 38.0	266 32.6 17.6	241 21.7 44.3	60 10.1 02.5	325 33.9 25.5	Elnath	278 10.9 N28 37.0	
08	219 40.4	281 31.7 17.1	256 22.2 43.6	75 12.7 02.5	340 36.1 25.6	Eltanin	90 46.2 N51 29.4	
09	234 42.9	296 30.9 . . 16.5	271 22.8 . . 43.0	90 15.4 . . 02.6	355 38.3 . . 25.6	Enif	33 46.3 N 9 56.8	
10	249 45.4	311 30.0 16.0	286 23.3 42.3	105 18.0 02.7	10 40.5 25.7	Fomalhaut	15 23.0 S29 32.7	
11	264 47.8	326 29.1 15.5	301 23.9 41.7	120 20.6 02.7	25 42.7 25.7			
12	279 50.3	341 28.3 S22 14.9	316 24.4 S15 41.0	135 23.3 N15 02.8	40 44.9 S18 25.8	Gacrux	171 59.6 S57 11.6	
13	294 52.8	356 27.4 14.4	331 25.0 40.4	150 25.9 02.9	55 47.1 25.8	Gienah	175 51.2 S17 37.4	
14	309 55.2	11 26.5 13.8	346 25.5 39.7	165 28.5 02.9	70 49.3 25.9	Hadar	148 46.5 S60 26.4	
15	324 57.7	26 25.7 . . 13.3	1 26.1 . . 39.1	180 31.2 . . 03.0	85 51.5 . . 25.9	Hamal	327 59.4 N23 32.0	
16	340 00.1	41 24.8 12.8	16 26.6 38.5	195 33.8 03.1	100 53.7 26.0	Kaus Aust.	83 42.8 S34 22.4	
17	355 02.6	56 23.9 12.2	31 27.1 37.8	210 36.5 03.1	115 55.9 26.0			
18	10 05.1	71 23.1 S22 11.7	46 27.7 S15 37.2	225 39.1 N15 03.2	130 58.1 S18 26.0	Kochab	137 21.0 N74 05.5	
19	25 07.5	86 22.2 11.1	61 28.2 36.5	240 41.7 03.3	146 00.3 26.1	Markab	13 37.4 N15 17.3	
20	40 10.0	101 21.3 10.6	76 28.8 35.9	255 44.4 03.3	161 02.5 26.1	Menkar	314 13.7 N 4 08.8	
21	55 12.5	116 20.5 . . 10.0	91 29.3 . . 35.2	270 47.0 . . 03.4	176 04.7 . . 26.2	Menkent	148 06.4 S36 26.4	
22	70 14.9	131 19.6 09.5	106 29.9 34.6	285 49.7 03.5	191 06.9 26.2	Miaplacidus	221 38.5 S69 46.7	
23	85 17.4	146 18.7 08.9	121 30.4 33.9	300 52.3 03.5	206 09.1 26.3			
1 00	100 19.9	161 17.9 S22 08.4	136 31.0 S15 33.3	315 54.9 N15 03.6	221 11.3 S18 26.3	Mirfak	308 38.4 N49 54.9	
01	115 22.3	176 17.0 07.8	151 31.5 32.6	330 57.6 03.7	236 13.5 26.4	Nunki	75 57.4 S26 16.5	
02	130 24.8	191 16.1 07.3	166 32.1 32.0	346 00.2 03.7	251 15.7 26.4	Peacock	53 18.2 S56 41.1	
03	145 27.2	206 15.3 . . 06.7	181 32.6 . . 31.3	1 02.9 . . 03.8	266 17.9 . . 26.5	Póllux	243 26.1 N27 59.1	
04	160 29.7	221 14.4 06.2	196 33.2 30.7	16 05.5 03.9	281 20.1 26.5	Procyon	244 58.3 N 5 10.9	
05	175 32.2	236 13.5 05.6	211 33.7 30.0	31 08.1 03.9	296 22.3 26.6			
06	190 34.6	251 12.7 S22 05.1	226 34.3 S15 29.4	46 10.8 N15 04.0	311 24.5 S18 26.6	Rasalhague	96 05.8 N12 33.1	
07	205 37.1	266 11.8 04.5	241 34.8 28.7	61 13.4 04.1	326 26.7 26.7	Régulus	207 42.2 N11 53.4	
08	220 39.6	281 11.0 03.9	256 35.4 28.0	76 16.1 04.1	341 28.9 26.7	Rigel	281 10.7 S 8 11.3	
09	235 42.0	296 10.1 . . 03.4	271 35.9 . . 27.4	91 18.7 . . 04.2	356 31.1 . . 26.8	Rigel Kent.	139 50.5 S60 53.4	
10	250 44.5	311 09.2 02.8	286 36.5 26.7	106 21.4 04.3	11 33.3 26.8	Sabik	102 11.7 S15 44.4	
11	265 47.0	326 08.4 02.3	301 37.0 26.1	121 24.0 04.4	26 35.6 26.9			
12	280 49.4	341 07.5 S22 01.7	316 37.6 S15 25.4	136 26.6 N15 04.4	41 37.8 S18 26.9	Schedar	349 39.2 N56 37.4	
13	295 51.9	356 06.7 01.1	331 38.1 24.8	151 29.3 04.5	56 40.0 27.0	Shaula	96 20.9 S37 06.6	
14	310 54.4	11 05.8 00.6	346 38.7 24.1	166 31.9 04.6	71 42.2 27.0	Sirius	258 32.4 S16 44.4	
15	325 56.8	26 04.9 22 00.0	1 39.2 . . 23.5	181 34.6 . . 04.6	86 44.4 . . 27.1	Spica	158 30.2 S11 14.3	
16	340 59.3	41 04.1 21 59.4	16 39.8 22.8	196 37.2 04.7	101 46.6 27.1	Suhail	222 51.2 S43 29.6	
17	356 01.7	56 03.2 58.9	31 40.3 22.2	211 39.9 04.8	116 48.8 27.2			
18	11 04.2	71 02.4 S21 58.3	46 40.9 S15 21.5	226 42.5 N15 04.8	131 51.0 S18 27.2	Vega	80 38.7 N38 48.0	
19	26 06.7	86 01.5 57.7	61 41.4 20.9	241 45.2 04.9	146 53.2 27.3	Zuben'ubi	137 04.4 S16 06.1	
20	41 09.1	101 00.7 57.1	76 42.0 20.2	256 47.8 05.0	161 55.4 27.3			
21	56 11.6	115 59.8 . . 56.6	91 42.5 . . 19.5	271 50.5 . . 05.1	176 57.6 . . 27.4			
22	71 14.1	130 59.0 56.0	106 43.1 18.9	286 53.1 05.1	191 59.8 27.4	Venus	62 18.0 13 14	
23	86 16.5	145 58.1 55.4	121 43.6 18.2	301 55.8 05.2	207 02.0 27.4	Marte	36 57.2 14 54	
						Júpiter	215 30.9 3 00	
						Saturno	120 57.7 9 17	
h m								
Paso Mer. 17 19.8	v -0.9	d 0.5	v 0.5	d 0.6	v 2.6	d 0.1	v 2.2	d 0.0

UT (HmGr)	SOL		LUNA					Lat.	Aurora		Orto Sol	Orto Luna				
	AHGr	Dec	AHGr	v	Dec	d	Ph		Náut.	Civil		30	31	1	2	
d h	° /	° /	° /	° /	° /	° /	° /	°	h m	h m	h m	h m	h m	h m	h m	h m
M A R T E S	30	00	179 26.4	S23 10.9	76 01.9	10.4	N 8 34.0	9.7 58.2	N 72	08 25	10 46	██	11 20	11 23	11 29	11 42
	01	194 26.1	10.7	90 31.3	10.4	8 43.7	9.7 58.2	N 70	08 06	09 51	██	11 20	11 23	11 29	11 42	
	02	209 25.8	10.6	105 00.7	10.3	8 53.4	9.6 58.2	68	07 50	09 18	██	11 33	11 42	11 57	12 20	
	03	224 25.5	10.4	119 30.0	10.4	9 03.0	9.5 58.1	66	07 38	08 54	10 30	11 44	11 58	12 18	12 46	
	04	239 25.2	10.3	133 59.4	10.4	9 12.5	9.5 58.1	64	07 27	08 35	09 51	11 53	12 11	12 35	13 07	
	05	254 24.9	10.1	148 28.8	10.3	9 22.0	9.5 58.1	62	07 18	08 19	09 24	12 00	12 22	12 49	13 23	
	06	269 24.6	S23 09.9	162 58.1	10.3	N 9 31.5	9.4 58.1	N 60	07 09	08 06	09 03	12 07	12 31	13 01	13 37	
	07	284 24.3	09.8	177 27.4	10.4	9 40.9	9.3 58.1	58	07 02	07 54	08 46	12 13	12 39	13 11	13 49	
	08	299 24.0	09.6	191 56.8	10.3	9 50.2	9.3 58.0	56	06 56	07 44	08 31	12 18	12 47	13 20	14 00	
	09	314 23.7	09.4	206 26.1	10.3	9 59.5	9.2 58.0	54	06 50	07 36	08 19	12 23	12 53	13 28	14 09	
	10	329 23.4	09.3	220 55.4	10.3	10 08.7	9.1 58.0	52	06 44	07 28	08 08	12 27	12 59	13 35	14 17	
	11	344 23.1	09.1	235 24.7	10.3	10 17.8	9.1 58.0	50	06 39	07 20	07 59	12 31	13 04	13 42	14 24	
	12	359 22.8	S23 09.0	249 54.0	10.3	N10 26.9	9.0 57.9	45	06 27	07 04	07 38	12 40	13 16	13 56	14 40	
	13	14 22.5	08.8	264 23.3	10.3	10 35.9	9.0 57.9	N 40	06 17	06 51	07 22	12 47	13 25	14 07	14 53	
	14	29 22.2	08.6	278 52.6	10.2	10 44.9	8.9 57.9	35	06 08	06 40	07 08	12 53	13 34	14 17	15 04	
	15	44 21.9	08.5	293 21.8	10.3	10 53.8	8.8 57.9	30	05 59	06 29	06 56	12 58	13 41	14 26	15 14	
	16	59 21.6	08.3	307 51.1	10.3	11 02.6	8.7 57.9	20	05 43	06 11	06 35	13 08	13 53	14 41	15 30	
	17	74 21.3	08.1	322 20.4	10.2	11 11.3	8.7 57.8	N 10	05 27	05 54	06 16	13 16	14 04	14 54	15 45	
	18	89 21.0	S23 07.9	336 49.6	10.2	N11 20.0	8.7 57.8	0	05 11	05 37	05 59	13 24	14 15	15 07	15 58	
	19	104 20.7	07.8	351 18.8	10.2	11 28.7	8.5 57.8	S 10	04 52	05 19	05 42	13 32	14 25	15 19	16 12	
	20	119 20.4	07.6	5 48.0	10.2	11 37.2	8.5 57.8	20	04 30	04 59	05 23	13 40	14 37	15 32	16 27	
	21	134 20.1	07.4	20 17.2	10.2	11 45.7	8.4 57.7	30	04 01	04 34	05 01	13 50	14 49	15 48	16 44	
	22	149 19.8	07.2	34 46.4	10.2	11 54.1	8.4 57.7	35	03 42	04 19	04 49	13 56	14 57	15 57	16 53	
	23	164 19.5	07.1	49 15.6	10.2	12 02.5	8.2 57.7	40	03 20	04 01	04 34	14 02	15 06	16 07	17 05	
								45	02 50	03 39	04 16	14 09	15 16	16 19	17 18	
M I É R C O L E S	31	00	179 19.2	S23 06.9	63 44.8	10.1	N12 10.7	8.2 57.7	S 50	02 05	03 10	03 54	14 19	15 28	16 33	17 34
	01	194 18.9	06.7	78 13.9	10.2	12 18.9	8.2 57.7	52	01 39	02 55	03 43	14 23	15 33	16 40	17 42	
	02	209 18.6	06.5	92 43.1	10.1	12 27.1	8.0 57.6	54	00 57	02 37	03 31	14 27	15 40	16 48	17 50	
	03	224 18.3	06.4	107 12.2	10.2	12 35.1	8.0 57.6	56	////	02 16	03 17	14 33	15 47	16 56	18 00	
	04	239 18.0	06.2	121 41.4	10.1	12 43.1	7.9 57.6	58	////	01 47	03 01	14 38	15 54	17 06	18 10	
	05	254 17.7	06.0	136 10.5	10.1	12 51.0	7.9 57.6	S 60	////	01 02	02 41	14 45	16 03	17 17	18 23	
	06	269 17.4	S23 05.8	150 39.6	10.1	N12 58.9	7.7 57.6	Ocaso Sol		Crepúsculo		Ocaso Luna				
	07	284 17.1	05.6	165 08.7	10.0	13 06.6	7.7 57.5	Lat.				30	31	1	2	
	08	299 16.8	05.5	179 37.7	10.1	13 14.3	7.6 57.5									
	09	314 16.5	05.3	194 06.8	10.0	13 21.9	7.5 57.5									
	10	329 16.2	05.1	208 35.8	10.1	13 29.4	7.5 57.5									
	11	344 15.9	04.9	223 04.9	10.0	13 36.9	7.3 57.4	N 72	h m	h m	h m	h m	h m	h m	h m	
	12	359 15.6	S23 04.7	237 33.9	10.0	N13 44.2	7.3 57.4	N 70	██	14 15	16 01	02 43	04 26	06 08	07 42	
	13	14 15.3	04.5	252 02.9	10.0	13 51.5	7.2 57.4	68	██	14 48	16 16	02 31	04 08	05 41	07 05	
	14	29 15.0	04.3	266 31.9	10.0	13 58.7	7.2 57.4	66	13 36	15 13	16 29	02 22	03 53	05 20	06 39	
	15	44 14.7	04.2	281 00.9	10.0	14 05.9	7.0 57.4	64	14 16	15 32	16 39	02 14	03 41	05 04	06 19	
	16	59 14.4	04.0	295 29.9	9.9	14 12.9	7.0 57.3	62	14 43	15 47	16 49	02 08	03 31	04 50	06 02	
	17	74 14.1	03.8	309 58.8	10.0	14 19.9	6.9 57.3	60	15 03	16 00	16 57	02 02	03 22	04 39	05 49	
	18	89 13.8	S23 03.6	324 27.8	9.9	N14 26.8	6.8 57.3	N 58	15 20	16 12	17 04	01 57	03 15	04 29	05 37	
	19	104 13.5	03.4	338 56.7	10.0	14 33.6	6.7 57.3	56	15 35	16 22	17 11	01 52	03 08	04 20	05 27	
	20	119 13.2	03.2	353 25.7	9.9	14 40.3	6.6 57.3	54	15 47	16 31	17 17	01 48	03 02	04 12	05 18	
	21	134 12.9	03.0	7 54.6	9.9	14 46.9	6.5 57.2	52	15 58	16 39	17 22	01 44	02 57	04 05	05 10	
	22	149 12.6	02.8	22 23.5	9.9	14 53.4	6.5 57.2	50	16 08	16 46	17 27	01 41	02 52	03 59	05 03	
	23	164 12.3	02.6	36 52.4	9.9	14 59.9	6.4 57.2	45	16 28	17 02	17 39	01 34	02 41	03 46	04 47	
	J U E V E S	1	00	179 12.0	S23 02.4	51 21.3	9.8	N15 06.3	6.3 57.2	N 40	16 44	17 15	17 49	01 28	02 32	03 35	04 35
01		194 11.7	02.2	65 50.1	9.9	15 12.6	6.2 57.1	35	16 58	17 26	17 58	01 23	02 25	03 26	04 24	
02		209 11.4	02.0	80 19.0	9.8	15 18.8	6.1 57.1	30	17 10	17 37	18 07	01 18	02 19	03 18	04 15	
03		224 11.1	01.8	94 47.8	9.9	15 24.9	6.0 57.1	20	17 31	17 55	18 23	01 11	02 07	03 03	03 59	
04		239 10.8	01.6	109 16.7	9.8	15 30.9	5.9 57.1	N 10	17 50	18 12	18 39	01 04	01 57	02 51	03 45	
05		254 10.5	01.4	123 45.5	9.8	15 36.8	5.9 57.1	0	18 07	18 29	18 55	00 57	01 48	02 40	03 31	
06		269 10.2	S23 01.2	138 14.3	9.8	N15 42.7	5.7 57.0	S 10	18 24	18 47	19 14	00 51	01 39	02 28	03 18	
07		284 10.0	01.0	152 43.1	9.8	15 48.4	5.7 57.0	20	18 43	19 07	19 36	00 44	01 29	02 16	03 04	
08		299 09.7	00.8	167 11.9	9.8	15 54.1	5.6 57.0	30	19 04	19 32	20 05	00 36	01 18	02 02	02 48	
09		314 09.4	00.6	181 40.7	9.8	15 59.7	5.5 57.0	35	19 17	19 47	20 23	00 32	01 12	01 54	02 39	
10		329 09.1	00.4	196 09.5	9.7	16 05.2	5.4 57.0	40	19 32	20 05	20 46	00 27	01 04	01 44	02 28	
11		344 08.8	00.2	210 38.2	9.8	16 10.6	5.3 56.9	45	19 50	20 27	21 16	00 21	00 56	01 34	02 16	
12		359 08.5	S23 00.0	225 07.0	9.8	N16 15.9	5.2 56.9	S 50	20 12	20 56	22 00	00 14	00 46	01 21	02 01	
13		14 08.2	22 59.8	239 35.8	9.7	16 21.1	5.1 56.9	52	20 22	21 10	22 26	00 11	00 41	01 15	01 53	
14		29 07.9	59.6	254 04.5	9.7	16 26.2	5.0 56.9	54	20 34	21 28	23 07	00 07	00 36	01 08	01 46	
15		44 07.6	59.4	268 33.2	9.8	16 31.2	5.0 56.9	56	20 48	21 49	////	00 03	00 30	01 01	01 37	
16		59 07.3	59.2	283 02.0	9.7	16 36.2	4.8 56.8	58	21 04	22 17	////	24 24	00 24	00 52	01 27	
17		74 07.0	59.0	297 30.7	9.7	16 41.0	4.8 56.8	S 60	21 24	23 01	////	24 16	00 16	00 43	01 15	
18		89 06.7	S22 58.8	311 59.4	9.7	N16 45.8	4.6 56.8	SOL		LUNA						
19		104 06.4	58.6	326 28.1	9.7	16 50.4	4.6 56.8	Día				Paso Mer.		Edad	Fase	
20		119 06.1	58.4	340 56.8	9.7	16 55.0	4.4 56.7					Paso Mer.				
21		134 05.8	58.2	355 25.5	9.7	16 59.4	4.4 56.7		00h	12h		Sup.	Inf.			
22		149 05.5	57.9	9 54.2	9.7	17 03.8	4.3 56.7	d	m s	m s	h m	h m	h m	d	%	
23		164 05.3	57.7	2												

EXPLICACIÓN

FUNDAMENTO Y DISPOSICIÓN DE LOS DATOS

1. *Objetivo.* El objetivo de este Almanaque es proporcionar convenientemente los datos necesarios para la práctica de la navegación astronómica en el mar.

2. *Principio.* El contenido principal del Almanaque consiste en los datos a partir de los cuales pueden obtenerse los valores del *Ángulo Horario de Greenwich* (AHGr) y la *Declinación* (Dec) de todos los astros usados en la navegación, para cualquier instante del *Tiempo Universal* (UT) o de la *Hora Media de Greenwich* (HmGr). El *Ángulo Horario Local* (AHL) puede obtenerse mediante el uso de la fórmula:

$$\text{AHL} = \text{AHGr} - \text{longitud W} \\ + \text{longitud E}$$

Los datos restantes se refieren a horas de orto y ocaso del Sol y de la Luna, y horas de los crepúsculos; datos de calendario y planeamientos misceláneos, tablas auxiliares, incluyendo una lista de horas oficiales y correcciones que deben aplicarse a las alturas observadas.

Para el Sol, la Luna y los planetas, los valores del AHGr y la Dec, se encuentran tabulados directamente para cada hora de UT a través del año. Para las estrellas, se indican los valores del *Ángulo Horario Sidéreo* (AHS), pudiendo obtenerse el AHGr mediante la fórmula:

$$\text{AHGr Estrella} = \text{AHGr Aries} + \text{AHS Estrella}$$

El AHS y la Dec de las estrellas cambian de valor lentamente y pueden considerarse como constantes a lo largo de períodos de varios días. El AHGr de Aries o el *Ángulo Horario de Greenwich* para el primer punto de Aries (Equinoccio Vernal), se encuentra tabulado para cada hora. Las tablas permanentes dan los incrementos y las correcciones apropiadas que deben aplicarse a los valores horarios tabulados del AHGr y la Dec para los minutos y segundos del UT.

Los seis volúmenes de la serie “*Sight Reduction Tables for Marine Navigation*” (publicados en los Estados Unidos de América como Pub. N° 229 y en el Reino Unido como N.P. 401), han sido elaborados para resolver el triángulo de posición, usando el *Almanaque Náutico*.

En las páginas 262 a 270, se presentan métodos para el cálculo de Ac y Azv, los cuales solamente requieren el empleo de una calculadora científica o computadores estándares. Estos métodos están basados en la solución del triángulo de posición por aplicación de trigonometría esférica.

La exactitud tabulada es de 0',1 para todos los datos. El dato horario en las páginas diarias de este Almanaque es UT 1 indicado siempre por UT. Esta escala puede diferir de las señales horarias emitidas por radio, correspondientes a la Hora Universal Coordinada (UTC), en una cantidad que, si se ignora, introducirá un error de hasta 0',2 en la longitud determinada por observaciones astronómicas. La diferencia aparece porque el dato horario depende de la razón de la variable en la rotación de la Tierra, mientras que las señales horarias emitidas por radio, están basadas en una escala de tiempo atómico. Se hacen ajustes escalonados de exactamente 1 segundo, a las señales horarias cuando se requiera (normalmente a las 24h del 31 de diciembre y 30 de junio), de modo que la diferencia entre la señal horaria y el UT, que se usa en este Almanaque, no exceda de 0,9 segundo. Si se requiere reducir las observaciones a una precisión mejor de 1 segundo, deberá obtenerse la corrección (DUT 1) para la señal horaria mediante la codificación de señales u otras fuentes de información; la hora requerida está dada por $UT 1 = UTC + DUT 1$ a una precisión de 0,1 segundo. Alternativamente, cuando la longitud sea determinada por observaciones astronómicas, puede corregirse en la cantidad correspondiente que aparece en la siguiente tabla:

Corrección a las señales horarias	Corrección a la longitud
-0,9 s a -0,7 s	0',2 al E
-0,6 s a -0,3 s	0',1 al E
-0,2 s a +0,2 s	No corregir
+0,3 s a +0,6 s	0',1 al W
+0,7 s a +0,9 s	0',2 al W

EXPLICACIÓN

3. *Presentación.* Los datos correspondientes para tres días se presentan en dos páginas opuestas: la página de la izquierda contiene los datos referentes a los planetas y las estrellas; la página de la derecha contiene los datos relativos al Sol y la Luna, junto con las horas de los crepúsculos, ortos y ocasos del Sol y de la Luna.

Los datos restantes se encuentran dispuestos como siguen: para facilidad de referencia, las tablas de correcciones para las alturas se encuentran en las páginas A_2 , A_3 , A_4 , xxxiv y xxxv; el calendario, los gráficos y las notas acerca de eclipses y planetas (datos de interés general) anteceden a las tabulaciones principales. La Explicación es seguida por información sobre horas oficiales, cartas estelares y lista de posiciones de estrellas, procedimientos y tablas abreviadas para reducción de observaciones, tablas de incrementos y correcciones y otras tablas auxiliares de uso frecuente.

DATOS PRINCIPALES

4. *Páginas diarias.* Las páginas diarias entregan los valores del AHGr de Aries, el AHGr y la Dec del Sol, la Luna y los cuatro planetas empleados en navegación, para cada hora UT. Para la Luna también se han tabulado los valores de v y d para cada hora, con el fin de facilitar la corrección del AHGr y la Dec para valores intermedios; los valores v y d correspondientes al Sol y los planetas cambian tan lentamente, que se encuentran anotados al pie de la columna respectiva, solamente una vez en cada página; v vale cero para Aries, y no es apreciable para el Sol, por lo tanto, se omite. También se dan los valores del AHS y la Dec correspondientes a las 57 estrellas seleccionadas, ordenadas alfabéticamente por su nombre propio.

5. *Estrellas.* En las páginas 278 - 283, se han tabulado los valores mensuales del AHS y la Dec, correspondientes a 173 estrellas, incluyendo las 57 seleccionadas; no se necesita interpolación y los datos pueden usarse en la misma forma que se hace con los referentes a las 57 estrellas seleccionadas en las páginas diarias. Las estrellas se han ordenado conforme con su AHS.

La lista de 173 estrellas incluye todas aquellas hasta de magnitud 3,0; además de algunas menos brillantes para completar los espacios más grandes. Las 57 estrellas seleccionadas han sido elegidas de entre estas, tomando en cuenta su brillantez y distribución en el cielo, y satisfarán la mayoría de las observaciones.

Las 57 estrellas seleccionadas son conocidas por sus nombres propios, pero también están numeradas en orden descendente del AHS. En la lista de 173 estrellas, los nombres de las constelaciones están siempre indicados en la segunda columna de la página izquierda; cuando existen nombres bien conocidos de las estrellas, se señalan en la segunda columna de la página de la derecha. Los números de las estrellas seleccionadas están indicados en ambas columnas. En la página 275 se agrega una lista con los nombres latinos y españoles de las principales constelaciones.

En la página xxxiii, se encuentra un índice con la lista de las estrellas seleccionadas, tanto en orden alfabético como numérico, además de los nombres de las constelaciones a que pertenecen; el mismo índice se halla impreso en el marcador del libro.

6. *Incrementos y correcciones.* Estas tablas impresas en papel de color (páginas ii-xxxi) en la parte posterior del Almanaque, proporcionan los incrementos y correcciones por minutos y segundos, que deben aplicarse a los valores horarios del AHGr y la Dec. Consisten en sesenta tablas, una por cada minuto, separadas en dos partes: incrementos al AHGr para el Sol y los planetas, Aries y Luna por cada minuto y segundo de tiempo; y, por cada minuto, las correcciones que deben aplicarse al AHGr y a la Dec, correspondientes a los valores de v y d anotados en las páginas diarias.

Los incrementos están basados en las siguientes razones horarias adoptadas de incremento del AHGr: Sol y planetas, 15° exactos; Aries, $15^\circ 02' 46''$; Luna, $14^\circ 19' 0''$. Los valores de v en las páginas diarias corresponden al exceso de los movimientos horarios reales sobre los valores adoptados; los cuales son generalmente positivos, excepto para Venus. Los valores horarios tabulados del AHGr para el Sol, se han ajustado con el fin de reducir al mínimo el error que se ocasiona al considerar a v como no apreciable. Los valores de d consignados en las páginas diarias, son las diferencias horarias de la Dec. Para la Luna, se dan los valores verdaderos de v y d para cada hora; para el resto se dan valores medios para los tres días de cada página.

7. *Método de entrada.* El UT correspondiente a una observación se expresa en día y hora, seguido por una cantidad de minutos y segundos. Los valores tabulares del AHGr y la Dec, y los valores de v y d —cuando sea necesario— se toman directamente de las páginas diarias para el día y hora de UT. Esta hora es siempre *anterior* a la de la observación. Los valores de AHS y Dec de las estrellas seleccionadas, se toman también de las páginas diarias.

EXPLICACIÓN

A continuación, se busca la Tabla de Incrementos y Correcciones correspondientes para el minuto de UT. Para el AHGr, el incremento por minutos y segundos se toma de la columna apropiada frente al valor de los segundos de UT; la corrección v se toma de la segunda parte de la misma tabla y se encuentra frente al valor de v dado en las páginas diarias. Tanto el incremento como la corrección de v deben sumarse al valor del AHGr, excepto en el caso de Venus, cuando v lleva signo menos, que significa que la corrección para v debe restarse. Para la Dec no hay incremento, pero se aplica una corrección para d en la misma forma que la corrección para v ; d se encuentra sin signo en las páginas diarias; el signo de la corrección debe deducirse mediante inspección de la columna de la Dec. En muchos casos, la corrección puede aplicarse mentalmente.

8. *Ejemplos.* (a) Sol y Luna. Determinar el AHGr y la Dec del Sol y de la Luna, para el 5 de mayo de 2014 a las 15^h 47^m 13^s UT.

		SOL			LUNA			
		AHGr	Dec	d	AHGr	v	Dec	d
		° ,	° ,		° ,	'	° ,	'
Página diaria, mayo	5 ^d 15 ^h	45 49,8	16 20,7 N	0,7	328 50,7	13,3	15 17,7 N	5,9
Incrementos para	47 ^m 13 ^s	11 48,3			11 16,0			
Correcciones v o d para	47 ^m		+0,6		+10,5		-4,7	
Suma para mayo	5 ^d 15 ^h	47 ^m 13 ^s	57 38,1	16 21,3 N	340 17,2		15 13,0 N	

(b) Planetas. Determinar el AHL y la Dec de: (i) Venus para el 5 de mayo de 2014 a las 13^h 15^m 18^s UT en longitud 120° 24' W; (ii) Marte para el 5 de mayo de 2014 a las 13^h 38^m 56^s UT en longitud 75° 42' E.

		VENUS				MARTE			
		AHGr	v	Dec	d	AHGr	v	Dec	d
		° ,	'	° ,	'	° ,	'	° ,	'
Página diaria para mayo 5 ^d	(13 ^h)	55 08,5	-0,2	0 14,4 S	1,0	(13 ^h)	228 12,4	2,9	2 49,8 S
Incrementos (Planetas)	(15 ^m 18 ^s)	3 49,5				(38 ^m 56 ^s)	9 44,0		
Correcciones v o d	(15 ^m)	-0,1		-0,3		(38 ^m)	+1,9		-0,1
Suma = AHGr y Dec		58 57,9		0 14,1 S		237 58,3		2 49,7 S	
Longitud	(oeste)	-120 24,0				(este)	+75 42,0		
Múltiplos de 360°		+360							
AHL del Planeta		298 33,9				313 40,3			

(c) Estrellas. Determinar el AHGr y la Dec de: (i) *Vega* para el 5 de mayo de 2014 a las 7^h 02^m 18^s UT; (ii) *Spica* para el 5 de mayo de 2014 a las 19^h 43^m 37^s UT.

		<i>Vega</i>		<i>Spica</i>	
		AHGr	Dec	AHGr	Dec
		° ,	° ,	° ,	° ,
Página diaria (AHS y Dec)		80 38,3	38 47,8 N	158 30,3	11 14,3 S
Página diaria (AHGr de Aries)	(7 ^h)	328 04,7		(19 ^h)	148 34,2
Incrementos (Aries)	(02 ^m 18 ^s)	0 34,6		(43 ^m 37 ^s)	10 56,0
Suma = AHGr de las estrellas		409 17,6		318 00,5	
Múltiplos de 360°		-360			
AHGr de la estrella		49 17,6		318 00,5	

9. *Tablas de Polaris (Estrella Polar).* Las tablas contenidas en las páginas 284 - 286, dan los valores de las correcciones que permiten calcular la latitud que puede deducirse de una observación de la altura de la estrella *Polaris* y también dan su Azv; su empleo se explica e ilustra en dichas páginas. Las tablas están basadas en la siguiente fórmula:

$$\begin{aligned}
 \text{Latitud} - Av &= -\Delta \cos h + \frac{1}{2} \Delta \sin \Delta \sin^2 h \operatorname{tg} (\text{latitud}) \\
 \text{En la que: } Av &= \text{Altura aparente (corregida por refracción)} \\
 \Delta &= \text{distancia polar de la estrella } Polaris = 90^\circ - \text{Dec} \\
 h &= \text{ángulo horario del lugar de } Polaris = \text{AHL de Aries} + \text{AHS}
 \end{aligned}$$

a₀, que es una función únicamente del AHL de Aries, es el valor de ambos términos de la fórmula anterior, calculada por valores promedios del AHS (317° 24') y de la Dec (89° 19',5 N) de la estrella *Polaris*, para una latitud media de 50° y ajustada mediante la suma de una constante (58',8).

EXPLICACIÓN

a_1 , que es una función del AHL de Aries y de la latitud, es el exceso del valor del segundo término sobre su valor medio para latitud de 50°, incrementado por una constante (0',6) con el fin de hacerlo siempre positivo. a_2 , que es una función del AHL de Aries y de la fecha, es la corrección aplicable al primer término por la variación de la estrella *Polaris* a partir de su posición media adoptada; este valor está incrementado por una constante (0',6) con el fin de hacerlo positivo. La suma de las constantes agregadas es 1°, de manera que:

$$\text{Latitud} = \text{Altura aparente (corregida por refracción)} - 1^\circ + a_o + a_1 + a_2$$

FENÓMENOS DE ORTO Y OCASO

10. *Generalidades.* En las páginas diarias del lado derecho de la publicación se encuentran las horas de orto y ocaso del Sol, inicio de las auroras náutica y civil, término de los crepúsculos civil y náutico, y las del orto y ocaso de la Luna para latitudes comprendidas entre 72° N y 60° S. Las horas de las páginas diarias, que se encuentran dadas al minuto más próximo, son estrictamente los UT en que ocurren los fenómenos sobre el meridiano de Greenwich; están dadas para cada día, para los fenómenos de orto y ocaso de la Luna, pero solamente para el día medio de los tres contenidos en cada página, para el caso del fenómeno solar.

Para las latitudes entre 60° S y 72° S se incluyen tablas especiales en las páginas 287 - 315, cuyos valores fueron calculados utilizando como referencia el meridiano de Greenwich.

Estas horas son aproximadamente las Horas Medias Locales (Hml) de los fenómenos correspondientes sobre otros meridianos; pueden interpolarse si se desea. El UT de ocurrencia de un fenómeno se obtiene a partir de la Hml por medio de la siguiente fórmula:

$$\begin{aligned} \text{UT} = \text{Hml} &+ \text{longitud W} \\ &- \text{longitud E} \end{aligned}$$

en la cual el valor de la longitud debe convertirse primero en tiempo, mediante el uso de la tabla contenida en la página “i” o de otra forma.

La interpolación por latitud puede hacerse mentalmente, o con ayuda de la Tabla I de la página xxxii.

Para indicar las condiciones bajo las cuales algunos de los fenómenos no ocurren en altas latitudes, se usan los siguientes símbolos:

- El Sol o la Luna permanecen continuamente sobre el horizonte;
- El Sol o la Luna permanecen continuamente por debajo del horizonte;
- //// La aurora o el crepúsculo duran toda la noche.

Bases de la Tabulación. Para el orto y el ocaso del Sol, se adoptaron los valores de 16' por semidiámetro y 34' por refracción horizontal, de tal manera que, a las horas dadas, el limbo superior del Sol se encuentra sobre el horizonte visible; todas las horas se refieren a los fenómenos, tal como se ven desde el nivel del mar con horizonte claro.

A las horas dadas para el comienzo de las auroras y término de los crepúsculos, la distancia zenital del Sol es de 96° para el civil y de 102° para el náutico. A las horas dadas para la aurora y crepúsculo civil (en buenas condiciones meteorológicas y en ausencia de otra iluminación), el grado de iluminación es tal, que las estrellas más brillantes resultan visibles y el horizonte claramente definido. A las horas dadas para la aurora y crepúsculo náutico, generalmente el horizonte no es visible y está demasiado oscuro para efectuar alguna observación con sextante.

Las horas correspondientes a otras depresiones del Sol pueden obtenerse por interpolación, no resultando confiables las mayores de 12° mediante extrapolación; las horas obtenidas de esta forma estarán sujetas a considerable incertidumbre cerca de las condiciones extremas.

Para el orto y el ocaso de la Luna se adoptó el valor de 34' para considerar los valores de semidiámetro, paralaje y refracción, de tal manera que, a las horas dadas, el limbo superior de la Luna se encuentre sobre el horizonte visible, visto desde el nivel del mar.

11. *Orto, Ocaso del Sol; Auroras y Crepúsculos.* Las horas tabuladas pueden considerarse, sin errores serios, como la Hml de los fenómenos, en cualquiera de los tres días contenidos en la página y en cualquier longitud. Las horas precisas pueden obtenerse normalmente interpolando los valores tabulares por latitud y de acuerdo con el día y longitud correctos, considerando a esta última expresada como fracción de un día dividiendo su valor por 360°, siendo positiva para las longitudes W y negativa para las longitudes E. En las condiciones extremas, cerca de los símbolos □, ■ o ////, puede no ser posible la interpolación en una dirección, pero las horas exactas son de escasa significación en estas circunstancias.

EXPLICACIÓN

Ejemplos. Determinar el UT de: (a) el comienzo de las auroras y orto del Sol para el 13 de enero de 2014 en latitud 48° 55' S, longitud 75° 18' E; (b) el ocaso del Sol y término de los crepúsculos para el 15 de enero de 2014 en latitud 67° 10' N, longitud 168° 05' W.

	Aurora			Orto Sol			Ocaso Sol			Crepúsculo		
	(a)	Náutica	Civil				(b)			Civil	Náutico	
De pág. 19		d h m	d h m	d h m				d h m		d h m	d h m	
Hml para Lat. 45° S		13 03 09	13 03 56	13 04 32	66°	N	15 14 23			15 15 42	15 16 53	
Correc. para 48° 55' S		-30	-20	-16	67° 10' N		-22			-12	-6	
(pág. xxxii, Tabla I)												
Long. (pág. i) 75° 18' E		-5 01	-5 01	-5 01	168° 05' W		+11 12			+11 12	+11 12	
UT		12 21 38	12 22 35	12 23 15			16 01 13			16 02 42	16 03 59	

Las Hml son estrictamente para el 14 de enero (día del medio de la página) y 0° de longitud; para obtener la hora más precisa es necesario interpolar de la forma siguiente, pero los errores de aproximación pueden acumular alrededor de 2^m.

(a) Para enero 13^d - 75°/360° = enero 12,8^d, o sea $\frac{1}{3}$ (1,2) = 0,4 hacia atrás del dato obtenido para la misma latitud interpolada en forma similar de la página 17; las correcciones son -2^m para la aurora náutica, -2^m para la aurora civil y -2^m para el orto del Sol.

(b) Para enero 15^d + 168°/360° = enero 15,5^d, o sea $\frac{1}{3}$ (1,5) = 0,5 hacia adelante del dato obtenido para la misma latitud interpolada en forma similar de la página 21; las correcciones son +7^m para el ocaso del Sol, +4^m para el crepúsculo civil y +4^m para el crepúsculo náutico.

12. *Orto y ocaso de la Luna.* Pocas veces se necesitan las horas exactas del orto y ocaso de la Luna; una mirada a las tablas generalmente dará suficiente indicación acerca de que si la Luna se encuentra en condiciones de observación y de las horas de su orto y ocaso. Si se necesitan, las horas exactas pueden obtenerse como sigue: interpolar por latitud, usando la Tabla I de la página xxxii, para el día requerido y también para el día anterior en longitudes E, o para el día siguiente en longitudes W; tomar la diferencia entre estas horas e interpolar por longitud aplicando a la hora del día requerido la corrección de la Tabla II de la página xxxii, de tal manera que la hora resultante quede entre las dos horas usadas. En condiciones extremas, cerca de los símbolos $\square$ o $\blacksquare$, la interpolación por latitud o longitud solamente es posible en una dirección; en estas circunstancias las horas exactas son de escaso valor.

Para facilitar esta interpolación, en cada página se encuentran registradas las horas de orto y ocaso de la Luna para cuatro días; cuando no hay ocurrencia del fenómeno durante un día particular (tal como acontece una vez al mes), la hora de ocurrencia del fenómeno para el día siguiente viene aumentada en 24^h. Debe tenerse mucho cuidado al interpolar entre dos valores, cuando uno de los cuales excede de 24^h. En la práctica, es suficiente emplear la diferencia diaria entre las horas para la latitud más próxima tabulada y, generalmente, entrar a la Tabla II con los argumentos tabulares más próximos, tal como se muestra en los ejemplos que siguen:

Ejemplo. Determinar el UT del orto y ocaso de la Luna en latitud 47° 10' S y longitudes de 124° 00' E y 78° 31' W para el 11 de enero de 2014.

	Longitud 124° 00' E		Longitud 78° 31' W	
	Orto Luna	Ocaso Luna	Orto Luna	Ocaso Luna
	d h m	d h m	d h m	d h m
Hml para Lat. 45° S	11 15 54	11 00 54	11 15 54	11 00 54
Correc. por Lat. (pág. xxxii, Tabla I)	+07	-07	+07	-07
Correc. por Long. (pág. xxxii, Tabla II)	-20	-13	+11	+09
Hml corregido	11 15 41	11 00 34	11 16 12	11 00 56
Longitud (pág. i)	-8 16	-8 16	+5 14	+5 14
UT	11 07 25	10 16 18	11 21 26	11 06 10

TABLAS DE CORRECCIÓN DE ALTURAS

13. *Generalidades.* En general, se dan dos correcciones para aplicar a las alturas observadas con el sextante; se necesitan correcciones adicionales para Venus y Marte y también para alturas muy bajas.

EXPLICACIÓN

En las páginas A_2 y xxxiv se encuentran las tablas de corrección por depresión del horizonte, debido a la elevación del ojo del observador sobre el nivel del mar. Esta corrección debe aplicarse primero y restarse de la altura del sextante, para obtener la altura aparente, que es el argumento correcto de entrada para las otras tablas.

Se dan tablas separadas para obtener la segunda corrección para el Sol, estrellas y planetas (en las páginas A_2 y A_3) y para la Luna (en las páginas xxxiv y xxxv). En cuanto al Sol, se dan valores para ambos limbos, superior e inferior, para dos períodos del año. Las tablas de estrellas se usan para los planetas, pero se necesita hacer otras correcciones por paralaje para Venus y Marte (página A_2). Las tablas de la Luna están divididas en dos partes: la corrección principal es una función de la altura aparente, y está tabulada para el limbo inferior (deben restarse $30'$ para obtener la corrección del limbo superior); la otra corrección, que viene dada para limbos superior e inferior, depende también del paralaje horizontal, el que debe obtenerse de las páginas diarias.

Se requiere de otra corrección, entregada en la página A_4 para el cambio en la refracción, debido a las variaciones de presión y temperatura con respecto a las condiciones normales adoptadas; la que puede ignorarse generalmente para alturas mayores de 10° , excepto posiblemente en condiciones atmosféricas extremas. Las tablas de correcciones para el Sol, las estrellas y planetas, están presentadas en dos partes; solamente aquellas referentes a alturas mayores de 10° se han reimpresso en el marcador del libro.

14. *Tablas críticas.* Algunas de las tablas de correcciones de altura se han dispuesto como tablas críticas. En ellas, un intervalo de altura aparente (o elevación del ojo del observador) corresponde a un solo valor de la corrección; no se necesita interpolación. Para una entrada “crítica” se toma el valor superior de los dos posibles para la corrección. Por ejemplo, en la tabla de depresión, una corrección de $-4',1$ corresponde a todos los valores de elevación del ojo de 5,3 a 5,5 metros (17,5 a 18,3 pies) inclusive.

15. *Ejemplos.* Los siguientes ejemplos ilustran el uso de las tablas de corrección de alturas; se supone que las alturas del sextante fueron tomadas el 9 de marzo de 2014 con un sextante marino, con una elevación de ojo de 5,4 m (18 pies), temperatura de -3°C y una presión de 982 hectopascales, observándose la Luna alrededor de las 10^{h} UT.

	SOL		SOL		LUNA		LUNA		VENUS		Polaris	
	Limbo		Limbo		Limbo		Limbo					
	Inf.		Sup.		Inf.		Sup.					
	°	'	°	'	°	'	°	'	°	'	°	'
Altura del Sextante	21	19,7	3	20,2	33	27,6	26	06,7	4	32,6	49	36,5
Depresión 5,4 m (18 pies)		-4,1		-4,1		-4,1		-4,1		-4,1		-4,1
Corrección principal		+13,8		-29,6		+57,4		+60,5		-10,8		-0,8
-30' Limb. sup. (Luna)		-		-		-		-30,0		-		-
Corr. para Luna (limbos sup. e inf.)		-		-		+1,5		+1,7		-		-
Corr. adicional para Venus		-		-		-		-		+0,3		-
Corr. adicional por refracción		-0,1		-0,6		-0,1		-0,1		-0,5		0,0
Altura del Sextante Corregida	21	29,3	2	45,9	34	22,3	26	34,7	4	17,5	49	31,6

Las correcciones principales se han obtenido partiendo de la altura aparente (altura de sextante corregida por error de índice y depresión) como argumento, interpolando donde fue posible. Estas sutilezas raramente se necesitan.

16. *Componentes de las correcciones.* La tabla para la depresión del horizonte del mar está basada en la fórmula:

$$\text{Corrección por depresión} = -1',76 \sqrt{(\text{elevación del ojo en m})} = -0',97 \sqrt{(\text{elevación del ojo en pies})}$$

La tabla de corrección para el Sol incluye los efectos de semidiámetro, paralaje y refracción media.

Las tablas de corrección para las estrellas y planetas consideran el efecto de refracción media.

La corrección de fase para Venus ha sido incorporada en la tabulación de AHGr y Dec y, por lo tanto, no se requiere efectuar corrección adicional por fase. Las correcciones adicionales para Venus y Marte consideran el efecto de paralaje. Alternativamente, la corrección por paralaje puede ser calculada de: $p \cos H$, donde p es el paralaje y H es la altura. Para el año 2014, los valores de p son:

	Ene. 1	Ene. 9	Ene. 12	Ene. 31	Feb. 16	Mar. 10	Abr. 30	Dic. 31
Venus	0',5	0',6	0',5	0',4	0',3	0',2	0',1	
	Ene. 1	Feb. 9	Jun. 29	Dic. 31				
Marte	0',1	0',2	0',1					

EXPLICACIÓN

La tabla de corrección para la Luna incluye el efecto de semidiámetro, paralaje, aumento y refracción media.

La refracción media está calculada para una temperatura de 10 °C (50 °F) y una presión de 1.010 hectopascales (29,83 pulgadas), con una humedad del 80% y una longitud de onda de 0,50169 μm .

17. *Observaciones con sextante de burbuja.* Cuando se observa con sextante de burbuja, no se requieren correcciones por depresión, semidiámetro o aumento. Las correcciones para las estrellas y los planetas dados en la página A₂ y en el marcador del libro, deben usarse también para el Sol; para la Luna es más fácil tomar el valor medio de las correcciones para limbos superior e inferior y restar 15' de la altura; la corrección por depresión no debe aplicarse.

DATOS AUXILIARES Y DE PLANEAMIENTO

18. *Sol y Luna.* Las páginas diarias entregan: los valores de cada hora del paralaje horizontal de la Luna; los semidiámetros y las horas de paso del Sol y de la Luna por el meridiano de Greenwich; la ecuación del tiempo; la edad de la Luna, el porcentaje iluminado, junto con el símbolo indicativo de la fase. Las horas de las fases de la Luna se dan en UT en la página 4. Para la Luna, al pie de la columna, se dan los valores de los semidiámetros para cada uno de los tres días, para el Sol es suficiente un único valor. La Tabla II de la página xxxii puede ser usada para interpolar, por longitud, la hora de paso de la Luna por el meridiano. La ecuación del tiempo está dada para las 00h y 12h UT de cada día. El signo es *positivo* para valores no sombreados y *negativo* para valores sombreados. Para obtener la hora verdadera, se suma la ecuación del tiempo a la hora media, cuando el signo es *positivo*; mientras que se resta la ecuación del tiempo a la hora media, cuando el signo es *negativo*. A las 12h UT, cuando el signo es *positivo*, el paso del Sol por el meridiano ocurre *antes* de las 12h UT. En caso contrario, este sucede *después* de las 12h UT.

19. *Planetas.* Las magnitudes de los planetas están indicadas inmediatamente a continuación de sus nombres en los encabezados de las páginas diarias; también se dan, en un recuadro al pie de la página, el AHS a las 00^h UT y la hora de paso por el meridiano, ambos para el día del medio de los tres días indicados en cada página.

La explicación y el diagrama de los planetas de las páginas 8 y 9, proporcionan información descriptiva de la posibilidad de observación de los planetas durante el año, así como de sus posiciones y movimientos.

20. *Estrellas.* Las páginas diarias entregan la hora del paso del primer punto de Aries por sobre el meridiano de Greenwich, a 0,1 min., para el día del medio de los tres de cada página. El intervalo entre pasos sucesivos por el meridiano es de 23^h 56,1 min. (24^h menos 3,9 min.), de tal manera que pueden deducirse rápidamente las horas de paso para días intermedios, así como las de paso por otros meridianos. Si se necesita la hora exacta, puede determinarse encontrando el UT donde el AHL de Aries es cero.

El paso de una estrella por el meridiano ocurre cuando su AHL es cero, es decir, cuando el AHL de Aries + AHS = 360°. La hora aproximada puede obtenerse empleando el diagrama de planetas de la página 9.

Las cartas estelares de las páginas 276 - 277 sirven para ayudar a la identificación. En ellas se muestra la posición relativa de las estrellas en el cielo tal como se ven desde la Tierra e incluyen las 173 estrellas usadas en el Almanaque, junto con otras más para completar la configuración de las principales constelaciones. El meridiano local a cualquier hora, puede ubicarse en la carta mediante su AHS, el cual es igual a 360° - AHL de Aries o longitud oeste - AHGr de Aries.

21. *Esfera Celeste.* Para emplear un globo estelar que tenga impresa una escala del AHL de Aries, primero se fija la esfera de acuerdo con la latitud y luego se hace girar alrededor del eje polar, hasta que se lea en la escala bajo el borde del círculo meridiano el AHL de Aries.

Para encontrar las posiciones del Sol, la Luna y los planetas sobre un globo estelar, tómese la diferencia AHGr de Aries - AHGr del astro y úsese esta diferencia a lo largo de la escala de AHL de Aries junto con la declinación, para establecer la posición del astro. La diferencia AHGr de Aries - AHGr del astro se facilita tomándola cuando el AHGr del astro es pequeño (menos de 15°), lo cual acontece una vez al día.

EXPLICACIÓN

22. *Calendario*. En la página 5 se encuentra un calendario Juliano, el cual incluye los días del mes y del año, así como el nombre correspondiente de los días de la semana.

Al pie de la página 5, se entregan breves detalles de los eclipses solares y lunares que se producirán durante el año; las horas se dan en UT. Las características principales de los eclipses solares más importantes se grafican en las páginas 6 y 7.

23. *Horas oficiales*. Las listas de las páginas 271 - 274 dan las horas oficiales usadas en la mayoría de los países. En general, no se ha intentado dar detalles acerca del comienzo y término de la hora de verano, dado a que están sujetas a frecuentes cambios, avisados con poca anticipación. Para obtener información actualizada, deberá consultarse el "*Admiralty List of Radio Signals*", Volumen 2 (NP 282), corregido por la Sección VI de la edición semanal del "*Admiralty Notices to Mariners*".

La Línea Internacional de Cambio de Fecha es una línea arbitraria que determina una diferencia de un día entre cada uno de sus lados. Cuando se cruza con rumbo al E, la fecha debe atrasarse un día; cuando se cruza con rumbo W, la fecha debe adelantarse un día. Esta línea es una modificación de la correspondiente al meridiano 180° y se ha trazado de modo que incluya, hasta donde sea posible, islas de un mismo grupo, etc., hacia el mismo lado de la línea. Puede trazarse comenzando en el polo Sur y uniendo los siguientes puntos:

	°	°	°	°	°	°	°
Lat.	51,0 S	45,0 S	15,0 S	5,0 S	48,0 N	53,0 N	65,5 N
Long.	180,0	172,5 W	172,5 W	180,0	180,0	170,0 E	169,0 W

de ahí, dividiendo las islas Diomedes, llega hasta la Lat. 68°,0 N, Long. 169°,0 W, pasando al E de Ostrov Vrangelya (Isla Wrangel) en Lat. 75°,0 N, Long. 180°,0 y desde allí hacia el polo Norte.

EXACTITUD

24. *Datos principales*. Las cantidades tabuladas en este Almanaque están generalmente correctas al 0',1 más próximo; la excepción la constituye el AHGr del Sol, el cual está ajustado deliberadamente a 0',15 con el fin de reducir el error cometido al ignorar la corrección v . El AHGr y la Dec, para horas intermedias no pueden obtenerse con esta precisión, ya que al menos deben agregarse dos cantidades; por otra parte, las correcciones v y d están basadas en valores medios de v y d y se toman de las tablas al minuto entero solamente. El error más grande que puede ocurrir en el AHGr o la Dec de cualquier astro diferente del Sol o la Luna, es menos de 0',2. Puede llegar a 0',25 para el AHGr del Sol y a 0',3 para el de la Luna.

En la práctica, puede esperarse que solamente una tercera parte de los valores tomados del AHGr y la Dec, tengan errores mayores de 0',05 y menos de una décima parte tengan errores mayores de 0',1.

25. *Correcciones a las alturas*. Los errores en las correcciones de las alturas son nominalmente del mismo orden que los correspondientes al AHGr y la Dec, dado que son el resultado de la suma de varias cantidades, cada una de las cuales se ha redondeado correctamente al 0',1. En caso de condiciones atmosféricas extremas, los valores reales de la depresión y de la refracción, a bajas alturas, pueden diferir considerablemente de los valores medios empleados en las tablas.

USO DE ESTE ALMANAQUE DURANTE EL AÑO 2015

Este Almanaque puede usarse para el Sol y las estrellas en el 2015 de la siguiente manera:

En el Sol, obtenga el AHGr y la Dec para la misma fecha, pero empleando un tiempo de 5^h 48^m 00^s *antes* del UT de la observación; *agregue* 87° 00' al AHGr así obtenido. El error, debido principalmente a perturbaciones planetarias de la Tierra, difícilmente excederá a 0',4.

En las estrellas, calcule el AHGr y la Dec para la misma fecha y hora, pero *reste* 15',1 al AHGr así obtenido. El error, debido a una incompleta corrección a la precesión y nutación, difícilmente excederá de 0',4. Si lo prefiere, se puede obtener el mismo resultado empleando un tiempo de 5^h 48^m 00^s *antes* del UT de la observación (igual como en el Sol), y agregando 86° 59',2 al AHGr (o agregando 87°, al igual que en el Sol, y restando 0',8 para la precesión, del AHS de la estrella).

Este Almanaque no se puede usar para la Luna ni los planetas durante el año 2015.

PROCEDIMIENTOS DE REDUCCIÓN DE OBSERVACIONES

MÉTODOS Y FÓRMULAS PARA CÁLCULO DIRECTO

1.- **Introducción.** Se entregan métodos y fórmulas para calcular la posición en el mar a partir de las alturas observadas obtenidas con un sextante marino usando un computador o calculadora electrónica.

El método utiliza conceptos análogos y terminología similar a la empleada en los métodos manuales de astro-navegación, donde la posición se calcula trazando las líneas de posición en las cartas a partir de su intercepto y el azimut.

Los algoritmos se presentan en álgebra estándar adecuadamente para traducirlos al lenguaje computacional del computador del usuario. Los datos básicos de las efemérides pueden obtenerse directamente de las páginas tabulares principales de una versión actualizada de este Almanaque. Se entregan fórmulas para calcular la altura y el azimut del AHGr y la Dec de un cuerpo celeste y la posición estimada del observador. Las fórmulas que se entregan también sirven para reducir las observaciones hechas con el sextante a alturas verdaderas, aplicando las correcciones por error de índice, depresión del horizonte, refracción, paralaje y semidiámetro.

El intercepto y el azimut obtenidos de cada observación determina una línea de posición y el observador deberá permanecer cerca o en cada una de ellas. El método de los mínimos cuadrados se utiliza para calcular el punto observado donde la suma de los cuadrados de las distancias de las líneas de posición es un mínimo. El uso de los mínimos cuadrados tiene otras ventajas, como por ejemplo, el mejoramiento de la posición estimada en el momento del punto observado repitiendo el cálculo. También es posible incluir más observaciones a la solución y eliminar de ella las observaciones dudosas.

2.- Abreviaturas

<i>Aap</i>	=	Altura aparente. Corresponde a la <i>Ai</i> corregida por el error de índice (<i>Ei</i>) y la depresión del horizonte (<i>Dip</i>).
<i>Ac</i>	=	Altura calculada. Sobre el horizonte es positiva, bajo él es negativa. Su rango varía de -90° en el nadir, hasta $+90^\circ$ en el zenit.
<i>AHGr</i>	=	Ángulo Horario de Greenwich. Su rango va de 0° a 360° , empezando con 0° en el meridiano de Greenwich e incrementándose al W hasta llegar nuevamente a dicho meridiano en los 360° .
<i>AHL</i>	=	Ángulo Horario Local = <i>AHGr</i> + Long. El <i>AHL</i> aumenta al W desde 0° en el meridiano local hasta 360° .
<i>AHS</i>	=	Ángulo Horario Sidéreo. Es el arco de Ecuador celeste medido en grados (de 0° a 360°), contado desde el punto Vernal de Aries hacia el W (como horario de 0 a 24 h), hasta el máximo de ascensión del astro.
<i>Ai</i>	=	Altura instrumental o del sextante.
<i>Ao</i>	=	Altura observada. Corresponde a la <i>Ai</i> corregida por el error de índice (<i>Ei</i>).
<i>Av</i>	=	Altura verdadera. Es la <i>Aap</i> corregida por refracción y, en los casos que corresponda, por paralaje y semidiámetro.
<i>Azv</i>	=	Azimut verdadero. Es el ángulo en el horizonte, desde el N verdadero al astro, por el E. Su rango va de 0° a 360° .
<i>Dec</i>	=	Declinación. Convencionalmente se empleará la declinación N como positiva y la S como negativa. El rango va de -90° en el polo celeste sur, a $+90^\circ$ en el polo celeste norte.
<i>Dip</i>	=	Depresión del horizonte.
<i>Dv</i>	=	Distancia verdadera.

Dz	=	Distancia cenital.
Ei	=	Error de índice o instrumental.
f	=	Constante.
G	=	Longitud. Por convención, el signo E será positivo y el W negativo. Su rango abarca de -180° a $+180^\circ$.
I	=	Intercepto = $Av - Ac$. Hacia el astro es positivo, en sentido contrario es negativo.
L	=	Latitud. El signo N será convencionalmente positivo y el S negativo, con un rango de -90° a $+90^\circ$.
P	=	Ángulo al Polo. Se mide desde el meridiano del observador al círculo horario del astro, hacia el E o hacia el W. Su rango abarca de -180° a $+180^\circ$. Por convención el signo E será positivo y el W negativo.
Pa	=	Paralaje de altura del Sol, Luna, Venus o Marte.
Ph	=	Paralaje horizontal del Sol, Luna, Venus o Marte.
Php	=	Presión Hectopascal.
Δp	=	Distancia polar = $90^\circ + Dec$ cuando la Dec del astro y la latitud del observador son de distinto signo, y $90^\circ - Dec$ cuando son de igual signo. Su rango varía de 0° a 180° . Para el caso, se considera el valor absoluto de Dec .
Ref	=	Refracción atmosférica.
Rv	=	Rumbo verdadero. Medido como el Azv , desde el norte verdadero.
S/D	=	Semidiámetro del Sol y Luna.
V	=	Velocidad en nudos.

3.- **Ingreso de los datos básicos.** Cuando se ingresen a la calculadora datos como el $AHGr$, que el Almanaque entrega en grados y minutos, es necesario convertirlos a grados y décimas de grado, dividiendo los minutos por 60 y sumándolos a los grados; por ejemplo, si el $AHGr = 123^\circ 45',6$; ingrese ambas cifras 123 y 45,6 a la memoria y haga $AHGr = 123 + 45,6/60 = 123^\circ,7600$. Si bien 4 decimales de un grado son suficientes, se asume en los ejemplos que en la calculadora se mantiene precisión total.

La mayoría de las calculadoras científicas tiene una tecla especial para convertir grados, minutos y segundos a grados con decimales. En calculadoras programables o computadores frecuentemente es posible hacer una subrutina que haga la conversión automáticamente. Para valores como la Dec , que tienen un signo menos para las declinaciones S, es necesario cambiar el signo de + a -, después que el valor ha sido convertido a grados con decimales, por ejemplo, $Dec = 0^\circ 12',3 S = 0^\circ,2050 S = -0^\circ,2050$. Otros valores que requieren conversión son el S/D , Ph , G y L .

4.- **Interpolación del $AHGr$ y Dec .** Para interpolar mediante la calculadora el $AHGr$ y la Dec del Sol, Luna o planetas, al instante de la observación, proceda a calcular el factor de interpolación $x = b/60 + c/3600$, en donde b son los minutos y c los segundos del UT de la observación. Tome el valor tabular correspondiente a la hora precedente ($AHGr_0$) y la siguiente ($AHGr_1$), y el valor interpolado del $AHGr$ será:

$$AHGr = AHGr_0 + x(AHGr_1 - AHGr_0)$$

Si entre los valores que se interpolarán está 360° , agregar 360° al $AHGr_1$ antes de hacer la operación anterior; si como consecuencia de ello el valor obtenido excede 360° , reste 360° a dicho valor.

Igualmente para la declinación, tome el valor de la tabla Dec_0 correspondiente a la hora precedente (a) y el valor de la tabla Dec_1 , para la siguiente hora (a + 1), y el valor interpolado de la Dec será:

$$Dec = Dec_0 + x(Dec_1 - Dec_0)$$

Ejemplos

(a): Obtener el $AHGr$ y la Dec del Sol para el 6 de marzo de 2014, a la $HmGr$ $13^h 47^m 13^s$ UT.

El factor de interpolación será $x = 47/60 + 13/3600 = 0,7869$ horas.

De pág. 53:

$$\begin{aligned} 13^h AHGr_0 &= 12^\circ 11',3 = 12^\circ,1883 \\ 14^h AHGr_1 &= 27^\circ 11',5 = 27^\circ,1917 \\ 13^h,7869 AHGr &= 12,1883 + 0,7869 (27,1917 - 12,1883) = 23^\circ,9951 \\ 13^h Dec_0 &= 5^\circ 34',2 S = -5^\circ,5700 \\ 14^h Dec_1 &= 5^\circ 33',2 S = -5^\circ,5533 \\ 13^h,7869 Dec &= -5,5700 + 0,7869 (-5,5533 + 5,5700) = -5^\circ,5569 \end{aligned}$$

Para la Dec y el $AHGr$ de Aries, se procede de la forma antes indicada. Para las estrellas se obtiene la Dec y el AHS de las páginas diarias sin interpolar, este último se suma al $AHGr$ Aries interpolado al instante de la observación:

$$AHGr = AHGr \text{ Aries} + AHS$$

(b): Obtener el $AHGr$ y la Dec de *Vega* para el 6 de marzo de 2014, a la $HmGr$ $13^h 47^m 13^s$ UT.

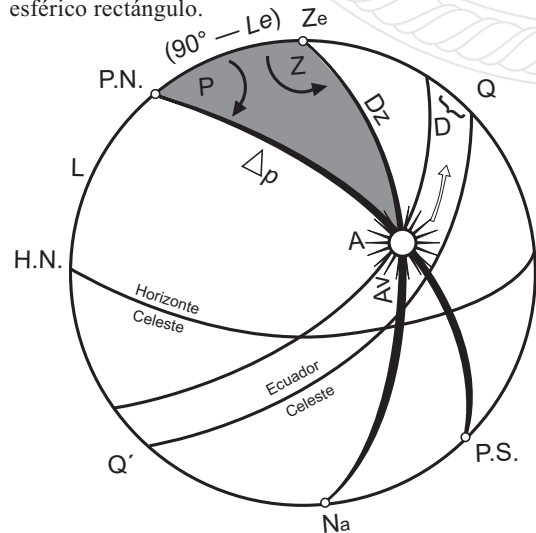
El factor de interpolación será $x = 0,7869$ horas, como anteriormente.

$$\begin{aligned} \text{De pág. 52: } 13^h AHGr \text{ Aries}_0 &= 359^\circ 11',2 = 359^\circ,1867 \\ 14^h AHGr \text{ Aries}_1 &= 14^\circ 13',6 = 374^\circ,2267 \text{ (se suma } 360^\circ) \\ 13^h,7869 AHGr \text{ Aries} &= 359,1867 + 0,7869 (374,2267 - 359,1867) = 371^\circ,0223 \\ AHS &= 80^\circ 38',8 = 80^\circ,6467 \\ AHGr = AHGr \text{ Aries} + AHS &= 91^\circ,6690 \text{ (se resta } 360^\circ) \\ Dec &= 38^\circ 47',7 N = +38^\circ,7950 \end{aligned}$$

5.- Determinación de la Ac y el Azv :

a) **Método Meger.** Este método desarrolla la solución empleando el ángulo al polo (P), la distancia polar (Δp) y un valor auxiliar K.

Las fórmulas a emplear en este método se deducen de las relaciones trigonométricas fundamentales en un triángulo esférico rectángulo.



En triángulo PN, Ze, A, los elementos conocidos son :

$$\begin{aligned} (90^\circ - Le) &= \text{Co - Latitud} \\ P &= \text{Ángulo al Polo} \\ \Delta p &= \text{Distancia Polar} \end{aligned}$$

Paso 1.- Calcular el ángulo al polo y la distancia polar:

$$\begin{aligned}
 &\text{si } Ge > 0^\circ (E) \quad P = 360^\circ - (AHGr + Ge) \\
 &\text{si } P > 180^\circ \text{ entonces } P = P - 360^\circ \\
 &\text{si } Ge < 0^\circ (W) \quad P = - (AHGr + Ge) \\
 &\text{si } P < -180^\circ, \text{ entonces } P = 360^\circ - P \\
 &\Delta p = 90^\circ - |Dec| \text{ cuando } Dec \text{ y } L \text{ son de igual signo, o} \\
 &\Delta p = 90^\circ + |Dec| \text{ cuando } Dec \text{ y } L \text{ son de distinto signo,} \\
 &\text{en este cálculo se considera el valor absoluto de } Dec, Le \text{ y } P.
 \end{aligned}$$

Paso 2.- Calcular el valor auxiliar K:

$$\begin{aligned}
 K &= \arctan(\tan \Delta p \cos P) \\
 \text{Si } K &\text{ es negativo sumar } 180^\circ
 \end{aligned}$$

Paso 3.- Calcular el ángulo al cenit Z:

$$\begin{aligned}
 Z &= \arccos(\sin K \tan P / \cos(K + Le)) \\
 \text{Si } Z &\text{ es negativo sumar } 180^\circ
 \end{aligned}$$

Paso 4.- Calcular el Azv:

$$\begin{aligned}
 Azv &= Z \text{ si } Le = N \text{ y } P = E (> 0^\circ) \\
 Azv &= 360^\circ - Z \text{ si } Le = N \text{ y } P = W (< 0^\circ) \\
 Azv &= 180^\circ - Z \text{ si } Le = S \text{ y } P = E (> 0^\circ) \\
 Azv &= 180^\circ + Z \text{ si } Le = S \text{ y } P = W (< 0^\circ)
 \end{aligned}$$

Paso 5.- Determinar la Ac:

$$Ac = \arcsin(\sin(K + Le) \cos \Delta p / \cos K)$$

Ejemplo. Encontrar la altura calculada (Ac) y el acimut verdadero (Azv) cuando:

$$AHGr = 53^\circ \quad Dec = 15^\circ S \quad Le = 32^\circ N \quad Ge = 16^\circ W$$

Para el cálculo se hace:

$$AHGr = 53^\circ \quad Dec = -15^\circ \quad Le = +32^\circ \quad Ge = -16^\circ$$

$$\begin{aligned}
 \text{Paso 1.- } P &= -[53^\circ + (-16^\circ)] = -37^\circ = 37^\circ E \\
 \Delta p &= 90^\circ + 15^\circ = 105^\circ
 \end{aligned}$$

$$\begin{aligned}
 \text{Paso 2.- } \tan K &= \tan \Delta p \cos P \\
 \tan K &= \tan 105^\circ \cos 37^\circ \\
 \tan K &= -3,7320508 \cdot 0,7986355 \\
 \tan K &= -2,980529 \\
 K &= \arctan -2,980529 \\
 K &= -71^\circ,4529 \quad (\text{suma } 180^\circ) \\
 K &= 108^\circ,5470
 \end{aligned}$$

$$\begin{aligned}
 \text{Paso 3.- } \tan Z &= (\sin K \tan P) / \cos(K + Le) \\
 \tan Z &= \sin 108^\circ,5470 \tan 37^\circ / \cos(108^\circ,5470 + 32)
 \end{aligned}$$

$$\begin{aligned}
 \tan Z &= \frac{0,948063 \cdot 0,753554}{-0,772146}
 \end{aligned}$$

$$\begin{aligned}
 \tan Z &= -0,9252352 \\
 Z &= \arctan -0,9252352 \\
 Z &= -42^\circ,7760 \quad \text{es decir} \\
 Z &= 180^\circ - 42^\circ,7760 \\
 Z &= N 137^\circ,224 E
 \end{aligned}$$

$$\text{Paso 4.- } Azv = 137^\circ,224$$

$$\begin{aligned}
 \text{Paso 5.-} \quad \text{sen } Ac &= \text{sen } (K + Le) \cos \Delta p / \cos K \\
 \text{sen } Ac &= \text{sen } (108^{\circ},5470 + 32^{\circ}) \cos 105^{\circ} / \cos 108^{\circ},5470 \\
 &= 0,635445 \cdot (-0,258819) / (-0,318082) \\
 \text{sen } Ac &= \frac{-0,164465}{-0,318082} = 0,517052 \\
 Ac &= \text{arc sen } 0,517052 \\
 Ac &= 31^{\circ},1347
 \end{aligned}$$

b) Método de la Tangente de la mitad del Ángulo. Este método utiliza como argumentos de entrada el *AHL*, la *Dec* y la *Le*, debiendo tenerse presente que las latitudes N, declinaciones N y longitudes E se ingresan con signo positivo, mientras que las latitudes S, declinaciones S y longitudes W se expresan con signo negativo. Si el valor del *Az* resulta negativo, deberá sumársele 360°.

Paso 1.- Cálculo de la *Ac*:

Se obtiene con la aplicación de la siguiente fórmula:

$$Ac = \text{arc sen} [\text{sen } (Le) \text{sen } (Dec) + \cos (Le) \cos (Dec) \cos (AHL)]$$

Paso 2.- Obtenida la *Ac*, se está en condiciones de calcular el *Az* mediante la relación

$$Azv = 2 \text{ arc tg } \left[\frac{-\cos (Le) \cos (Dec) \text{sen } (AHL)}{[\cos (Ac + Le) + \text{sen } (Dec)]} \right]$$

Ejemplo : Encontrar la *Ac* y el *Azv* cuando

$$AHGr = 53^{\circ} \quad Dec = 15^{\circ} \text{ S} \quad Le = 32^{\circ} \text{ N} \quad Ge = 16^{\circ} \text{ W}$$

Paso 1.- Se debe conocer el *AHL*, para lo cual

$$\begin{aligned}
 AHL &= AHGr + Ge \\
 AHL &= 53^{\circ} + (-16^{\circ}) = 37^{\circ} \text{ (Si el } AHL \text{ resultare negativo deberá sumársele } 360^{\circ})
 \end{aligned}$$

luego,

$$\begin{aligned}
 Ac &= \text{arc sen} [\text{sen } (32) \text{sen } (-15) + \cos (32) \cos (-15) \cos (37)] \\
 Ac &= 31^{\circ},1178
 \end{aligned}$$

Paso 2.- Cálculo de *Az*.

$$\begin{aligned}
 Azv &= 2 \text{ arc tg } \left[\frac{-\cos (32) \cos (-15) \text{sen } (37)}{[\cos (31^{\circ},1178 + 32) + \text{sen } (-15)]} \right] \\
 Azv &= 2 \text{ arc tg } \left[\frac{-0,84805 \times 0,96592 \times 0,60181}{0,45190 + (-0,25882)} \right]
 \end{aligned}$$

$$\begin{aligned}
 Azv &= 2 \text{ arc tg } -2,55327 \\
 Azv &= -137^{\circ},218 \text{ (como } Azv \text{ resultase negativo, deberá sumársele } 360^{\circ}) \\
 Azv &= 222^{\circ},8
 \end{aligned}$$

6.- Reducción de la altura instrumental a la altura verdadera. La altura instrumental o del sextante (*Ai*) se corrige por el error de índice (*Ei*) y la depresión del horizonte (*Dip*) para obtener la altura aparente (*Aap*); la altura verdadera (*Av*) se calcula corrigiendo la refracción (*Ref*) a la *Aap*. Para el Sol, la Luna, Venus y Marte se aplica también a la *Aap* una corrección por paralaje (*Pa*), y para el Sol y la Luna se requiere una corrección adicional por semidiámetro (*S/D*). Las correcciones se obtienen como se indica:

Paso 1.- Cálculo de la depresión del horizonte (*Dip*):

$$Dip = 0^{\circ},0293 \sqrt{h}$$

en que *h* es la elevación del ojo sobre el nivel del mar, en metros.

Paso 2.- Cálculo de la altura aparente (*Aap*):

$$Aap = Ai + Ei - Dip$$

en que *Ei* es el error de índice del sextante.

Paso 3.- Cálculo de la refracción (*Ref*):

Para atmósfera estándar, 10 °C y 1010 hp:

$$Ref_0 = 0^{\circ},0167 / \operatorname{tg} (Aap + 7,32 / (Aap + 4,32))$$

Si se conoce la temperatura *T* °C(*T*) y presión *Php* (*P*):

$$Ref = f Ref_0, \quad \text{donde} \quad f = 0,28 P / (T + 273)$$

En otro caso, $Ref = Ref_0$

Paso 4.- Cálculo del paralaje de altura (*Pa*) a partir de paralaje horizontal (*Ph*) y la altura aparente (*Aap*) para el Sol, Luna, Venus y Marte:

$$Pa = Ph \cos Aap$$

Para el Sol, $Ph = 0^{\circ},0024$. Esta corrección es muy pequeña y puede ser ignorada.

Para la Luna, *Ph* se toma de la tabla diaria principal, en la hora más cercana, y se convierte en grados.

Para Venus y Marte, *Ph* se toma de las tablas críticas al final de la pág. 259, y se convierte en grados.

Para las estrellas y los planetas restantes, Júpiter y Saturno, $Pa = 0$.

Si un error de 0,2 es significativo, la expresión para el paralaje de altura de la Luna debe incluir una pequeña corrección por el achatamiento de la esfera terrestre (OB), como sigue:

$$Pa = Ph \cos Aap + OB \quad \text{en que}$$

$$OB = 0^{\circ},0032 \operatorname{sen}^2 Le \cos Aap + 0^{\circ},0032 \operatorname{sen}^2 Le \cos Azv \operatorname{sen} Aap$$

en latitudes medias y para alturas de la Luna menores de 60°, se puede aproximar

$$OB = -0^{\circ},0017 \cos Aap.$$

Paso 5.- Calcular el semidiámetro (*S/D*) del Sol y la Luna:

Sol: *S/D* se toma de la tabla diaria principal y se convierte en grados.

Luna: $S/D = 0^{\circ},2724 Ph$, en que *Ph* se toma de la tabla diaria principal, en la hora más cercana, y se convierte en grados.

Paso 6.- Calcular la altura observada (*Ao*):

$$Ao = Aap - Ref + Pa \pm S/D$$

en que se usa para el *S/D* el signo + cuando se observa el limbo inferior del Sol o Luna, y el signo – cuando se observa el limbo superior. La suma de las correcciones parciales *Ref*, *Pa* y *S/D* se conocen también como “corrección total” (*CT*).

Ejemplo. El siguiente ejemplo ilustra cómo usar la calculadora para reducir la altura observada (*Ao*) en altura verdadera (*Av*); las *Ao* dadas se asume que fueron tomadas el 9 de marzo de 2014 con un sextante marino, un índice de corrección igual a 0, a una altura de 5,4 m, con una temperatura de – 3 °C y una presión de 982 hectopascales; las observaciones de la Luna se asume fueron tomadas a las 10^h UT.

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Cuerpo celeste limbo	Sol inf	Sol sup	Luna inf	Luna sup	Venus -	Polaris -

Altura observada:

A_o	21,3283	3,3367	33,4600	26,1117	4,5433	49,6083

Paso 1. Depresión:

$Dip = 0,0293 \sqrt{h}$	0,0681	0,0681	0,0681	0,0681	0,0681	0,0681

Paso 2. Altura aparente:

$Aap = A_o - Dip$	21,2602	3,2686	33,3919	26,0436	4,4752	49,5402

Paso 3. Refracción:

Ref_0	0,0423	0,2256	0,0251	0,0338	0,1798	0,0142
f	1,0184	1,0184	1,0184	1,0184	1,0184	1,0184
$Ref = f Ref_0$	0,0431	0,2298	0,0256	0,0344	0,1831	0,0144

Paso 4. Paralaje:

Ph	0,0024	0,0024	(54',6)	(54',6)	(0',3)	-

Paralaje en altitud

$Pa = Ph \cos Aap$	0,0022	0,0024	0,7598	0,8176	0,0050	-

Paso 5. Semidiámetro:

$S/D \text{ Sol} = 16,1/60$	0,2683	0,2683	-	-	-	-
$S/D \text{ Luna} = 0,2724 Ph$	-	-	0,2479	0,2479	-	-

Paso 6. Altura verdadera:

$Av = Aap - Ref + Pa \pm S/D$	21,4877	2,7729	34,3740	26,5789	4,2971	49,5258

Nótese que para la Luna, se ha omitido la corrección por achatamiento terrestre de $-0^{\circ},0017 \cos Aap$, que equivale a $-0^{\circ},0014$ para el limbo inferior y $-0^{\circ},0015$ para el limbo superior.

7.- Posición con azimut e intercepto usando la carta. Se debe determinar la posición al momento de la observación, mediante navegación por estima desde el último punto observado. Por ejemplo, si el rumbo estimado (Re) y la velocidad estimada (Ve) del observador se mantienen constantes, entonces la longitud estimada (Ge) y la latitud estimada (Le) al momento de la observación, se calcula:

$$Le = Lo + t(Ve/60) \cos Re$$

$$Ge = Go + t(Ve/60) \sin Re / \cos Lo$$

donde Lo y Go corresponden a la latitud y longitud del último punto observado (Po) respectivamente, y t es el lapso en horas transcurrido entre dicho Po y el momento de la observación (si el momento de la observación es anterior al Po , t es negativo).

La recta de altura de una observación se plotea en la carta utilizando el intercepto ($I = Av - Ac$) y el Azv , con origen en el punto estimado (Pe , con Le y Ge) al momento de la observación, donde Ac y Azv se calculan mediante cualquiera de los métodos descritos en los párrafos 5a y 5b, precedentes. Partiendo de esa Pe , se dibuja en la carta una línea en la dirección del Azv al astro. Se convierte I en millas náuticas, multiplicándolo por 60. La recta de altura se dibuja en ángulo recto respecto de la línea de azimut, a una distancia I desde el Pe , hacia el astro si I es positivo, y en sentido opuesto si es negativo. Si no hay errores gruesos en los datos o cálculos, el navegante debió encontrarse en algún lugar sobre o muy cerca de la recta de altura, al momento de efectuar la observación. Se requieren dos o más rectas de altura para determinar un punto observado (Po).

8.- **Posición con azimut e intercepto usando la calculadora.** Se puede calcular un punto observado (P_o) con dos o más observaciones con sextante, como se indica:

Si I_1, Azv_1 , son el intercepto y azimut de la primera observación, I_2, Azv_2 , los de la segunda observación y así sucesivamente, haga las sumatorias:

$$\begin{aligned} A &= \cos^2 Azv_1 + \cos^2 Azv_2 + \dots \\ B &= \cos Azv_1 \sin Azv_1 + \cos Azv_2 \sin Azv_2 + \dots \\ C &= \sin^2 Azv_1 + \sin^2 Azv_2 + \dots \\ D &= I_1 \cos Azv_1 + I_2 \cos Azv_2 + \dots \\ E &= I_1 \sin Azv_1 + I_2 \sin Azv_2 + \dots \end{aligned}$$

donde el número de términos de cada sumatoria es igual al número de observaciones efectuadas con sextante.

Haciendo $G = AC - B^2$, se puede obtener un mejoramiento de la posición estimada al momento de la observación (Lm, Gm) mediante:

$$\begin{aligned} Lm &= Le + (CD - BE)/G \\ Gm &= Ge + (AE - BD)/(G \cos Le) \end{aligned}$$

Calcule la distancia d entre la posición estimada inicial al momento de la observación (Le, Ge), y la posición mejorada (Lm, Gm) en millas náuticas mediante:

$$d = 60 \sqrt{((Gm - Ge)^2 \cos^2 Le + (Lm - Le)^2)}$$

Si d excede de unas 20 millas náuticas, utilice $Le = Lm, Ge = Gm$ y repita los cálculos hasta que d , la distancia entre la estima previa y la estima mejorada, sea menor que unas 20 millas náuticas.

Ejemplo de cálculo directo. Usando el método descrito anteriormente, calcule la posición de un buque a las 21^h 00^m 00^s UT del 28 de junio de 2014, habiéndose observado las siguientes Av (corregido Ei, Dip y Ref): *Régulus* (N° 26) 32°,0620 a las 20^h 39^m 23^s UT, *Antares* (N° 42) 23°,4185 a las 20^h 45^m 47^s UT y *Kochab* (N° 40) 47°,5156 a las 21^h 10^m 34^s UT y. El buque navegaba al Rv 325° y a una velocidad constante de 20 nudos durante el período de observación; la Pe del buque a las 21^h 00^m 00^s UT solamente se conoce al grado entero más cercano ($Le = 32^\circ N$ $Ge = 15^\circ W$).

A continuación, se muestran los valores intermedios de la primera iteración. El *AHGr* Aries se interpoló del valor tabular más cercano en la pág. 128. Para la primera iteración considere $Le = +32^\circ,0000$ y $Ge = -15^\circ,0000$ a las 21^h 00^m 00^s *HmGr*.

Estrella	Primera iteración		
	<i>Régulus</i>	<i>Antares</i>	<i>Kochab</i>
N°	26	42	40
hora observación	20 ^h 39 ^m 23 ^s	20 ^h 45 ^m 47 ^s	21 ^h 10 ^m 34 ^s
Av	32,0620	23,4185	47,5156
factor interpolación	0,6564	0,7631	0,1761
<i>AHGr</i> Aries	226,7098	228,3143	234,5273
<i>AHS</i> (pág. 128)	207,7167	112,4167	137,3250
<i>AHGr</i>	74,4265	340,7310	11,8523
<i>Dec</i> (pág. 132)	+11,8950	-26,4617	+74,1017
t	-0,3436	-0,2369	+0,1761
Le	+31,9062	+31,9353	+32,0481
Ge	-14,9225	-14,9466	-15,0397
Azv	264,0766	146,8160	1,3022
Ac	32,0389	23,1127	47,9157
I	+0,0231	+0,3058	-0,4001

$$A = 1,7106 \quad B = -0,3327 \quad C = 1,2894 \quad D = -0,6583 \quad E = 0,1353 \quad G = 2,0950$$

$$(CD - BE)/G = -0,3837, (AE - BD)/(G \cos Le) = +0,0070$$

Una estima mejorada de la posición a las 21^h 00^m 00^s UT es:

$$Lm = Le - 0,3837 = +31,6163 \text{ y } Gm = Ge + 0,0070 = -14,9930$$

Como la distancia entre la posición estimada previa y la posición estimada mejorada $d = 23,0$ millas, considere $Le = +31,6163$ y $Ge = -14,9930$ y repita los cálculos. A continuación, se muestran los valores intermedios de la segunda iteración. En cada iteración los valores de A_v , $AHGr$, Dec y t no cambian.

Segunda iteración			
Estrella	<i>Régulus</i>	<i>Antares</i>	<i>Kochab</i>
Nº	26	42	40
Le	+31,5225	+31,5516	+31,6644
Ge	-14,9159	-14,9398	-15,0325
Az_v	264,3195	146,7312	1,2897
Ac	32,0271	23,4369	47,5322
I	-0,0100	-0,0183	-0,0166

$$A = 1,7084 \quad B = -0,3377 \quad C = 1,2916 \quad D = -0,0003 \quad E = -0,0004 \quad G = 2,0926$$

$$(CD - BE)/G = -0,0003, (AE - BD)/(G \cos Le) = -0,0005$$

Una estima mejorada de la posición a las 21^h 00^m 00^s $HmGr$ es:

$$Lm = Le - 0,0003 = +31,6160 \text{ y } Gm = Ge - 0,0005 = -14,9935$$

La distancia entre la posición estimada previa y la posición estimada mejorada, $d = 0,03$ milla, es tan pequeña, que una tercera iteración, no producirá un mejoramiento apreciable de la posición estimada.

HORAS OFICIALES (Corregidas hasta diciembre de 2012)

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Los datos astronómicos están expresados en hora universal (UT), la que también se conoce como hora media Greenwich (HmGr), y corresponde a la hora estándar del meridiano de Greenwich (longitud 0°). Una hora expresada en UT puede ser convertida a hora media local sumando la longitud E o restando la longitud W, cuando la longitud del lugar está expresada en horas; la razón es de 1 hora por cada 15°. Las diferencias entre la hora estándar y la universal (UT) aparecen en estas tablas; la hora reloj local puede, sin embargo, diferir de estas horas estándares, especialmente en verano cuando los relojes suelen ser adelantados en una hora.

LISTA I - LUGARES CON HORA ADELANTADA AL UTC

(principalmente aquellos al E DE GREENWICH)

Las horas indicadas } *sumadas* al UTC para obtener la Hora Oficial
deben ser } *restadas* a la Hora Oficial para obtener el UTC

	h m		h m
Afganistán	04 30	Croacia*	01
Albania*	01	Checa, República*†	01
Alemania*†	01	Dinamarca*†	01
Amirante, Islas	04	Egipto, República Árabe de	02
Andaman, Islas	05 30	Emiratos Árabes Unidos	04
Archipiélago de Chagos e isla Diego García	06	Eritrea	03
Argelia	01	Eslovaquia*†	01
Angola	01	Eslovenia*†	01
Armenia	04	España*†	01
Arabia Saudita	03	Posesiones españolas al N de África*	01
Australia		Balears, Islas*†	01
Cocos (Keeling), Islas	06 30	Estados Unidos de América:	
Christmas, Islas, océano Índico	07	Is. Palau	09
Australia occidental	08	Is. Admiralty, Is. Guam,	
Norte y Sur de Australia*	09 30	Is. Mariana	10
Territorio Capital *,		Estonia*†	02
Nueva Gales del Sur* ¹ , Queensland,		Etiopía	03
Tasmania*, Victoria*,		Fiji*	12
Whitsunday, Islas	10	Filipinas, República de	08
Lord Howe, Islas*	10 30	Finlandia*†	02
Norfolk, Isla	11 30	Francia*†	01
Austria*†	01	Gabón	01
Azerbaiyán*	04	Georgia	04
Bahrein	03	Gibraltar*	01
Bangladesh	06	Grecia*†	02
Bielorrusia	03	Guinea Ecuatorial, República de	01
Bélgica*†	01	Holanda*†	01
Benin	01	Hong Kong	08
Bosnia y Herzegovina*	01	Hungria*†	01
Botswana, República de	02	India	05 30
Brunei	08	Indonesia, República de	
Bulgaria*†	02	Bangka, Billiton, Java, Kalimantan	
Birmania (Myanmar)	06 30	occ. y central, Madura, Sumatra	07
Burundi	02	Bali, Flores, Kalimantan sur y	
Camboya (Kampuchea)	07	oriental, Lombok, Sulawesi,	
Camerún, República de	01	Sumba, Sumbawa, Timor occidental	08
Centroafricana, República	01	Aru, Irian Jaya, Kai, Molucas,	
Chad	01	Tanimbar	09
China, República Popular de	08	Irak	03
Chipre†: Ercan*, Larnaca*	02	Irán*	03 30
Comoro, Islas (Comores)	03	Israel*	02
Congo, República Democrática del		Italia*†	01
Occidental: Kinshasa, Equateur	01	Japón	09
Oriental: Orientale, Kasai, Kivu, Shaba	02	Jordania	03
Congo, República del	01	Kazajstán	
Corea del Norte	09	Occidental: Aktau, Uralsk, Atyrau	05
Corea del Sur, República de	09	Oriental y central: Kzyl-Orda, Astana	06
Córcega*†	01	Kenya	03
Creta*†	02	Kerguelen, Islas	05

	h m		h m
Kiribati, República de		Rusia ^{3*}	
Gilbert, Islas	12	Zona 1 Kaliningrado	03
Phoenix, Islas ²	13	Zona 2 Arkhangelsk, Astrakhan,	
Line, Islas ²	14	Volgograd, Moscú, San	
Kuwait	03	Petersburgo, Samara	04
Kirguistán	06	Zona 3 Perm, Novyy Port,	
Laccadive, Islas	05 30	Ekaterinburg, Ufa	06
Laos	07	Zona 4 Omsk, Novosibirsk, Tomsk	07
Letonia*†	02	Zona 5 Norilsk, Kranoyarsk, Dikson	08
Libano*	02	Zona 6 Bratsk, Irkutsk, Ulan-Ude	09
Lesotho	02	Zona 7 Tiksi, Yakutsk, Chita	10
Libia	02	Zona 8 Khabarovsk, Vladivostok,	
Liechtenstein*	01	Okhotsk, islas Sakhalin	11
Lituania*†	02	Zona 9 Petropavlosk-K., Magadan,	
Luxemburgo*†	01	Anadyr, islas Kuriles	12
Macao (Portugal)	08	Ruanda	02
Macedonia* formada de la ex Yugoslavia	01	Ryukyu, Islas	09
Macías Nguema (Fernando Póo)	01	Salomón, Islas	11
Madagascar, República Democrática de	03	Samoa*	13
Malawi	02	Santa Cruz, Islas	11
Malasia, Malaya, Sabah, Sarawak	08	Schouten, Islas (Nueva Guinea)	09
Maldivas, República de Las	05	Serbia*	01
Malta*†	01	Seychelles	04
Marshall, Islas	12	Sicilia*†	01
Mauricio	04	Singapur	08
Micronesia (Islas Carolina)	10	Siria*	02
Pohnpei, Pingelap y Kosrae	11	Socotra	03
Moldavia*	02	Somali, República	03
Mónaco*	01	Spitsbergen, Isla	
Mongolia	08	(Arch. Svalbard)* (Noruega)	01
Montenegro*	01	Sri Lanka	05 30
Mozambique	02	Sudáfrica, República de	02
Namibia*	01	Sudán, República de	03
Nauru	12	Suazilandia	02
Nepal	05 45	Suecia*†	01
Nicobar, Islas	05 30	Suiza*	01
Níger	01	Tailandia	07
Nigeria, República de	01	Taiwán	08
Noruega*	01	Tanzania	03
Jan Mayen, Isla*	01	Tayikistán	05
Nueva Caledonia	11	Timor Oriental	09
Nueva Zelanda*	12	Tonga, Reino de	13
Is. Chatham*	12 45	Túnez	01
Okinawa	09	Turquía*	02
Omán	04	Turkmenistán	05
Pagalu (Islas Annobon)	01	Tuvalu	12
Pakistán	05	Ucrania*	02
Papúa Nueva Guinea	10	Uganda	03
Pescadores, Islas	08	Uzbekistán	05
Polonia*†	01	Vanuatu, República de	11
Qatar	03	Vietnam, República Socialista de	07
Reunión	04	Yemen	03
Rumania*†	02	Zambia, República de	02
		Zimbabue	02

* Estos lugares pueden emplear hora de verano.

† Para las fechas de hora de verano, véase el pie de nota de la lista II.

¹ Excepto el área de Broken Hill*, la cual mantiene 09^h 30^m.

² La parte de las islas Line y Phoenix que no pertenece a la República de Kiribati, mantienen zona 10 y 11 respectivamente, atrasada a la UTC.

³ Los límites entre las zonas son irregulares; se listan las principales repúblicas y ciudades de cada zona.

Arch. Tristán de Acuña (R. U.)	Irlanda, República de*†	Is. Santa Elena (R. U.)	Senegal
Burkina-Faso	Irlanda del Norte†	Liberia	Sierra Leona
Costa de Marfil	Islandia	Madeira*† (Portugal)	Togo, República de
Gambia	Is. Ascensión (R.U.)	Mali	
Ghana	Is. Canal†	Marruecos*	
Gran Bretaña†	(de la Mancha)	Mauritania	
Guinea Bissau	Is. Canarias*† (España)	Portugal*†	
Guinea, República de	Is. Feroé* (Dinamarca)	Santo Tomé y Príncipe	

* Estos lugares pueden emplear hora de verano.

† Hora de verano (horario de ahorro de luz diurna), una hora por adelantado del UTC, se mantendrá desde la 01h del 30 de marzo de 2014 hasta la 01h del 26 de octubre del UTC (Novena Directiva de la Hora de Verano de la Unión Europea). La ratificación por parte de los países miembros no se ha verificado.

LISTA III - LUGARES CON HORA ATRASADA AL UTC (AL W DE GREENWICH)

Las horas indicadas } *restadas* al UTC para obtener la Hora Oficial
deben ser } *sumadas* a la Hora Oficial para obtener el UTC

	h m		h m
Argentina	03	Costa Rica, I. de	06
Azores, Islas * †	01	Cuba*, I. de	05
Bahamas*	05	Ecuador	05
Barbados	04	Is. Galápagos (Arch. Colón)	06
Belice	06	El Salvador	06
Bolivia	04	Estados Unidos de América‡	
Brasil		-Connecticut, Delaware, Distrito de	
-Is. Fernando de Noronha,		Columbia, Florida², Georgia, Indiana²,	
Is. Trinidad, Is. Oceanic	02	parte oriental de Kentucky, Maine,	
-S y E estados costeros*, Goias*,		Maryland, Massachusetts, Michigan²,	
Brasilia*, Minas Gerais*, Bahía,		Nueva Hampshire, Nueva Jersey, Nueva York,	
Tocantins, Espírito Santo*,		Carolina del Norte, Ohio, Pensilvania,	
N y NE estados costeros	03	Rhode Island, Carolina del Sur, parte	
-Mato Grosso*, Mato Grosso del Sur*,		oriental de Tennessee, Vermont,	
Roraima, Rondonia, Amazonas, Acre	04	Washington D.C., Virginia, Virginia del Oeste	05
Cabo Verde, Islas	01	-Alabama, Arkansas, Illinois, Iowa,	
Canadá¹ ‡		Kansas², parte occ. de Kentucky, Louisiana,	
Terranova*	03 30	Minnesota, Misisipi, Misuri,	
Labrador*, New Brunswick*,		parte oriental de Nebraska, parte oriental	
Nueva Escocia*, Is. Príncipe Eduardo*	04	de Dakota del Norte, Oklahoma, parte	
Nunavut*		oriental de Dakota del Sur, parte occ.	
al oriente de 85° W	05	de Tennessee, Texas², Wisconsin	06
entre 85° W y 102° W	06	-Arizona³, Colorado, parte S de Idaho,	
al occ. de 102° W	07	Montana, Nuevo México, parte occ. de	
Quebec, al oriente de 63° W	04	Dakota del Sur, parte occ. de Dakota del Norte,	
al occ. de 63° W*	05	parte occ. de Nebraska,	
Ontario, al oriente de 90° W*	05	Utah, Wyoming	07
al occ. de 90° W*	06	-California, parte N de Idaho, Nevada,	
Manitoba*, Saskatchewan	06	Oregón², Washington	08
Alberta*, Territorios del NW*	07	-Alaska,	
Columbia Británica*, Yukón*	08	Is. Aleutianas, al oriente de 169° 30' W	09
Chile*	04	Is. Aleutianas, al occ. de 169° 30' W,	
Arch. de Juan Fernández*	04	Hawai³, Is. Johnston,	10
Is. Diego Ramírez*	04	Is. Midway, Is. Samoa	11
Is. San Félix y San Ambrosio*	04	Francia (Dependencias):	
Territorio Chileno Antártico*	04	-Guayana Francesa	
I. Salas y Gómez*, I. de Pascua*	06	-Is. San Pedro y Miguelón*	03
Colombia	05	-Guadalupe, Martinica	04

	h m		h m
-Polinesia Francesa:		Distrito Norte de Baja California*	08
Is. Marquesas	09 30	Nicaragua	06
-Is. Australes (Tubai), Is. de la Sociedad,		Niue	11
Arch. Tuamotu	10	Panamá, República de	05
Granada	04	Paraguay*	04
Groenlandia (Dinamarca)*		Perú	05
Danmarkshavn, Mesters Vig	00	Puerto Rico	04
General*	03	Reino Unido (Dependencias):	
Scoresby Sound*	01	Is. Georgia del Sur	02
Thule*, Pituffik*	04	Bermuda*, Is. Falkland o Malvinas*,	
Guatemala	06	Is. Vírgenes	04
Guyana, República Cooperativa de	04	Is. Caimán, Is. Turks* y Caicos*	05
Haití	05	Is. Pitcairn	08
Holanda (Dependencias):		Is. Cook	10
Antillas (Isla Curazao)	04	República Dominicana	04
Honduras	06	Surinam	03
Jamaica	05	Trinidad y Tobago	04
Leeward, Islas (o de Sotavento)	04	Uruguay*, República Oriental del	03
México*	06	Venezuela, República Bolivariana de	04 30
Sonora, Sinaloa*, Nayarit*, Chihuahua*,		Windward, Islas (o de Barlovento)	04
Distrito Sur de Baja California*	07		

* Estos lugares pueden emplear hora de verano.

‡ Horario de ahorro de luz diurna (verano), durante el 2014 se mantiene una hora adelantada sobre lo señalado por Almanaque, desde el 9 de marzo (segundo domingo) hasta el 2 de noviembre (primer domingo), cambiando, luego, a 02^h 00^m (hora local).

¹ Algunas áreas mantienen otra zona horaria.

² Una pequeña parte del estado está en otra zona horaria.

³ Se exceptúan de mantener la hora de verano.

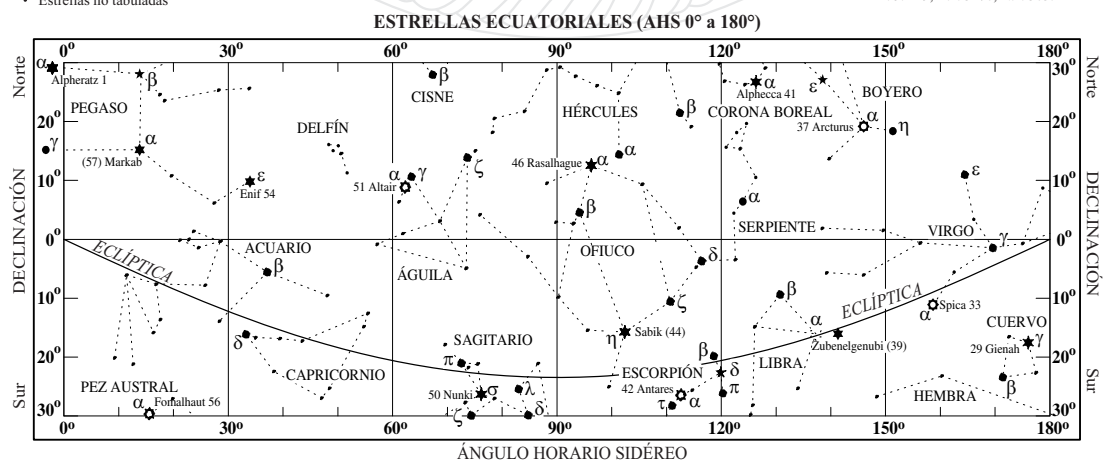
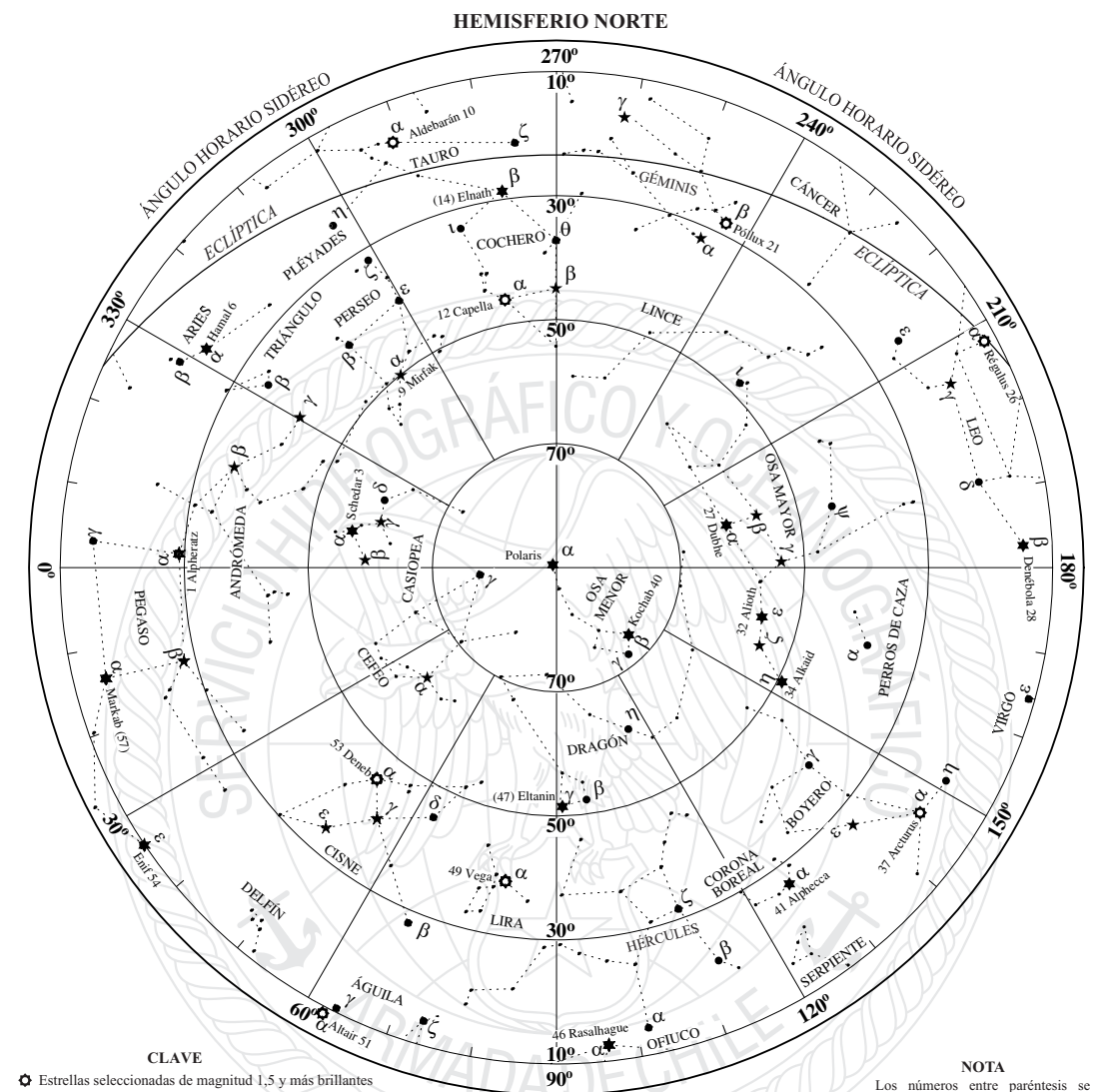
NOMBRE DE LAS CONSTELACIONES

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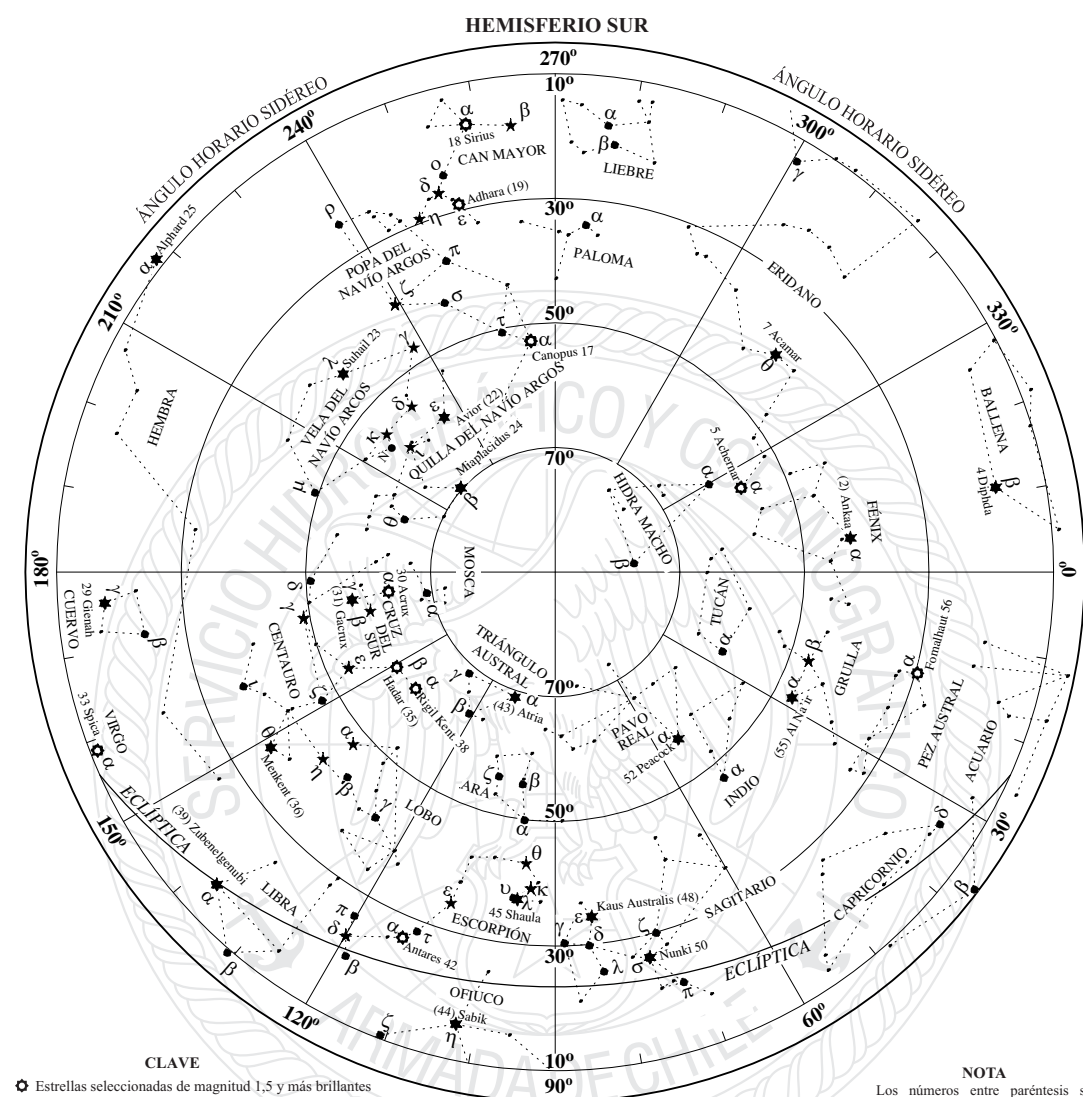
NOMBRE LATINO	NOMBRE COMÚN	NOMBRE LATINO	NOMBRE COMÚN
<i>Andromedae</i>	Andrómeda	<i>Lacertae</i> *	Lagarto
<i>Antilae</i> *	Máquina Neumática	<i>Leonis</i>	Leo o León
<i>Apodis</i> *	Ave del Paraíso	<i>Leonis Minoris</i> *	León Menor
<i>Aquarii</i>	Acuario o Aguador	<i>Leporis</i>	Liebre
<i>Aquilae</i>	Águila	<i>Librae</i>	Libra o Balanza
<i>Arae</i>	Ara o Altar	<i>Lupi</i>	Lobo
<i>Arietis</i>	Aries o Carnero	<i>Lyncis</i> *	Lince
<i>Aurigae</i>	Auriga o Cochero	<i>Lyrae</i>	Lira
<i>Bootis</i>	Bootes o Boyero	<i>Mensae</i> *	Monte de la Tabla
<i>Coelis</i> *	Buril	<i>Microscopii</i> *	Microscopio
<i>Cacum Venaticorum</i>	Jirafa	<i>Monocerotis</i> *	Unicornio
<i>Camelopardalis</i> *	Cáncer o Cangrejo	<i>Muscae</i>	Mosca
<i>Cancris</i> *	Perros de Caza	<i>Normae</i> *	Escuadra
<i>Canis Majoris</i>	Can Mayor	<i>Octantis</i> *	Octante
<i>Canis Minoris</i>	Can Menor	<i>Ophiuchi</i>	Ofiuco o Serpentario
<i>Capricorni</i>	Capricornio o Cabra	<i>Orionis</i>	Orión
<i>Carinae</i>	Quilla del Navío Argos	<i>Pavonis</i>	Pavón o Pavo Real
<i>Cassiopeiae</i>	Casiopea	<i>Pegasi</i>	Pegaso
<i>Centauri</i>	Centauro	<i>Persei</i>	Perseo
<i>Cephei</i>	Cefeo	<i>Phoenicis</i>	Fénix
<i>Ceti</i>	Ballena	<i>Pictoris</i> *	Caballote del Pintor
<i>Circini</i> *	Brújula	<i>Piscium</i> *	Piscis o Peces
<i>Columbae</i>	Paloma	<i>Piscis Austrini</i>	Pez Austral
<i>Coronae Berenices</i> *	Cabellera de Berenice	<i>Puppis</i>	Popa del Navío Argos
<i>Coronae Australis</i> *	Corona Austral	<i>Pyxidis</i> *	Brújula del Navío Argos
<i>Coronae Borealis</i>	Corona Boreal	<i>Reticuli</i> *	Retícula
<i>Corvi</i>	Cuervo	<i>Sagittae</i> *	Flecha
<i>Crateris</i> *	Copa	<i>Sagittarii</i>	Sagitario o Arquero
<i>Crucis</i>	Cruz (del Sur)	<i>Scorpii</i>	Escorpión
<i>Cygni</i>	Cisne	<i>Sculptoris</i> *	Taller del Escultor
<i>Chamaeleonti</i> *	Camaleón	<i>Scuti</i> *	Escudo
<i>Delphini</i> *	Delfín	<i>Serpentis</i>	Serpiente
<i>Doradus</i> *	Dorada	<i>Sextantis</i> *	Sextante
<i>Draconis</i>	Dragón	<i>Tauri</i>	Tauro o Toro
<i>Equulei</i> *	Caballo Menor	<i>Telescopii</i> *	Telescopio
<i>Eridani</i>	Eridano	<i>Trianguli</i>	Triángulo
<i>Fornacis</i> *	Horno o Aparato Químico	<i>Trianguli Australis</i>	Triángulo Austral
<i>Geminorum</i>	Géminis o Gemelos	<i>Tucanae</i>	Tucán
<i>Gruis</i>	Grulla	<i>Ursae Majoris</i>	Osa Mayor
<i>Herculis</i>	Hércules	<i>Ursae Minoris</i>	Osa Menor
<i>Horologii</i> *	Reloj	<i>Velorum</i>	Vela del Navío Argos
<i>Hydrae</i>	Hidra Hembra	<i>Virginis</i>	Virgo o Virgen
<i>Hydri</i>	Hidra Macho	<i>Volantis</i> *	Pez volador
<i>Indi</i>	Indio	<i>Vulpeculae</i> *	Zorra

* Estas constelaciones no contienen estrellas seleccionadas para navegación.

CARTAS ESTELARES



CARTAS ESTELARES

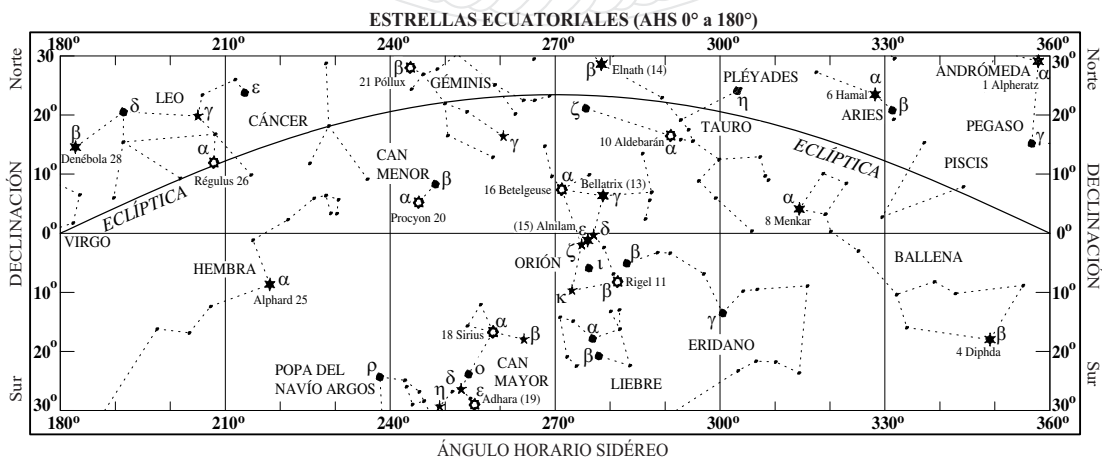


CLAVE

- ⬠ Estrellas seleccionadas de magnitud 1,5 y más brillantes
- ★ Estrellas seleccionadas de magnitud 1,6 y menos brillantes
- ☆ Otras estrellas de magnitud 2,5 y más brillantes
- Otras estrellas de magnitud 2,6 y menos brillantes
- Estrellas no tabuladas

NOTA

Los números entre paréntesis se refieren a las estrellas de las páginas diarias que no se usan en las Tablas de Reducción de Observaciones H.O. 249, A.P. 3270, N.P. 303.



Mag.	Nombres y Números	A.H.S.							Declinación						
			ENE.	FEB.	MAR.	ABR.	MAY.	JUN.		ENE.	FEB.	MAR.	ABR.	MAY.	JUN.
			°	/	/	/	/	/		°	/	/	/	/	/
3.2	γ Cephei	57	4	60.9	61.5	61.7	61.4	60.8	59.9	N 77	43.0	42.9	42.7	42.6	42.5
2.5	α Pegasi		13	38.1	38.1	38.1	38.0	37.8	37.6	N 15	17.0	16.9	16.9	16.8	16.9
2.4	β Pegasi		13	53.2	53.2	53.2	53.1	52.9	52.6	N 28	09.7	09.6	09.6	09.5	09.5
1.2	α Piscis Aust.	56	15	23.8	23.8	23.8	23.7	23.5	23.2	S 29	32.9	32.9	32.8	32.7	32.6
2.1	β Gruis		19	07.8	07.8	07.8	07.6	07.4	07.0	S 46	48.8	48.7	48.5	48.4	48.3
2.9	α Tucanæ	55	25	08.7	08.8	08.7	08.4	08.1	07.7	S 60	11.4	11.3	11.2	11.0	10.9
1.7	α Gruis		27	43.6	43.6	43.5	43.4	43.1	42.8	S 46	53.6	53.5	53.4	53.3	53.2
2.9	δ Capricorni		33	02.9	02.9	02.8	02.7	02.5	02.2	S 16	03.8	03.7	03.7	03.6	03.5
2.4	ε Pegasi	54	33	47.0	47.0	46.9	46.7	46.5	46.3	N 9	56.5	56.4	56.4	56.5	56.6
2.9	β Aquarii		36	55.7	55.6	55.6	55.4	55.2	54.9	S 5	30.5	30.5	30.5	30.4	30.3
2.4	α Cephei	53	40	16.7	16.7	16.6	16.2	15.8	15.5	N 62	39.0	38.8	38.7	38.6	38.7
2.5	ε Cygni		48	18.5	18.5	18.3	18.1	17.9	17.6	N 34	01.6	01.4	01.3	01.3	01.4
1.3	α Cygni		49	31.6	31.6	31.4	31.2	30.9	30.6	N 45	20.0	19.9	19.8	19.7	19.8
3.1	α Indi	52	50	22.1	22.0	21.8	21.6	21.2	20.9	S 47	14.5	14.4	14.3	14.2	14.1
1.9	α Pavonis		53	19.2	19.1	18.9	18.5	18.1	17.8	S 56	41.3	41.2	41.0	40.9	40.9
2.2	γ Cygni	51	54	19.3	19.2	19.0	18.8	18.5	18.3	N 40	18.3	18.1	18.0	18.0	18.1
0.8	α Aquilæ		62	08.2	08.1	07.9	07.7	07.5	07.3	N 8	54.5	54.4	54.4	54.5	54.6
2.7	γ Aquilæ		63	16.3	16.2	16.0	15.8	15.6	15.4	N 10	39.0	38.9	38.9	38.9	39.0
2.9	δ Cygni		63	39.1	39.0	38.8	38.6	38.3	38.1	N 45	10.1	09.9	09.8	09.8	09.9
3.1	β Cygni		67	10.9	10.8	10.6	10.4	10.2	10.0	N 27	59.5	59.4	59.3	59.4	59.5
2.9	π Sagittarii	50	72	21.2	21.1	20.9	20.6	20.4	20.2	S 20	59.9	59.9	59.9	59.9	59.8
3.0	ζ Aquilæ		73	29.4	29.2	29.0	28.8	28.6	28.5	N 13	53.2	53.1	53.1	53.2	53.3
2.6	ζ Sagittarii		74	07.6	07.5	07.3	07.0	06.8	06.6	S 29	51.4	51.4	51.4	51.3	51.3
2.0	σ Sagittarii	49	75	58.2	58.0	57.8	57.6	57.3	57.1	S 26	16.6	16.6	16.5	16.5	16.5
0.0	α Lyrae		80	39.1	38.9	38.7	38.4	38.2	38.1	N 38	47.9	47.8	47.7	47.8	48.0
2.8	λ Sagittarii	48	82	47.6	47.4	47.2	47.0	46.8	46.6	S 25	24.6	24.6	24.6	24.6	24.6
1.9	ε Sagittarii		83	43.6	43.4	43.2	42.9	42.7	42.5	S 34	22.5	22.4	22.4	22.4	22.4
2.7	δ Sagittarii		84	31.8	31.6	31.4	31.1	30.9	30.7	S 29	49.1	49.1	49.1	49.1	49.1
3.0	γ Sagittarii	47	88	19.5	19.3	19.1	18.8	18.6	18.4	S 30	25.2	25.2	25.2	25.2	25.2
2.2	γ Draconis		90	46.4	46.2	45.9	45.6	45.4	45.3	N 51	29.3	29.1	29.1	29.1	29.2
2.8	β Ophiuchi	46	93	57.6	57.5	57.3	57.1	56.9	56.8	N 4	33.8	33.7	33.7	33.7	33.8
2.4	κ Scorpii		94	08.3	08.0	07.8	07.5	07.2	07.1	S 39	02.0	01.9	01.9	02.0	02.0
1.9	θ Scorpii		95	25.2	25.0	24.7	24.4	24.2	24.0	S 43	00.1	00.1	00.1	00.1	00.2
2.1	α Ophiuchi	45	96	06.4	06.2	06.0	05.8	05.6	05.5	N 12	33.1	33.0	33.0	33.1	33.2
1.6	λ Scorpii		96	21.7	21.5	21.2	20.9	20.7	20.5	S 37	06.6	06.6	06.6	06.6	06.7
3.0	α Aræ	44	96	46.3	46.0	45.7	45.3	45.1	44.9	S 49	52.9	52.9	52.9	53.0	53.0
2.7	ν Scorpii		97	04.3	04.1	03.8	03.6	03.4	03.2	S 37	18.2	18.1	18.2	18.2	18.2
2.8	β Draconis		97	19.2	18.9	18.6	18.3	18.1	18.0	N 52	17.4	17.3	17.3	17.4	17.6
2.8	β Aræ	43	98	23.2	22.8	22.5	22.1	21.8	21.6	S 55	32.3	32.2	32.2	32.2	32.3
Var.‡	α Herculis		101	10.8	10.6	10.4	10.2	10.1	10.0	N 14	22.5	22.4	22.4	22.4	22.5
2.4	η Ophiuchi	44	102	12.3	12.1	11.9	11.7	11.5	11.4	S 15	44.4	44.4	44.4	44.4	44.4
3.1	ζ Aræ		105	03.4	03.0	02.6	02.3	02.0	01.9	S 56	00.4	00.4	00.4	00.5	00.6
2.3	ε Scorpii		107	14.0	13.7	13.4	13.2	13.0	12.9	S 34	18.9	18.9	18.9	18.9	19.0
1.9	α Triang. Aust.	43	107	27.8	27.3	26.7	26.2	25.8	25.6	S 69	02.8	02.8	02.8	02.8	02.9
2.8	ζ Herculis		109	33.0	32.7	32.5	32.3	32.2	32.1	N 31	34.6	34.5	34.5	34.5	34.6
2.6	ζ Ophiuchi	42	110	31.1	30.8	30.6	30.4	30.3	30.2	S 10	35.6	35.6	35.7	35.7	35.7
2.8	τ Scorpii		110	48.7	48.4	48.2	48.0	47.8	47.7	S 28	14.5	14.5	14.5	14.6	14.6
2.8	β Herculis		112	17.8	17.6	17.3	17.1	17.0	17.0	N 21	27.5	27.4	27.4	27.5	27.7
1.0	α Scorpii	42	112	26.0	25.7	25.5	25.3	25.1	25.0	S 26	27.6	27.6	27.6	27.7	27.7
2.7	η Draconis		113	57.8	57.4	57.1	56.7	56.6	56.6	N 61	28.8	28.7	28.7	28.8	28.9
2.7	δ Ophiuchi	41	116	13.8	13.6	13.4	13.2	13.1	13.0	S 3	43.7	43.8	43.8	43.8	43.7
2.6	β Scorpii		118	26.2	25.9	25.7	25.5	25.4	25.3	S 19	50.5	50.5	50.5	50.6	50.6
2.3	δ Scorpii		119	42.5	42.3	42.0	41.9	41.7	41.6	S 22	39.5	39.6	39.6	39.7	39.7
2.9	π Scorpii	41	120	04.4	04.2	04.0	03.8	03.6	03.6	S 26	09.1	09.1	09.2	09.2	09.2
2.8	β Trianguli Aust.		120	54.1	53.7	53.2	52.9	52.6	52.5	S 63	28.1	28.1	28.1	28.2	28.3
2.6	α Serpentis	41	123	45.6	45.4	45.2	45.0	44.9	44.9	N 6	22.9	22.8	22.8	22.8	23.0
2.8	γ Lupi		125	58.8	58.5	58.2	58.0	57.8	57.8	S 41	12.6	12.6	12.7	12.7	12.8
2.2	α Coronæ Bor.		126	10.9	10.6	10.4	10.2	10.1	10.1	N 26	40.0	39.9	39.9	40.0	40.2

Mag.	Nombres y Números	A.H.S.							Declinación						
			JUL.	AGO.	SEP.	OCT.	NOV.	DIC.		JUL.	AGO.	SEP.	OCT.	NOV.	DIC.
3·2	γ Cephei		°	/	/	/	/	/	N 77	°	/	/	/	/	/
2·5	Markab	57	4	59·2	58·6	58·4	58·5	58·9	59·6	N 15	42·6	42·7	42·9	43·1	43·3
2·4	Scheat		13	37·4	37·2	37·1	37·2	37·2	37·3	N 28	17·1	17·2	17·3	17·3	17·4
1·2	Fomalhaut	56	13	52·4	52·2	52·1	52·2	52·3	52·4	S 29	09·7	09·9	10·0	10·1	10·1
2·1	β Gruis		15	23·0	22·8	22·7	22·7	22·9	23·0	S 46	32·4	32·4	32·5	32·5	32·6
			19	06·8	06·6	06·5	06·6	06·7	06·9	S 46	48·2	48·2	48·3	48·4	48·5
2·9	α Tucanæ		25	07·3	07·1	07·0	07·2	07·4	07·7	S 60	10·9	10·9	11·1	11·2	11·3
1·7	Al Na'ir	55	27	42·5	42·3	42·3	42·4	42·6	42·7	S 46	53·1	53·1	53·2	53·3	53·4
2·9	δ Capricorni		33	02·0	01·9	01·9	02·0	02·1	02·2	S 16	03·4	03·4	03·4	03·5	03·5
2·4	Enif	54	33	46·1	46·0	46·0	46·1	46·2	46·3	N 9	56·7	56·8	56·8	56·9	56·8
2·9	β Aquarii		36	54·8	54·7	54·7	54·7	54·9	54·9	S 5	30·2	30·1	30·1	30·1	30·2
2·4	Alderamin		40	15·2	15·1	15·2	15·5	15·8	16·1	N 62	38·9	39·1	39·2	39·3	39·3
2·5	ε Cygni		48	17·5	17·4	17·5	17·6	17·8	17·9	N 34	01·6	01·8	01·9	02·0	01·9
1·3	Deneb	53	49	30·5	30·4	30·5	30·7	30·9	31·1	N 45	20·1	20·2	20·4	20·5	20·4
3·1	α Indi		50	20·7	20·6	20·7	20·9	21·1	21·2	S 47	14·1	14·2	14·3	14·3	14·3
1·9	Peacock	52	53	17·5	17·5	17·5	17·8	18·0	18·2	S 56	41·0	41·1	41·2	41·2	41·2
2·2	γ Cygni		54	18·2	18·1	18·2	18·4	18·6	18·7	N 40	18·4	18·5	18·6	18·7	18·6
0·8	Altair	51	62	07·2	07·1	07·2	07·3	07·5	07·5	N 8	54·7	54·7	54·8	54·8	54·7
2·7	γ Aquilæ		63	15·3	15·3	15·3	15·5	15·6	15·7	N 10	39·2	39·3	39·3	39·3	39·2
2·9	δ Cygni		63	38·0	38·0	38·1	38·3	38·5	38·7	N 45	10·2	10·3	10·5	10·5	10·4
3·1	Albireo		67	09·9	09·9	10·0	10·2	10·3	10·4	N 27	59·7	59·8	59·9	59·9	59·8
2·9	π Sagittarii		72	20·1	20·1	20·2	20·3	20·5	20·5	S 20	59·8	59·8	59·8	59·8	59·8
3·0	ζ Aquilæ		73	28·4	28·4	28·5	28·6	28·7	28·8	N 13	53·4	53·5	53·5	53·5	53·4
2·6	ζ Sagittarii		74	06·5	06·5	06·6	06·7	06·8	06·9	S 29	51·3	51·3	51·4	51·4	51·3
2·0	Nunki	50	75	57·0	57·0	57·1	57·3	57·4	57·4	S 26	16·5	16·5	16·5	16·5	16·5
0·0	Vega	49	80	38·0	38·1	38·2	38·4	38·6	38·7	N 38	48·1	48·2	48·3	48·3	48·1
2·8	λ Sagittarii		82	46·5	46·5	46·6	46·8	46·9	46·9	S 25	24·6	24·6	24·6	24·6	24·6
1·9	Kaus Australis	48	83	42·4	42·5	42·6	42·7	42·9	42·9	S 34	22·4	22·5	22·5	22·5	22·4
2·7	δ Sagittarii		84	30·6	30·7	30·8	30·9	31·0	31·1	S 29	49·1	49·1	49·1	49·1	49·1
3·0	γ Sagittarii		88	18·4	18·4	18·5	18·7	18·8	18·8	S 30	25·2	25·2	25·3	25·3	25·2
2·2	Eltanin	47	90	45·3	45·4	45·7	45·9	46·1	46·2	N 51	29·5	29·7	29·7	29·6	29·5
2·8	β Ophiuchi		93	56·7	56·8	56·9	57·0	57·1	57·1	N 4	33·9	34·0	34·0	34·0	33·9
2·4	κ Scorpii		94	07·0	07·1	07·2	07·4	07·5	07·5	S 39	02·1	02·1	02·1	02·1	02·0
1·9	θ Scorpii		95	23·9	24·0	24·2	24·4	24·5	24·5	S 43	00·3	00·3	00·3	00·3	00·2
2·1	Rasalhague	46	96	05·4	05·5	05·6	05·8	05·9	05·9	N 12	33·2	33·3	33·3	33·3	33·2
1·6	Shaula	45	96	20·5	20·6	20·7	20·9	21·0	21·0	S 37	06·7	06·7	06·7	06·7	06·6
3·0	α Aræ		96	44·8	44·9	45·1	45·3	45·5	45·4	S 49	53·1	53·2	53·2	53·2	53·0
2·7	ν Scorpii		97	03·2	03·2	03·4	03·5	03·6	03·6	S 37	18·3	18·3	18·3	18·3	18·2
2·8	β Draconis		97	18·1	18·2	18·5	18·7	18·9	19·0	N 52	17·8	17·9	17·9	17·8	17·6
2·8	β Aræ		98	21·6	21·7	21·9	22·2	22·3	22·3	S 55	32·5	32·6	32·6	32·5	32·4
Var.‡	α Herculis		101	09·9	10·0	10·2	10·3	10·4	10·4	N 14	22·7	22·8	22·8	22·7	22·6
2·4	Sabik	44	102	11·4	11·4	11·6	11·7	11·8	11·7	S 15	44·4	44·4	44·3	44·3	44·4
3·1	ζ Aræ		105	01·8	02·0	02·2	02·5	02·6	02·5	S 56	00·7	00·8	00·8	00·6	00·5
2·3	ε Scorpii		107	12·9	13·0	13·1	13·3	13·3	13·3	S 34	19·1	19·1	19·1	19·0	19·0
1·9	Atria	43	107	25·7	25·9	26·3	26·7	26·9	26·8	S 69	03·2	03·3	03·3	03·2	03·0
2·8	ζ Herculis		109	32·1	32·2	32·4	32·6	32·7	32·6	N 31	34·9	35·0	35·0	34·9	34·7
2·6	ζ Ophiuchi		110	30·2	30·3	30·4	30·5	30·6	30·5	S 10	35·6	35·6	35·6	35·6	35·6
2·8	τ Scorpii		110	47·7	47·8	47·9	48·1	48·1	48·0	S 28	14·6	14·6	14·6	14·6	14·6
2·8	β Herculis		112	17·0	17·1	17·2	17·4	17·4	17·4	N 21	27·8	27·8	27·9	27·8	27·6
1·0	Antares	42	112	25·0	25·1	25·3	25·4	25·4	25·4	S 26	27·7	27·7	27·7	27·7	27·6
2·7	η Draconis		113	56·7	57·0	57·4	57·7	57·8	57·8	N 61	29·2	29·3	29·3	29·2	28·9
2·7	δ Ophiuchi		116	13·0	13·1	13·2	13·3	13·4	13·3	S 3	43·7	43·7	43·7	43·7	43·8
2·6	β Scorpii		118	25·3	25·4	25·6	25·7	25·7	25·6	S 19	50·6	50·6	50·6	50·5	50·5
2·3	Dschubba		119	41·7	41·8	41·9	42·0	42·0	41·9	S 22	39·7	39·7	39·6	39·6	39·6
2·9	π Scorpii		120	03·6	03·7	03·8	03·9	03·9	03·8	S 26	09·3	09·3	09·2	09·2	09·2
2·8	β Trianguli Aust.		120	52·6	52·9	53·2	53·4	53·5	53·3	S 63	28·6	28·6	28·6	28·5	28·3
2·6	α Serpentis		123	44·9	45·0	45·2	45·3	45·3	45·2	N 6	23·0	23·1	23·1	23·0	22·9
2·8	γ Lupi		125	57·8	58·0	58·1	58·2	58·3	58·1	S 41	12·9	12·9	12·9	12·8	12·7
2·2	Alphecca	41	126	10·2	10·3	10·5	10·6	10·6	10·5	N 26	40·2	40·3	40·3	40·2	40·0

Mag.	Nombres y Números	A.H.S.							Declinación							
			ENE.	FEB.	MAR.	ABR.	MAY.	JUN.		ENE.	FEB.	MAR.	ABR.	MAY.	JUN.	
		°	'	'	'	'	'	'	°	'	'	'	'	'	'	
3.1	γ Ursæ Minoris	129	50.0	49.5	48.9	48.6	48.5	48.7	N 71	46.8	46.7	46.8	46.9	47.1	47.2	
2.9	γ Trianguli Aust.	129	56.3	55.7	55.2	54.8	54.6	54.6	S 68	43.5	43.5	43.6	43.7	43.9	44.0	
2.6	β Libræ	130	33.5	33.3	33.1	32.9	32.8	32.8	S 9	26.0	26.1	26.1	26.1	26.1	26.1	
2.7	β Lupi	135	08.0	07.7	07.4	07.3	07.1	07.1	S 43	11.2	11.2	11.3	11.4	11.5	11.6	
2.8	α Libræ	39 137	05.1	04.8	04.6	04.5	04.4	04.4	S 16	05.9	06.0	06.0	06.1	06.1	06.1	
2.1	β Ursæ Minoris	40	137	20.6	20.0	19.4	19.1	19.0	19.3	N 74	05.6	05.6	05.6	05.8	05.9	06.1
2.4	ε Bootis	138	36.0	35.8	35.6	35.5	35.4	35.4	N 27	00.8	00.7	00.7	00.8	00.9	01.0	
2.3	α Lupi	139	16.8	16.5	16.2	16.0	15.9	15.9	S 47	26.6	26.7	26.8	26.9	27.0	27.1	
—0.3	α Centauri	38	139	51.2	50.8	50.5	50.2	50.1	50.2	S 60	53.2	53.3	53.4	53.5	53.7	53.8
2.3	η Centauri		140	53.8	53.5	53.2	53.1	53.0	53.0	S 42	12.9	13.0	13.1	13.2	13.3	13.3
3.0	γ Bootis		141	50.4	50.2	49.9	49.8	49.8	49.8	N 38	14.6	14.6	14.6	14.7	14.8	14.9
0.0	α Bootis	37	145	55.4	55.2	55.0	54.9	54.9	54.9	N 19	06.4	06.4	06.4	06.4	06.5	06.6
2.1	θ Centauri	36	148	07.1	06.8	06.6	06.5	06.4	06.5	S 36	26.1	26.2	26.3	26.4	26.5	26.6
0.6	β Centauri	35	148	47.3	46.9	46.6	46.4	46.3	46.4	S 60	26.1	26.2	26.3	26.5	26.6	26.7
2.6	ζ Centauri		150	53.4	53.1	52.8	52.7	52.7	52.7	S 47	21.2	21.3	21.4	21.5	21.6	21.7
2.7	η Bootis		151	09.6	09.4	09.2	09.1	09.1	09.1	N 18	19.5	19.4	19.4	19.5	19.6	19.6
1.9	η Ursæ Majoris	34	152	58.7	58.4	58.1	58.0	58.0	58.2	N 49	14.3	14.3	14.3	14.5	14.6	14.7
2.3	ε Centauri		154	47.9	47.5	47.3	47.1	47.1	47.2	S 53	32.0	32.1	32.2	32.4	32.5	32.6
1.0	α Virginis	33	158	30.8	30.6	30.4	30.3	30.3	30.4	S 11	14.1	14.2	14.2	14.3	14.3	14.2
2.3	ζ Ursæ Majoris		158	52.7	52.4	52.1	52.1	52.1	52.3	N 54	50.8	50.8	50.9	51.0	51.2	51.3
2.8	ι Centauri		159	38.8	38.6	38.4	38.3	38.3	38.4	S 36	47.0	47.1	47.2	47.4	47.4	47.5
2.8	ε Virginis		164	16.7	16.5	16.3	16.3	16.3	16.3	N 10	52.9	52.8	52.8	52.8	52.9	52.9
2.9	α Canum Venat.		165	49.6	49.4	49.2	49.2	49.2	49.3	N 38	14.3	14.3	14.3	14.4	14.5	14.6
1.8	ε Ursæ Majoris	32	166	20.3	20.0	19.8	19.7	19.8	20.0	N 55	52.7	52.7	52.8	52.9	53.1	53.1
1.3	β Crucis		167	51.2	50.8	50.6	50.6	50.6	50.8	S 59	45.7	45.8	46.0	46.1	46.3	46.3
2.9	γ Virginis		169	24.2	24.0	23.9	23.8	23.8	23.9	S 1	31.7	31.8	31.8	31.8	31.8	31.8
2.2	γ Centauri		169	25.1	24.8	24.6	24.6	24.6	24.7	S 49	02.0	02.2	02.3	02.5	02.6	02.6
2.7	α Muscæ		170	28.7	28.2	28.0	27.9	28.0	28.3	S 69	12.5	12.7	12.8	13.0	13.1	13.2
2.7	β Corvi		171	12.8	12.6	12.4	12.4	12.4	12.5	S 23	28.4	28.5	28.6	28.7	28.8	28.8
1.6	γ Crucis	31	171	60.2	59.8	59.7	59.6	59.7	59.9	S 57	11.3	11.4	11.6	11.8	11.9	11.9
1.3	α Crucis	30	173	08.5	08.1	07.9	07.9	08.0	08.2	S 63	10.4	10.5	10.7	10.9	11.0	11.1
2.6	γ Corvi	29	175	51.7	51.5	51.4	51.4	51.4	51.5	S 17	37.2	37.3	37.4	37.5	37.5	37.5
2.6	δ Centauri		177	43.1	42.8	42.7	42.7	42.8	42.9	S 50	47.9	48.0	48.2	48.3	48.4	48.5
2.4	γ Ursæ Majoris		181	21.3	21.0	20.9	20.9	21.1	21.3	N 53	36.6	36.7	36.8	36.9	37.0	37.1
2.1	β Leonis	28	182	33.1	32.9	32.8	32.8	32.9	33.0	N 14	29.4	29.4	29.4	29.4	29.4	29.5
2.6	δ Leonis		191	16.9	16.7	16.6	16.7	16.8	16.8	N 20	26.5	26.5	26.5	26.6	26.6	26.7
3.0	ψ Ursæ Majoris		192	23.0	22.7	22.7	22.7	22.9	23.0	N 44	25.0	25.0	25.1	25.2	25.3	25.3
1.8	α Ursæ Majoris	27	193	50.9	50.6	50.5	50.6	50.8	51.1	N 61	40.1	40.2	40.3	40.5	40.6	40.6
2.4	β Ursæ Majoris		194	19.4	19.2	19.1	19.2	19.4	19.6	N 56	18.1	18.1	18.2	18.4	18.4	18.5
2.7	μ Velorum		198	08.7	08.5	08.5	08.6	08.8	08.9	S 49	29.6	29.8	30.0	30.1	30.2	30.2
2.8	θ Carinæ		199	07.2	07.0	06.9	07.1	07.4	07.7	S 64	28.0	28.2	28.4	28.5	28.6	28.6
2.3	γ Leonis		204	48.4	48.3	48.3	48.3	48.4	48.5	N 19	45.9	45.9	45.9	46.0	46.0	46.1
1.4	α Leonis	26	207	42.8	42.7	42.7	42.7	42.8	42.9	N 11	53.7	53.6	53.6	53.6	53.7	53.7
3.0	ε Leonis		213	19.9	19.8	19.8	19.9	20.0	20.1	N 23	42.3	42.3	42.3	42.4	42.4	42.4
3.1	N Velorum		217	04.5	04.4	04.4	04.7	04.9	05.1	S 57	05.8	06.0	06.2	06.3	06.3	06.3
2.0	α Hydræ	25	217	55.4	55.3	55.3	55.4	55.5	55.6	S 8	43.4	43.5	43.5	43.6	43.5	43.5
2.5	κ Velorum		219	21.0	20.9	21.0	21.2	21.4	21.7	S 55	04.3	04.5	04.6	04.7	04.8	04.7
2.2	ι Carinæ		220	37.2	37.1	37.2	37.4	37.7	38.0	S 59	20.1	20.3	20.5	20.6	20.6	20.6
1.7	β Carinæ	24	221	38.6	38.5	38.7	39.1	39.5	39.9	S 69	46.5	46.7	46.9	47.0	47.1	47.0
2.2	λ Velorum	23	222	51.7	51.6	51.7	51.8	52.0	52.2	S 43	29.5	29.6	29.8	29.9	29.9	29.8
3.1	ι Ursæ Majoris		224	57.0	56.9	56.9	57.1	57.3	57.4	N 47	58.9	58.9	59.0	59.1	59.1	59.1
2.0	δ Velorum		228	42.8	42.8	43.0	43.2	43.4	43.7	S 54	45.7	45.9	46.1	46.1	46.2	46.1
1.9	ε Carinæ	22	234	17.1	17.1	17.3	17.6	17.9	18.2	S 59	33.4	33.6	33.7	33.8	33.8	33.7
1.8	γ Velorum		237	29.8	29.9	30.0	30.2	30.4	30.6	S 47	22.9	23.0	23.1	23.2	23.2	23.1
2.8	ρ Puppis		237	57.3	57.3	57.4	57.5	57.7	57.8	S 24	20.9	21.0	21.1	21.2	21.1	21.1
2.3	ζ Puppis		238	58.2	58.2	58.3	58.5	58.7	58.8	S 40	02.8	02.9	03.0	03.1	03.1	03.0
1.1	β Geminorum	21	243	26.8	26.8	26.9	27.1	27.2	27.2	N 27	59.3	59.3	59.3	59.3	59.3	59.3
0.4	α Canis Minoris	20	244	58.9	58.9	59.0	59.2	59.3	59.3	N 5	11.1	11.0	11.0	11.0	11.0	11.1

Mag.	Nombres y Números	A.H.S.							Declinación						
			JUL.	AGO.	SEP.	OCT.	NOV.	DIC.		JUL.	AGO.	SEP.	OCT.	NOV.	DIC.
			°	'	'	'	'	'		°	'	'	'	'	'
3·1	γ Ursæ Minoris		129	49·0	49·5	50·1	50·5	50·6	50·5	N 71	47·3	47·3	47·3	47·1	47·0
2·9	γ Trianguli Aust.		129	54·8	55·1	55·5	55·8	55·5	55·5	S 68	44·1	44·1	44·1	44·0	43·8
2·6	β Libræ		130	32·8	32·9	33·1	33·1	33·1	33·0	S 9	26·1	26·0	26·0	26·0	26·1
2·7	β Lupi		135	07·2	07·4	07·5	07·6	07·6	07·4	S 43	11·6	11·6	11·5	11·5	11·3
2·8	Zubenelgenubi 39		137	04·4	04·5	04·7	04·7	04·7	04·5	S 16	06·1	06·0	06·0	06·0	06·0
2·1	Kochab 40		137	19·8	20·4	20·9	21·3	21·4	21·2	N 74	06·1	06·1	06·1	05·9	05·7
2·4	ε Bootis		138	35·5	35·6	35·8	35·9	35·8	35·7	N 27	01·1	01·1	01·1	01·0	00·9
2·3	α Lupi		139	16·0	16·2	16·4	16·4	16·4	16·2	S 47	27·1	27·1	27·1	27·0	26·8
-0·3	Rigil Kent. 38		139	50·4	50·6	50·9	51·0	51·0	50·7	S 60	53·8	53·8	53·8	53·6	53·5
2·3	η Centauri		140	53·1	53·2	53·4	53·4	53·4	53·2	S 42	13·4	13·4	13·3	13·2	13·1
3·0	γ Bootis		141	49·9	50·1	50·2	50·3	50·2	50·2	N 38	15·0	15·0	15·0	14·9	14·7
0·0	Arcturus 37		145	55·0	55·1	55·2	55·3	55·2	55·1	N 19	06·6	06·6	06·6	06·5	06·4
2·1	Menkent 36		148	06·5	06·7	06·8	06·9	06·8	06·6	S 36	26·6	26·5	26·5	26·4	26·3
0·6	Hadad 35		148	46·6	46·8	47·0	47·1	47·0	46·7	S 60	26·8	26·8	26·7	26·5	26·4
2·6	ζ Centauri		150	52·8	53·0	53·2	53·2	53·1	52·9	S 47	21·7	21·7	21·6	21·5	21·4
2·7	η Bootis		151	09·2	09·3	09·4	09·5	09·4	09·2	N 18	19·7	19·7	19·7	19·6	19·5
1·9	Alkaid 34		152	58·3	58·5	58·7	58·7	58·7	58·5	N 49	14·8	14·7	14·7	14·5	14·3
2·3	ε Centauri		154	47·4	47·6	47·7	47·8	47·6	47·4	S 53	32·6	32·6	32·5	32·4	32·3
1·0	Spica 33		158	30·4	30·5	30·6	30·6	30·5	30·3	S 11	14·2	14·2	14·1	14·1	14·2
2·3	Mizar		158	52·5	52·7	52·8	52·9	52·8	52·6	N 54	51·3	51·3	51·1	51·0	50·8
2·8	ι Centauri		159	38·5	38·6	38·7	38·7	38·6	38·4	S 36	47·5	47·4	47·3	47·3	47·2
2·8	ε Virginis		164	16·4	16·5	16·6	16·6	16·5	16·3	N 10	53·0	53·0	53·0	52·9	52·8
2·9	Cor Caroli		165	49·5	49·6	49·7	49·7	49·6	49·3	N 38	14·6	14·6	14·5	14·4	14·2
1·8	Alloth 32		166	20·2	20·4	20·5	20·6	20·4	20·1	N 55	53·2	53·1	53·0	52·8	52·6
1·3	Mimosa		167	51·0	51·2	51·4	51·4	51·2	50·8	S 59	46·4	46·3	46·2	46·0	45·9
2·9	γ Virginis		169	24·0	24·1	24·1	24·1	24·0	23·8	S 1	31·7	31·7	31·7	31·7	31·8
2·2	Muhlifain		169	24·9	25·1	25·2	25·1	25·0	24·7	S 49	02·6	02·5	02·4	02·3	02·2
2·7	α Muscæ		170	28·7	29·0	29·2	29·2	28·9	28·4	S 69	13·2	13·2	13·0	12·9	12·8
2·7	β Corvi		171	12·6	12·7	12·7	12·7	12·6	12·3	S 23	28·7	28·7	28·6	28·6	28·6
1·6	Gacrux 31		171	60·1	60·3	60·4	60·3	60·1	59·8	S 57	11·9	11·9	11·7	11·6	11·5
1·3	Acrux 30		173	08·4	08·7	08·8	08·8	08·5	08·1	S 63	11·1	11·0	10·9	10·7	10·6
2·6	Gienah 29		175	51·6	51·7	51·7	51·7	51·5	51·3	S 17	37·4	37·4	37·3	37·3	37·4
2·6	δ Centauri		177	43·1	43·3	43·3	43·3	43·1	42·7	S 50	48·5	48·4	48·2	48·1	48·1
2·4	Phecda		181	21·4	21·6	21·6	21·6	21·3	21·0	N 53	37·1	37·0	36·8	36·7	36·5
2·1	Denebola 28		182	33·0	33·1	33·1	33·1	32·9	32·7	N 14	29·5	29·5	29·5	29·4	29·3
2·6	δ Leonis		191	16·9	17·0	17·0	16·9	16·7	16·4	N 20	26·7	26·7	26·6	26·5	26·4
3·0	ψ Ursæ Majoris		192	23·1	23·2	23·2	23·1	22·8	22·5	N 44	25·3	25·2	25·1	25·0	24·8
1·8	Dubhe 27		193	51·3	51·4	51·4	51·3	50·9	50·5	N 61	40·5	40·4	40·2	40·1	39·9
2·4	Merak		194	19·8	19·9	19·8	19·7	19·4	19·0	N 56	18·4	18·3	18·2	18·0	17·9
2·7	μ Velorum		198	09·1	09·2	09·2	09·0	08·7	08·4	S 49	30·1	30·0	29·8	29·7	29·8
2·8	θ Carinæ		199	07·9	08·1	08·1	07·9	07·5	07·1	S 64	28·6	28·4	28·3	28·2	28·1
2·3	Algeiba		204	48·6	48·6	48·5	48·4	48·2	47·9	N 19	46·1	46·0	46·0	45·9	45·8
1·4	Regulus 26		207	43·0	43·0	42·9	42·8	42·6	42·3	N 11	53·7	53·7	53·7	53·6	53·5
3·0	ε Leonis		213	20·1	20·1	20·0	19·8	19·6	19·4	N 23	42·4	42·4	42·3	42·2	42·1
3·1	N Velorum		217	05·3	05·3	05·2	05·0	04·6	04·3	S 57	06·2	06·0	05·9	05·8	05·9
2·0	Alphard 25		217	55·6	55·6	55·5	55·4	55·1	54·9	S 8	43·4	43·4	43·3	43·3	43·4
2·5	κ Velorum		219	21·8	21·8	21·7	21·5	21·1	20·8	S 55	04·6	04·5	04·3	04·3	04·4
2·2	ι Carinæ		220	38·1	38·2	38·0	37·8	37·4	37·0	S 59	20·4	20·3	20·1	20·1	20·2
1·7	Miaplacidus 24		221	40·2	40·3	40·1	39·7	39·2	38·7	S 69	46·9	46·7	46·6	46·5	46·6
2·2	Suhail 23		222	52·2	52·2	52·1	51·9	51·6	51·4	S 43	29·7	29·6	29·5	29·4	29·5
3·1	ι Ursæ Majoris		224	57·5	57·4	57·2	57·0	56·7	56·3	N 47	59·0	58·9	58·8	58·7	58·6
2·0	δ Velorum		228	43·8	43·7	43·6	43·3	43·0	42·7	S 54	46·0	45·8	45·7	45·6	45·8
1·9	Avior 22		234	18·3	18·2	18·0	17·7	17·3	17·0	S 59	33·6	33·4	33·3	33·2	33·4
1·8	γ Velorum		237	30·6	30·5	30·4	30·1	29·8	29·6	S 47	23·0	22·8	22·7	22·7	22·8
2·8	ρ Puppis		237	57·8	57·7	57·5	57·3	57·1	56·9	S 24	21·0	20·8	20·8	20·8	20·9
2·3	ζ Puppis		238	58·8	58·8	58·6	58·4	58·1	57·9	S 40	02·8	02·7	02·6	02·6	02·8
1·1	Póllux 21		243	27·2	27·1	26·9	26·7	26·4	26·2	N 27	59·3	59·3	59·2	59·2	59·1
0·4	Procyon 20		244	59·3	59·2	59·0	58·8	58·6	58·4	N 5	11·1	11·1	11·1	11·1	11·0

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			ENE.	FEB.	MAR.	ABR.	MAY.	JUN.		ENE.	FEB.	MAR.	ABR.	MAY.	JUN.
		°	/	/	/	/	/	/	°	/	/	/	/	/	/
1-6	α Geminorum	246	07-1	07-0	07-1	07-3	07-4	07-5	N 31	51-2	51-2	51-2	51-3	51-3	51-2
3-3	σ Puppis	247	34-2	34-3	34-4	34-7	34-8	34-9	S 43	20-0	20-2	20-3	20-3	20-3	20-2
2-9	β Canis Minoris	248	00-8	00-8	00-9	01-0	01-1	01-2	N 8	15-4	15-4	15-4	15-4	15-4	15-4
2-4	η Canis Majoris	248	49-7	49-7	49-8	50-0	50-2	50-2	S 29	20-1	20-2	20-3	20-3	20-3	20-2
2-7	π Puppis	250	34-8	34-9	35-0	35-2	35-4	35-5	S 37	07-6	07-7	07-8	07-9	07-8	07-7
1-8	δ Canis Majoris	252	45-0	45-1	45-2	45-4	45-5	45-5	S 26	25-2	25-3	25-4	25-4	25-3	25-2
3-0	ϕ Canis Majoris	254	05-3	05-3	05-5	05-6	05-8	05-8	S 23	51-5	51-6	51-7	51-7	51-6	51-5
1-5	ϵ Canis Majoris	19 255	11-8	11-8	12-0	12-2	12-3	12-3	S 28	59-7	59-9	59-9	59-9	59-9	59-8
2-9	τ Puppis	257	25-1	25-2	25-4	25-7	25-9	26-0	S 50	38-1	38-3	38-4	38-4	38-3	38-2
-1-5	α Canis Majoris	18 258	33-0	33-0	33-2	33-3	33-4	33-4	S 16	44-4	44-5	44-5	44-5	44-5	44-4
1-9	γ Geminorum	260	21-6	21-7	21-8	21-9	22-0	22-0	N 16	23-0	23-0	23-0	23-0	23-0	23-0
-0-7	α Carinae	17 263	55-4	55-6	55-8	56-1	56-3	56-4	S 52	42-5	42-6	42-7	42-7	42-6	42-5
2-0	β Canis Majoris	264	09-7	09-8	09-9	10-1	10-2	10-2	S 17	58-1	58-1	58-2	58-2	58-1	58-0
2-6	θ Aurigæ	269	49-2	49-3	49-4	49-6	49-7	49-7	N 37	12-6	12-7	12-7	12-7	12-6	12-6
1-9	β Aurigæ	269	50-9	51-0	51-2	51-4	51-5	51-5	N 44	56-8	56-8	56-8	56-8	56-8	56-7
Var.‡	α Orionis	16 271	00-5	00-6	00-7	00-8	00-9	00-9	N 7	24-3	24-3	24-3	24-3	24-3	24-4
2-1	κ Orionis	272	53-2	53-3	53-4	53-5	53-6	53-6	S 9	40-1	40-2	40-2	40-2	40-2	40-1
1-9	ζ Orionis	274	37-5	37-6	37-7	37-8	37-9	37-9	S 1	56-4	56-4	56-4	56-4	56-4	56-3
2-6	α Columbæ	274	57-2	57-3	57-4	57-6	57-7	57-7	S 34	04-3	04-4	04-4	04-4	04-3	04-2
3-0	ζ Tauri	275	22-2	22-3	22-4	22-5	22-6	22-6	N 21	08-9	08-9	08-9	08-9	08-9	08-8
1-7	ϵ Orionis	15 275	45-6	45-7	45-8	46-0	46-0	46-0	S 1	11-8	11-9	11-9	11-9	11-8	11-8
2-8	ι Orionis	275	57-7	57-8	57-9	58-1	58-1	58-1	S 5	54-3	54-4	54-4	54-4	54-3	54-2
2-6	α Leporis	276	39-3	39-4	39-5	39-7	39-8	39-7	S 17	49-0	49-1	49-1	49-1	49-0	48-9
2-2	δ Orionis	276	48-7	48-7	48-9	49-0	49-1	49-0	S 0	17-6	17-6	17-6	17-6	17-6	17-5
2-8	β Leporis	277	46-8	46-9	47-1	47-2	47-3	47-3	S 20	45-2	45-3	45-3	45-3	45-2	45-1
1-7	β Tauri	14 278	11-7	11-8	12-0	12-1	12-2	12-1	N 28	37-0	37-0	37-0	37-0	37-0	36-9
1-6	γ Orionis	13 278	31-3	31-3	31-5	31-6	31-7	31-6	N 6	21-5	21-5	21-5	21-5	21-5	21-5
0-1	α Aurigæ	12 280	33-4	33-5	33-7	33-9	34-0	33-9	N 46	00-6	00-7	00-7	00-6	00-6	00-5
0-1	β Orionis	11 281	11-4	11-4	11-6	11-7	11-8	11-7	S 8	11-4	11-4	11-5	11-4	11-4	11-3
2-8	β Eridani	282	51-5	51-5	51-7	51-8	51-9	51-8	S 5	04-3	04-4	04-4	04-4	04-3	04-3
2-7	ι Aurigæ	285	30-8	30-9	31-0	31-2	31-2	31-2	N 33	11-2	11-2	11-2	11-2	11-1	11-1
0-9	α Tauri	10 290	48-6	48-7	48-8	49-0	49-0	48-9	N 16	32-1	32-1	32-1	32-1	32-1	32-1
2-9	ϵ Persei	300	17-5	17-6	17-8	17-9	17-9	17-8	N 40	03-0	03-0	03-0	03-0	02-9	02-8
3-0	γ Eridani	300	19-4	19-5	19-6	19-7	19-8	19-7	S 13	28-4	28-4	28-4	28-4	28-3	28-2
2-9	ζ Persei	301	14-2	14-4	14-5	14-6	14-6	14-5	N 31	55-5	55-5	55-4	55-4	55-4	55-3
2-9	η Tauri	302	54-7	54-8	55-0	55-1	55-1	55-0	N 24	08-8	08-8	08-8	08-8	08-7	08-8
1-8	α Persei	9 308	39-4	39-6	39-8	39-9	39-9	39-7	N 49	54-7	54-7	54-7	54-6	54-5	54-5
Var.§	β Persei	312	43-2	43-4	43-5	43-6	43-6	43-4	N 41	00-6	00-6	00-6	00-5	00-4	00-4
2-5	α Ceti	8 314	14-5	14-6	14-7	14-8	14-7	14-6	N 4	08-6	08-5	08-5	08-5	08-6	08-6
3-2	θ Eridani	7 315	17-9	18-1	18-2	18-3	18-3	18-2	S 40	15-2	15-3	15-2	15-1	14-9	14-8
2-0	α Ursæ Minoris	317	24-5	24-5	24-6	24-7	24-8	24-8	N 89	19-7	19-7	19-7	19-5	19-4	19-3
3-0	β Trianguli	327	23-9	24-0	24-2	24-2	24-1	23-9	N 35	03-3	03-3	03-2	03-1	03-1	03-1
2-0	α Arietis	6 328	00-2	00-3	00-4	00-4	00-4	00-2	N 23	31-8	31-7	31-7	31-6	31-6	31-7
2-3	γ Andromedæ	328	48-1	48-3	48-4	48-5	48-4	48-1	N 42	24-0	23-9	23-9	23-8	23-7	23-7
2-9	α Hydri	330	11-9	12-1	12-4	12-5	12-4	12-2	S 61	30-4	30-4	30-3	30-1	30-0	29-8
2-6	β Arietis	331	08-5	08-6	08-7	08-7	08-6	08-4	N 20	52-6	52-6	52-5	52-5	52-5	52-5
0-5	α Eridani	5 335	26-5	26-8	26-9	27-0	26-9	26-7	S 57	10-3	10-2	10-1	09-9	09-8	09-6
2-7	δ Cassiopeiæ	338	18-4	18-6	18-8	18-9	18-7	18-3	N 60	18-8	18-7	18-6	18-5	18-4	18-3
2-1	β Andromedæ	342	21-9	22-1	22-1	22-1	22-0	21-8	N 35	41-9	41-8	41-7	41-6	41-6	41-6
Var.||	γ Cassiopeiæ	345	36-2	36-4	36-6	36-5	36-3	36-0	N 60	47-9	47-8	47-7	47-5	47-4	47-4
2-0	β Ceti	4 348	55-6	55-6	55-7	55-7	55-5	55-3	S 17	54-7	54-7	54-7	54-6	54-5	54-3
2-2	α Cassiopeiæ	3 349	40-1	40-3	40-4	40-3	40-1	39-8	N 56	37-1	37-1	36-9	36-8	36-7	36-7
2-4	α Phœnicis	2 353	15-5	15-6	15-6	15-6	15-4	15-2	S 42	14-0	13-9	13-8	13-7	13-5	13-4
2-8	β Hydri	353	23-8	24-4	24-6	24-6	24-2	23-5	S 77	10-8	10-7	10-5	10-3	10-2	10-0
2-8	γ Pegasi	356	30-5	30-6	30-6	30-6	30-4	30-2	N 15	15-8	15-7	15-7	15-7	15-7	15-8
2-3	β Cassiopeiæ	357	30-8	31-0	31-1	31-0	30-7	30-4	N 59	13-9	13-8	13-7	13-6	13-5	13-5
2-1	α Andromedæ	1 357	43-2	43-2	43-3	43-2	43-0	42-8	N 29	10-2	10-2	10-1	10-0	10-0	10-1

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			JUL.	AGO.	SEP.	OCT.	NOV.	DIC.		JUL.	AGO.	SEP.	OCT.	NOV.	DIC.
1-6	<i>Castor</i>	246	07:4	07:3	07:1	06:9	06:6	06:4	N 31	51:2	51:2	51:1	51:1	51:0	51:0
3:3	σ Puppis	247	34:9	34:8	34:6	34:4	34:1	33:9	S 43	20:0	19:9	19:8	19:8	19:8	20:0
2:9	β Canis Minoris	248	01:1	01:0	00:8	00:6	00:4	00:2	N 8	15:4	15:5	15:5	15:4	15:4	15:3
2:4	η Canis Majoris	248	50:2	50:1	49:9	49:7	49:5	49:3	S 29	20:0	19:9	19:8	19:8	19:9	20:0
2:7	π Puppis	250	35:4	35:3	35:1	34:9	34:6	34:5	S 37	07:6	07:4	07:3	07:3	07:4	07:6
1:8	<i>Wezen</i>	252	45:5	45:4	45:2	45:0	44:8	44:6	S 26	25:1	25:0	24:9	24:9	25:0	25:1
3:0	α Canis Majoris	254	05:8	05:6	05:5	05:2	05:0	04:8	S 23	51:4	51:3	51:2	51:2	51:3	51:5
1:5	<i>Adhara</i>	255	12:3	12:2	12:0	11:8	11:5	11:3	S 28	59:7	59:5	59:5	59:5	59:5	59:7
2:9	τ Puppis	257	26:0	25:8	25:6	25:3	25:0	24:8	S 50	38:0	37:9	37:8	37:8	37:9	38:0
-1:5	<i>Sirius</i>	258	33:4	33:3	33:1	32:8	32:6	32:5	S 16	44:3	44:2	44:2	44:2	44:3	44:4
1:9	<i>Alhena</i>	260	21:9	21:8	21:6	21:4	21:1	21:0	N 16	23:0	23:0	23:0	23:0	23:0	22:9
-0:7	<i>Canopus</i>	263	56:3	56:2	55:9	55:6	55:3	55:1	S 52	42:3	42:1	42:1	42:1	42:2	42:3
2:0	<i>Mirzam</i>	264	10:1	10:0	09:8	09:6	09:3	09:2	S 17	57:9	57:8	57:8	57:8	57:9	58:0
2:6	θ Aurigæ	269	49:5	49:3	49:1	48:8	48:5	48:4	N 37	12:6	12:5	12:5	12:5	12:5	12:6
1:9	<i>Menkalinan</i>	269	51:3	51:1	50:8	50:5	50:2	50:0	N 44	56:6	56:6	56:6	56:6	56:6	56:7
Var.‡	<i>Betelgeuse</i>	16	270	60:8	60:6	60:4	60:2	60:0	N 7	24:4	24:5	24:5	24:5	24:4	24:4
2:1	κ Orionis	272	53:5	53:3	53:1	52:9	52:7	52:6	S 9	40:0	39:9	39:9	39:9	40:0	40:1
1:9	<i>Anitak</i>	274	37:8	37:6	37:4	37:2	37:0	36:9	S 1	56:2	56:2	56:1	56:1	56:2	56:3
2:6	<i>Phact</i>	274	57:6	57:5	57:2	57:0	56:8	56:7	S 34	04:0	03:9	03:9	03:9	04:0	04:2
3:0	ζ Tauri	275	22:5	22:3	22:0	21:8	21:6	21:5	N 21	08:9	08:9	08:9	08:9	08:9	08:9
1:7	<i>Alnilam</i>	15	275	45:9	45:7	45:5	45:3	45:1	S 1	11:7	11:6	11:6	11:6	11:7	11:7
2:8	ι Orionis	275	58:0	57:8	57:6	57:4	57:2	57:1	S 5	54:2	54:1	54:0	54:1	54:1	54:2
2:6	α Leporis	276	39:6	39:5	39:2	39:0	38:8	38:7	S 17	48:8	48:7	48:7	48:7	48:8	48:9
2:2	δ Orionis	276	48:9	48:7	48:5	48:3	48:1	48:0	S 0	17:4	17:4	17:3	17:4	17:4	17:5
2:8	β Leporis	277	47:2	47:0	46:8	46:6	46:4	46:3	S 20	45:0	44:9	44:8	44:8	44:9	45:0
1:7	<i>Elnath</i>	14	278	12:0	11:8	11:5	11:3	11:1	N 28	36:9	36:9	37:0	37:0	37:0	37:0
1:6	<i>Bellatrix</i>	13	278	31:5	31:3	31:1	30:9	30:7	N 6	21:6	21:7	21:7	21:7	21:6	21:6
0:1	<i>Capella</i>	12	280	33:7	33:5	33:1	32:8	32:6	N 46	00:5	00:4	00:4	00:5	00:5	00:6
0:1	<i>Rigel</i>	11	281	11:6	11:4	11:2	11:0	10:8	S 8	11:2	11:1	11:1	11:1	11:2	11:3
2:8	β Eridani	282	51:7	51:5	51:3	51:1	50:9	50:8	S 5	04:2	04:1	04:1	04:1	04:1	04:2
2:7	ι Aurigæ	285	31:0	30:8	30:5	30:3	30:1	29:9	N 33	11:1	11:1	11:1	11:1	11:2	11:2
0:9	<i>Aldebaran</i>	10	290	48:8	48:5	48:3	48:1	47:9	N 16	32:1	32:2	32:2	32:2	32:2	32:2
2:9	ϵ Persei	300	17:5	17:3	17:0	16:7	16:6	16:5	N 40	02:8	02:9	02:9	03:0	03:1	03:1
3:0	γ Eridani	300	19:5	19:3	19:1	18:9	18:8	18:7	S 13	28:1	28:0	28:0	28:0	28:1	28:1
2:9	ζ Persei	301	14:3	14:0	13:8	13:6	13:4	13:4	N 31	55:3	55:4	55:4	55:5	55:5	55:6
2:9	<i>Alcyone</i>	302	54:8	54:5	54:3	54:1	54:0	53:9	N 24	08:8	08:8	08:9	08:9	09:0	09:0
1:8	<i>Mirfak</i>	9	308	39:5	39:1	38:8	38:6	38:4	N 49	54:4	54:5	54:5	54:6	54:7	54:8
Var.§	<i>Algol</i>	312	43:1	42:9	42:6	42:4	42:3	42:2	N 41	00:4	00:5	00:5	00:6	00:7	00:8
2:5	<i>Menkar</i>	8	314	14:4	14:2	14:0	13:8	13:7	N 4	08:7	08:8	08:8	08:9	08:8	08:8
3:2	<i>Acamar</i>	7	315	18:0	17:7	17:5	17:3	17:2	S 40	14:6	14:6	14:6	14:7	14:8	14:9
2:0	<i>Polaris</i>	316	93:1	78:4	64:9	55:2	51:1	55:0	N 89	19:2	19:2	19:3	19:5	19:6	19:8
3:0	β Trianguli	327	23:6	23:4	23:2	23:0	23:0	23:0	N 35	03:1	03:2	03:3	03:4	03:5	03:5
2:0	<i>Hamal</i>	6	327	59:9	59:7	59:5	59:4	59:3	N 23	31:7	31:8	31:9	32:0	32:0	32:0
2:3	<i>Almak</i>	328	47:9	47:6	47:3	47:2	47:1	47:2	N 42	23:7	23:8	23:9	24:0	24:1	24:2
2:9	α Hydri	330	11:9	11:5	11:1	11:0	11:0	11:2	S 61	29:7	29:7	29:7	29:9	30:0	30:1
2:6	<i>Sheratan</i>	331	08:2	07:9	07:7	07:6	07:6	07:6	N 20	52:6	52:7	52:8	52:9	52:9	52:9
0:5	<i>Achernar</i>	5	335	26:4	26:0	25:7	25:6	25:6	S 57	09:5	09:5	09:6	09:7	09:8	10:0
2:7	<i>Ruchbah</i>	338	17:9	17:5	17:3	17:1	17:1	17:2	N 60	18:4	18:5	18:6	18:8	18:9	19:0
2:1	<i>Mirach</i>	342	21:5	21:2	21:1	21:0	21:0	21:0	N 35	41:7	41:8	41:9	42:0	42:1	42:1
Var.||	γ Cassiopeiæ	345	35:6	35:2	34:9	34:8	34:9	35:1	N 60	47:5	47:6	47:7	47:9	48:0	48:1
2:0	<i>Diphda</i>	4	348	55:1	54:9	54:7	54:7	54:8	S 17	54:2	54:2	54:2	54:2	54:3	54:4
2:2	<i>Schedar</i>	3	349	39:4	39:1	38:9	38:8	38:9	N 56	36:8	36:9	37:1	37:2	37:4	37:4
2:4	<i>Ankaa</i>	2	353	14:9	14:7	14:5	14:5	14:7	S 42	13:3	13:3	13:4	13:5	13:6	13:7
2:8	β Hydri	353	22:7	22:0	21:6	21:6	21:9	22:5	S 77	10:0	10:0	10:2	10:3	10:5	10:5
2:8	<i>Algenib</i>	356	29:9	29:7	29:6	29:6	29:6	29:7	N 15	15:9	16:0	16:1	16:1	16:1	16:1
2:3	<i>Caph</i>	357	30:0	29:7	29:5	29:5	29:6	29:8	N 59	13:6	13:7	13:9	14:1	14:2	14:3
2:1	<i>Alpheratz</i>	1	357	42:5	42:3	42:2	42:2	42:3	N 29	10:2	10:3	10:4	10:5	10:6	10:6

‡ 0:1 — 1:2 § 2:1 — 3:4 || Variable Irregular: 2012 mag. 2 • 1

TABLAS PARA LA ESTRELLA POLAR (POLARIS), 2014
DETERMINACIÓN DE LA LATITUD Y DEL Azv A PARTIR DE LA ALTURA DEL SEXTANTE

A.H.L. ARIES	0° – 9°	10° – 19°	20° – 29°	30° – 39°	40° – 49°	50° – 59°	60° – 69°	70° – 79°	80° – 89°	90° – 99°	100° – 109°	110° – 119°
	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0
0	29.1	24.8	21.5	19.3	18.3	18.6	20.2	22.9	26.7	31.5	37.2	43.5
1	28.6	24.4	21.2	19.1	18.3	18.7	20.4	23.2	27.2	32.1	37.8	44.1
2	28.2	24.0	20.9	19.0	18.3	18.9	20.6	23.6	27.6	32.6	38.4	44.8
3	27.7	23.7	20.7	18.9	18.3	19.0	20.9	23.9	28.1	33.2	39.0	45.5
4	27.3	23.3	20.4	18.8	18.3	19.1	21.1	24.3	28.5	33.7	39.6	46.1
5	26.8	23.0	20.2	18.7	18.3	19.3	21.4	24.7	29.0	34.3	40.3	46.8
6	26.4	22.6	20.0	18.6	18.4	19.4	21.7	25.1	29.5	34.8	40.9	47.5
7	26.0	22.3	19.8	18.5	18.4	19.6	22.0	25.5	30.0	35.4	41.5	48.2
8	25.6	22.0	19.6	18.4	18.5	19.8	22.3	25.9	30.5	36.0	42.2	48.9
9	25.2	21.7	19.5	18.4	18.6	20.0	22.6	26.3	31.0	36.6	42.8	49.5
10	24.8	21.5	19.3	18.3	18.6	20.2	22.9	26.7	31.5	37.2	43.5	50.2
Lat.	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1
0	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3
10	.5	.5	.6	.6	.6	.6	.6	.5	.5	.4	.4	.4
20	.5	.6	.6	.6	.6	.6	.6	.5	.5	.5	.4	.4
30	.5	.6	.6	.6	.6	.6	.6	.6	.5	.5	.5	.5
40	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5
45	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6
50	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6
55	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.6	.7
60	.6	.6	.6	.6	.6	.6	.6	.6	.7	.7	.7	.7
62	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
64	.7	.6	.6	.6	.6	.6	.6	.7	.7	.7	.8	.8
66	.7	.7	.6	.6	.6	.6	.6	.7	.7	.8	.8	.8
68	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9
Mes	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2
Ene.	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7
Feb.	.7	.7	.8	.8	.8	.9	.9	.9	.9	.9	.8	.8
Mar.	.5	.6	.7	.7	.8	.8	.9	.9	.9	.9	.9	0.9
Abr.	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.9	1.0
May.	.3	.3	.4	.4	.5	.6	.6	.7	.7	.8	.9	0.9
Jun.	.2	.3	.3	.3	.4	.4	.5	.5	.6	.7	.7	.8
Jul.	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6	0.6
Ago.	.4	.4	.3	.3	.3	.3	.3	.3	.3	.4	.4	.5
Sep.	.6	.5	.5	.4	.4	.4	.3	.3	.3	.3	.3	.3
Oct.	0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3
Nov.	0.9	0.9	0.8	.8	.7	.7	.6	.5	.4	.4	.3	.3
Dic.	1.0	1.0	1.0	0.9	0.9	0.8	0.7	0.7	0.6	0.5	0.4	0.4
Lat.	Azv											
0	0.4	0.3	0.2	0.1	0.0	359.9	359.7	359.6	359.5	359.5	359.4	359.4
20	0.4	0.3	0.2	0.1	0.0	359.8	359.7	359.6	359.5	359.4	359.4	359.3
40	0.5	0.4	0.3	0.1	0.0	359.8	359.7	359.5	359.4	359.3	359.2	359.2
50	0.6	0.5	0.3	0.1	0.0	359.8	359.6	359.4	359.3	359.2	359.1	359.0
55	0.7	0.6	0.4	0.2	359.9	359.7	359.5	359.4	359.2	359.1	358.9	358.9
60	0.8	0.6	0.4	0.2	359.9	359.7	359.5	359.3	359.1	358.9	358.8	358.7
65	1.0	0.8	0.5	0.2	359.9	359.6	359.4	359.1	358.9	358.7	358.6	358.5

$$\text{Latitud} = \text{Altura verdadera (Av)} - 1^\circ + a_0 + a_1 + a_2$$

Se entra a la tabla con el AHL de Aries para determinar la columna que se debe usar; cada columna se refiere a un rango de 10°. a_0 se toma de la tabla superior, mediante interpolación mental, con las unidades del AHL de Aries en grados, como argumento; a_1 , a_2 se toman de la segunda y tercera tabla sin interpolación, usando la latitud y el mes como argumento respectivamente; a_0 , a_1 , a_2 son siempre positivas.

La tabla final da el Azv de "Polaris", utilizando como argumentos de entrada el AHL de Aries y la Lat.

TABLAS PARA LA ESTRELLA POLAR (POLARIS), 2014
DETERMINACIÓN DE LA LATITUD Y DEL Azv A PARTIR DE LA ALTURA DEL SEXTANTE

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A.H.L. ARIES	120° – 129°	130° – 139°	140° – 149°	150° – 159°	160° – 169°	170° – 179°	180° – 189°	190° – 199°	200° – 209°	210° – 219°	220° – 229°	230° – 239°
	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0
°	°	°	°	°	°	°	°	°	°	°	°	°
0	0 50·2	0 57·2	I 04·3	I 11·2	I 17·7	I 23·6	I 28·7	I 33·0	I 36·2	I 38·3	I 39·3	I 39·0
1	50·9	58·0	05·0	11·8	18·3	24·1	29·2	33·4	36·5	38·5	39·3	38·9
2	51·6	58·7	05·7	12·5	18·9	24·7	29·7	33·7	36·7	38·6	39·3	38·8
3	52·3	0 59·4	06·4	13·2	19·5	25·2	30·1	34·1	37·0	38·7	39·3	38·6
4	53·0	I 00·1	07·1	13·8	20·1	25·7	30·6	34·4	37·2	38·9	39·3	38·5
5	0 53·7	I 00·8	I 07·8	I 14·5	I 20·7	I 26·3	I 31·0	I 34·8	I 37·4	I 38·9	I 39·3	I 38·4
6	54·4	01·5	08·5	15·1	21·3	26·8	31·4	35·1	37·6	39·0	39·2	38·2
7	55·1	02·2	09·1	15·8	21·9	27·3	31·8	35·4	37·8	39·1	39·2	38·0
8	55·8	02·9	09·8	16·4	22·4	27·8	32·2	35·7	38·0	39·2	39·1	37·9
9	56·5	03·6	10·5	17·0	23·0	28·3	32·6	36·0	38·2	39·2	39·1	37·7
10	0 57·2	I 04·3	I 11·2	I 17·7	I 23·6	I 28·7	I 33·0	I 36·2	I 38·3	I 39·3	I 39·0	I 37·5
Lat.	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1
°	°	°	°	°	°	°	°	°	°	°	°	°
0	0·3	0·3	0·3	0·4	0·4	0·4	0·5	0·5	0·6	0·6	0·6	0·6
10	·4	·4	·4	·4	·4	·5	·5	·5	·6	·6	·6	·6
20	·4	·4	·4	·4	·5	·5	·5	·6	·6	·6	·6	·6
30	·5	·5	·5	·5	·5	·5	·5	·6	·6	·6	·6	·6
40	0·5	0·5	0·5	0·5	0·5	0·6	0·6	0·6	0·6	0·6	0·6	0·6
45	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6
50	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6
55	·7	·7	·7	·6	·6	·6	·6	·6	·6	·6	·6	·6
60	·7	·7	·7	·7	·7	·7	·6	·6	·6	·6	·6	·6
62	0·8	0·8	0·8	0·7	0·7	0·7	0·7	0·6	0·6	0·6	0·6	0·6
64	·8	·8	·8	·8	·7	·7	·7	·6	·6	·6	·6	·6
66	·8	·9	·8	·8	·8	·7	·7	·7	·6	·6	·6	·6
68	0·9	0·9	0·9	0·9	0·8	0·8	0·7	0·7	0·6	0·6	0·6	0·6
Mes	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2
°	°	°	°	°	°	°	°	°	°	°	°	°
Ene.	0·6	0·6	0·6	0·5	0·5	0·5	0·4	0·4	0·4	0·4	0·4	0·4
Feb.	·8	·7	·7	·7	·6	·6	·5	·5	·4	·4	·4	·3
Mar.	0·9	0·9	0·8	·8	·8	·7	·7	·6	·5	·5	·4	·4
Abr.	1·0	1·0	1·0	0·9	0·9	0·9	0·8	0·7	0·7	0·6	0·6	0·5
May.	0·9	1·0	1·0	1·0	1·0	0·9	0·9	·9	·8	·8	·7	·6
Jun.	·8	0·9	0·9	0·9	0·9	1·0	1·0	·9	·9	·9	·8	·8
Jul.	0·7	0·7	0·8	0·8	0·9	0·9	0·9	0·9	0·9	0·9	0·9	0·9
Ago.	·5	·5	·6	·6	·7	·7	·8	·8	·9	·9	·9	·9
Sep.	·4	·4	·4	·5	·5	·6	·6	·7	·7	·8	·8	·8
Oct.	0·3	0·3	0·3	0·3	0·3	0·4	0·4	0·5	0·5	0·6	0·7	0·7
Nov.	·2	·2	·2	·2	·2	·2	·3	·3	·4	·4	·5	·5
Dic.	0·3	0·2	0·2	0·2	0·2	0·1	0·2	0·2	0·2	0·3	0·3	0·4
Lat.	Azv											
°	°	°	°	°	°	°	°	°	°	°	°	°
0	359·3	359·3	359·3	359·4	359·4	359·5	359·6	359·7	359·8	359·9	0·0	0·1
20	359·3	359·3	359·3	359·3	359·4	359·5	359·6	359·7	359·8	359·9	0·0	0·2
40	359·1	359·1	359·1	359·2	359·3	359·4	359·5	359·6	359·7	359·9	0·0	0·2
50	359·0	359·0	359·0	359·0	359·1	359·2	359·4	359·5	359·7	359·9	0·0	0·2
55	358·8	358·8	358·9	358·9	359·0	359·1	359·3	359·5	359·6	359·8	0·0	0·2
60	358·7	358·7	358·7	358·8	358·9	359·0	359·2	359·4	359·6	359·8	0·1	0·3
65	358·4	358·4	358·4	358·5	358·7	358·8	359·0	359·3	359·5	359·8	0·1	0·3

EJEMPLO			De las páginas diarias:	°	'	Av	49 31,6
El 21 de abril de 2014 a las 23 ^h 18 ^m 56 ^s UT			AHG de Aries (23 ^h)	194	56,2	a_0 (argumento 162° 27')	1 19,2
en longitud 37° 14' W la altura verdadera Av			Incremento (18 ^m 56 ^s)	4	44,8 (pág. xi)	a_1 (Latitud 50° aprox.)	0,6
de <i>Polaris</i> fue: 49° 31',6.			Longitud (oeste)	–37	14	a_2 (abril)	0,9
			A.H.L. Aries	162	27	Sum. –1° = Lat. =	49 52,3
Lat. = 49° 31',6			A.H.L. Aries = 162° 27'		Azv = 359,1°		

TABLAS PARA LA ESTRELLA POLAR (POLARIS), 2014
DETERMINACIÓN DE LA LATITUD Y DEL Azv A PARTIR DE LA ALTURA DEL SEXTANTE

A.H.L. ARIES	240° – 249°	250° – 259°	260° – 269°	270° – 279°	280° – 289°	290° – 299°	300° – 309°	310° – 319°	320° – 329°	330° – 339°	340° – 349°	350° – 359°
	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0	a_0
°	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /
0	I 37·5	I 34·8	I 31·1	I 26·4	I 20·8	I 14·6	I 07·9	I 00·9	O 53·9	O 46·9	O 40·4	O 34·4
1	37·3	34·5	30·6	25·8	20·2	14·0	07·2	I 00·2	53·2	46·3	39·8	33·8
2	37·0	34·2	30·2	25·3	19·6	13·3	06·5	O 59·5	52·5	45·6	39·1	33·3
3	36·8	33·8	29·8	24·8	19·0	12·6	05·8	58·8	51·8	44·9	38·5	32·7
4	36·5	33·4	29·3	24·2	18·4	12·0	05·1	58·1	51·1	44·3	37·9	32·2
5	I 36·3	I 33·1	I 28·8	I 23·7	I 17·8	I 11·3	I 04·4	O 57·4	O 50·4	O 43·6	O 37·3	O 31·6
6	36·0	32·7	28·4	23·1	17·2	10·6	03·7	56·7	49·7	43·0	36·7	31·1
7	35·7	32·3	27·9	22·6	16·5	10·0	03·0	56·0	49·0	42·3	36·1	30·6
8	35·4	31·9	27·4	22·0	15·9	09·3	02·3	55·3	48·3	41·7	35·5	30·1
9	35·1	31·5	26·9	21·4	15·3	08·6	01·6	54·6	47·6	41·0	35·0	29·6
10	I 34·8	I 31·1	I 26·4	I 20·8	I 14·6	I 07·9	I 00·9	O 53·9	O 46·9	O 40·4	O 34·4	O 29·1
Lat.	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1	a_1
°	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /
0	0·6	0·5	0·5	0·4	0·4	0·3	0·3	0·3	0·3	0·4	0·4	0·4
10	·6	·5	·5	·4	·4	·4	·4	·4	·4	·4	·4	·5
20	·6	·5	·5	·5	·4	·4	·4	·4	·4	·4	·5	·5
30	·6	·6	·5	·5	·5	·5	·5	·5	·5	·5	·5	·5
40	0·6	0·6	0·6	0·5	0·5	0·5	0·5	0·5	0·5	0·5	0·5	0·6
45	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6
50	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6	·6
55	·6	·6	·6	·6	·6	·7	·7	·7	·7	·6	·6	·6
60	·6	·6	·7	·7	·7	·7	·7	·7	·7	·7	·7	·7
62	0·6	0·6	0·7	0·7	0·7	0·7	0·8	0·8	0·8	0·7	0·7	0·7
64	·6	·7	·7	·7	·8	·8	·8	·8	·8	·8	·7	·7
66	·6	·7	·7	·8	·8	·8	·8	·9	·8	·8	·8	·7
68	0·6	0·7	0·7	0·8	0·8	0·9	0·9	0·9	0·9	0·9	0·8	0·8
Mes	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2	a_2
°	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /	° /
Ene.	0·4	0·4	0·4	0·5	0·5	0·5	0·6	0·6	0·6	0·7	0·7	0·7
Feb.	·3	·3	·3	·3	·4	·4	·4	·5	·5	·5	·6	·6
Mar.	·3	·3	·3	·3	·3	·3	·3	·3	·4	·4	·4	·5
Abr.	0·4	0·4	0·3	0·3	0·3	0·2	0·2	0·2	0·2	0·3	0·3	0·3
May.	·6	·5	·5	·4	·3	·3	·3	·2	·2	·2	·2	·3
Jun.	·7	·7	·6	·5	·5	·4	·4	·3	·3	·3	·3	·2
Jul.	0·8	0·8	0·8	0·7	0·6	0·6	0·5	0·5	0·4	0·4	0·3	0·3
Ago.	·9	·9	·9	·8	·8	·7	·7	·7	·6	·6	·5	·5
Sep.	·9	·9	·9	·9	·9	·9	·8	·8	·8	·7	·7	·6
Oct.	0·8	0·8	0·9	0·9	0·9	0·9	0·9	0·9	0·9	0·9	0·9	0·8
Nov.	·6	·7	·8	·8	·9	·9	1·0	1·0	1·0	1·0	1·0	1·0
Dic.	0·5	0·5	0·6	0·7	0·8	0·8	0·9	1·0	1·0	1·0	1·0	1·1
Lat.	Azv											
°	°	°	°	°	°	°	°	°	°	°	°	°
0	0·3	0·4	0·5	0·5	0·6	0·6	0·7	0·7	0·7	0·6	0·6	0·5
20	0·3	0·4	0·5	0·6	0·6	0·7	0·7	0·7	0·7	0·7	0·6	0·5
40	0·3	0·5	0·6	0·7	0·8	0·8	0·9	0·9	0·9	0·8	0·7	0·7
50	0·4	0·6	0·7	0·8	0·9	1·0	1·0	1·0	1·0	1·0	0·9	0·8
55	0·4	0·6	0·8	0·9	1·0	1·1	1·2	1·2	1·2	1·1	1·0	0·9
60	0·5	0·7	0·9	1·1	1·2	1·3	1·3	1·3	1·3	1·3	1·2	1·0
65	0·6	0·8	1·1	1·2	1·4	1·5	1·6	1·6	1·6	1·5	1·4	1·2

$$\text{Latitud} = \text{Altura verdadera (Av)} - 1^\circ + a_0 + a_1 + a_2$$

Se entra a la tabla con el AHL de Aries para determinar la columna que se debe usar; cada columna se refiere a un rango de 10°. a_0 se toma de la tabla superior, mediante interpolación mental, con las unidades del AHL de Aries en grados, como argumento; a_1 , a_2 se toman de la segunda y tercera tabla sin interpolación, usando la latitud y el mes como argumento respectivamente; a_0 , a_1 , a_2 son siempre positivas.

La tabla final da el Azv de "Polaris", utilizando como argumentos de entrada el AHL de Aries y la Lat.

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LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ENE.	2	01 09	////	////	////	////	////	////	////	////
	6	01 22	////	////	////	////	////	////	////	////
	10	01 37	00 12	////	////	////	////	////	////	////
	14	01 52	01 01	////	////	////	////	////	////	////
	18	02 07	01 27	////	////	////	////	////	////	////
	22	02 22	01 49	00 46	////	////	////	////	////	////
	26	02 36	02 09	01 26	////	////	////	////	////	////
	30	02 51	02 27	01 54	00 49	////	////	////	////	////
FEB.	3	03 05	02 44	02 17	01 35	////	////	////	////	////
	7	03 19	03 01	02 37	02 06	01 10	////	////	////	////
	11	03 32	03 16	02 56	02 30	01 53	01 23	////	////	////
	15	03 45	03 31	03 14	02 52	02 23	02 03	01 37	00 51	////
	19	03 58	03 45	03 30	03 12	02 48	02 33	02 15	01 51	01 16
	23	04 10	03 59	03 46	03 31	03 11	02 59	02 45	02 28	02 06
	27	04 21	04 12	04 01	03 48	03 31	03 22	03 10	02 57	02 41
MAR.	3	04 33	04 25	04 15	04 04	03 50	03 42	03 33	03 23	03 10
	7	04 44	04 37	04 29	04 20	04 08	04 02	03 54	03 45	03 36
	11	04 55	04 49	04 42	04 35	04 25	04 20	04 14	04 07	03 59
	15	05 05	05 01	04 55	04 49	04 41	04 37	04 32	04 27	04 21
	19	05 15	05 12	05 08	05 03	04 57	04 54	04 50	04 46	04 41
	23	05 25	05 23	05 20	05 16	05 12	05 10	05 07	05 04	05 00
	27	05 35	05 34	05 32	05 29	05 27	05 25	05 23	05 21	05 19
	31	05 45	05 44	05 43	05 42	05 41	05 40	05 39	05 38	05 37
ABR.	4	05 54	05 55	05 55	05 55	05 55	05 55	05 55	05 55	05 55

CREPÚSCULO CIVIL

		h m	h m	h m	h m	h m	h m	h m	h m
ENE.	2	22 57	////	////	////	////	////	////	////
	6	22 47	////	////	////	////	////	////	////
	10	22 35	23 42*	////	////	////	////	////	////
	14	22 23	23 11	////	////	////	////	////	////
	18	22 11	22 49	////	////	////	////	////	////
	22	21 59	22 30	23 25	////	////	////	////	////
	26	21 46	22 13	22 52	////	////	////	////	////
	30	21 33	21 56	22 28	23 23	////	////	////	////
FEB.	3	21 20	21 40	22 06	22 45	////	////	////	////
	7	21 07	21 25	21 47	22 17	23 06	////	////	////
	11	20 54	21 09	21 29	21 53	22 29	22 55	23 40	////
	15	20 41	20 55	21 11	21 32	22 00	22 18	22 42	23 17
	19	20 28	20 40	20 54	21 12	21 35	21 49	22 06	22 27
	23	20 15	20 25	20 38	20 53	21 12	21 23	21 36	21 52
	27	20 02	20 11	20 22	20 35	20 50	21 00	21 11	21 23
MAR.	3	19 49	19 57	20 06	20 17	20 30	20 38	20 47	20 57
	7	19 36	19 43	19 51	20 00	20 11	20 17	20 24	20 33
	11	19 24	19 29	19 35	19 43	19 52	19 57	20 03	20 10
	15	19 11	19 15	19 21	19 27	19 34	19 38	19 43	19 48
	19	18 59	19 02	19 06	19 11	19 16	19 19	19 23	19 27
	23	18 46	18 49	18 51	18 55	18 59	19 01	19 04	19 07
	27	18 34	18 36	18 37	18 39	18 42	18 43	18 45	18 47
	31	18 22	18 23	18 23	18 24	18 25	18 26	18 27	18 27
ABR.	4	18 10	18 10	18 10	18 09	18 09	18 09	18 09	18 08

(*) FENÓMENO DOBLE (Ver página 311)

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LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ABR.	8	06 04	06 05	06 06	06 07	06 09	06 10	06 11	06 12	06 13
	12	06 13	06 15	06 17	06 20	06 23	06 24	06 26	06 28	06 30
	16	06 22	06 25	06 28	06 32	06 36	06 39	06 41	06 44	06 47
	20	06 31	06 35	06 39	06 44	06 50	06 53	06 56	07 00	07 04
	24	06 40	06 45	06 50	06 56	07 03	07 07	07 11	07 16	07 22
	28	06 49	06 54	07 00	07 08	07 16	07 21	07 26	07 32	07 39
MAY.	2	06 57	07 04	07 11	07 19	07 29	07 35	07 41	07 48	07 56
	6	07 06	07 13	07 21	07 31	07 42	07 49	07 56	08 04	08 13
	10	07 14	07 22	07 31	07 42	07 55	08 02	08 11	08 20	08 31
	14	07 22	07 30	07 41	07 53	08 07	08 16	08 25	08 36	08 48
	18	07 29	07 39	07 50	08 03	08 19	08 29	08 39	08 51	09 06
	22	07 36	07 47	07 59	08 13	08 31	08 41	08 53	09 07	09 23
	26	07 43	07 54	08 07	08 22	08 41	08 53	09 06	09 22	09 40
	30	07 49	08 01	08 14	08 31	08 52	09 04	09 18	09 36	09 57
JUN.	3	07 54	08 06	08 21	08 39	09 01	09 14	09 30	09 49	10 14
	7	07 59	08 12	08 27	08 39	09 08	09 23	09 40	10 01	10 29
	11	08 03	08 16	08 31	08 50	09 15	09 30	09 48	10 11	10 43
	15	08 05	08 19	08 35	08 54	09 19	09 35	09 54	10 18	10 54
	19	08 07	08 21	08 37	08 57	09 22	09 38	09 57	10 22	11 00
	23	08 08	08 22	08 38	08 58	09 23	09 39	09 58	10 23	11 01
	27	08 08	08 21	08 37	08 57	09 22	09 37	09 56	10 21	10 56
JUL.	1	08 07	08 20	08 36	08 55	09 19	09 34	09 52	10 15	10 47
	5	08 05	08 18	08 33	08 51	09 14	09 29	09 46	10 07	10 35

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		h m	h m	h m	h m	h m	h m	h m	h m
ABR.	8	17 59	17 57	17 56	17 55	17 53	17 52	17 51	17 49
	12	17 47	17 45	17 43	17 40	17 37	17 35	17 34	17 29
	16	17 36	17 33	17 30	17 26	17 22	17 19	17 17	17 10
	20	17 26	17 22	17 17	17 12	17 07	17 03	17 00	16 52
	24	17 15	17 11	17 05	16 59	16 52	16 48	16 43	16 38
	28	17 05	17 00	16 53	16 46	16 38	16 33	16 27	16 21
MAY.	2	16 56	16 49	16 42	16 34	16 24	16 18	16 11	16 04
	6	16 47	16 40	16 31	16 22	16 10	16 03	15 56	15 39
	10	16 38	16 30	16 21	16 10	15 57	15 49	15 41	15 21
	14	16 30	16 21	16 11	15 59	15 45	15 36	15 27	15 16
	18	16 23	16 13	16 02	15 49	15 33	15 23	15 13	15 00
	22	16 17	16 06	15 54	15 40	15 22	15 11	15 00	14 46
	26	16 11	16 00	15 47	15 31	15 12	15 00	14 47	14 32
	30	16 06	15 54	15 40	15 24	15 03	14 50	14 36	14 19
JUN.	3	16 02	15 49	15 35	15 17	14 55	14 42	14 26	14 07
	7	15 59	15 46	15 31	15 12	14 49	14 35	14 18	13 57
	11	15 57	15 43	15 28	15 09	14 44	14 29	14 11	13 48
	15	15 55	15 42	15 26	15 07	14 42	14 26	14 07	13 43
	19	15 55	15 42	15 26	15 06	14 41	14 25	14 05	13 40
	23	15 56	15 43	15 27	15 07	14 42	14 26	14 06	13 41
	27	15 58	15 45	15 29	15 09	14 44	14 29	14 10	13 46
JUL.	1	16 01	15 48	15 32	15 13	14 49	14 34	14 16	13 53
	5	16 05	15 52	15 37	15 18	14 55	14 41	14 24	14 03

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LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
JUL.	9	08 02	08 14	08 28	08 46	09 08	09 21	09 37	09 56	10 21
	13	07 57	08 09	08 23	08 40	09 00	09 13	09 27	09 45	10 06
	17	07 52	08 04	08 17	08 32	08 51	09 03	09 16	09 31	09 50
	21	07 47	07 57	08 09	08 24	08 41	08 52	09 04	09 17	09 34
	25	07 40	07 50	08 01	08 14	08 30	08 40	08 50	09 03	09 17
	29	07 33	07 42	07 52	08 04	08 18	08 27	08 36	08 47	09 00
AGO.	2	07 25	07 33	07 42	07 53	08 06	08 14	08 22	08 31	08 42
	6	07 16	07 23	07 32	07 41	07 53	08 00	08 07	08 15	08 25
	10	07 07	07 13	07 21	07 29	07 39	07 45	07 52	07 59	08 07
	14	06 57	07 03	07 09	07 17	07 26	07 30	07 36	07 42	07 49
	18	06 47	06 52	06 58	07 04	07 11	07 15	07 20	07 25	07 30
	22	06 37	06 41	06 45	06 50	06 56	07 00	07 03	07 07	07 12
	26	06 26	06 29	06 33	06 37	06 41	06 44	06 47	06 50	06 53
	30	06 15	06 17	06 20	06 23	06 26	06 28	06 30	06 32	06 34
SEP.	3	06 04	06 05	06 07	06 08	06 10	06 11	06 12	06 14	06 15
	7	05 52	05 53	05 53	05 54	05 54	05 55	05 55	05 55	05 55
	11	05 40	05 40	05 40	05 39	05 38	05 37	05 37	05 36	05 35
	15	05 28	05 27	05 26	05 24	05 21	05 20	05 19	05 17	05 15
	19	05 16	05 14	05 11	05 08	05 05	05 02	05 00	04 57	04 54
	23	05 04	05 01	04 57	04 53	04 47	04 44	04 41	04 37	04 33
	27	04 51	04 47	04 42	04 37	04 30	04 26	04 21	04 16	04 11
OCT.	1	04 39	04 34	04 27	04 20	04 12	04 07	04 01	03 55	03 48
	5	04 26	04 20	04 12	04 04	03 53	03 47	03 40	03 32	03 24

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		h m	h m	h m	h m	h m	h m	h m	h m
JUL.	9	16 09	15 57	15 42	15 25	15 03	14 50	14 34	14 15
	13	16 15	16 03	15 49	15 32	15 12	14 59	14 45	14 28
	17	16 20	16 09	15 56	15 41	15 22	15 10	14 57	14 42
	21	16 27	16 16	16 04	15 50	15 32	15 22	15 10	14 56
	25	16 34	16 24	16 13	16 00	15 44	15 34	15 24	15 11
	29	16 41	16 32	16 22	16 10	15 55	15 47	15 38	15 27
AGO.	2	16 49	16 41	16 31	16 21	16 08	16 00	15 52	15 42
	6	16 57	16 49	16 41	16 31	16 20	16 13	16 06	15 58
	10	17 05	16 58	16 51	16 42	16 32	16 27	16 20	16 13
	14	17 13	17 07	17 01	16 54	16 45	16 40	16 35	16 29
	18	17 21	17 17	17 11	17 05	16 58	16 54	16 49	16 45
	22	17 30	17 26	17 22	17 17	17 11	17 08	17 04	17 00
	26	17 39	17 36	17 32	17 28	17 24	17 21	17 19	17 16
	30	17 47	17 45	17 43	17 40	17 37	17 35	17 33	17 31
SEP.	3	17 57	17 55	17 54	17 52	17 50	17 49	17 48	17 47
	7	18 05	18 05	18 04	18 04	18 04	18 04	18 03	18 03
	11	18 14	18 15	18 15	18 16	18 17	18 18	18 19	18 19
	15	18 23	18 25	18 27	18 29	18 31	18 33	18 34	18 36
	19	18 33	18 35	18 38	18 41	18 45	18 48	18 50	18 53
	23	18 42	18 46	18 50	18 54	19 00	19 03	19 07	19 11
	27	18 52	18 57	19 02	19 08	19 15	19 19	19 24	19 29
OCT.	1	19 02	19 08	19 14	19 21	19 30	19 36	19 41	19 48
	5	19 13	19 19	19 27	19 36	19 47	19 53	20 00	20 08

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LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
OCT.	9	04 13	04 06	03 57	03 47	03 34	03 27	03 18	03 09	02 58
	13	04 00	03 52	03 41	03 29	03 14	03 05	02 55	02 43	02 29
	17	03 47	03 37	03 25	03 11	02 53	02 42	02 30	02 15	01 57
	21	03 34	03 23	03 09	02 52	02 31	02 18	02 02	01 42	01 17
	25	03 21	03 08	02 52	02 33	02 07	01 50	01 29	01 00	////
	29	03 08	02 53	02 35	02 12	01 40	01 17	00 43	////	////
NOV.	2	02 55	02 38	02 17	01 49	01 06	00 26*	////	////	////
	6	02 42	02 23	01 58	01 23	00 07	////	////	////	////
	10	02 29	02 07	01 38	00 50	////	////	////	////	////
	14	02 16	01 51	01 15	////	////	////	////	////	////
	18	02 03	01 34	00 46	////	////	////	////	////	////
	22	01 51	01 16	////	////	////	////	////	////	////
	26	01 38	00 55	////	////	////	////	////	////	////
	30	01 26	00 30	////	////	////	////	////	////	////
DIC.	4	01 15	////	////	////	////	////	////	////	////
	8	01 04	////	////	////	////	////	////	////	////
	12	00 55	////	////	////	////	////	////	////	////
	16	00 48	////	////	////	////	////	////	////	////
	20	00 45	////	////	////	////	////	////	////	////
	24	00 47	////	////	////	////	////	////	////	////
	28	00 54	////	////	////	////	////	////	////	////

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		h m	h m	h m	h m	h m	h m	h m	h m
OCT.	9	19 23	19 31	19 40	19 51	20 04	20 12	20 20	20 30
	13	19 34	19 43	19 54	20 06	20 22	20 31	20 42	20 54
	17	19 45	19 56	20 08	20 23	20 41	20 53	21 06	21 22
	21	19 57	20 09	20 23	20 40	21 03	21 17	21 33	21 54
	25	20 09	20 22	20 39	20 59	21 26	21 44	22 07	22 41
	29	20 21	20 37	20 56	21 20	21 54	22 19	23 01	////
NOV.	2	20 34	20 52	21 14	21 43	22 30	23 29	////	////
	6	20 48	21 07	21 33	22 10	////	////	////	////
	10	21 01	21 24	21 55	22 47	////	////	////	////
	14	21 15	21 41	22 20	////	////	////	////	////
	18	21 30	22 00	22 53	////	////	////	////	////
	22	21 44	22 21	////	////	////	////	////	////
	26	21 59	22 45	////	////	////	////	////	////
	30	22 14	23 16	////	////	////	////	////	////
DIC.	4	22 28	////	////	////	////	////	////	////
	8	22 42	////	////	////	////	////	////	////
	12	22 55	////	////	////	////	////	////	////
	16	23 04	////	////	////	////	////	////	////
	20	23 10	////	////	////	////	////	////	////
	24	23 11	////	////	////	////	////	////	////
	28	23 07	////	////	////	////	////	////	////

(*) FENÓMENO DOBLE (Ver página 311)

AURORA Y CREPÚSCULO NÁUTICO, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 AURORA NÁUTICA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ENE.	2	////	////	////	////	////	////	////	////	////
	6	////	////	////	////	////	////	////	////	////
	10	////	////	////	////	////	////	////	////	////
	14	////	////	////	////	////	////	////	////	////
	18	////	////	////	////	////	////	////	////	////
	22	////	////	////	////	////	////	////	////	////
	26	////	////	////	////	////	////	////	////	////
	30	00 45	////	////	////	////	////	////	////	////
FEB.	3	01 27	////	////	////	////	////	////	////	////
	7	01 53	01 04	////	////	////	////	////	////	////
	11	02 15	01 41	////	////	////	////	////	////	////
	15	02 35	02 08	01 27	////	////	////	////	////	////
	19	02 52	02 30	02 00	01 07	////	////	////	////	////
	23	03 08	02 49	02 25	01 51	00 32	////	////	////	////
	27	03 23	03 07	02 47	02 20	01 40	01 06	////	////	////
MAR.	3	03 36	03 23	03 06	02 45	02 15	01 55	01 28	00 32	////
	7	03 50	03 38	03 23	03 06	02 43	02 28	02 10	01 47	01 12
	11	04 02	03 52	03 40	03 25	03 06	02 54	02 41	02 25	02 04
	15	04 14	04 05	03 55	03 42	03 27	03 17	03 07	02 54	02 39
	19	04 25	04 18	04 09	03 58	03 46	03 38	03 29	03 20	03 08
	23	04 36	04 30	04 22	04 14	04 03	03 57	03 50	03 42	03 33
	27	04 46	04 41	04 35	04 28	04 20	04 15	04 09	04 03	03 56
	31	04 56	04 52	04 48	04 42	04 35	04 31	04 27	04 22	04 16
ABR.	4	05 06	05 03	05 00	04 55	04 50	04 47	04 44	04 40	04 36

CREPÚSCULO NÁUTICO

		h m	h m	h m	h m	h m	h m	h m	h m
ENE.	2	////	////	////	////	////	////	////	////
	6	////	////	////	////	////	////	////	////
	10	////	////	////	////	////	////	////	////
	14	////	////	////	////	////	////	////	////
	18	////	////	////	////	////	////	////	////
	22	////	////	////	////	////	////	////	////
	26	////	////	////	////	////	////	////	////
	30	23 29	////	////	////	////	////	////	////
FEB.	3	22 54	////	////	////	////	////	////	////
	7	22 30	23 14	////	////	////	////	////	////
	11	22 09	22 41	23 45	////	////	////	////	////
	15	21 50	22 15	22 53	////	////	////	////	////
	19	21 32	21 54	22 22	23 08	////	////	////	////
	23	21 16	21 34	21 57	22 29	23 28	////	////	////
	27	21 00	21 15	21 35	22 00	22 36	23 05	////	////
MAR.	3	20 45	20 58	21 14	21 35	22 02	22 21	22 45	23 22
	7	20 30	20 42	20 55	21 12	21 34	21 48	22 05	22 26
	11	20 16	20 26	20 37	20 52	21 10	21 21	21 33	21 49
	15	20 02	20 10	20 20	20 32	20 47	20 56	21 06	21 18
	19	19 49	19 56	20 04	20 14	20 27	20 34	20 42	20 51
	23	19 36	19 41	19 48	19 57	20 07	20 13	20 20	20 27
	27	19 23	19 28	19 33	19 40	19 48	19 53	19 58	20 04
	31	19 10	19 14	19 19	19 24	19 31	19 34	19 38	19 43
ABR.	4	18 58	19 01	19 05	19 09	19 13	19 16	19 19	19 23

AURORA Y CREPÚSCULO NÁUTICO, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
AURORA NÁUTICA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ABR.	8	05 16	05 14	05 11	05 08	05 05	05 02	05 00	04 57	04 54
	12	05 25	05 24	05 22	05 21	05 18	05 17	05 15	05 14	05 12
	16	05 34	05 33	05 33	05 32	05 32	05 31	05 30	05 30	05 29
	20	05 42	05 43	05 44	05 44	05 45	05 45	05 45	05 45	05 45
	24	05 51	05 52	05 54	05 55	05 57	05 58	05 59	06 00	06 01
	28	05 59	06 01	06 04	06 06	06 09	06 11	06 12	06 14	06 16
MAY.	2	06 07	06 10	06 13	06 17	06 21	06 23	06 26	06 28	06 31
	6	06 15	06 19	06 23	06 27	06 32	06 35	06 38	06 42	06 45
	10	06 22	06 27	06 32	06 37	06 43	06 47	06 51	06 55	06 59
	14	06 30	06 35	06 40	06 47	06 54	06 58	07 02	07 07	07 13
	18	06 36	06 42	06 48	06 55	07 04	07 08	07 14	07 19	07 25
	22	06 43	06 49	06 56	07 04	07 13	07 18	07 24	07 30	07 37
	26	06 49	06 55	07 03	07 12	07 22	07 27	07 34	07 41	07 49
	30	06 54	07 01	07 09	07 19	07 30	07 36	07 43	07 50	07 59
JUN.	3	06 59	07 06	07 15	07 25	07 36	07 43	07 50	07 59	08 08
	7	07 03	07 11	07 20	07 30	07 42	07 49	07 57	08 06	08 15
	11	07 06	07 14	07 24	07 34	07 47	07 54	08 02	08 11	08 22
	15	07 09	07 17	07 26	07 37	07 50	07 58	08 06	08 15	08 26
	19	07 10	07 19	07 28	07 40	07 53	08 00	08 09	08 18	08 29
	23	07 11	07 20	07 29	07 40	07 54	08 01	08 10	08 19	08 30
	27	07 11	07 20	07 29	07 40	07 53	08 01	08 09	08 18	08 29
JUL.	1	07 10	07 19	07 28	07 39	07 51	07 59	08 07	08 16	08 26
	5	07 09	07 17	07 26	07 36	07 48	07 55	08 03	08 12	08 21

CREPÚSCULO NÁUTICO

		h m	h m	h m	h m	h m	h m	h m	h m
ABR.	8	18 47	18 49	18 51	18 54	18 57	18 59	19 01	19 07
	12	18 35	18 36	18 38	18 39	18 41	18 42	18 44	18 47
	16	18 25	18 25	18 25	18 25	18 26	18 27	18 27	18 28
	20	18 14	18 13	18 13	18 12	18 12	18 11	18 11	18 11
	24	18 04	18 03	18 01	17 59	17 58	17 57	17 56	17 53
	28	17 55	17 52	17 50	17 47	17 44	17 43	17 41	17 37
MAY.	2	17 46	17 43	17 39	17 36	17 32	17 29	17 27	17 21
	6	17 37	17 34	17 29	17 25	17 20	17 17	17 13	17 06
	10	17 29	17 25	17 20	17 15	17 08	17 05	17 01	16 52
	14	17 22	17 17	17 12	17 05	16 58	16 54	16 49	16 39
	18	17 16	17 10	17 04	16 56	16 48	16 43	16 38	16 26
	22	17 10	17 04	16 57	16 49	16 39	16 34	16 28	16 15
	26	17 05	16 58	16 51	16 42	16 32	16 26	16 19	16 05
	30	17 01	16 53	16 45	16 36	16 25	16 19	16 12	15 56
JUN.	3	16 57	16 50	16 41	16 31	16 19	16 13	16 05	15 48
	7	16 55	16 47	16 38	16 27	16 15	16 08	16 00	15 42
	11	16 53	16 45	16 35	16 25	16 12	16 05	15 57	15 37
	15	16 52	16 44	16 34	16 23	16 10	16 03	15 55	15 35
	19	16 52	16 44	16 34	16 23	16 10	16 02	15 54	15 34
	23	16 53	16 45	16 35	16 24	16 11	16 03	15 55	15 35
	27	16 55	16 47	16 37	16 26	16 13	16 06	15 57	15 38
JUL.	1	16 57	16 49	16 40	16 29	16 17	16 09	16 01	15 42
	5	17 01	16 53	16 44	16 34	16 21	16 14	16 07	15 48

AURORA Y CREPÚSCULO NÁUTICO, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 AURORA NÁUTICA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
JUL.	9	07 06	07 14	07 22	07 32	07 44	07 51	07 58	08 06	08 15
	13	07 03	07 10	07 18	07 27	07 38	07 45	07 51	07 59	08 08
	17	06 58	07 05	07 13	07 21	07 32	07 37	07 44	07 51	07 59
	21	06 53	06 59	07 06	07 14	07 24	07 29	07 35	07 41	07 48
	25	06 47	06 53	06 59	07 07	07 15	07 20	07 25	07 31	07 37
	29	06 41	06 46	06 51	06 58	07 05	07 09	07 14	07 19	07 24
AGO.	2	06 33	06 38	06 43	06 48	06 55	06 58	07 02	07 06	07 11
	6	06 26	06 29	06 33	06 38	06 43	06 46	06 50	06 53	06 57
	10	06 17	06 20	06 23	06 27	06 31	06 34	06 36	06 39	06 42
	14	06 08	06 10	06 13	06 16	06 19	06 20	06 22	06 24	06 26
	18	05 58	06 00	06 02	06 03	06 05	06 06	06 07	06 09	06 10
	22	05 48	05 49	05 50	05 51	05 51	05 52	05 52	05 52	05 53
	26	05 38	05 38	05 38	05 37	05 37	05 37	05 36	05 36	05 35
	30	05 27	05 26	05 25	05 24	05 22	05 21	05 19	05 18	05 16
SEP.	3	05 16	05 14	05 12	05 09	05 06	05 04	05 02	05 00	04 57
	7	05 04	05 02	04 58	04 54	04 50	04 47	04 44	04 41	04 37
	11	04 52	04 49	04 44	04 39	04 33	04 29	04 25	04 21	04 16
	15	04 40	04 35	04 30	04 23	04 15	04 11	04 05	04 00	03 53
	19	04 27	04 21	04 15	04 07	03 57	03 51	03 45	03 37	03 29
	23	04 14	04 07	03 59	03 49	03 37	03 30	03 23	03 14	03 03
	27	04 01	03 52	03 43	03 31	03 17	03 08	02 59	02 48	02 34
OCT.	1	03 47	03 37	03 26	03 12	02 55	02 45	02 33	02 18	02 01
	5	03 33	03 22	03 08	02 52	02 31	02 18	02 03	01 44	01 18

CREPÚSCULO NÁUTICO

		h m	h m	h m	h m	h m	h m	h m	h m
JUL.	9	17 05	16 57	16 49	16 39	16 27	16 20	16 13	15 56
	13	17 09	17 02	16 54	16 45	16 34	16 28	16 21	16 05
	17	17 15	17 08	17 00	16 52	16 41	16 36	16 29	16 15
	21	17 20	17 14	17 07	16 59	16 50	16 45	16 39	16 26
	25	17 26	17 21	17 15	17 07	16 59	16 54	16 49	16 37
	29	17 33	17 28	17 22	17 16	17 09	17 05	17 00	16 50
AGO.	2	17 40	17 36	17 31	17 25	17 19	17 15	17 12	17 03
	6	17 47	17 43	17 39	17 35	17 30	17 27	17 24	17 16
	10	17 55	17 52	17 48	17 45	17 41	17 38	17 36	17 30
	14	18 02	18 00	17 58	17 55	17 52	17 51	17 49	17 45
	18	18 10	18 09	18 07	18 06	18 04	18 03	18 02	18 00
	22	18 19	18 18	18 17	18 17	18 16	18 16	18 16	18 15
	26	18 27	18 27	18 27	18 28	18 29	18 29	18 30	18 31
	30	18 36	18 37	18 38	18 39	18 41	18 43	18 44	18 46
SEP.	3	18 44	18 46	18 49	18 51	18 55	18 57	18 59	19 02
	7	18 53	18 56	19 00	19 04	19 09	19 11	19 15	19 18
	11	19 03	19 07	19 11	19 16	19 23	19 27	19 31	19 36
	15	19 12	19 17	19 23	19 30	19 38	19 43	19 48	19 54
	19	19 22	19 28	19 35	19 44	19 54	20 00	20 06	20 14
	23	19 33	19 40	19 48	19 58	20 11	20 18	20 26	20 35
	27	19 43	19 52	20 02	20 14	20 29	20 38	20 48	20 59
OCT.	1	19 55	20 04	20 16	20 30	20 48	20 59	21 12	21 27
	5	20 07	20 18	20 32	20 49	21 10	21 24	21 41	22 02

CREPÚSCULO NÁUTICO

[illegible]

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ENE.	1	03 18	03 03	02 44	02 20	01 48	01 27	00 57	...	☐
	2	04 41	04 28	04 13	03 54	03 30	03 15	02 57	02 34	02 02
	3	06 11	06 02	05 51	05 38	05 22	05 12	05 02	04 49	04 34
	4	07 43	07 37	07 30	07 23	07 13	07 08	07 02	06 55	06 47
	5	09 13	09 10	09 07	09 04	09 00	08 58	08 56	08 53	08 50
	6	10 39	10 40	10 41	10 42	10 43	10 43	10 44	10 45	10 46
	7	12 03	12 07	12 11	12 16	12 22	12 25	12 29	12 33	12 38
	8	13 23	13 30	13 38	13 47	13 58	14 04	14 11	14 19	14 28
	9	14 40	14 50	15 01	15 15	15 31	15 41	15 53	16 06	16 21
	10	15 53	16 05	16 20	16 38	17 02	17 16	17 33	17 55	18 24
	11	16 59	17 14	17 32	17 55	18 25	18 45	19 12	19 55	■
	12	17 58	18 14	18 34	18 59	19 35	20 00	20 38	■	■
	13	18 47	19 03	19 23	19 48	20 23	20 48	21 25	■	■
	14	19 26	19 41	19 59	20 21	20 51	21 11	21 36	22 14	■
	15	19 57	20 10	20 25	20 43	21 06	21 20	21 37	21 58	22 26
	16	20 21	20 31	20 43	20 57	21 15	21 25	21 36	21 50	22 06
	17	20 41	20 49	20 57	21 08	21 20	21 27	21 35	21 43	21 53
	18	20 58	21 03	21 08	21 15	21 23	21 27	21 32	21 38	21 44
	19	21 13	21 15	21 18	21 21	21 25	21 28	21 30	21 33	21 36
	20	21 27	21 27	21 27	21 27	21 27	21 27	21 28	21 28	21 28
	21	21 41	21 39	21 36	21 33	21 30	21 27	21 25	21 23	21 20
	22	21 57	21 52	21 47	21 40	21 32	21 28	21 23	21 18	21 12
	23	22 16	22 08	22 00	21 49	21 37	21 30	21 22	21 13	21 03
	24	22 40	22 29	22 17	22 02	21 44	21 34	21 22	21 07	20 51

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
ENE.	1	20 37	20 50	21 06	21 26	21 50	22 06	22 24	22 47
	2	21 11	21 22	21 33	21 47	22 04	22 15	22 26	22 39
	3	21 37	21 44	21 52	22 01	22 12	22 18	22 25	22 33
	4	21 58	22 02	22 06	22 11	22 17	22 20	22 24	22 27
	5	22 16	22 17	22 18	22 19	22 20	22 21	22 21	22 22
	6	22 33	22 31	22 28	22 26	22 23	22 21	22 19	22 17
	7	22 49	22 45	22 39	22 33	22 25	22 21	22 17	22 12
	8	23 08	23 00	22 52	22 41	22 29	22 22	22 14	22 06
	9	23 29	23 19	23 07	22 52	22 35	22 25	22 13	21 59
	10	23 55	23 42	23 27	23 08	22 44	22 30	22 12	21 50
	11	...	...	23 55	23 32	23 01	22 41	22 14	21 31
	12	00 28	00 13	...	...	23 32	23 07	22 28	■
	13	01 09	00 53	00 33	00 08	...	23 59	23 22	■
	14	02 00	01 43	01 24	00 59	00 24	...	...	■
	15	02 58	02 43	02 26	02 04	01 35	01 15	00 50	00 12
	16	04 03	03 51	03 36	03 18	02 56	02 42	02 25	02 05
	17	05 12	05 02	04 51	04 37	04 21	04 11	04 00	03 47
	18	06 22	06 16	06 08	05 58	05 47	05 41	05 34	05 25
	19	07 34	07 30	07 26	07 20	07 13	07 10	07 06	07 01
	20	08 47	08 46	08 44	08 42	08 40	08 39	08 37	08 36
	21	10 01	10 02	10 04	10 05	10 07	10 08	10 09	10 11
	22	11 16	11 20	11 25	11 30	11 36	11 40	11 44	11 49
	23	12 33	12 40	12 48	12 58	13 09	13 15	13 23	13 31
	24	13 52	14 02	14 13	14 27	14 44	14 55	15 06	15 20

(... ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ENE.	25	23 11	22 58	22 42	22 23	21 58	21 43	21 24	21 01	20 28
	26	23 54	23 39	23 20	22 57	22 25	22 04	21 36	20 47	□
	27	.. ..	.. ..	.. ..	23 53	23 19	22 56	22 22	□	□
	28	00 52	00 37	00 17	.. ..	.. ..	.. ..	.. ..	23 29	□
	29	02 06	01 52	01 35	01 13	00 45	00 26	00 03	.. ..	□
	30	03 32	03 21	03 08	02 51	02 31	02 19	02 04	01 47	01 25
	31	05 04	04 57	04 47	04 37	04 24	04 16	04 08	03 58	03 47
FEB.	1	06 37	06 33	06 28	06 22	06 15	06 12	06 07	06 02	05 57
	2	08 09	08 08	08 06	08 05	08 04	08 03	08 02	08 01	08 00
	3	09 37	09 39	09 41	09 44	09 48	09 50	09 52	09 54	09 57
	4	11 01	11 07	11 13	11 20	11 28	11 33	11 39	11 45	11 52
	5	12 22	12 30	12 40	12 52	13 06	13 14	13 23	13 34	13 46
	6	13 38	13 49	14 03	14 19	14 39	14 51	15 06	15 23	15 44
	7	14 48	15 02	15 18	15 39	16 06	16 23	16 45	17 14	18 11
	8	15 50	16 06	16 24	16 48	17 21	17 44	18 15	■	■
	9	16 43	16 59	17 18	17 43	18 18	18 42	19 18	■	■
	10	17 25	17 40	17 59	18 22	18 53	19 14	19 41	20 28	■
	11	17 59	18 12	18 28	18 48	19 13	19 28	19 47	20 12	20 47
	12	18 26	18 37	18 50	19 05	19 24	19 35	19 49	20 04	20 22
	13	18 47	18 56	19 06	19 17	19 31	19 39	19 48	19 58	20 10
	14	19 05	19 11	19 18	19 26	19 35	19 41	19 46	19 53	20 00
	15	19 21	19 25	19 29	19 33	19 38	19 41	19 45	19 48	19 52
	16	19 36	19 37	19 38	19 39	19 41	19 42	19 43	19 44	19 45

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
ENE.	25	15 10	15 23	15 38	15 57	16 21	16 36	16 54	17 17
	26	16 25	16 40	16 58	17 21	17 53	18 14	18 42	19 30
	27	17 31	17 47	18 06	18 31	19 04	19 28	20 01	□
	28	18 24	18 39	18 57	19 19	19 47	20 06	20 30	21 04
	29	19 05	19 17	19 31	19 48	20 09	20 22	20 37	20 55
	30	19 36	19 45	19 55	20 07	20 21	20 29	20 39	20 49
	31	20 00	20 06	20 12	20 19	20 28	20 33	20 38	20 44
FEB.	1	20 20	20 23	20 26	20 29	20 32	20 34	20 36	20 39
	2	20 39	20 38	20 37	20 37	20 36	20 35	20 35	20 34
	3	20 56	20 53	20 49	20 44	20 39	20 36	20 33	20 29
	4	21 15	21 09	21 01	20 53	20 43	20 37	20 31	20 24
	5	21 36	21 27	21 16	21 04	20 49	20 40	20 30	20 19
	6	22 01	21 49	21 35	21 18	20 57	20 45	20 30	20 12
	7	22 31	22 17	22 00	21 39	21 12	20 54	20 32	20 03
	8	23 09	22 54	22 35	22 11	21 38	21 15	20 43	■
	9	23 56	23 40	23 21	22 56	22 21	21 57	21 21	■
	10	.. ..	.. ..	.. ..	23 56	23 25	23 04	22 37	21 50
	11	00 52	00 37	00 19	.. ..	.. ..	.. ..	.. ..	23 44
	12	01 54	01 41	01 25	01 06	00 42	00 27	00 08	.. ..
	13	03 01	02 51	02 38	02 24	02 05	01 54	01 42	01 27
	14	04 11	04 03	03 54	03 44	03 31	03 23	03 15	03 05
	15	05 23	05 18	05 12	05 05	04 57	04 53	04 47	04 42
	16	06 36	06 33	06 31	06 27	06 24	06 22	06 19	06 17

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
FEB.	17	19 51	19 49	19 48	19 46	19 43	19 42	19 41	19 39	19 38
	18	20 07	20 03	19 58	19 53	19 47	19 43	19 39	19 35	19 30
	19	20 25	20 18	20 10	20 01	19 51	19 45	19 38	19 31	19 22
	20	20 46	20 37	20 26	20 13	19 58	19 48	19 38	19 26	19 13
	21	21 14	21 02	20 48	20 31	20 09	19 56	19 40	19 22	18 59
	22	21 51	21 37	21 19	20 58	20 30	20 12	19 49	19 18	□
	23	22 41	22 25	22 06	21 42	21 10	20 48	20 18	19 10	□
	24	23 45	23 30	23 11	22 49	22 18	21 58	21 31	20 47	□
	25	.. ..	.. ..	.. ..	.. ..	23 52	23 37	23 19	22 56	22 25
	26	01 02	00 49	00 34	00 15	.. ..	.. ..	.. ..	.. ..	.. ..
	27	02 28	02 19	02 08	01 54	01 38	01 28	01 17	01 04	00 49
	28	03 59	03 53	03 46	03 38	03 28	03 22	03 16	03 08	03 00
MAR.	1	05 31	05 28	05 25	05 21	05 17	05 15	05 12	05 09	05 05
	2	07 02	07 02	07 03	07 03	07 04	07 04	07 05	07 05	07 06
	3	08 30	08 33	08 38	08 43	08 48	08 52	08 55	08 59	09 04
	4	09 55	10 02	10 09	10 19	10 30	10 36	10 43	10 51	11 01
	5	11 15	11 25	11 37	11 50	12 07	12 18	12 29	12 43	12 59
	6	12 30	12 43	12 58	13 16	13 39	13 54	14 11	14 33	15 03
	7	13 37	13 52	14 09	14 32	15 01	15 21	15 46	16 26	■
	8	14 34	14 50	15 09	15 33	16 06	16 29	17 02	■	■
	9	15 21	15 36	15 55	16 19	16 50	17 12	17 40	18 35	■
	10	15 58	16 12	16 29	16 49	17 16	17 33	17 54	18 21	19 08
	11	16 28	16 40	16 53	17 10	17 31	17 43	17 58	18 15	18 37

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
FEB.	17	07 50	07 50	07 50	07 51	07 51	07 51	07 52	07 52
	18	09 04	09 07	09 11	09 15	09 20	09 22	09 25	09 29
	19	10 21	10 26	10 33	10 41	10 50	10 56	11 02	11 08
	20	11 38	11 46	11 56	12 08	12 23	12 32	12 41	12 53
	21	12 54	13 06	13 20	13 36	13 57	14 10	14 25	14 43
	22	14 08	14 22	14 39	15 00	15 28	15 46	16 08	16 40
	23	15 15	15 31	15 50	16 14	16 46	17 08	17 38	18 45
	24	16 12	16 28	16 46	17 09	17 40	18 00	18 27	19 11
	25	16 58	17 11	17 26	17 46	18 10	18 25	18 43	19 06
	26	17 32	17 43	17 55	18 09	18 26	18 37	18 49	19 02
	27	18 00	18 07	18 15	18 25	18 36	18 42	18 50	18 58
	28	18 22	18 26	18 31	18 36	18 42	18 46	18 49	18 54
MAR.	1	18 41	18 42	18 44	18 45	18 47	18 47	18 48	18 49
	2	19 00	18 58	18 56	18 53	18 51	18 49	18 47	18 45
	3	19 19	19 14	19 09	19 02	18 55	18 51	18 46	18 41
	4	19 39	19 32	19 23	19 13	19 00	18 53	18 45	18 36
	5	20 03	19 53	19 41	19 26	19 08	18 58	18 46	18 32
	6	20 32	20 19	20 04	19 45	19 21	19 06	18 48	18 26
	7	21 08	20 53	20 35	20 13	19 43	19 23	18 57	18 18
	8	21 52	21 37	21 18	20 53	20 20	19 57	19 25	■
	9	22 45	22 30	22 11	21 48	21 17	20 55	20 27	19 32
	10	23 45	23 31	23 15	22 55	22 29	22 12	21 51	21 24
	11	.. ..	.. ..	.. ..	.. ..	23 49	23 37	23 23	23 06

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO LUNA

LAT. S	60°	62°	64°	66°	68°	69°	70°	71°	72°
	h m	h m	h m	h m	h m	h m	h m	h m	h m
MAR. 12	16 51	17 01	17 11	17 24	17 40	17 49	17 59	18 10	18 24
13	17 11	17 18	17 25	17 35	17 45	17 52	17 58	18 06	18 15
14	17 28	17 32	17 37	17 43	17 49	17 53	17 57	18 02	18 07
15	17 43	17 45	17 47	17 50	17 53	17 54	17 56	17 58	18 00
16	17 59	17 58	17 57	17 56	17 56	17 55	17 54	17 54	17 53
17	18 14	18 11	18 08	18 04	17 59	17 56	17 53	17 50	17 46
18	18 32	18 26	18 20	18 12	18 03	17 58	17 52	17 46	17 39
19	18 53	18 45	18 35	18 23	18 10	18 02	17 53	17 43	17 31
20	19 19	19 08	18 55	18 39	18 20	18 08	17 55	17 39	17 20
21	19 53	19 40	19 23	19 03	18 38	18 22	18 02	17 37	17 00
22	20 38	20 23	20 04	19 42	19 11	18 50	18 24	17 40	□
23	21 36	21 21	21 02	20 39	20 08	19 47	19 20	18 32	□
24	22 46	22 33	22 16	21 56	21 30	21 14	20 54	20 27	19 45
25	.. ..	23 56	23 43	23 28	23 09	22 57	22 44	22 28	22 09
26	00 06	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
27	01 32	01 25	01 16	01 06	00 53	00 46	00 38	00 28	00 18
28	03 01	02 56	02 52	02 46	02 39	02 35	02 31	02 26	02 20
29	04 30	04 28	04 27	04 26	04 24	04 23	04 22	04 21	04 19
30	05 58	06 00	06 02	06 05	06 08	06 10	06 12	06 14	06 17
31	07 24	07 29	07 35	07 42	07 50	07 55	08 00	08 06	08 13
ABR. 1	08 47	08 56	09 05	09 17	09 31	09 39	09 48	09 58	10 11
2	10 06	10 18	10 31	10 47	11 07	11 19	11 33	11 50	12 12

OCASO LUNA

	h m	h m	h m	h m	h m	h m	h m	h m	h m
MAR. 12	00 50	00 39	00 25	00 09	.. ..	.. ..	.. ..	.. ..	.. ..
13	01 59	01 50	01 40	01 28	01 13	01 05	00 55	00 44	00 31
14	03 10	03 04	02 57	02 49	02 39	02 33	02 27	02 20	02 12
15	04 22	04 19	04 15	04 11	04 05	04 02	03 59	03 55	03 51
16	05 36	05 35	05 35	05 34	05 33	05 32	05 31	05 31	05 30
17	06 51	06 53	06 56	06 58	07 01	07 03	07 05	07 07	07 10
18	08 08	08 13	08 18	08 25	08 32	08 37	08 42	08 47	08 53
19	09 25	09 33	09 42	09 53	10 05	10 13	10 21	10 30	10 41
20	10 43	10 53	11 06	11 21	11 39	11 51	12 03	12 19	12 37
21	11 58	12 11	12 27	12 46	13 11	13 27	13 46	14 11	14 48
22	13 07	13 22	13 40	14 03	14 33	14 53	15 20	16 04	□
23	14 06	14 21	14 40	15 03	15 34	15 55	16 23	17 10	□
24	14 54	15 08	15 24	15 45	16 11	16 28	16 48	17 15	17 58
25	15 31	15 42	15 56	16 12	16 32	16 43	16 57	17 13	17 33
26	16 00	16 09	16 18	16 30	16 43	16 51	17 00	17 10	17 22
27	16 24	16 29	16 35	16 42	16 51	16 56	17 01	17 07	17 13
28	16 44	16 46	16 49	16 52	16 56	16 58	17 01	17 03	17 06
29	17 03	17 02	17 02	17 01	17 00	17 00	17 00	16 59	16 59
30	17 21	17 18	17 14	17 10	17 05	17 02	16 59	16 55	16 52
31	17 41	17 35	17 28	17 20	17 10	17 04	16 58	16 51	16 44
ABR. 1	18 04	17 55	17 44	17 32	17 17	17 08	16 59	16 47	16 35
2	18 31	18 19	18 05	17 49	17 28	17 15	17 01	16 43	16 22

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ABR.	3	11 19	11 32	11 49	12 09	12 36	12 53	13 14	13 42	14 32
	4	12 21	12 37	12 55	13 19	13 50	14 12	14 40	15 36	■
	5	13 14	13 29	13 48	14 12	14 44	15 06	15 36	16 44	■
	6	13 55	14 10	14 27	14 49	15 17	15 36	15 59	16 32	■
	7	14 28	14 41	14 56	15 14	15 36	15 50	16 07	16 27	16 53
	8	14 54	15 04	15 16	15 30	15 47	15 58	16 09	16 23	16 39
	9	15 15	15 23	15 32	15 42	15 54	16 02	16 10	16 19	16 29
	10	15 33	15 38	15 44	15 51	15 59	16 04	16 09	16 15	16 21
	11	15 49	15 52	15 55	15 59	16 03	16 05	16 08	16 11	16 14
	12	16 04	16 05	16 05	16 06	16 06	16 07	16 07	16 07	16 08
	13	16 20	16 18	16 16	16 13	16 10	16 08	16 06	16 04	16 01
	14	16 37	16 33	16 27	16 21	16 14	16 10	16 05	16 00	15 54
	15	16 57	16 50	16 41	16 31	16 20	16 13	16 05	15 57	15 47
	16	17 22	17 12	17 00	16 46	16 29	16 18	16 07	15 54	15 38
	17	17 54	17 41	17 26	17 07	16 44	16 30	16 13	15 51	15 23
	18	18 36	18 21	18 03	17 41	17 12	16 53	16 28	15 53	□
	19	19 30	19 15	18 56	18 33	18 02	17 41	17 12	16 23	□
	20	20 37	20 23	20 06	19 45	19 17	18 59	18 37	18 06	□
	21	21 54	21 42	21 29	21 12	20 51	20 38	20 23	20 05	19 42
	22	23 17	23 08	22 58	22 46	22 32	22 23	22 14	22 03	21 50
	23	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	23 58	23 51
	24	00 42	00 37	00 31	00 23	00 15	00 10	00 04	.. ..	.. ..
	25	02 08	02 06	02 04	02 01	01 57	01 55	01 53	01 50	01 47

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
ABR.	3	19 04	18 50	18 34	18 13	17 46	17 29	17 07	16 39
	4	19 46	19 30	19 12	18 48	18 17	17 55	17 26	16 31
	5	20 36	20 20	20 02	19 38	19 06	18 44	18 14	17 06
	6	21 33	21 19	21 02	20 41	20 13	19 55	19 31	18 59
	7	22 37	22 25	22 10	21 53	21 31	21 17	21 01	20 41
	8	23 44	23 34	23 23	23 10	22 53	22 43	22 32	22 19
	9	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	23 55
	10	00 54	00 47	00 39	00 29	00 18	00 11	00 04	.. ..
	11	02 05	02 01	01 56	01 50	01 43	01 39	01 35	01 30
	12	03 18	03 17	03 15	03 13	03 10	03 08	03 07	03 05
	13	04 33	04 34	04 35	04 37	04 38	04 39	04 40	04 41
	14	05 50	05 54	05 58	06 03	06 09	06 12	06 16	06 20
	15	07 08	07 15	07 22	07 31	07 42	07 48	07 55	08 03
	16	08 27	08 37	08 48	09 01	09 18	09 27	09 38	09 51
	17	09 45	09 57	10 12	10 30	10 53	11 07	11 24	11 44
	18	10 58	11 12	11 30	11 52	12 20	12 39	13 04	13 39
	19	12 01	12 16	12 35	12 58	13 30	13 51	14 19	15 09
	20	12 53	13 07	13 24	13 46	14 14	14 32	14 54	15 26
	21	13 33	13 45	13 59	14 17	14 38	14 52	15 07	15 26
	22	14 04	14 13	14 24	14 37	14 52	15 01	15 12	15 23
	23	14 29	14 35	14 42	14 51	15 01	15 07	15 13	15 20
	24	14 49	14 53	14 57	15 01	15 07	15 10	15 13	15 17
	25	15 08	15 08	15 09	15 10	15 11	15 12	15 12	15 13

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ABR.	26	03 34	03 35	03 36	03 37	03 38	03 39	03 40	03 40	03 41
	27	04 59	05 03	05 07	05 13	05 19	05 22	05 26	05 30	05 35
	28	06 23	06 29	06 37	06 47	06 58	07 05	07 12	07 20	07 30
	29	07 43	07 53	08 05	08 19	08 36	08 46	08 58	09 11	09 27
	30	08 59	09 11	09 26	09 45	10 08	10 23	10 41	11 03	11 34
MAY.	1	10 06	10 21	10 39	11 01	11 31	11 51	12 16	12 56	■
	2	11 04	11 20	11 39	12 03	12 35	12 58	13 29	■	■
	3	11 51	12 06	12 24	12 47	13 17	13 38	14 04	14 47	■
	4	12 28	12 41	12 57	13 17	13 42	13 58	14 17	14 41	15 17
	5	12 56	13 08	13 21	13 36	13 56	14 08	14 21	14 37	14 56
	6	13 19	13 28	13 38	13 50	14 04	14 13	14 22	14 33	14 45
	7	13 38	13 45	13 52	14 00	14 10	14 16	14 22	14 29	14 37
	8	13 55	13 59	14 03	14 08	14 14	14 17	14 21	14 25	14 30
	9	14 10	14 12	14 13	14 15	14 17	14 18	14 20	14 21	14 23
	10	14 25	14 24	14 23	14 22	14 20	14 19	14 19	14 17	14 16
	11	14 42	14 38	14 34	14 29	14 24	14 21	14 18	14 14	14 10
	12	15 00	14 54	14 47	14 39	14 29	14 23	14 17	14 10	14 03
	13	15 23	15 14	15 03	14 51	14 36	14 28	14 18	14 07	13 54
	14	15 51	15 40	15 26	15 09	14 48	14 36	14 21	14 04	13 43
	15	16 30	16 16	15 59	15 38	15 11	14 53	14 32	14 03	13 11
	16	17 20	17 05	16 46	16 23	15 52	15 30	15 02	14 12	□
	17	18 25	18 10	17 52	17 30	17 00	16 40	16 15	15 36	□
	18	19 40	19 28	19 13	18 54	18 31	18 17	17 59	17 37	17 08

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
ABR.	26	15 25	15 23	15 21	15 18	15 15	15 13	15 11	15 07
	27	15 44	15 39	15 34	15 27	15 20	15 15	15 11	15 05
	28	16 05	15 57	15 48	15 38	15 26	15 18	15 10	15 01
	29	16 30	16 19	16 07	15 52	15 34	15 24	15 11	14 57
	30	17 00	16 47	16 32	16 13	15 49	15 33	15 15	14 53
MAY.	1	17 38	17 23	17 05	16 43	16 13	15 53	15 27	14 47
	2	18 25	18 09	17 50	17 26	16 54	16 31	16 00	■
	3	19 20	19 05	18 47	18 25	17 54	17 34	17 08	■
	4	20 22	20 09	19 53	19 34	19 09	18 54	18 35	18 11
	5	21 28	21 17	21 05	20 50	20 31	20 20	20 06	19 51
	6	22 37	22 29	22 19	22 08	21 55	21 47	21 38	21 28
	7	23 47	23 42	23 36	23 28	23 20	23 15	23 09	23 03
	8	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	9	00 59	00 56	00 53	00 49	00 45	00 42	00 39	00 36
	10	02 13	02 12	02 12	02 12	02 11	02 11	02 11	02 11
	11	03 28	03 30	03 33	03 36	03 40	03 42	03 45	03 48
	12	04 45	04 51	04 57	05 04	05 12	05 17	05 23	05 29
	13	06 05	06 13	06 23	06 34	06 48	06 56	07 05	07 15
	14	07 25	07 36	07 49	08 05	08 25	08 37	08 51	09 08
	15	08 42	08 55	09 12	09 32	09 59	10 16	10 38	11 06
	16	09 51	10 06	10 25	10 48	11 19	11 40	12 09	12 58
	17	10 49	11 04	11 22	11 45	12 14	12 34	13 00	13 39
	18	11 34	11 47	12 03	12 22	12 46	13 00	13 18	13 40

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
MAY.	19	21 03	20 54	20 42	20 29	20 12	20 03	19 51	19 39	19 23
	20	22 29	22 22	22 15	22 06	21 56	21 50	21 43	21 36	21 27
	21	23 55	23 51	23 48	23 43	23 38	23 35	23 32	23 28	23 24
	22	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	23	01 20	01 19	01 19	01 19	01 18	01 18	01 18	01 18	01 17
	24	02 43	02 46	02 49	02 53	02 57	03 00	03 02	03 05	03 09
	25	04 05	04 11	04 18	04 26	04 35	04 40	04 46	04 53	05 00
	26	05 25	05 34	05 44	05 57	06 11	06 20	06 30	06 41	06 54
	27	06 42	06 54	07 07	07 24	07 45	07 58	08 13	08 31	08 54
	28	07 53	08 07	08 23	08 44	09 12	09 30	09 52	10 23	■
	29	08 55	09 10	09 29	09 53	10 25	10 47	11 17	■	■
	30	09 46	10 02	10 21	10 44	11 17	11 39	12 09	13 21	■
	31	10 27	10 41	10 59	11 20	11 48	12 06	12 28	12 59	■
JUN.	1	10 59	11 11	11 26	11 43	12 05	12 19	12 35	12 54	13 18
	2	11 24	11 34	11 45	11 59	12 16	12 25	12 36	12 49	13 04
	3	11 45	11 52	12 00	12 10	12 22	12 29	12 36	12 45	12 54
	4	12 02	12 07	12 12	12 19	12 26	12 31	12 35	12 41	12 47
	5	12 17	12 20	12 23	12 26	12 30	12 32	12 34	12 37	12 40
	6	12 32	12 32	12 32	12 32	12 33	12 33	12 33	12 33	12 33
	7	12 47	12 45	12 42	12 39	12 36	12 34	12 32	12 29	12 26
	8	13 04	12 59	12 54	12 47	12 40	12 35	12 31	12 25	12 20
	9	13 24	13 17	13 08	12 58	12 45	12 38	12 31	12 22	12 12
	10	13 49	13 39	13 27	13 12	12 55	12 44	12 32	12 18	12 02

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
MAY.	19	12 08	12 19	12 31	12 45	13 02	13 13	13 25	13 38
	20	12 35	12 42	12 51	13 01	13 12	13 19	13 26	13 35
	21	12 57	13 01	13 06	13 12	13 19	13 22	13 27	13 31
	22	13 15	13 17	13 19	13 21	13 23	13 25	13 26	13 28
	23	13 33	13 32	13 30	13 29	13 27	13 26	13 25	13 24
	24	13 51	13 47	13 42	13 37	13 31	13 28	13 24	13 20
	25	14 10	14 03	13 56	13 47	13 36	13 30	13 23	13 16
	26	14 32	14 23	14 12	13 59	13 43	13 34	13 24	13 12
	27	15 00	14 48	14 33	14 16	13 54	13 41	13 26	13 07
	28	15 34	15 19	15 02	14 41	14 13	13 55	13 32	13 01
	29	16 16	16 01	15 42	15 18	14 46	14 24	13 53	■
	30	17 08	16 53	16 34	16 10	15 38	15 16	14 46	13 34
	31	18 08	17 53	17 37	17 16	16 48	16 30	16 08	15 37
JUN.	1	19 12	19 01	18 47	18 30	18 08	17 55	17 40	17 21
	2	20 21	20 11	20 01	19 48	19 32	19 23	19 12	19 00
	3	21 30	21 24	21 16	21 07	20 56	20 50	20 43	20 35
	4	22 41	22 37	22 33	22 27	22 21	22 17	22 13	22 09
	5	23 53	23 52	23 50	23 48	23 46	23 45	23 43	23 42
	6	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	7	01 06	01 07	01 09	01 10	01 12	01 13	01 14	01 16
	8	02 21	02 25	02 30	02 35	02 41	02 45	02 49	02 53
	9	03 39	03 46	03 53	04 03	04 14	04 20	04 27	04 35
	10	04 58	05 08	05 19	05 33	05 50	06 00	06 11	06 24

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
JUN.	11	14 22	14 09	13 54	13 35	13 11	12 56	12 38	12 16	11 46
	12	15 07	14 52	14 34	14 11	13 41	13 21	12 56	12 16	□
	13	16 06	15 51	15 32	15 09	14 37	14 16	13 47	12 55	□
	14	17 19	17 05	16 49	16 28	16 02	15 44	15 23	14 55	14 05
	15	18 42	18 31	18 18	18 03	17 43	17 32	17 18	17 02	16 42
	16	20 10	20 02	19 53	19 43	19 30	19 23	19 14	19 05	18 54
	17	21 38	21 34	21 29	21 23	21 16	21 12	21 07	21 02	20 57
	18	23 05	23 04	23 02	23 01	22 59	22 58	22 56	22 55	22 54
	19	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	20	00 30	00 32	00 34	00 36	00 39	00 40	00 42	00 44	00 46
	21	01 53	01 57	02 03	02 09	02 17	02 21	02 26	02 31	02 37
	22	03 13	03 21	03 30	03 40	03 53	04 00	04 09	04 18	04 29
	23	04 30	04 40	04 53	05 08	05 27	05 38	05 51	06 06	06 25
	24	05 42	05 55	06 11	06 30	06 55	07 11	07 31	07 56	08 34
	25	06 46	07 01	07 20	07 43	08 13	08 34	09 02	09 50	■
	26	07 41	07 57	08 16	08 40	09 13	09 36	10 08	■	■
	27	08 26	08 41	08 59	09 22	09 52	10 12	10 38	11 18	■
	28	09 02	09 15	09 30	09 50	10 14	10 29	10 48	11 11	11 43
	29	09 29	09 40	09 53	10 08	10 27	10 38	10 51	11 06	11 24
	30	09 51	10 00	10 09	10 21	10 34	10 42	10 51	11 01	11 13
JUL.	1	10 10	10 16	10 22	10 30	10 40	10 45	10 51	10 57	11 05
	2	10 26	10 29	10 33	10 38	10 43	10 46	10 50	10 53	10 57

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
JUN.	11	06 17	06 30	06 45	07 03	07 26	07 41	07 58	08 50
	12	07 31	07 46	08 04	08 27	08 56	09 16	09 42	10 21
	13	08 37	08 52	09 11	09 34	10 06	10 27	10 56	11 48
	14	09 29	09 43	10 00	10 21	10 48	11 06	11 27	11 56
	15	10 09	10 21	10 34	10 51	11 11	11 23	11 37	11 54
	16	10 40	10 48	10 58	11 10	11 24	11 32	11 41	11 51
	17	11 04	11 09	11 15	11 23	11 31	11 36	11 41	11 47
	18	11 24	11 26	11 29	11 32	11 36	11 39	11 41	11 44
	19	11 42	11 41	11 41	11 41	11 41	11 40	11 40	11 40
	20	11 59	11 56	11 53	11 49	11 44	11 42	11 39	11 36
	21	12 18	12 12	12 06	11 58	11 49	11 44	11 38	11 32
	22	12 39	12 30	12 20	12 09	11 55	11 47	11 38	11 28
	23	13 04	12 52	12 39	12 24	12 04	11 53	11 39	11 23
	24	13 35	13 21	13 05	12 45	12 19	12 03	11 43	11 18
	25	14 13	13 58	13 40	13 16	12 45	12 24	11 57	11 09
	26	15 01	14 45	14 26	14 02	13 29	13 06	12 34	■
	27	15 57	15 42	15 24	15 02	14 32	14 13	13 47	13 06
	28	17 00	16 47	16 32	16 13	15 49	15 34	15 16	14 53
	29	18 07	17 56	17 44	17 30	17 12	17 01	16 49	16 34
	30	19 16	19 08	18 59	18 49	18 36	18 29	18 20	18 11
JUL.	1	20 26	20 21	20 15	20 08	20 00	19 56	19 50	19 45
	2	21 37	21 35	21 32	21 28	21 24	21 22	21 20	21 17

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
JUL.	3	10 41	10 42	10 43	10 44	10 46	10 47	10 48	10 49	10 51
	4	10 55	10 54	10 53	10 51	10 49	10 48	10 47	10 46	10 44
	5	11 11	11 07	11 03	10 58	10 53	10 49	10 46	10 42	10 38
	6	11 29	11 23	11 15	11 07	10 57	10 52	10 45	10 38	10 31
	7	11 51	11 42	11 31	11 19	11 04	10 56	10 46	10 35	10 23
	8	12 18	12 07	11 53	11 37	11 16	11 04	10 49	10 32	10 11
	9	12 56	12 42	12 25	12 04	11 38	11 20	10 59	10 31	09 44
	10	13 47	13 31	13 13	12 49	12 18	11 57	11 29	10 41	□
	11	14 53	14 38	14 20	13 58	13 28	13 08	12 43	12 04	□
	12	16 12	16 00	15 45	15 27	15 03	14 49	14 32	14 11	13 42
	13	17 40	17 31	17 20	17 07	16 51	16 42	16 31	16 19	16 04
	14	19 12	19 06	18 59	18 51	18 41	18 36	18 30	18 23	18 15
	15	20 43	20 40	20 37	20 33	20 29	20 27	20 24	20 21	20 18
	16	22 11	22 12	22 12	22 13	22 14	22 14	22 15	22 15	22 16
	17	23 37	23 40	23 44	23 49	23 55	23 58	...	...	...
	18	...	...	...	...	...	...	00 02	00 06	00 10
	19	00 59	01 06	01 13	01 22	01 33	01 40	01 47	01 54	02 03
	20	02 18	02 27	02 39	02 52	03 08	03 18	03 29	03 42	03 57
	21	03 32	03 44	03 59	04 16	04 39	04 53	05 10	05 30	05 57
	22	04 39	04 53	05 10	05 32	06 01	06 19	06 43	07 18	■
	23	05 37	05 52	06 11	06 35	07 07	07 29	07 59	■	■
	24	06 25	06 40	06 58	07 22	07 53	08 14	08 41	09 30	■
	25	07 03	07 17	07 34	07 54	08 20	08 37	08 57	09 25	10 09

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
JUL.	3	22 49	22 49	22 49	22 49	22 49	22 49	22 49	22 49
	4	...	...	...	...	...	...	...	...
	5	00 02	00 04	00 07	00 11	00 15	00 17	00 20	00 26
	6	01 16	01 22	01 28	01 35	01 44	01 49	01 54	02 00
	7	02 33	02 41	02 51	03 02	03 16	03 24	03 33	03 43
	8	03 50	04 01	04 15	04 30	04 50	05 02	05 16	05 33
	9	05 06	05 20	05 36	05 57	06 23	06 40	07 01	07 29
	10	06 16	06 32	06 50	07 13	07 45	08 05	08 33	09 22
	11	07 16	07 31	07 49	08 12	08 42	09 01	09 27	10 06
	12	08 03	08 16	08 32	08 50	09 14	09 29	09 46	10 08
	13	08 39	08 49	09 01	09 15	09 32	09 42	09 53	10 06
	14	09 07	09 14	09 22	09 31	09 42	09 48	09 55	10 03
	15	09 30	09 33	09 38	09 43	09 49	09 52	09 56	10 00
	16	09 49	09 50	09 51	09 52	09 54	09 55	09 55	09 56
	17	10 08	10 06	10 03	10 01	09 58	09 56	09 55	09 53
	18	10 26	10 22	10 16	10 10	10 03	09 59	09 54	09 49
	19	10 47	10 39	10 31	10 20	10 08	10 02	09 54	09 45
	20	11 10	11 00	10 48	10 34	10 17	10 06	09 55	09 41
	21	11 39	11 26	11 11	10 53	10 30	10 15	09 58	09 37
	22	12 14	12 00	11 42	11 20	10 51	10 32	10 08	09 33
	23	12 58	12 43	12 24	12 00	11 28	11 06	10 36	■
	24	13 51	13 36	13 18	12 55	12 24	12 03	11 35	10 47
	25	14 51	14 38	14 21	14 01	13 35	13 19	12 59	12 32

(... ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
JUL.	26	07 34	07 45	07 59	08 16	08 36	08 49	09 03	09 21	09 42
	27	07 58	08 07	08 18	08 30	08 46	08 55	09 05	09 17	09 30
	28	08 17	08 24	08 32	08 41	08 52	08 58	09 05	09 13	09 22
	29	08 34	08 39	08 44	08 50	08 56	09 00	09 05	09 09	09 14
	30	08 50	08 52	08 54	08 57	09 00	09 02	09 04	09 06	09 08
	31	09 05	09 04	09 04	09 03	09 03	09 03	09 02	09 02	09 02
AGO.	1	09 20	09 17	09 14	09 10	09 06	09 04	09 02	08 59	08 56
	2	09 36	09 31	09 25	09 19	09 11	09 06	09 01	08 55	08 49
	3	09 56	09 48	09 39	09 29	09 17	09 09	09 02	08 53	08 42
	4	10 20	10 10	09 58	09 44	09 26	09 16	09 04	08 50	08 34
	5	10 52	10 39	10 24	10 06	09 42	09 28	09 11	08 49	08 21
	6	11 34	11 20	11 02	10 40	10 11	09 53	09 29	08 54	□
	7	12 31	12 16	11 57	11 35	11 04	10 44	10 17	09 33	□
	8	13 42	13 28	13 12	12 51	12 25	12 08	11 47	11 19	10 31
	9	15 05	14 54	14 41	14 26	14 06	13 54	13 41	13 24	13 04
	10	16 36	16 28	16 19	16 09	15 56	15 48	15 40	15 31	15 20
	11	18 09	18 05	18 00	17 54	17 47	17 43	17 39	17 34	17 28
	12	19 41	19 40	19 39	19 38	19 36	19 35	19 34	19 33	19 32
	13	21 11	21 13	21 16	21 19	21 22	21 24	21 26	21 28	21 31
	14	22 38	22 43	22 49	22 56	23 05	23 10	23 15	23 21	23 28
	15	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	16	00 00	00 09	00 18	00 30	00 44	00 52	01 01	01 12	01 24
	17	01 18	01 29	01 42	01 58	02 18	02 30	02 44	03 01	03 22

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m	h m
JUL.	26	15 56	15 45	15 32	15 16	14 56	14 44	14 30	14 13	13 52
	27	17 05	16 56	16 46	16 34	16 19	16 11	16 01	15 50	15 37
	28	18 14	18 08	18 01	17 53	17 43	17 38	17 32	17 24	17 16
	29	19 25	19 21	19 17	19 13	19 07	19 04	19 01	18 57	18 53
	30	20 36	20 35	20 34	20 33	20 31	20 30	20 29	20 28	20 27
	31	21 48	21 49	21 51	21 53	21 56	21 57	21 59	22 00	22 02
AGO.	1	23 00	23 05	23 09	23 15	23 22	23 26	23 30	23 35	23 40
	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	3	00 14	00 21	00 29	00 39	00 50	00 57	01 04	01 12	01 22
	4	01 29	01 39	01 50	02 04	02 21	02 31	02 42	02 55	03 11
	5	02 44	02 56	03 11	03 29	03 52	04 06	04 23	04 44	05 11
	6	03 55	04 09	04 27	04 49	05 17	05 36	06 00	06 34	□
	7	04 59	05 14	05 32	05 55	06 26	06 46	07 13	07 57	□
	8	05 51	06 06	06 22	06 43	07 10	07 27	07 48	08 17	09 05
	9	06 33	06 45	06 58	07 15	07 35	07 47	08 02	08 18	08 39
	10	07 05	07 14	07 24	07 36	07 50	07 58	08 07	08 17	08 29
	11	07 31	07 37	07 43	07 50	07 58	08 03	08 09	08 15	08 21
	12	07 53	07 55	07 58	08 01	08 05	08 07	08 09	08 12	08 14
	13	08 13	08 12	08 12	08 11	08 10	08 10	08 09	08 09	08 08
	14	08 32	08 29	08 25	08 20	08 15	08 12	08 09	08 05	08 01
	15	08 53	08 46	08 39	08 31	08 21	08 16	08 09	08 02	07 55
	16	09 16	09 07	08 56	08 44	08 29	08 20	08 11	07 59	07 46
	17	09 43	09 32	09 18	09 01	08 41	08 28	08 14	07 57	07 35

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
AGO.	18	02 28	02 42	02 58	03 18	03 44	04 01	04 21	04 48	05 32
	19	03 30	03 45	04 03	04 26	04 57	05 17	05 44	06 29	■
	20	04 22	04 37	04 55	05 18	05 50	06 10	06 38	07 27	■
	21	05 03	05 18	05 35	05 56	06 23	06 41	07 03	07 33	08 37
	22	05 36	05 49	06 03	06 21	06 43	06 57	07 13	07 32	07 57
	23	06 03	06 13	06 24	06 38	06 55	07 05	07 16	07 30	07 45
	24	06 24	06 31	06 40	06 50	07 03	07 10	07 18	07 27	07 37
	25	06 42	06 47	06 53	07 00	07 08	07 13	07 18	07 23	07 30
	26	06 58	07 01	07 04	07 08	07 12	07 15	07 17	07 20	07 24
	27	07 13	07 14	07 14	07 15	07 16	07 16	07 17	07 17	07 18
	28	07 29	07 27	07 25	07 22	07 19	07 18	07 16	07 14	07 12
	29	07 45	07 41	07 36	07 30	07 24	07 20	07 16	07 11	07 06
	30	08 03	07 57	07 49	07 40	07 29	07 23	07 16	07 09	07 00
	31	08 26	08 17	08 06	07 53	07 38	07 29	07 19	07 07	06 54
SEP.	1	08 54	08 42	08 28	08 12	07 51	07 39	07 24	07 07	06 45
	2	09 31	09 17	09 01	08 40	08 14	07 57	07 37	07 10	06 28
	3	10 20	10 05	09 47	09 24	08 55	08 35	08 10	07 31	□
	4	11 22	11 07	10 50	10 29	10 00	09 42	09 19	08 46	□
	5	12 37	12 24	12 10	11 52	11 29	11 15	10 59	10 38	10 11
	6	14 02	13 52	13 41	13 28	13 12	13 03	12 52	12 40	12 25
	7	15 32	15 26	15 19	15 11	15 01	14 55	14 49	14 42	14 34
	8	17 04	17 02	16 58	16 55	16 50	16 48	16 45	16 42	16 39
	9	18 36	18 37	18 37	18 38	18 39	18 39	18 40	18 40	18 41

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m	h m
AGO.	18	10 17	10 03	09 47	09 26	09 00	08 43	08 22	07 55	07 11
	19	10 58	10 43	10 25	10 02	09 31	09 11	08 44	07 59	■
	20	11 48	11 33	11 14	10 51	10 20	10 00	09 32	08 43	■
	21	12 45	12 31	12 14	11 54	11 26	11 09	10 47	10 17	09 14
	22	13 48	13 36	13 22	13 05	12 43	12 30	12 15	11 55	11 31
	23	14 55	14 46	14 35	14 21	14 05	13 56	13 45	13 32	13 17
	24	16 04	15 57	15 49	15 40	15 29	15 22	15 15	15 07	14 57
	25	17 15	17 10	17 05	16 59	16 53	16 49	16 44	16 39	16 34
	26	18 25	18 24	18 22	18 19	18 16	18 15	18 13	18 11	18 09
	27	19 37	19 38	19 38	19 39	19 41	19 41	19 42	19 43	19 44
	28	20 49	20 52	20 56	21 01	21 06	21 09	21 12	21 16	21 20
	29	22 02	22 08	22 15	22 23	22 33	22 38	22 44	22 51	22 59
	30	23 16	23 25	23 35	23 47	.. ..	.. ..	.. ..	.. ..	.. ..
	31	.. ..	.. ..	.. ..	.. ..	00 01	00 10	00 19	00 30	00 43
SEP.	1	00 29	00 40	00 54	01 10	01 30	01 42	01 56	02 13	02 34
	2	01 40	01 53	02 09	02 29	02 55	03 12	03 32	03 58	04 41
	3	02 44	02 59	03 17	03 39	04 09	04 29	04 54	05 32	□
	4	03 40	03 55	04 12	04 34	05 02	05 21	05 44	06 17	□
	5	04 25	04 38	04 53	05 12	05 35	05 49	06 06	06 27	06 54
	6	05 01	05 11	05 23	05 37	05 54	06 04	06 15	06 28	06 44
	7	05 30	05 37	05 45	05 54	06 06	06 12	06 19	06 27	06 36
	8	05 54	05 58	06 02	06 07	06 14	06 17	06 21	06 25	06 30
	9	06 15	06 16	06 17	06 18	06 20	06 21	06 22	06 23	06 24

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
SEP.	10	20 06	20 10	20 14	20 19	20 25	20 28	20 32	20 36	20 41
	11	21 33	21 40	21 48	21 57	22 09	22 15	22 22	22 31	22 40
	12	22 56	23 06	23 17	23 31	23 48	23 58	.. ..	.. ..	.. ..
	13	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	00 10	00 23	00 39
	14	00 12	00 24	00 39	00 57	01 20	01 35	01 52	02 13	02 42
	15	01 19	01 33	01 50	02 12	02 40	02 59	03 23	03 57	■
	16	02 15	02 30	02 48	03 11	03 42	04 02	04 29	05 14	■
	17	03 01	03 15	03 33	03 54	04 23	04 41	05 05	05 38	■
	18	03 37	03 50	04 05	04 24	04 48	05 02	05 20	05 41	06 11
	19	04 06	04 16	04 29	04 44	05 02	05 13	05 26	05 41	05 58
	20	04 29	04 37	04 47	04 58	05 12	05 20	05 29	05 39	05 50
	21	04 48	04 54	05 01	05 09	05 18	05 24	05 30	05 36	05 44
	22	05 05	05 09	05 13	05 18	05 23	05 26	05 30	05 34	05 38
	23	05 21	05 22	05 24	05 25	05 27	05 28	05 29	05 31	05 32
	24	05 36	05 35	05 34	05 33	05 31	05 30	05 29	05 28	05 27
	25	05 53	05 49	05 45	05 41	05 35	05 32	05 29	05 25	05 21
	26	06 11	06 05	05 58	05 50	05 41	05 36	05 30	05 23	05 16
	27	06 32	06 24	06 14	06 02	05 49	05 41	05 32	05 22	05 10
	28	06 58	06 47	06 35	06 19	06 00	05 49	05 36	05 21	05 03
	29	07 32	07 19	07 03	06 44	06 20	06 05	05 47	05 24	04 53
	30	08 16	08 01	07 44	07 22	06 54	06 35	06 12	05 38	□
OCT.	1	09 12	08 57	08 40	08 18	07 49	07 30	07 06	06 31	□
	2	10 20	10 07	09 51	09 32	09 07	08 52	08 33	08 09	07 34

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m	h m
SEP.	10	06 35	06 33	06 31	06 28	06 25	06 24	06 22	06 20	06 18
	11	06 55	06 51	06 45	06 39	06 31	06 27	06 23	06 17	06 12
	12	07 18	07 11	07 02	06 51	06 39	06 32	06 24	06 15	06 05
	13	07 45	07 34	07 22	07 08	06 50	06 39	06 27	06 13	05 57
	14	08 17	08 04	07 49	07 30	07 06	06 52	06 34	06 13	05 44
	15	08 56	08 41	08 24	08 02	07 33	07 15	06 51	06 17	■
	16	09 43	09 28	09 10	08 47	08 17	07 56	07 29	06 44	■
	17	10 38	10 24	10 07	09 46	09 17	08 59	08 36	08 03	■
	18	11 40	11 27	11 12	10 54	10 31	10 17	09 59	09 38	09 09
	19	12 45	12 35	12 23	12 09	11 51	11 41	11 28	11 14	10 57
	20	13 54	13 46	13 37	13 26	13 14	13 06	12 58	12 48	12 38
	21	15 03	14 58	14 52	14 45	14 37	14 32	14 27	14 21	14 15
	22	16 14	16 11	16 08	16 05	16 01	15 58	15 56	15 53	15 50
	23	17 26	17 25	17 25	17 25	17 25	17 25	17 25	17 25	17 24
	24	18 38	18 40	18 43	18 47	18 50	18 52	18 55	18 58	19 00
	25	19 51	19 57	20 02	20 09	20 17	20 22	20 27	20 33	20 39
	26	21 05	21 13	21 22	21 33	21 46	21 53	22 01	22 11	22 22
	27	22 19	22 29	22 42	22 56	23 14	23 25	23 38	23 52	.. ..
	28	23 30	23 43	23 58	.. ..	.. ..	.. ..	.. ..	.. ..	00 10
	29	.. ..	.. ..	.. ..	00 17	00 41	00 56	01 13	01 36	02 07
	30	00 36	00 51	01 08	01 29	01 58	02 16	02 40	03 13	□
OCT.	1	01 34	01 48	02 06	02 28	02 57	03 16	03 40	04 16	□
	2	02 21	02 35	02 51	03 10	03 36	03 51	04 10	04 35	05 10

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
OCT.	3	11 38	11 28	11 15	11 00	10 42	10 31	10 18	10 03	09 45
	4	13 03	12 56	12 47	12 37	12 24	12 17	12 09	12 00	11 49
	5	14 32	14 28	14 23	14 17	14 10	14 06	14 02	13 57	13 51
	6	16 02	16 01	15 59	15 58	15 56	15 55	15 54	15 53	15 51
	7	17 32	17 34	17 36	17 39	17 42	17 44	17 46	17 48	17 51
	8	19 01	19 06	19 12	19 19	19 27	19 32	19 37	19 43	19 50
	9	20 27	20 35	20 45	20 56	21 10	21 18	21 27	21 38	21 50
	10	21 47	21 59	22 12	22 28	22 48	23 00	23 14	23 31	23 52
	11	23 01	23 14	23 31	23 51	.. ..	.. ..	.. ..	.. ..	.. ..
	12	.. ..	.. ..	.. ..	.. ..	00 17	00 33	00 54	01 21	02 05
	13	00 04	00 18	00 36	00 59	01 29	01 49	02 15	02 56	■
	14	00 55	01 10	01 28	01 50	02 20	02 39	03 04	03 42	■
	15	01 36	01 49	02 05	02 25	02 51	03 07	03 26	03 51	04 29
	16	02 07	02 19	02 33	02 49	03 09	03 21	03 36	03 52	04 13
	17	02 33	02 42	02 53	03 05	03 21	03 29	03 40	03 51	04 05
	18	02 53	03 00	03 08	03 17	03 28	03 34	03 41	03 49	03 58
	19	03 11	03 16	03 21	03 27	03 33	03 37	03 42	03 47	03 52
	20	03 27	03 29	03 32	03 35	03 38	03 40	03 42	03 44	03 46
	21	03 43	03 43	03 42	03 42	03 42	03 42	03 41	03 41	03 41
	22	03 59	03 56	03 53	03 50	03 46	03 44	03 41	03 39	03 36
	23	04 16	04 11	04 05	03 59	03 51	03 47	03 42	03 36	03 30
	24	04 37	04 29	04 20	04 10	03 58	03 51	03 43	03 34	03 25
	25	05 01	04 51	04 39	04 25	04 08	03 58	03 47	03 34	03 18

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
OCT.	3	02 59	03 10	03 24	03 39	03 58	04 10	04 23	04 39
	4	03 30	03 38	03 48	03 59	04 12	04 20	04 29	04 39
	5	03 55	04 00	04 06	04 13	04 22	04 26	04 32	04 38
	6	04 16	04 19	04 21	04 25	04 28	04 31	04 33	04 35
	7	04 36	04 36	04 35	04 35	04 34	04 34	04 34	04 33
	8	04 57	04 53	04 50	04 45	04 40	04 37	04 34	04 31
	9	05 18	05 12	05 05	04 57	04 47	04 41	04 35	04 28
	10	05 43	05 34	05 24	05 11	04 56	04 48	04 38	04 27
	11	06 13	06 01	05 48	05 31	05 10	04 58	04 43	04 26
	12	06 50	06 36	06 19	05 59	05 33	05 16	04 55	04 28
	13	07 35	07 20	07 02	06 39	06 09	05 49	05 23	04 42
	14	08 28	08 13	07 56	07 34	07 04	06 45	06 20	05 42
	15	09 28	09 15	08 59	08 40	08 14	07 59	07 39	07 14
	16	10 33	10 22	10 09	09 53	09 33	09 21	09 08	08 51
	17	11 40	11 32	11 22	11 10	10 55	10 47	10 37	10 26
	18	12 50	12 44	12 36	12 28	12 18	12 13	12 06	11 59
	19	14 00	13 56	13 52	13 47	13 42	13 39	13 35	13 31
	20	15 11	15 10	15 09	15 07	15 06	15 05	15 04	15 02
	21	16 23	16 25	16 26	16 28	16 31	16 32	16 33	16 35
	22	17 37	17 41	17 46	17 51	17 58	18 01	18 05	18 10
	23	18 52	18 58	19 06	19 16	19 27	19 33	19 40	19 48
	24	20 07	20 16	20 27	20 41	20 57	21 07	21 18	21 30
	25	21 20	21 32	21 47	22 04	22 26	22 40	22 56	23 15

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
OCT.	26	05 33	05 20	05 06	04 48	04 25	04 11	03 55	03 35	03 09
	27	06 14	06 00	05 43	05 22	04 54	04 36	04 14	03 44	02 41
	28	07 06	06 52	06 34	06 12	05 42	05 23	04 58	04 21	□
	29	08 11	07 57	07 41	07 20	06 54	06 37	06 16	05 49	05 02
	30	09 25	09 14	09 00	08 44	08 23	08 11	07 56	07 39	07 17
	31	10 46	10 38	10 28	10 16	10 01	09 53	09 43	09 32	09 20
NOV.	1	12 11	12 06	11 59	11 52	11 43	11 38	11 32	11 26	11 19
	2	13 38	13 35	13 32	13 29	13 25	13 23	13 21	13 18	13 15
	3	15 05	15 05	15 06	15 07	15 08	15 08	15 09	15 10	15 11
	4	16 32	16 35	16 40	16 45	16 50	16 54	16 58	17 02	17 06
	5	17 57	18 04	18 12	18 21	18 33	18 39	18 46	18 54	19 04
	6	19 21	19 30	19 42	19 56	20 13	20 23	20 35	20 48	21 04
	7	20 38	20 51	21 06	21 24	21 47	22 02	22 19	22 41	23 11
	8	21 47	22 02	22 19	22 41	23 10	23 29	23 53	.. ..	■
	9	22 45	23 00	23 19	23 42	.. ..	.. ..	.. ..	00 28	■
	10	23 32	23 46	.. ..	.. ..	00 12	00 33	01 00	01 45	■
	11	.. ..	.. ..	00 03	00 24	00 52	01 10	01 33	02 04	■
	12	00 08	00 20	00 35	00 53	01 16	01 30	01 46	02 07	02 33
	13	00 36	00 46	00 58	01 12	01 30	01 40	01 52	02 06	02 22
	14	00 58	01 06	01 15	01 26	01 39	01 46	01 54	02 04	02 14
	15	01 17	01 23	01 29	01 36	01 45	01 50	01 55	02 01	02 08
	16	01 34	01 37	01 40	01 44	01 49	01 52	01 55	01 58	02 02
	17	01 49	01 50	01 51	01 52	01 53	01 54	01 55	01 56	01 56

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m	h m
OCT.	26	22 29	22 43	23 00	23 21	23 48	.. ..	.. ..	.. ..	.. ..
	27	23 30	23 45	.. ..	.. ..	.. ..	00 06	00 28	00 58	02 00
	28	.. ..	.. ..	00 03	00 25	00 55	01 14	01 39	02 16	□
	29	00 21	00 35	00 52	01 12	01 39	01 56	02 17	02 45	03 31
	30	01 01	01 13	01 27	01 44	02 06	02 18	02 33	02 51	03 14
	31	01 33	01 43	01 53	02 06	02 21	02 30	02 41	02 52	03 06
NOV.	1	01 59	02 05	02 13	02 21	02 32	02 37	02 44	02 51	02 59
	2	02 21	02 24	02 28	02 33	02 39	02 42	02 45	02 49	02 53
	3	02 40	02 41	02 42	02 43	02 44	02 45	02 46	02 47	02 48
	4	03 00	02 58	02 55	02 53	02 50	02 48	02 46	02 44	02 42
	5	03 20	03 15	03 09	03 03	02 56	02 51	02 47	02 42	02 36
	6	03 42	03 35	03 26	03 16	03 03	02 56	02 48	02 39	02 29
	7	04 09	03 59	03 47	03 32	03 14	03 04	02 51	02 37	02 21
	8	04 43	04 30	04 14	03 55	03 32	03 17	02 59	02 37	02 07
	9	05 24	05 09	04 52	04 30	04 01	03 42	03 17	02 42	■
	10	06 14	05 59	05 41	05 18	04 47	04 27	04 00	03 15	■
	11	07 12	06 58	06 41	06 20	05 53	05 35	05 12	04 41	■
	12	08 16	08 04	07 50	07 32	07 10	06 56	06 40	06 20	05 54
	13	09 24	09 14	09 03	08 49	08 32	08 22	08 11	07 58	07 42
	14	10 33	10 26	10 17	10 08	09 56	09 49	09 41	09 33	09 23
	15	11 43	11 38	11 33	11 26	11 19	11 15	11 10	11 05	10 59
	16	12 53	12 51	12 49	12 46	12 42	12 40	12 38	12 36	12 33
	17	14 05	14 05	14 05	14 06	14 06	14 07	14 07	14 08	14 08

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

ORTO Y OCASO DE LA LUNA, 2014
 TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
 ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
NOV.	18	02 05	02 03	02 01	01 59	01 57	01 56	01 54	01 53	01 51
	19	02 21	02 17	02 13	02 08	02 01	01 58	01 54	01 50	01 45
	20	02 40	02 33	02 26	02 17	02 07	02 01	01 55	01 48	01 40
	21	03 03	02 54	02 43	02 31	02 16	02 07	01 57	01 46	01 33
	22	03 31	03 20	03 06	02 50	02 29	02 17	02 03	01 46	01 25
	23	04 09	03 55	03 39	03 19	02 53	02 36	02 16	01 50	01 09
	24	04 58	04 43	04 25	04 03	03 33	03 14	02 49	02 10	□
	25	06 00	05 45	05 28	05 07	04 38	04 20	03 57	03 24	□
	26	07 13	07 00	06 46	06 28	06 05	05 51	05 34	05 13	04 45
	27	08 33	08 23	08 12	07 59	07 42	07 33	07 21	07 08	06 53
	28	09 57	09 51	09 43	09 34	09 24	09 17	09 11	09 03	08 54
	29	11 23	11 19	11 15	11 11	11 05	11 02	10 58	10 55	10 50
	30	12 48	12 47	12 47	12 46	12 46	12 45	12 45	12 44	12 44
DIC.	1	14 13	14 15	14 18	14 22	14 26	14 28	14 30	14 33	14 36
	2	15 37	15 42	15 49	15 56	16 05	16 10	16 16	16 22	16 30
	3	16 59	17 08	17 18	17 29	17 44	17 52	18 02	18 13	18 26
	4	18 18	18 29	18 43	18 59	19 20	19 32	19 47	20 04	20 27
	5	19 30	19 44	20 01	20 21	20 48	21 05	21 26	21 55	22 47
	6	20 33	20 49	21 07	21 30	22 01	22 21	22 48	23 35	■
	7	21 25	21 40	21 58	22 21	22 51	23 11	23 37	.. ..	■
	8	22 06	22 20	22 36	22 56	23 22	23 38	23 58	00 18	■
	9	22 38	22 50	23 03	23 19	23 39	23 52	.. ..	00 23	01 02
	10	23 03	23 12	23 23	23 35	23 50	23 59	00 06	00 22	00 43

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m	h m
NOV.	18	15 17	15 20	15 24	15 28	15 32	15 35	15 38	15 41	15 45
	19	16 32	16 37	16 44	16 51	17 00	17 06	17 11	17 18	17 25
	20	17 47	17 56	18 06	18 17	18 31	18 39	18 49	18 59	19 11
	21	19 03	19 14	19 27	19 43	20 03	20 15	20 29	20 45	21 06
	22	20 16	20 30	20 46	21 05	21 31	21 47	22 07	22 33	23 14
	23	21 22	21 37	21 55	22 17	22 47	23 06	23 31	.. ..	□
	24	22 19	22 33	22 51	23 12	23 41	23 59	.. ..	00 10	□
	25	23 03	23 16	23 31	23 50	.. ..	.. ..	00 23	00 56	□
	26	23 38	23 49	.. ..	.. ..	00 13	00 28	00 45	01 06	01 34
	27	.. ..	.. ..	00 01	00 15	00 32	00 42	00 54	01 08	01 23
	28	00 06	00 13	00 22	00 32	00 44	00 50	00 58	01 07	01 16
	29	00 28	00 33	00 38	00 44	00 51	00 55	01 00	01 04	01 10
	30	00 48	00 50	00 52	00 54	00 57	00 58	01 00	01 02	01 04
DIC.	1	01 07	01 06	01 05	01 03	01 02	01 01	01 00	00 59	00 58
	2	01 26	01 22	01 18	01 13	01 07	01 04	01 00	00 56	00 52
	3	01 46	01 40	01 32	01 24	01 13	01 07	01 01	00 54	00 46
	4	02 10	02 01	01 50	01 37	01 22	01 13	01 03	00 51	00 38
	5	02 39	02 28	02 13	01 56	01 35	01 22	01 07	00 49	00 27*
	6	03 16	03 02	02 45	02 24	01 57	01 40	01 18	00 49	■
	7	04 02	03 47	03 28	03 05	02 34	02 14	01 46	01 00	■
	8	04 57	04 42	04 24	04 01	03 31	03 12	02 46	02 05	■
	9	05 59	05 45	05 30	05 10	04 45	04 29	04 10	03 44	03 06
	10	07 06	06 55	06 42	06 26	06 07	05 55	05 41	05 25	05 05

(.. ..) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

(*) FENÓMENO DOBLE (Ver página 311)

ORTO Y OCASO DE LA LUNA, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO LUNA

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
DIC.	11	23 24	23 30	23 38	23 47	23 57	...	00 09	00 20	00 33
	12	23 41	23 45	23 50	23 56	...	00 03	00 10	00 17	00 26
	13	23 57	23 58	...	...	00 02	00 06	00 10	00 14	00 20
	14	...	...	00 01	00 03	00 06	00 08	00 10	00 12	00 14
	15	00 12	00 11	00 11	00 10	00 10	00 09	00 09	00 09	00 08
	16	00 27	00 24	00 21	00 18	00 14	00 11	00 09	00 06	00 03*
	17	00 44	00 39	00 33	00 26	00 18	00 14	00 09	00 03	23 51
	18	01 05	00 57	00 48	00 38	00 25	00 18	00 10	00 01	23 43
	19	01 30	01 19	01 07	00 53	00 35	00 25	00 13	00 00	23 33
	20	02 02	01 50	01 34	01 16	00 53	00 38	00 21	00 00	□
	21	02 46	02 31	02 14	01 52	01 24	01 05	00 42	00 09	□
	22	03 42	03 28	03 10	02 47	02 17	01 58	01 32	00 53	□
	23	04 53	04 39	04 23	04 03	03 37	03 21	03 01	02 34	01 53
	24	06 13	06 02	05 49	05 34	05 14	05 03	04 49	04 33	04 14
	25	07 39	07 31	07 22	07 11	06 58	06 51	06 42	06 33	06 22
	26	09 06	09 02	08 56	08 50	08 43	08 39	08 34	08 29	08 23
	27	10 33	10 32	10 30	10 28	10 26	10 24	10 23	10 21	10 20
	28	11 59	12 01	12 02	12 04	12 07	12 08	12 10	12 11	12 13
	29	13 23	13 27	13 33	13 39	13 46	13 50	13 55	14 00	14 05
	30	14 45	14 52	15 01	15 11	15 24	15 31	15 39	15 48	15 58
	31	16 03	16 14	16 26	16 41	16 59	17 10	17 22	17 37	17 54

OCASO LUNA

		h m	h m	h m	h m	h m	h m	h m	h m
DIC.	11	08 15	08 06	07 56	07 45	07 31	07 22	07 13	06 50
	12	09 25	09 19	09 12	09 04	08 55	08 49	08 43	08 29
	13	10 35	10 31	10 28	10 23	10 18	10 15	10 12	10 04
	14	11 45	11 44	11 43	11 42	11 41	11 40	11 40	11 38
	15	12 57	12 58	13 00	13 02	13 05	13 06	13 08	13 10
	16	14 09	14 13	14 18	14 24	14 31	14 35	14 39	14 44
	17	15 23	15 30	15 38	15 48	15 59	16 06	16 13	16 21
	18	16 39	16 48	17 00	17 13	17 30	17 40	17 51	18 04
	19	17 53	18 06	18 20	18 38	19 01	19 15	19 32	19 52
	20	19 04	19 19	19 36	19 57	20 25	20 44	21 07	21 40
	21	20 07	20 22	20 40	21 02	21 32	21 52	22 18	22 57
	22	20 59	21 13	21 29	21 49	22 16	22 32	22 52	23 19
	23	21 39	21 51	22 04	22 20	22 40	22 52	23 06	23 23
	24	22 11	22 19	22 29	22 41	22 55	23 03	23 12	23 23
	25	22 36	22 41	22 48	22 55	23 04	23 09	23 15	23 21
	26	22 57	22 59	23 03	23 06	23 11	23 13	23 16	23 18
	27	23 16	23 16	23 16	23 16	23 16	23 16	23 16	23 16
	28	23 34	23 32	23 29	23 25	23 21	23 18	23 16	23 13
	29	23 54	23 49	23 42	23 35	23 27	23 22	23 16	23 10
	30	...	...	23 59	23 47	23 34	23 26	23 18	23 08
	31	00 16	00 08	...	...	23 45	23 34	23 21	23 06

(...) INDICA QUE EL FENÓMENO OCURRE AL DÍA SIGUIENTE

(*) FENÓMENO DOBLE (Ver página 311)

AURORA CIVIL

LAT. S	69°	
	h m	h m
NOV. 2	00 26	23 57

CREPÚSCULO CIVIL

LAT. S	62°	
	h m	h m
ENE. 10	00 03	23 42

ORTO LUNA

LAT. S	72°	
	h m	h m
DIC. 16	00 03	23 57

OCASO LUNA

LAT. S	72°	
	h m	h m
DIC. 5	00 27	23 57
DIC. 23	00 01	23 43

ORTO Y OCASO DEL SOL, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO SOL

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ENE.	2	02 44	02 20	01 45	00 37	□	□	□	□	□
	6	02 52	02 28	01 56	01 02	□	□	□	□	□
	10	03 00	02 38	02 09	01 23	□	□	□	□	□
	14	03 09	02 48	02 22	01 44	□	□	□	□	□
	18	03 19	03 00	02 36	02 03	01 05	□	□	□	□
	22	03 29	03 12	02 50	02 22	01 39	01 00	□	□	□
	26	03 40	03 24	03 05	02 40	02 05	01 40	01 00	□	□
	30	03 51	03 36	03 19	02 57	02 28	02 09	01 44	01 04	□
FEB.	3	04 02	03 49	03 33	03 14	02 50	02 34	02 15	01 51	01 14
	7	04 13	04 01	03 47	03 31	03 10	02 57	02 42	02 24	02 00
	11	04 24	04 13	04 01	03 47	03 29	03 18	03 06	02 51	02 34
	15	04 35	04 26	04 15	04 02	03 47	03 38	03 28	03 16	03 02
	19	04 45	04 38	04 28	04 18	04 04	03 57	03 48	03 38	03 27
	23	04 56	04 49	04 41	04 32	04 21	04 15	04 08	04 00	03 51
	27	05 07	05 01	04 54	04 47	04 37	04 32	04 26	04 20	04 12
MAR.	3	05 17	05 12	05 07	05 01	04 53	04 49	04 44	04 39	04 33
	7	05 27	05 24	05 19	05 14	05 09	05 05	05 02	04 58	04 53
	11	05 37	05 35	05 32	05 28	05 24	05 21	05 19	05 16	05 13
	15	05 47	05 46	05 44	05 41	05 39	05 37	05 35	05 33	05 31
	19	05 57	05 56	05 56	05 54	05 53	05 53	05 52	05 51	05 50
	23	06 07	06 07	06 07	06 07	06 08	06 08	06 08	06 08	06 08
	27	06 17	06 18	06 19	06 20	06 22	06 23	06 24	06 25	06 27
	31	06 26	06 28	06 31	06 33	06 37	06 38	06 40	06 42	06 45
ABR.	4	06 36	06 39	06 42	06 46	06 51	06 54	06 56	07 00	07 03

OCASO SOL

		h m	h m	h m	h m	h m	h m	h m	h m	h m
ENE.	2	21 23	21 47	22 21	23 25	□	□	□	□	□
	6	21 19	21 42	22 13	23 05	□	□	□	□	□
	10	21 14	21 36	22 04	22 47	□	□	□	□	□
	14	21 08	21 28	21 54	22 31	□	□	□	□	□
	18	21 01	21 19	21 42	22 14	23 07	□	□	□	□
	22	20 52	21 09	21 30	21 58	22 39	23 12	□	□	□
	26	20 44	20 59	21 18	21 42	22 15	22 38	23 13	□	□
	30	20 34	20 48	21 05	21 26	21 54	22 12	22 35	23 09	□
FEB.	3	20 24	20 37	20 52	21 10	21 34	21 49	22 06	22 29	23 01
	7	20 14	20 25	20 38	20 55	21 15	21 27	21 41	21 59	22 20
	11	20 03	20 13	20 25	20 39	20 56	21 07	21 18	21 32	21 49
	15	19 52	20 01	20 11	20 23	20 38	20 47	20 57	21 08	21 21
	19	19 40	19 48	19 57	20 08	20 20	20 28	20 36	20 45	20 56
	23	19 29	19 35	19 43	19 52	20 03	20 09	20 16	20 23	20 32
	27	19 17	19 23	19 29	19 36	19 45	19 50	19 56	20 02	20 09
MAR.	3	19 05	19 10	19 15	19 21	19 28	19 32	19 37	19 42	19 47
	7	18 53	18 57	19 01	19 05	19 11	19 14	19 18	19 21	19 26
	11	18 41	18 44	18 47	18 50	18 54	18 56	18 59	19 02	19 05
	15	18 29	18 31	18 32	18 35	18 37	18 39	18 40	18 42	18 44
	19	18 17	18 18	18 18	18 19	18 20	18 21	18 22	18 22	18 23
	23	18 05	18 05	18 04	18 04	18 03	18 03	18 03	18 03	18 02
	27	17 53	17 52	17 50	17 49	17 47	17 46	17 45	17 43	17 42
	31	17 41	17 39	17 36	17 33	17 30	17 28	17 26	17 24	17 21
ABR.	4	17 29	17 26	17 22	17 18	17 13	17 11	17 08	17 04	17 01

ORTO Y OCASO DEL SOL, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO SOL

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
ABR.	8	06 46	06 50	06 54	06 59	07 05	07 09	07 13	07 17	07 22
	12	06 55	07 00	07 06	07 12	07 20	07 24	07 29	07 35	07 41
	16	07 05	07 11	07 17	07 25	07 35	07 40	07 46	07 53	08 00
	20	07 14	07 21	07 29	07 39	07 50	07 56	08 03	08 12	08 21
	24	07 24	07 32	07 41	07 52	08 05	08 13	08 21	08 31	08 42
	28	07 34	07 43	07 53	08 05	08 21	08 30	08 40	08 51	09 05
MAY.	2	07 43	07 53	08 05	08 19	08 37	08 47	08 59	09 13	09 29
	6	07 52	08 04	08 17	08 33	08 53	09 05	09 19	09 36	09 57
	10	08 02	08 14	08 29	08 47	09 10	09 24	09 41	10 02	10 30
	14	08 11	08 24	08 41	09 01	09 27	09 43	10 04	10 32	11 24
	18	08 19	08 34	08 52	09 14	09 44	10 05	10 31	11 18	■
	22	08 28	08 44	09 03	09 28	10 03	10 28	11 08	■	■
	26	08 36	08 53	09 14	09 41	10 22	10 56	■	■	■
	30	08 43	09 01	09 24	09 54	10 43	11 43	■	■	■
JUN.	3	08 49	09 09	09 33	10 06	11 06	■	■	■	■
	7	08 55	09 15	09 41	10 17	11 40	■	■	■	■
	11	08 59	09 20	09 47	10 27	■	■	■	■	■
	15	09 03	09 24	09 52	10 33	■	■	■	■	■
	19	09 05	09 27	09 55	10 38	■	■	■	■	■
	23	09 06	09 28	09 56	10 38	■	■	■	■	■
	27	09 06	09 27	09 55	10 36	■	■	■	■	■
JUL.	1	09 04	09 25	09 52	10 31	■	■	■	■	■
	5	09 01	09 21	09 47	10 23	11 45	■	■	■	■

OCASO SOL

		h m	h m	h m	h m	h m	h m	h m	h m	h m
ABR.	8	17 17	17 13	17 08	17 03	16 57	16 53	16 49	16 45	16 40
	12	17 05	17 00	16 55	16 48	16 40	16 36	16 31	16 25	16 19
	16	16 54	16 48	16 41	16 33	16 23	16 18	16 12	16 05	15 57
	20	16 42	16 35	16 27	16 18	16 07	16 00	15 53	15 45	15 35
	24	16 31	16 23	16 14	16 03	15 50	15 42	15 34	15 24	15 13
	28	16 21	16 11	16 01	15 48	15 33	15 24	15 14	15 02	14 49
MAY.	2	16 10	16 00	15 48	15 34	15 16	15 06	14 54	14 40	14 23
	6	16 00	15 49	15 35	15 19	14 59	14 47	14 33	14 16	13 55
	10	15 50	15 38	15 23	15 05	14 42	14 28	14 11	13 50	13 21
	14	15 41	15 28	15 11	14 51	14 25	14 08	13 47	13 19	12 27
	18	15 33	15 18	15 00	14 38	14 08	13 47	13 20	12 34	■
	22	15 25	15 09	14 49	14 25	13 50	13 25	12 45	■	■
	26	15 18	15 01	14 40	14 12	13 31	12 58	■	■	■
	30	15 12	14 54	14 31	14 00	13 12	12 12	■	■	■
JUN.	3	15 07	14 47	14 23	13 49	12 49	■	■	■	■
	7	15 03	14 42	14 17	13 40	12 17	■	■	■	■
	11	15 00	14 39	14 12	13 32	■	■	■	■	■
	15	14 58	14 37	14 09	13 27	■	■	■	■	■
	19	14 58	14 36	14 08	13 25	■	■	■	■	■
	23	14 59	14 37	14 09	13 26	■	■	■	■	■
	27	15 01	14 39	14 11	13 30	■	■	■	■	■
JUL.	1	15 04	14 43	14 16	13 37	■	■	■	■	■
	5	15 09	14 49	14 23	13 46	12 24	■	■	■	■

ORTO Y OCASO DEL SOL, 2014
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO SOL

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
JUL.	9	08 57	09 16	09 40	10 14	11 14	■	■	■	■
	13	08 51	09 10	09 32	10 03	10 52	11 51	■	■	■
	17	08 45	09 02	09 24	09 51	10 32	11 05	■	■	■
	21	08 38	08 54	09 14	09 39	10 13	10 39	11 18	■	■
	25	08 30	08 45	09 03	09 25	09 56	10 16	10 43	11 30	■
	29	08 22	08 35	08 52	09 12	09 38	09 55	10 16	10 44	11 37
AGO.	2	08 13	08 25	08 40	08 58	09 21	09 35	09 52	10 13	10 42
	6	08 03	08 14	08 28	08 44	09 04	09 16	09 30	09 47	10 09
	10	07 53	08 03	08 15	08 29	08 47	08 57	09 09	09 23	09 40
	14	07 42	07 51	08 02	08 15	08 30	08 39	08 49	09 01	09 15
	18	07 31	07 40	07 49	08 00	08 13	08 21	08 30	08 40	08 51
	22	07 20	07 27	07 36	07 45	07 57	08 03	08 11	08 19	08 28
	26	07 09	07 15	07 22	07 30	07 40	07 45	07 52	07 59	08 06
	30	06 57	07 03	07 08	07 15	07 23	07 28	07 33	07 39	07 45
SEP.	3	06 46	06 50	06 55	07 00	07 07	07 10	07 14	07 19	07 24
	7	06 34	06 37	06 41	06 45	06 50	06 53	06 56	06 59	07 03
	11	06 22	06 24	06 27	06 30	06 33	06 35	06 37	06 40	06 42
	15	06 10	06 11	06 13	06 14	06 17	06 18	06 19	06 20	06 22
	19	05 58	05 58	05 59	05 59	06 00	06 00	06 01	06 01	06 02
	23	05 45	05 45	05 44	05 44	05 43	05 43	05 42	05 42	05 41
	27	05 33	05 32	05 30	05 28	05 26	05 25	05 24	05 22	05 20
OCT.	1	05 21	05 19	05 16	05 13	05 09	05 07	05 05	05 03	05 00
	5	05 09	05 06	05 02	04 58	04 52	04 50	04 46	04 43	04 39

OCASO SOL

		h m	h m	h m	h m	h m	h m	h m	h m	h m
JUL.	9	15 14	14 55	14 31	13 57	12 57	■	■	■	■
	13	15 20	15 02	14 40	14 09	13 20	12 21	■	■	■
	17	15 28	15 10	14 49	14 22	13 41	13 08	■	■	■
	21	15 35	15 19	15 00	14 35	14 00	13 35	12 55	■	■
	25	15 43	15 29	15 11	14 48	14 18	13 58	13 31	12 44	■
	29	15 52	15 38	15 22	15 02	14 36	14 19	13 58	13 30	12 37
AGO.	2	16 01	15 48	15 34	15 16	14 53	14 38	14 21	14 00	13 31
	6	16 10	15 58	15 45	15 29	15 09	14 57	14 43	14 26	14 05
	10	16 19	16 09	15 57	15 42	15 25	15 15	15 03	14 49	14 32
	14	16 28	16 19	16 08	15 56	15 41	15 32	15 21	15 10	14 56
	18	16 37	16 29	16 20	16 09	15 56	15 48	15 39	15 30	15 18
	22	16 46	16 39	16 31	16 22	16 11	16 04	15 57	15 48	15 39
	26	16 56	16 50	16 43	16 35	16 25	16 20	16 14	16 07	15 59
	30	17 05	17 00	16 54	16 48	16 40	16 35	16 30	16 24	16 18
SEP.	3	17 14	17 10	17 06	17 00	16 54	16 50	16 46	16 42	16 37
	7	17 23	17 20	17 17	17 13	17 08	17 05	17 02	16 59	16 55
	11	17 33	17 31	17 28	17 25	17 22	17 20	17 18	17 15	17 13
	15	17 42	17 41	17 39	17 38	17 36	17 35	17 33	17 32	17 31
	19	17 51	17 51	17 51	17 50	17 50	17 49	17 49	17 49	17 48
	23	18 01	18 01	18 02	18 03	18 04	18 04	18 05	18 05	18 06
	27	18 10	18 12	18 13	18 15	18 18	18 19	18 21	18 22	18 24
OCT.	1	18 20	18 22	18 25	18 28	18 32	18 34	18 37	18 39	18 42
	5	18 29	18 33	18 37	18 41	18 47	18 50	18 53	18 57	19 01

ORTO Y OCASO DEL SOL, 2013
TIEMPO UNIVERSAL PARA EL MERIDIANO DE GREENWICH
ORTO SOL

LAT.	S	60°	62°	64°	66°	68°	69°	70°	71°	72°
		h m	h m	h m	h m	h m	h m	h m	h m	h m
OCT.	9	04 57	04 53	04 48	04 42	04 35	04 32	04 27	04 23	04 17
	13	04 45	04 40	04 34	04 27	04 18	04 13	04 08	04 02	03 56
	17	04 33	04 27	04 20	04 11	04 01	03 55	03 49	03 41	03 33
	21	04 21	04 14	04 06	03 56	03 43	03 36	03 29	03 20	03 10
	25	04 10	04 01	03 52	03 40	03 26	03 17	03 08	02 57	02 45
	29	03 59	03 49	03 38	03 24	03 08	02 58	02 47	02 34	02 19
NOV.	2	03 48	03 37	03 24	03 09	02 49	02 38	02 24	02 08	01 49
	6	03 37	03 25	03 10	02 53	02 31	02 17	02 00	01 40	01 13
	10	03 27	03 13	02 57	02 37	02 11	01 54	01 33	01 05	00 10
	14	03 17	03 02	02 44	02 21	01 50	01 29	01 00		
	18	03 08	02 52	02 31	02 05	01 28	00 59			
	22	02 59	02 42	02 19	01 49	01 02	00 10			
	26	02 52	02 32	02 08	01 33	00 26				
	30	02 45	02 24	01 57	01 16					
DIC.	4	02 40	02 17	01 47	00 59					
	8	02 35	02 11	01 39	00 40					
	12	02 32	02 07	01 32	00 17					
	16	02 31	02 05	01 28						
	20	02 32	02 05	01 27						
	24	02 34	02 07	01 29						
	28	02 37	02 11	01 34						

OCASO SOL

		h m	h m	h m	h m	h m	h m	h m	h m
OCT.	9	18 39	18 44	18 49	18 55	19 02	19 06	19 10	19 15
	13	18 49	18 55	19 01	19 08	19 17	19 22	19 27	19 33
	17	18 59	19 06	19 13	19 22	19 32	19 39	19 45	19 53
	21	19 10	19 17	19 26	19 36	19 49	19 56	20 04	20 13
	25	19 20	19 29	19 39	19 51	20 05	20 14	20 24	20 35
	29	19 31	19 40	19 52	20 06	20 23	20 33	20 45	20 58
NOV.	2	19 41	19 52	20 05	20 21	20 41	20 53	21 07	21 24
	6	19 52	20 04	20 19	20 37	21 00	21 15	21 32	21 54
	10	20 03	20 17	20 33	20 54	21 21	21 39	22 01	22 33
	14	20 14	20 29	20 47	21 11	21 43	22 06	22 38	
	18	20 24	20 41	21 01	21 28	22 08	22 39		
	22	20 34	20 53	21 16	21 47	22 37			
	26	20 44	21 04	21 30	22 05	23 24			
	30	20 54	21 15	21 43	22 25				
DIC.	4	21 02	21 25	21 56	22 46				
	8	21 09	21 34	22 07	23 08				
	12	21 16	21 41	22 17	23 39				
	16	21 20	21 46	22 24					
	20	21 24	21 50	22 28					
	24	21 25	21 52	22 29					
	28	21 25	21 51	22 28					

CONVERSIÓN DE CARCO A TIEMPO



CONVERSIÓN DE ARCO A TIEMPO

0°-59°		60°-119°		120°-179°		180°-239°		240°-299°		300°-359°			0°00	0°25	0°50	0°75
°	h m	°	h m	°	h m	°	h m	°	h m	°	h m	/	m s	m s	m s	m s
0	0 00	60	4 00	120	8 00	180	12 00	240	16 00	300	20 00	0	0 00	0 01	0 02	0 03
1	0 04	61	4 04	121	8 04	181	12 04	241	16 04	301	20 04	1	0 04	0 05	0 06	0 07
2	0 08	62	4 08	122	8 08	182	12 08	242	16 08	302	20 08	2	0 08	0 09	0 10	0 11
3	0 12	63	4 12	123	8 12	183	12 12	243	16 12	303	20 12	3	0 12	0 13	0 14	0 15
4	0 16	64	4 16	124	8 16	184	12 16	244	16 16	304	20 16	4	0 16	0 17	0 18	0 19
5	0 20	65	4 20	125	8 20	185	12 20	245	16 20	305	20 20	5	0 20	0 21	0 22	0 23
6	0 24	66	4 24	126	8 24	186	12 24	246	16 24	306	20 24	6	0 24	0 25	0 26	0 27
7	0 28	67	4 28	127	8 28	187	12 28	247	16 28	307	20 28	7	0 28	0 29	0 30	0 31
8	0 32	68	4 32	128	8 32	188	12 32	248	16 32	308	20 32	8	0 32	0 33	0 34	0 35
9	0 36	69	4 36	129	8 36	189	12 36	249	16 36	309	20 36	9	0 36	0 37	0 38	0 39
10	0 40	70	4 40	130	8 40	190	12 40	250	16 40	310	20 40	10	0 40	0 41	0 42	0 43
11	0 44	71	4 44	131	8 44	191	12 44	251	16 44	311	20 44	11	0 44	0 45	0 46	0 47
12	0 48	72	4 48	132	8 48	192	12 48	252	16 48	312	20 48	12	0 48	0 49	0 50	0 51
13	0 52	73	4 52	133	8 52	193	12 52	253	16 52	313	20 52	13	0 52	0 53	0 54	0 55
14	0 56	74	4 56	134	8 56	194	12 56	254	16 56	314	20 56	14	0 56	0 57	0 58	0 59
15	1 00	75	5 00	135	9 00	195	13 00	255	17 00	315	21 00	15	1 00	1 01	1 02	1 03
16	1 04	76	5 04	136	9 04	196	13 04	256	17 04	316	21 04	16	1 04	1 05	1 06	1 07
17	1 08	77	5 08	137	9 08	197	13 08	257	17 08	317	21 08	17	1 08	1 09	1 10	1 11
18	1 12	78	5 12	138	9 12	198	13 12	258	17 12	318	21 12	18	1 12	1 13	1 14	1 15
19	1 16	79	5 16	139	9 16	199	13 16	259	17 16	319	21 16	19	1 16	1 17	1 18	1 19
20	1 20	80	5 20	140	9 20	200	13 20	260	17 20	320	21 20	20	1 20	1 21	1 22	1 23
21	1 24	81	5 24	141	9 24	201	13 24	261	17 24	321	21 24	21	1 24	1 25	1 26	1 27
22	1 28	82	5 28	142	9 28	202	13 28	262	17 28	322	21 28	22	1 28	1 29	1 30	1 31
23	1 32	83	5 32	143	9 32	203	13 32	263	17 32	323	21 32	23	1 32	1 33	1 34	1 35
24	1 36	84	5 36	144	9 36	204	13 36	264	17 36	324	21 36	24	1 36	1 37	1 38	1 39
25	1 40	85	5 40	145	9 40	205	13 40	265	17 40	325	21 40	25	1 40	1 41	1 42	1 43
26	1 44	86	5 44	146	9 44	206	13 44	266	17 44	326	21 44	26	1 44	1 45	1 46	1 47
27	1 48	87	5 48	147	9 48	207	13 48	267	17 48	327	21 48	27	1 48	1 49	1 50	1 51
28	1 52	88	5 52	148	9 52	208	13 52	268	17 52	328	21 52	28	1 52	1 53	1 54	1 55
29	1 56	89	5 56	149	9 56	209	13 56	269	17 56	329	21 56	29	1 56	1 57	1 58	1 59
30	2 00	90	6 00	150	10 00	210	14 00	270	18 00	330	22 00	30	2 00	2 01	2 02	2 03
31	2 04	91	6 04	151	10 04	211	14 04	271	18 04	331	22 04	31	2 04	2 05	2 06	2 07
32	2 08	92	6 08	152	10 08	212	14 08	272	18 08	332	22 08	32	2 08	2 09	2 10	2 11
33	2 12	93	6 12	153	10 12	213	14 12	273	18 12	333	22 12	33	2 12	2 13	2 14	2 15
34	2 16	94	6 16	154	10 16	214	14 16	274	18 16	334	22 16	34	2 16	2 17	2 18	2 19
35	2 20	95	6 20	155	10 20	215	14 20	275	18 20	335	22 20	35	2 20	2 21	2 22	2 23
36	2 24	96	6 24	156	10 24	216	14 24	276	18 24	336	22 24	36	2 24	2 25	2 26	2 27
37	2 28	97	6 28	157	10 28	217	14 28	277	18 28	337	22 28	37	2 28	2 29	2 30	2 31
38	2 32	98	6 32	158	10 32	218	14 32	278	18 32	338	22 32	38	2 32	2 33	2 34	2 35
39	2 36	99	6 36	159	10 36	219	14 36	279	18 36	339	22 36	39	2 36	2 37	2 38	2 39
40	2 40	100	6 40	160	10 40	220	14 40	280	18 40	340	22 40	40	2 40	2 41	2 42	2 43
41	2 44	101	6 44	161	10 44	221	14 44	281	18 44	341	22 44	41	2 44	2 45	2 46	2 47
42	2 48	102	6 48	162	10 48	222	14 48	282	18 48	342	22 48	42	2 48	2 49	2 50	2 51
43	2 52	103	6 52	163	10 52	223	14 52	283	18 52	343	22 52	43	2 52	2 53	2 54	2 55
44	2 56	104	6 56	164	10 56	224	14 56	284	18 56	344	22 56	44	2 56	2 57	2 58	2 59
45	3 00	105	7 00	165	11 00	225	15 00	285	19 00	345	23 00	45	3 00	3 01	3 02	3 03
46	3 04	106	7 04	166	11 04	226	15 04	286	19 04	346	23 04	46	3 04	3 05	3 06	3 07
47	3 08	107	7 08	167	11 08	227	15 08	287	19 08	347	23 08	47	3 08	3 09	3 10	3 11
48	3 12	108	7 12	168	11 12	228	15 12	288	19 12	348	23 12	48	3 12	3 13	3 14	3 15
49	3 16	109	7 16	169	11 16	229	15 16	289	19 16	349	23 16	49	3 16	3 17	3 18	3 19
50	3 20	110	7 20	170	11 20	230	15 20	290	19 20	350	23 20	50	3 20	3 21	3 22	3 23
51	3 24	111	7 24	171	11 24	231	15 24	291	19 24	351	23 24	51	3 24	3 25	3 26	3 27
52	3 28	112	7 28	172	11 28	232	15 28	292	19 28	352	23 28	52	3 28	3 29	3 30	3 31
53	3 32	113	7 32	173	11 32	233	15 32	293	19 32	353	23 32	53	3 32	3 33	3 34	3 35
54	3 36	114	7 36	174	11 36	234	15 36	294	19 36	354	23 36	54	3 36	3 37	3 38	3 39
55	3 40	115	7 40	175	11 40	235	15 40	295	19 40	355	23 40	55	3 40	3 41	3 42	3 43
56	3 44	116	7 44	176	11 44	236	15 44	296	19 44	356	23 44	56	3 44	3 45	3 46	3 47
57	3 48	117	7 48	177	11 48	237	15 48	297	19 48	357	23 48	57	3 48	3 49	3 50	3 51
58	3 52	118	7 52	178	11 52	238	15 52	298	19 52	358	23 52	58	3 52	3 53	3 54	3 55
59	3 56	119	7 56	179	11 56	239	15 56	299	19 56	359	23 56	59	3 56	3 57	3 58	3 59

La tabla anterior se usa para convertir expresiones en arco a sus equivalentes en tiempo; su uso principal en este almanaque es para la conversión de la longitud para aplicarse a la Hml. (Sumadas al W, restadas al E) para obtener UT o viceversa, particularmente en el caso de orto y ocaso del Sol, etc.

INCREMENTOS Y CORRECCIONES



0^m

INCREMENTOS Y CORRECCIONES

1^m

0 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	1 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/ /	/ /	/ /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /	/ /	/ /	/ /
00	0 00-0	0 00-0	0 00-0	0-0	0-0	6-0	0-1	12-0	0-1	00	0 15-0	0 15-0	0 14-3	0-0	0-0	6-0	0-2	12-0	0-3
01	0 00-3	0 00-3	0 00-2	0-1	0-0	6-1	0-1	12-1	0-1	01	0 15-3	0 15-3	0 14-6	0-1	0-0	6-1	0-2	12-1	0-3
02	0 00-5	0 00-5	0 00-5	0-2	0-0	6-2	0-1	12-2	0-1	02	0 15-5	0 15-5	0 14-8	0-2	0-0	6-2	0-2	12-2	0-3
03	0 00-8	0 00-8	0 00-7	0-3	0-0	6-3	0-1	12-3	0-1	03	0 15-8	0 15-8	0 15-0	0-3	0-0	6-3	0-2	12-3	0-3
04	0 01-0	0 01-0	0 01-0	0-4	0-0	6-4	0-1	12-4	0-1	04	0 16-0	0 16-0	0 15-3	0-4	0-0	6-4	0-2	12-4	0-3
05	0 01-3	0 01-3	0 01-2	0-5	0-0	6-5	0-1	12-5	0-1	05	0 16-3	0 16-3	0 15-5	0-5	0-0	6-5	0-2	12-5	0-3
06	0 01-5	0 01-5	0 01-4	0-6	0-0	6-6	0-1	12-6	0-1	06	0 16-5	0 16-5	0 15-7	0-6	0-0	6-6	0-2	12-6	0-3
07	0 01-8	0 01-8	0 01-7	0-7	0-0	6-7	0-1	12-7	0-1	07	0 16-8	0 16-8	0 16-0	0-7	0-0	6-7	0-2	12-7	0-3
08	0 02-0	0 02-0	0 01-9	0-8	0-0	6-8	0-1	12-8	0-1	08	0 17-0	0 17-0	0 16-2	0-8	0-0	6-8	0-2	12-8	0-3
09	0 02-3	0 02-3	0 02-1	0-9	0-0	6-9	0-1	12-9	0-1	09	0 17-3	0 17-3	0 16-5	0-9	0-0	6-9	0-2	12-9	0-3
10	0 02-5	0 02-5	0 02-4	1-0	0-0	7-0	0-1	13-0	0-1	10	0 17-5	0 17-5	0 16-7	1-0	0-0	7-0	0-2	13-0	0-3
11	0 02-8	0 02-8	0 02-6	1-1	0-0	7-1	0-1	13-1	0-1	11	0 17-8	0 17-8	0 16-9	1-1	0-0	7-1	0-2	13-1	0-3
12	0 03-0	0 03-0	0 02-9	1-2	0-0	7-2	0-1	13-2	0-1	12	0 18-0	0 18-0	0 17-2	1-2	0-0	7-2	0-2	13-2	0-3
13	0 03-3	0 03-3	0 03-1	1-3	0-0	7-3	0-1	13-3	0-1	13	0 18-3	0 18-3	0 17-4	1-3	0-0	7-3	0-2	13-3	0-3
14	0 03-5	0 03-5	0 03-3	1-4	0-0	7-4	0-1	13-4	0-1	14	0 18-5	0 18-6	0 17-7	1-4	0-0	7-4	0-2	13-4	0-3
15	0 03-8	0 03-8	0 03-6	1-5	0-0	7-5	0-1	13-5	0-1	15	0 18-8	0 18-8	0 17-9	1-5	0-0	7-5	0-2	13-5	0-3
16	0 04-0	0 04-0	0 03-8	1-6	0-0	7-6	0-1	13-6	0-1	16	0 19-0	0 19-1	0 18-1	1-6	0-0	7-6	0-2	13-6	0-3
17	0 04-3	0 04-3	0 04-1	1-7	0-0	7-7	0-1	13-7	0-1	17	0 19-3	0 19-3	0 18-4	1-7	0-0	7-7	0-2	13-7	0-3
18	0 04-5	0 04-5	0 04-3	1-8	0-0	7-8	0-1	13-8	0-1	18	0 19-5	0 19-6	0 18-6	1-8	0-0	7-8	0-2	13-8	0-3
19	0 04-8	0 04-8	0 04-5	1-9	0-0	7-9	0-1	13-9	0-1	19	0 19-8	0 19-8	0 18-9	1-9	0-0	7-9	0-2	13-9	0-3
20	0 05-0	0 05-0	0 04-8	2-0	0-0	8-0	0-1	14-0	0-1	20	0 20-0	0 20-1	0 19-1	2-0	0-1	8-0	0-2	14-0	0-4
21	0 05-3	0 05-3	0 05-0	2-1	0-0	8-1	0-1	14-1	0-1	21	0 20-3	0 20-3	0 19-3	2-1	0-1	8-1	0-2	14-1	0-4
22	0 05-5	0 05-5	0 05-2	2-2	0-0	8-2	0-1	14-2	0-1	22	0 20-5	0 20-6	0 19-6	2-2	0-1	8-2	0-2	14-2	0-4
23	0 05-8	0 05-8	0 05-5	2-3	0-0	8-3	0-1	14-3	0-1	23	0 20-8	0 20-8	0 19-8	2-3	0-1	8-3	0-2	14-3	0-4
24	0 06-0	0 06-0	0 05-7	2-4	0-0	8-4	0-1	14-4	0-1	24	0 21-0	0 21-1	0 20-0	2-4	0-1	8-4	0-2	14-4	0-4
25	0 06-3	0 06-3	0 06-0	2-5	0-0	8-5	0-1	14-5	0-1	25	0 21-3	0 21-3	0 20-3	2-5	0-1	8-5	0-2	14-5	0-4
26	0 06-5	0 06-5	0 06-2	2-6	0-0	8-6	0-1	14-6	0-1	26	0 21-5	0 21-6	0 20-5	2-6	0-1	8-6	0-2	14-6	0-4
27	0 06-8	0 06-8	0 06-4	2-7	0-0	8-7	0-1	14-7	0-1	27	0 21-8	0 21-8	0 20-8	2-7	0-1	8-7	0-2	14-7	0-4
28	0 07-0	0 07-0	0 06-7	2-8	0-0	8-8	0-1	14-8	0-1	28	0 22-0	0 22-1	0 21-0	2-8	0-1	8-8	0-2	14-8	0-4
29	0 07-3	0 07-3	0 06-9	2-9	0-0	8-9	0-1	14-9	0-1	29	0 22-3	0 22-3	0 21-2	2-9	0-1	8-9	0-2	14-9	0-4
30	0 07-5	0 07-5	0 07-2	3-0	0-0	9-0	0-1	15-0	0-1	30	0 22-5	0 22-6	0 21-5	3-0	0-1	9-0	0-2	15-0	0-4
31	0 07-8	0 07-8	0 07-4	3-1	0-0	9-1	0-1	15-1	0-1	31	0 22-8	0 22-8	0 21-7	3-1	0-1	9-1	0-2	15-1	0-4
32	0 08-0	0 08-0	0 07-6	3-2	0-0	9-2	0-1	15-2	0-1	32	0 23-0	0 23-1	0 22-0	3-2	0-1	9-2	0-2	15-2	0-4
33	0 08-3	0 08-3	0 07-9	3-3	0-0	9-3	0-1	15-3	0-1	33	0 23-3	0 23-3	0 22-2	3-3	0-1	9-3	0-2	15-3	0-4
34	0 08-5	0 08-5	0 08-1	3-4	0-0	9-4	0-1	15-4	0-1	34	0 23-5	0 23-6	0 22-4	3-4	0-1	9-4	0-2	15-4	0-4
35	0 08-8	0 08-8	0 08-4	3-5	0-0	9-5	0-1	15-5	0-1	35	0 23-8	0 23-8	0 22-7	3-5	0-1	9-5	0-2	15-5	0-4
36	0 09-0	0 09-0	0 08-6	3-6	0-0	9-6	0-1	15-6	0-1	36	0 24-0	0 24-1	0 22-9	3-6	0-1	9-6	0-2	15-6	0-4
37	0 09-3	0 09-3	0 08-8	3-7	0-0	9-7	0-1	15-7	0-1	37	0 24-3	0 24-3	0 23-1	3-7	0-1	9-7	0-2	15-7	0-4
38	0 09-5	0 09-5	0 09-1	3-8	0-0	9-8	0-1	15-8	0-1	38	0 24-5	0 24-6	0 23-4	3-8	0-1	9-8	0-2	15-8	0-4
39	0 09-8	0 09-8	0 09-3	3-9	0-0	9-9	0-1	15-9	0-1	39	0 24-8	0 24-8	0 23-6	3-9	0-1	9-9	0-2	15-9	0-4
40	0 10-0	0 10-0	0 09-5	4-0	0-0	10-0	0-1	16-0	0-1	40	0 25-0	0 25-1	0 23-9	4-0	0-1	10-0	0-3	16-0	0-4
41	0 10-3	0 10-3	0 09-8	4-1	0-0	10-1	0-1	16-1	0-1	41	0 25-3	0 25-3	0 24-1	4-1	0-1	10-1	0-3	16-1	0-4
42	0 10-5	0 10-5	0 10-0	4-2	0-0	10-2	0-1	16-2	0-1	42	0 25-5	0 25-6	0 24-3	4-2	0-1	10-2	0-3	16-2	0-4
43	0 10-8	0 10-8	0 10-3	4-3	0-0	10-3	0-1	16-3	0-1	43	0 25-8	0 25-8	0 24-6	4-3	0-1	10-3	0-3	16-3	0-4
44	0 11-0	0 11-0	0 10-5	4-4	0-0	10-4	0-1	16-4	0-1	44	0 26-0	0 26-1	0 24-8	4-4	0-1	10-4	0-3	16-4	0-4
45	0 11-3	0 11-3	0 10-7	4-5	0-0	10-5	0-1	16-5	0-1	45	0 26-3	0 26-3	0 25-1	4-5	0-1	10-5	0-3	16-5	0-4
46	0 11-5	0 11-5	0 11-0	4-6	0-0	10-6	0-1	16-6	0-1	46	0 26-5	0 26-6	0 25-3	4-6	0-1	10-6	0-3	16-6	0-4
47	0 11-8	0 11-8	0 11-2	4-7	0-0	10-7	0-1	16-7	0-1	47	0 26-8	0 26-8	0 25-5	4-7	0-1	10-7	0-3	16-7	0-4
48	0 12-0	0 12-0	0 11-5	4-8	0-0	10-8	0-1	16-8	0-1	48	0 27-0	0 27-1	0 25-8	4-8	0-1	10-8	0-3	16-8	0-4
49	0 12-3	0 12-3	0 11-7	4-9	0-0	10-9	0-1	16-9	0-1	49	0 27-3	0 27-3	0 26-0	4-9	0-1	10-9	0-3	16-9	0-4
50	0 12-5	0 12-5	0 11-9	5-0	0-0	11-0	0-1	17-0	0-1	50	0 27-5	0 27-6	0 26-2	5-0	0-1	11-0	0-3	17-0	0-4
51	0 12-8	0 12-8	0 12-2	5-1	0-0	11-1	0-1	17-1	0-1	51	0 27-8	0 27-8	0 26-5	5-1	0-1	11-1	0-3	17-1	0-4
52	0 13-0	0 13-0	0 12-4	5-2	0-0	11-2	0-1	17-2	0-1	52	0 28-0	0 28-1	0 26-7	5-2	0-1	11-2	0-3	17-2	0-4
53	0 13-3	0 13-3	0 12-6	5-3	0-0	11-3	0-1	17-3	0-1	53	0 28-3	0 28-3	0 27-0	5-3	0-1	11-3	0-3	17-3	0-4
54	0 13-5	0 13-5	0 12-9	5-4	0-0	11-4	0-1	17-4	0-1	54	0 28-5	0 28-6	0 27-2	5-4	0-1	11-4	0-3	17-4	0-4
55	0 13-8	0 13-8	0 13-1	5-5	0-0	11-5	0-1	17-5	0-1	55	0 28-8	0 28-8	0 27-4	5-5	0-1	11-5	0-3	17-5	0-4
56	0 14-0	0 14-0	0 13-4	5-6	0-0	11-6	0-1	17-6	0-1	56	0 29-0	0 29-1	0 27-7	5-6	0-1	11-6	0-3	17-6	0-4
57	0 14-3	0 14-3	0 13-6	5-7	0-0	11-7	0-1	17-7	0-1	57	0 29-3	0 29-3	0 27-9	5-7	0-1	11-7	0-3	17-7	0-4
58	0 14-5	0 14-5	0 13-8	5-8	0-0	11-8	0-1	17-8	0-1	58	0 29-5	0 29-6	0 28-2	5-8	0-1	11-8	0-3	17-8	0-4
59	0 14-8	0 14-8	0 14-1	5-9	0-0	11-9	0-1	17-9	0-1	59	0 29-8	0 29-8	0 28-4	5-9	0-1	11-9	0-3	17-9	0-4
60	0 15-0	0 15-0	0 14-3	6-0	0-1	12-0	0-1	18-0	0-2	60	0 30-0	0 30-1	0 28-6	6-0	0-2	12-0	0-3	18-0	0-5

2^m

INCREMENTOS Y CORRECCIONES

3^m

m 2	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.	m 3	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.
s	° /	° /	° /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /
00	0 30-0	0 30-1	0 28-6	0-0 0-0	6-0 0-3	12-0 0-5	00	0 45-0	0 45-1	0 43-0	0-0 0-0	6-0 0-4	12-0 0-7
01	0 30-3	0 30-3	0 28-9	0-1 0-0	6-1 0-3	12-1 0-5	01	0 45-3	0 45-4	0 43-2	0-1 0-0	6-1 0-4	12-1 0-7
02	0 30-5	0 30-6	0 29-1	0-2 0-0	6-2 0-3	12-2 0-5	02	0 45-5	0 45-6	0 43-4	0-2 0-0	6-2 0-4	12-2 0-7
03	0 30-8	0 30-8	0 29-3	0-3 0-0	6-3 0-3	12-3 0-5	03	0 45-8	0 45-9	0 43-7	0-3 0-0	6-3 0-4	12-3 0-7
04	0 31-0	0 31-1	0 29-6	0-4 0-0	6-4 0-3	12-4 0-5	04	0 46-0	0 46-1	0 43-9	0-4 0-0	6-4 0-4	12-4 0-7
05	0 31-3	0 31-3	0 29-8	0-5 0-0	6-5 0-3	12-5 0-5	05	0 46-3	0 46-4	0 44-1	0-5 0-0	6-5 0-4	12-5 0-7
06	0 31-5	0 31-6	0 30-1	0-6 0-0	6-6 0-3	12-6 0-5	06	0 46-5	0 46-6	0 44-4	0-6 0-0	6-6 0-4	12-6 0-7
07	0 31-8	0 31-8	0 30-3	0-7 0-0	6-7 0-3	12-7 0-5	07	0 46-8	0 46-9	0 44-6	0-7 0-0	6-7 0-4	12-7 0-7
08	0 32-0	0 32-1	0 30-5	0-8 0-0	6-8 0-3	12-8 0-5	08	0 47-0	0 47-1	0 44-9	0-8 0-0	6-8 0-4	12-8 0-7
09	0 32-3	0 32-3	0 30-8	0-9 0-0	6-9 0-3	12-9 0-5	09	0 47-3	0 47-4	0 45-1	0-9 0-1	6-9 0-4	12-9 0-8
10	0 32-5	0 32-6	0 31-0	1-0 0-0	7-0 0-3	13-0 0-5	10	0 47-5	0 47-6	0 45-3	1-0 0-1	7-0 0-4	13-0 0-8
11	0 32-8	0 32-8	0 31-3	1-1 0-0	7-1 0-3	13-1 0-5	11	0 47-8	0 47-9	0 45-6	1-1 0-1	7-1 0-4	13-1 0-8
12	0 33-0	0 33-1	0 31-5	1-2 0-1	7-2 0-3	13-2 0-6	12	0 48-0	0 48-1	0 45-8	1-2 0-1	7-2 0-4	13-2 0-8
13	0 33-3	0 33-3	0 31-7	1-3 0-1	7-3 0-3	13-3 0-6	13	0 48-3	0 48-4	0 46-1	1-3 0-1	7-3 0-4	13-3 0-8
14	0 33-5	0 33-6	0 32-0	1-4 0-1	7-4 0-3	13-4 0-6	14	0 48-5	0 48-6	0 46-3	1-4 0-1	7-4 0-4	13-4 0-8
15	0 33-8	0 33-8	0 32-2	1-5 0-1	7-5 0-3	13-5 0-6	15	0 48-8	0 48-9	0 46-5	1-5 0-1	7-5 0-4	13-5 0-8
16	0 34-0	0 34-1	0 32-5	1-6 0-1	7-6 0-3	13-6 0-6	16	0 49-0	0 49-1	0 46-8	1-6 0-1	7-6 0-4	13-6 0-8
17	0 34-3	0 34-3	0 32-7	1-7 0-1	7-7 0-3	13-7 0-6	17	0 49-3	0 49-4	0 47-0	1-7 0-1	7-7 0-4	13-7 0-8
18	0 34-5	0 34-6	0 32-9	1-8 0-1	7-8 0-3	13-8 0-6	18	0 49-5	0 49-6	0 47-2	1-8 0-1	7-8 0-5	13-8 0-8
19	0 34-8	0 34-8	0 33-2	1-9 0-1	7-9 0-3	13-9 0-6	19	0 49-8	0 49-9	0 47-5	1-9 0-1	7-9 0-5	13-9 0-8
20	0 35-0	0 35-1	0 33-4	2-0 0-1	8-0 0-3	14-0 0-6	20	0 50-0	0 50-1	0 47-7	2-0 0-1	8-0 0-5	14-0 0-8
21	0 35-3	0 35-3	0 33-6	2-1 0-1	8-1 0-3	14-1 0-6	21	0 50-3	0 50-4	0 48-0	2-1 0-1	8-1 0-5	14-1 0-8
22	0 35-5	0 35-6	0 33-9	2-2 0-1	8-2 0-3	14-2 0-6	22	0 50-5	0 50-6	0 48-2	2-2 0-1	8-2 0-5	14-2 0-8
23	0 35-8	0 35-8	0 34-1	2-3 0-1	8-3 0-3	14-3 0-6	23	0 50-8	0 50-9	0 48-4	2-3 0-1	8-3 0-5	14-3 0-8
24	0 36-0	0 36-1	0 34-4	2-4 0-1	8-4 0-4	14-4 0-6	24	0 51-0	0 51-1	0 48-7	2-4 0-1	8-4 0-5	14-4 0-8
25	0 36-3	0 36-3	0 34-6	2-5 0-1	8-5 0-4	14-5 0-6	25	0 51-3	0 51-4	0 48-9	2-5 0-1	8-5 0-5	14-5 0-8
26	0 36-5	0 36-6	0 34-8	2-6 0-1	8-6 0-4	14-6 0-6	26	0 51-5	0 51-6	0 49-2	2-6 0-2	8-6 0-5	14-6 0-9
27	0 36-8	0 36-9	0 35-1	2-7 0-1	8-7 0-4	14-7 0-6	27	0 51-8	0 51-9	0 49-4	2-7 0-2	8-7 0-5	14-7 0-9
28	0 37-0	0 37-1	0 35-3	2-8 0-1	8-8 0-4	14-8 0-6	28	0 52-0	0 52-1	0 49-6	2-8 0-2	8-8 0-5	14-8 0-9
29	0 37-3	0 37-4	0 35-6	2-9 0-1	8-9 0-4	14-9 0-6	29	0 52-3	0 52-4	0 49-9	2-9 0-2	8-9 0-5	14-9 0-9
30	0 37-5	0 37-6	0 35-8	3-0 0-1	9-0 0-4	15-0 0-6	30	0 52-5	0 52-6	0 50-1	3-0 0-2	9-0 0-5	15-0 0-9
31	0 37-8	0 37-9	0 36-0	3-1 0-1	9-1 0-4	15-1 0-6	31	0 52-8	0 52-9	0 50-3	3-1 0-2	9-1 0-5	15-1 0-9
32	0 38-0	0 38-1	0 36-3	3-2 0-1	9-2 0-4	15-2 0-6	32	0 53-0	0 53-1	0 50-6	3-2 0-2	9-2 0-5	15-2 0-9
33	0 38-3	0 38-4	0 36-5	3-3 0-1	9-3 0-4	15-3 0-6	33	0 53-3	0 53-4	0 50-8	3-3 0-2	9-3 0-5	15-3 0-9
34	0 38-5	0 38-6	0 36-7	3-4 0-1	9-4 0-4	15-4 0-6	34	0 53-5	0 53-6	0 51-1	3-4 0-2	9-4 0-5	15-4 0-9
35	0 38-8	0 38-9	0 37-0	3-5 0-1	9-5 0-4	15-5 0-6	35	0 53-8	0 53-9	0 51-3	3-5 0-2	9-5 0-6	15-5 0-9
36	0 39-0	0 39-1	0 37-2	3-6 0-2	9-6 0-4	15-6 0-7	36	0 54-0	0 54-1	0 51-5	3-6 0-2	9-6 0-6	15-6 0-9
37	0 39-3	0 39-4	0 37-5	3-7 0-2	9-7 0-4	15-7 0-7	37	0 54-3	0 54-4	0 51-8	3-7 0-2	9-7 0-6	15-7 0-9
38	0 39-5	0 39-6	0 37-7	3-8 0-2	9-8 0-4	15-8 0-7	38	0 54-5	0 54-6	0 52-0	3-8 0-2	9-8 0-6	15-8 0-9
39	0 39-8	0 39-9	0 37-9	3-9 0-2	9-9 0-4	15-9 0-7	39	0 54-8	0 54-9	0 52-3	3-9 0-2	9-9 0-6	15-9 0-9
40	0 40-0	0 40-1	0 38-2	4-0 0-2	10-0 0-4	16-0 0-7	40	0 55-0	0 55-2	0 52-5	4-0 0-2	10-0 0-6	16-0 0-9
41	0 40-3	0 40-4	0 38-4	4-1 0-2	10-1 0-4	16-1 0-7	41	0 55-3	0 55-4	0 52-7	4-1 0-2	10-1 0-6	16-1 0-9
42	0 40-5	0 40-6	0 38-7	4-2 0-2	10-2 0-4	16-2 0-7	42	0 55-5	0 55-7	0 53-0	4-2 0-2	10-2 0-6	16-2 0-9
43	0 40-8	0 40-9	0 38-9	4-3 0-2	10-3 0-4	16-3 0-7	43	0 55-8	0 55-9	0 53-2	4-3 0-3	10-3 0-6	16-3 1-0
44	0 41-0	0 41-1	0 39-1	4-4 0-2	10-4 0-4	16-4 0-7	44	0 56-0	0 56-2	0 53-4	4-4 0-3	10-4 0-6	16-4 1-0
45	0 41-3	0 41-4	0 39-4	4-5 0-2	10-5 0-4	16-5 0-7	45	0 56-3	0 56-4	0 53-7	4-5 0-3	10-5 0-6	16-5 1-0
46	0 41-5	0 41-6	0 39-6	4-6 0-2	10-6 0-4	16-6 0-7	46	0 56-5	0 56-7	0 53-9	4-6 0-3	10-6 0-6	16-6 1-0
47	0 41-8	0 41-9	0 39-8	4-7 0-2	10-7 0-4	16-7 0-7	47	0 56-8	0 56-9	0 54-2	4-7 0-3	10-7 0-6	16-7 1-0
48	0 42-0	0 42-1	0 40-1	4-8 0-2	10-8 0-5	16-8 0-7	48	0 57-0	0 57-2	0 54-4	4-8 0-3	10-8 0-6	16-8 1-0
49	0 42-3	0 42-4	0 40-3	4-9 0-2	10-9 0-5	16-9 0-7	49	0 57-3	0 57-4	0 54-6	4-9 0-3	10-9 0-6	16-9 1-0
50	0 42-5	0 42-6	0 40-6	5-0 0-2	11-0 0-5	17-0 0-7	50	0 57-5	0 57-7	0 54-9	5-0 0-3	11-0 0-6	17-0 1-0
51	0 42-8	0 42-9	0 40-8	5-1 0-2	11-1 0-5	17-1 0-7	51	0 57-8	0 57-9	0 55-1	5-1 0-3	11-1 0-6	17-1 1-0
52	0 43-0	0 43-1	0 41-0	5-2 0-2	11-2 0-5	17-2 0-7	52	0 58-0	0 58-2	0 55-4	5-2 0-3	11-2 0-7	17-2 1-0
53	0 43-3	0 43-4	0 41-3	5-3 0-2	11-3 0-5	17-3 0-7	53	0 58-3	0 58-4	0 55-6	5-3 0-3	11-3 0-7	17-3 1-0
54	0 43-5	0 43-6	0 41-5	5-4 0-2	11-4 0-5	17-4 0-7	54	0 58-5	0 58-7	0 55-8	5-4 0-3	11-4 0-7	17-4 1-0
55	0 43-8	0 43-9	0 41-8	5-5 0-2	11-5 0-5	17-5 0-7	55	0 58-8	0 58-9	0 56-1	5-5 0-3	11-5 0-7	17-5 1-0
56	0 44-0	0 44-1	0 42-0	5-6 0-2	11-6 0-5	17-6 0-7	56	0 59-0	0 59-2	0 56-3	5-6 0-3	11-6 0-7	17-6 1-0
57	0 44-3	0 44-4	0 42-2	5-7 0-2	11-7 0-5	17-7 0-7	57	0 59-3	0 59-4	0 56-6	5-7 0-3	11-7 0-7	17-7 1-0
58	0 44-5	0 44-6	0 42-5	5-8 0-2	11-8 0-5	17-8 0-7	58	0 59-5	0 59-7	0 56-8	5-8 0-3	11-8 0-7	17-8 1-0
59	0 44-8	0 44-9	0 42-7	5-9 0-2	11-9 0-5	17-9 0-7	59	0 59-8	0 59-9	0 57-0	5-9 0-3	11-9 0-7	17-9 1-0
60	0 45-0	0 45-1	0 43-0	6-0 0-3	12-0 0-5	18-0 0-8	60	1 00-0	1 00-2	0 57-3	6-0 0-4	12-0 0-7	18-0 1-1

4^m

INCREMENTOS Y CORRECCIONES

5^m

m 4	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.	m 5	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.
s	o /	o /	o /	/ /	/ /	/ /	s	o /	o /	o /	/ /	/ /	/ /
00	1 00-0	1 00-2	0 57-3	0-0 0-0	6-0 0-5	12-0 0-9	00	1 15-0	1 15-2	1 11-6	0-0 0-0	6-0 0-6	12-0 1-1
01	1 00-3	1 00-4	0 57-5	0-1 0-0	6-1 0-5	12-1 0-9	01	1 15-3	1 15-5	1 11-8	0-1 0-0	6-1 0-6	12-1 1-1
02	1 00-5	1 00-7	0 57-7	0-2 0-0	6-2 0-5	12-2 0-9	02	1 15-5	1 15-7	1 12-1	0-2 0-0	6-2 0-6	12-2 1-1
03	1 00-8	1 00-9	0 58-0	0-3 0-0	6-3 0-5	12-3 0-9	03	1 15-8	1 16-0	1 12-3	0-3 0-0	6-3 0-6	12-3 1-1
04	1 01-0	1 01-2	0 58-2	0-4 0-0	6-4 0-5	12-4 0-9	04	1 16-0	1 16-2	1 12-5	0-4 0-0	6-4 0-6	12-4 1-1
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07	1 01-8	1 01-9	0 58-9	0-7 0-1	6-7 0-5	12-7 1-0	07	1 16-8	1 17-0	1 13-3	0-7 0-1	6-7 0-6	12-7 1-2
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60	1 15-0	1 15-2	1 11-6	6-0 0-5	12-0 0-9	18-0 1-4	60	1 30-0	1 30-2	1 25-9	6-0 0-6	12-0 1-1	18-0 1-7

6^m

INCREMENTOS Y CORRECCIONES

7^m

^m 6	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	^m 7	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/ /	/ /	/ /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /	/ /	/ /	/ /
00	1 30-0	1 30-2	1 25-9	0-0	0-0	6-0	0-7	12-0	1-3	00	1 45-0	1 45-3	1 40-2	0-0	0-0	6-0	0-8	12-0	1-5
01	1 30-3	1 30-5	1 26-1	0-1	0-0	6-1	0-7	12-1	1-3	01	1 45-3	1 45-5	1 40-5	0-1	0-0	6-1	0-8	12-1	1-5
02	1 30-5	1 30-7	1 26-4	0-2	0-0	6-2	0-7	12-2	1-3	02	1 45-5	1 45-8	1 40-7	0-2	0-0	6-2	0-8	12-2	1-5
03	1 30-8	1 31-0	1 26-6	0-3	0-0	6-3	0-7	12-3	1-3	03	1 45-8	1 46-0	1 40-9	0-3	0-0	6-3	0-8	12-3	1-5
04	1 31-0	1 31-2	1 26-9	0-4	0-0	6-4	0-7	12-4	1-3	04	1 46-0	1 46-3	1 41-2	0-4	0-1	6-4	0-8	12-4	1-6
05	1 31-3	1 31-5	1 27-1	0-5	0-1	6-5	0-7	12-5	1-4	05	1 46-3	1 46-5	1 41-4	0-5	0-1	6-5	0-8	12-5	1-6
06	1 31-5	1 31-8	1 27-3	0-6	0-1	6-6	0-7	12-6	1-4	06	1 46-5	1 46-8	1 41-6	0-6	0-1	6-6	0-8	12-6	1-6
07	1 31-8	1 32-0	1 27-6	0-7	0-1	6-7	0-7	12-7	1-4	07	1 46-8	1 47-0	1 41-9	0-7	0-1	6-7	0-8	12-7	1-6
08	1 32-0	1 32-3	1 27-8	0-8	0-1	6-8	0-7	12-8	1-4	08	1 47-0	1 47-3	1 42-1	0-8	0-1	6-8	0-9	12-8	1-6
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11	1 32-8	1 33-0	1 28-5	1-1	0-1	7-1	0-8	13-1	1-4	11	1 47-8	1 48-0	1 42-8	1-1	0-1	7-1	0-9	13-1	1-6
12	1 33-0	1 33-3	1 28-8	1-2	0-1	7-2	0-8	13-2	1-4	12	1 48-0	1 48-3	1 43-1	1-2	0-2	7-2	0-9	13-2	1-7
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16	1 34-0	1 34-3	1 29-7	1-6	0-2	7-6	0-8	13-6	1-5	16	1 49-0	1 49-3	1 44-0	1-6	0-2	7-6	1-0	13-6	1-7
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40	1 40-0	1 40-3	1 35-4	4-0	0-4	10-0	1-1	16-0	1-7	40	1 55-0	1 55-3	1 49-8	4-0	0-5	10-0	1-3	16-0	2-0
41	1 40-3	1 40-5	1 35-7	4-1	0-4	10-1	1-1	16-1	1-7	41	1 55-3	1 55-6	1 50-0	4-1	0-5	10-1	1-3	16-1	2-0
42	1 40-5	1 40-8	1 35-9	4-2	0-5	10-2	1-1	16-2	1-8	42	1 55-5	1 55-8	1 50-2	4-2	0-5	10-2	1-3	16-2	2-0
43	1 40-8	1 41-0	1 36-2	4-3	0-5	10-3	1-1	16-3	1-8	43	1 55-8	1 56-1	1 50-5	4-3	0-5	10-3	1-3	16-3	2-0
44	1 41-0	1 41-3	1 36-4	4-4	0-5	10-4	1-1	16-4	1-8	44	1 56-0	1 56-3	1 50-7	4-4	0-6	10-4	1-3	16-4	2-1
45	1 41-3	1 41-5	1 36-6	4-5	0-5	10-5	1-1	16-5	1-8	45	1 56-3	1 56-6	1 51-0	4-5	0-6	10-5	1-3	16-5	2-1
46	1 41-5	1 41-8	1 36-9	4-6	0-5	10-6	1-1	16-6	1-8	46	1 56-5	1 56-8	1 51-2	4-6	0-6	10-6	1-3	16-6	2-1
47	1 41-8	1 42-0	1 37-1	4-7	0-5	10-7	1-2	16-7	1-8	47	1 56-8	1 57-1	1 51-4	4-7	0-6	10-7	1-3	16-7	2-1
48	1 42-0	1 42-3	1 37-4	4-8	0-5	10-8	1-2	16-8	1-8	48	1 57-0	1 57-3	1 51-7	4-8	0-6	10-8	1-4	16-8	2-1
49	1 42-3	1 42-5	1 37-6	4-9	0-5	10-9	1-2	16-9	1-8	49	1 57-3	1 57-6	1 51-9	4-9	0-6	10-9	1-4	16-9	2-1
50	1 42-5	1 42-8	1 37-8	5-0	0-5	11-0	1-2	17-0	1-8	50	1 57-5	1 57-8	1 52-1	5-0	0-6	11-0	1-4	17-0	2-1
51	1 42-8	1 43-0	1 38-1	5-1	0-6	11-1	1-2	17-1	1-9	51	1 57-8	1 58-1	1 52-4	5-1	0-6	11-1	1-4	17-1	2-1
52	1 43-0	1 43-3	1 38-3	5-2	0-6	11-2	1-2	17-2	1-9	52	1 58-0	1 58-3	1 52-6	5-2	0-7	11-2	1-4	17-2	2-2
53	1 43-3	1 43-5	1 38-5	5-3	0-6	11-3	1-2	17-3	1-9	53	1 58-3	1 58-6	1 52-9	5-3	0-7	11-3	1-4	17-3	2-2
54	1 43-5	1 43-8	1 38-8	5-4	0-6	11-4	1-2	17-4	1-9	54	1 58-5	1 58-8	1 53-1	5-4	0-7	11-4	1-4	17-4	2-2
55	1 43-8	1 44-0	1 39-0	5-5	0-6	11-5	1-2	17-5	1-9	55	1 58-8	1 59-1	1 53-3	5-5	0-7	11-5	1-4	17-5	2-2
56	1 44-0	1 44-3	1 39-3	5-6	0-6	11-6	1-3	17-6	1-9	56	1 59-0	1 59-3	1 53-6	5-6	0-7	11-6	1-5	17-6	2-2
57	1 44-3	1 44-5	1 39-5	5-7	0-6	11-7	1-3	17-7	1-9	57	1 59-3	1 59-6	1 53-8	5-7	0-7	11-7	1-5	17-7	2-2
58	1 44-5	1 44-8	1 39-7	5-8	0-6	11-8	1-3	17-8	1-9	58	1 59-5	1 59-8	1 54-1	5-8	0-7	11-8	1-5	17-8	2-2
59	1 44-8	1 45-0	1 40-0	5-9	0-6	11-9	1-3	17-9	1-9	59	1 59-8	2 00-1	1 54-3	5-9	0-7	11-9	1-5	17-9	2-2
60	1 45-0	1 45-3	1 40-2	6-0	0-7	12-0	1-3	18-0	2-0	60	2 00-0	2 00-3	1 54-5	6-0	0-8	12-0	1-5	18-0	2-3

INCREMENTOS Y CORRECCIONES

8 ^m	SOL PLANETAS	ARIES	LUNA	v _o d Corr.	v _o d Corr.	v _o d Corr.	9 ^m	SOL PLANETAS	ARIES	LUNA	v _o d Corr.	v _o d Corr.	v _o d Corr.
s	° /	° /	° /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /
00	2 00-0	2 00-3	1 54-5	0-0 0-0	6-0 0-9	12-0 1-7	00	2 15-0	2 15-4	2 08-9	0-0 0-0	6-0 1-0	12-0 1-9
01	2 00-3	2 00-6	1 54-8	0-1 0-0	6-1 0-9	12-1 1-7	01	2 15-3	2 15-6	2 09-1	0-1 0-0	6-1 1-0	12-1 1-9
02	2 00-5	2 00-8	1 55-0	0-2 0-0	6-2 0-9	12-2 1-7	02	2 15-5	2 15-9	2 09-3	0-2 0-0	6-2 1-0	12-2 1-9
03	2 00-8	2 01-1	1 55-2	0-3 0-0	6-3 0-9	12-3 1-7	03	2 15-8	2 16-1	2 09-6	0-3 0-0	6-3 1-0	12-3 1-9
04	2 01-0	2 01-3	1 55-5	0-4 0-1	6-4 0-9	12-4 1-8	04	2 16-0	2 16-4	2 09-8	0-4 0-1	6-4 1-0	12-4 2-0
05	2 01-3	2 01-6	1 55-7	0-5 0-1	6-5 0-9	12-5 1-8	05	2 16-3	2 16-6	2 10-0	0-5 0-1	6-5 1-0	12-5 2-0
06	2 01-5	2 01-8	1 56-0	0-6 0-1	6-6 0-9	12-6 1-8	06	2 16-5	2 16-9	2 10-3	0-6 0-1	6-6 1-0	12-6 2-0
07	2 01-8	2 02-1	1 56-2	0-7 0-1	6-7 0-9	12-7 1-8	07	2 16-8	2 17-1	2 10-5	0-7 0-1	6-7 1-1	12-7 2-0
08	2 02-0	2 02-3	1 56-4	0-8 0-1	6-8 1-0	12-8 1-8	08	2 17-0	2 17-4	2 10-8	0-8 0-1	6-8 1-1	12-8 2-0
09	2 02-3	2 02-6	1 56-7	0-9 0-1	6-9 1-0	12-9 1-8	09	2 17-3	2 17-6	2 11-0	0-9 0-1	6-9 1-1	12-9 2-0
10	2 02-5	2 02-8	1 56-9	1-0 0-1	7-0 1-0	13-0 1-8	10	2 17-5	2 17-9	2 11-2	1-0 0-2	7-0 1-1	13-0 2-1
11	2 02-8	2 03-1	1 57-2	1-1 0-2	7-1 1-0	13-1 1-9	11	2 17-8	2 18-1	2 11-5	1-1 0-2	7-1 1-1	13-1 2-1
12	2 03-0	2 03-3	1 57-4	1-2 0-2	7-2 1-0	13-2 1-9	12	2 18-0	2 18-4	2 11-7	1-2 0-2	7-2 1-1	13-2 2-1
13	2 03-3	2 03-6	1 57-6	1-3 0-2	7-3 1-0	13-3 1-9	13	2 18-3	2 18-6	2 12-0	1-3 0-2	7-3 1-2	13-3 2-1
14	2 03-5	2 03-8	1 57-9	1-4 0-2	7-4 1-0	13-4 1-9	14	2 18-5	2 18-9	2 12-2	1-4 0-2	7-4 1-2	13-4 2-1
15	2 03-8	2 04-1	1 58-1	1-5 0-2	7-5 1-1	13-5 1-9	15	2 18-8	2 19-1	2 12-4	1-5 0-2	7-5 1-2	13-5 2-1
16	2 04-0	2 04-3	1 58-4	1-6 0-2	7-6 1-1	13-6 1-9	16	2 19-0	2 19-4	2 12-7	1-6 0-3	7-6 1-2	13-6 2-2
17	2 04-3	2 04-6	1 58-6	1-7 0-2	7-7 1-1	13-7 1-9	17	2 19-3	2 19-6	2 12-9	1-7 0-3	7-7 1-2	13-7 2-2
18	2 04-5	2 04-8	1 58-8	1-8 0-3	7-8 1-1	13-8 2-0	18	2 19-5	2 19-9	2 13-1	1-8 0-3	7-8 1-2	13-8 2-2
19	2 04-8	2 05-1	1 59-1	1-9 0-3	7-9 1-1	13-9 2-0	19	2 19-8	2 20-1	2 13-4	1-9 0-3	7-9 1-3	13-9 2-2
20	2 05-0	2 05-3	1 59-3	2-0 0-3	8-0 1-1	14-0 2-0	20	2 20-0	2 20-4	2 13-6	2-0 0-3	8-0 1-3	14-0 2-2
21	2 05-3	2 05-6	1 59-5	2-1 0-3	8-1 1-1	14-1 2-0	21	2 20-3	2 20-6	2 13-9	2-1 0-3	8-1 1-3	14-1 2-2
22	2 05-5	2 05-8	1 59-8	2-2 0-3	8-2 1-2	14-2 2-0	22	2 20-5	2 20-9	2 14-1	2-2 0-3	8-2 1-3	14-2 2-2
23	2 05-8	2 06-1	2 00-0	2-3 0-3	8-3 1-2	14-3 2-0	23	2 20-8	2 21-1	2 14-3	2-3 0-4	8-3 1-3	14-3 2-3
24	2 06-0	2 06-3	2 00-3	2-4 0-3	8-4 1-2	14-4 2-0	24	2 21-0	2 21-4	2 14-6	2-4 0-4	8-4 1-3	14-4 2-3
25	2 06-3	2 06-6	2 00-5	2-5 0-4	8-5 1-2	14-5 2-1	25	2 21-3	2 21-6	2 14-8	2-5 0-4	8-5 1-3	14-5 2-3
26	2 06-5	2 06-8	2 00-7	2-6 0-4	8-6 1-2	14-6 2-1	26	2 21-5	2 21-9	2 15-1	2-6 0-4	8-6 1-4	14-6 2-3
27	2 06-8	2 07-1	2 01-0	2-7 0-4	8-7 1-2	14-7 2-1	27	2 21-8	2 22-1	2 15-3	2-7 0-4	8-7 1-4	14-7 2-3
28	2 07-0	2 07-3	2 01-2	2-8 0-4	8-8 1-2	14-8 2-1	28	2 22-0	2 22-4	2 15-5	2-8 0-4	8-8 1-4	14-8 2-3
29	2 07-3	2 07-6	2 01-5	2-9 0-4	8-9 1-3	14-9 2-1	29	2 22-3	2 22-6	2 15-8	2-9 0-5	8-9 1-4	14-9 2-4
30	2 07-5	2 07-8	2 01-7	3-0 0-4	9-0 1-3	15-0 2-1	30	2 22-5	2 22-9	2 16-0	3-0 0-5	9-0 1-4	15-0 2-4
31	2 07-8	2 08-1	2 01-9	3-1 0-4	9-1 1-3	15-1 2-1	31	2 22-8	2 23-1	2 16-2	3-1 0-5	9-1 1-4	15-1 2-4
32	2 08-0	2 08-4	2 02-2	3-2 0-5	9-2 1-3	15-2 2-2	32	2 23-0	2 23-4	2 16-5	3-2 0-5	9-2 1-5	15-2 2-4
33	2 08-3	2 08-6	2 02-4	3-3 0-5	9-3 1-3	15-3 2-2	33	2 23-3	2 23-6	2 16-7	3-3 0-5	9-3 1-5	15-3 2-4
34	2 08-5	2 08-9	2 02-6	3-4 0-5	9-4 1-3	15-4 2-2	34	2 23-5	2 23-9	2 17-0	3-4 0-5	9-4 1-5	15-4 2-4
35	2 08-8	2 09-1	2 02-9	3-5 0-5	9-5 1-3	15-5 2-2	35	2 23-8	2 24-1	2 17-2	3-5 0-6	9-5 1-5	15-5 2-5
36	2 09-0	2 09-4	2 03-1	3-6 0-5	9-6 1-4	15-6 2-2	36	2 24-0	2 24-4	2 17-4	3-6 0-6	9-6 1-5	15-6 2-5
37	2 09-3	2 09-6	2 03-4	3-7 0-5	9-7 1-4	15-7 2-2	37	2 24-3	2 24-6	2 17-7	3-7 0-6	9-7 1-5	15-7 2-5
38	2 09-5	2 09-9	2 03-6	3-8 0-5	9-8 1-4	15-8 2-2	38	2 24-5	2 24-9	2 17-9	3-8 0-6	9-8 1-6	15-8 2-5
39	2 09-8	2 10-1	2 03-8	3-9 0-6	9-9 1-4	15-9 2-3	39	2 24-8	2 25-1	2 18-2	3-9 0-6	9-9 1-6	15-9 2-5
40	2 10-0	2 10-4	2 04-1	4-0 0-6	10-0 1-4	16-0 2-3	40	2 25-0	2 25-4	2 18-4	4-0 0-6	10-0 1-6	16-0 2-5
41	2 10-3	2 10-6	2 04-3	4-1 0-6	10-1 1-4	16-1 2-3	41	2 25-3	2 25-6	2 18-6	4-1 0-6	10-1 1-6	16-1 2-5
42	2 10-5	2 10-9	2 04-6	4-2 0-6	10-2 1-4	16-2 2-3	42	2 25-5	2 25-9	2 18-9	4-2 0-7	10-2 1-6	16-2 2-6
43	2 10-8	2 11-1	2 04-8	4-3 0-6	10-3 1-5	16-3 2-3	43	2 25-8	2 26-1	2 19-1	4-3 0-7	10-3 1-6	16-3 2-6
44	2 11-0	2 11-4	2 05-0	4-4 0-6	10-4 1-5	16-4 2-3	44	2 26-0	2 26-4	2 19-3	4-4 0-7	10-4 1-6	16-4 2-6
45	2 11-3	2 11-6	2 05-3	4-5 0-6	10-5 1-5	16-5 2-3	45	2 26-3	2 26-7	2 19-6	4-5 0-7	10-5 1-7	16-5 2-6
46	2 11-5	2 11-9	2 05-5	4-6 0-7	10-6 1-5	16-6 2-4	46	2 26-5	2 26-9	2 19-8	4-6 0-7	10-6 1-7	16-6 2-6
47	2 11-8	2 12-1	2 05-7	4-7 0-7	10-7 1-5	16-7 2-4	47	2 26-8	2 27-2	2 20-1	4-7 0-7	10-7 1-7	16-7 2-6
48	2 12-0	2 12-4	2 06-0	4-8 0-7	10-8 1-5	16-8 2-4	48	2 27-0	2 27-4	2 20-3	4-8 0-8	10-8 1-7	16-8 2-7
49	2 12-3	2 12-6	2 06-2	4-9 0-7	10-9 1-5	16-9 2-4	49	2 27-3	2 27-7	2 20-5	4-9 0-8	10-9 1-7	16-9 2-7
50	2 12-5	2 12-9	2 06-5	5-0 0-7	11-0 1-6	17-0 2-4	50	2 27-5	2 27-9	2 20-8	5-0 0-8	11-0 1-7	17-0 2-7
51	2 12-8	2 13-1	2 06-7	5-1 0-7	11-1 1-6	17-1 2-4	51	2 27-8	2 28-2	2 21-0	5-1 0-8	11-1 1-8	17-1 2-7
52	2 13-0	2 13-4	2 06-9	5-2 0-7	11-2 1-6	17-2 2-4	52	2 28-0	2 28-4	2 21-3	5-2 0-8	11-2 1-8	17-2 2-7
53	2 13-3	2 13-6	2 07-2	5-3 0-8	11-3 1-6	17-3 2-5	53	2 28-3	2 28-7	2 21-5	5-3 0-8	11-3 1-8	17-3 2-7
54	2 13-5	2 13-9	2 07-4	5-4 0-8	11-4 1-6	17-4 2-5	54	2 28-5	2 28-9	2 21-7	5-4 0-9	11-4 1-8	17-4 2-8
55	2 13-8	2 14-1	2 07-7	5-5 0-8	11-5 1-6	17-5 2-5	55	2 28-8	2 29-2	2 22-0	5-5 0-9	11-5 1-8	17-5 2-8
56	2 14-0	2 14-4	2 07-9	5-6 0-8	11-6 1-6	17-6 2-5	56	2 29-0	2 29-4	2 22-2	5-6 0-9	11-6 1-8	17-6 2-8
57	2 14-3	2 14-6	2 08-1	5-7 0-8	11-7 1-7	17-7 2-5	57	2 29-3	2 29-7	2 22-5	5-7 0-9	11-7 1-9	17-7 2-8
58	2 14-5	2 14-9	2 08-4	5-8 0-8	11-8 1-7	17-8 2-5	58	2 29-5	2 29-9	2 22-7	5-8 0-9	11-8 1-9	17-8 2-8
59	2 14-8	2 15-1	2 08-6	5-9 0-8	11-9 1-7	17-9 2-5	59	2 29-8	2 30-2	2 22-9	5-9 0-9	11-9 1-9	17-9 2-8
60	2 15-0	2 15-4	2 08-9	6-0 0-9	12-0 1-7	18-0 2-6	60	2 30-0	2 30-4	2 23-2	6-0 1-0	12-0 1-9	18-0 2-9

10^m

INCREMENTOS Y CORRECCIONES

11^m

10 ^m	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.	11 ^m	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.
s	° /	° /	° /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /
00	2 30-0	2 30-4	2 23-2	0-0 0-0	6-0 1-1	12-0 2-1	00	2 45-0	2 45-5	2 37-5	0-0 0-0	6-0 1-2	12-0 2-3
01	2 30-3	2 30-7	2 23-4	0-1 0-0	6-1 1-1	12-1 2-1	01	2 45-3	2 45-7	2 37-7	0-1 0-0	6-1 1-2	12-1 2-3
02	2 30-5	2 30-9	2 23-6	0-2 0-0	6-2 1-1	12-2 2-1	02	2 45-5	2 46-0	2 38-0	0-2 0-0	6-2 1-2	12-2 2-3
03	2 30-8	2 31-2	2 23-9	0-3 0-1	6-3 1-1	12-3 2-2	03	2 45-8	2 46-2	2 38-2	0-3 0-1	6-3 1-2	12-3 2-4
04	2 31-0	2 31-4	2 24-1	0-4 0-1	6-4 1-1	12-4 2-2	04	2 46-0	2 46-5	2 38-4	0-4 0-1	6-4 1-2	12-4 2-4
05	2 31-3	2 31-7	2 24-4	0-5 0-1	6-5 1-1	12-5 2-2	05	2 46-3	2 46-7	2 38-7	0-5 0-1	6-5 1-2	12-5 2-4
06	2 31-5	2 31-9	2 24-6	0-6 0-1	6-6 1-2	12-6 2-2	06	2 46-5	2 47-0	2 38-9	0-6 0-1	6-6 1-3	12-6 2-4
07	2 31-8	2 32-2	2 24-8	0-7 0-1	6-7 1-2	12-7 2-2	07	2 46-8	2 47-2	2 39-2	0-7 0-1	6-7 1-3	12-7 2-4
08	2 32-0	2 32-4	2 25-1	0-8 0-1	6-8 1-2	12-8 2-2	08	2 47-0	2 47-5	2 39-4	0-8 0-2	6-8 1-3	12-8 2-5
09	2 32-3	2 32-7	2 25-3	0-9 0-2	6-9 1-2	12-9 2-3	09	2 47-3	2 47-7	2 39-6	0-9 0-2	6-9 1-3	12-9 2-5
10	2 32-5	2 32-9	2 25-6	1-0 0-2	7-0 1-2	13-0 2-3	10	2 47-5	2 48-0	2 39-9	1-0 0-2	7-0 1-3	13-0 2-5
11	2 32-8	2 33-2	2 25-8	1-1 0-2	7-1 1-2	13-1 2-3	11	2 47-8	2 48-2	2 40-1	1-1 0-2	7-1 1-4	13-1 2-5
12	2 33-0	2 33-4	2 26-0	1-2 0-2	7-2 1-3	13-2 2-3	12	2 48-0	2 48-5	2 40-3	1-2 0-2	7-2 1-4	13-2 2-5
13	2 33-3	2 33-7	2 26-3	1-3 0-2	7-3 1-3	13-3 2-3	13	2 48-3	2 48-7	2 40-6	1-3 0-2	7-3 1-4	13-3 2-5
14	2 33-5	2 33-9	2 26-5	1-4 0-2	7-4 1-3	13-4 2-3	14	2 48-5	2 49-0	2 40-8	1-4 0-3	7-4 1-4	13-4 2-6
15	2 33-8	2 34-2	2 26-7	1-5 0-3	7-5 1-3	13-5 2-4	15	2 48-8	2 49-2	2 41-1	1-5 0-3	7-5 1-4	13-5 2-6
16	2 34-0	2 34-4	2 27-0	1-6 0-3	7-6 1-3	13-6 2-4	16	2 49-0	2 49-5	2 41-3	1-6 0-3	7-6 1-5	13-6 2-6
17	2 34-3	2 34-7	2 27-2	1-7 0-3	7-7 1-3	13-7 2-4	17	2 49-3	2 49-7	2 41-5	1-7 0-3	7-7 1-5	13-7 2-6
18	2 34-5	2 34-9	2 27-5	1-8 0-3	7-8 1-4	13-8 2-4	18	2 49-5	2 50-0	2 41-8	1-8 0-3	7-8 1-5	13-8 2-6
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21	2 35-3	2 35-7	2 28-2	2-1 0-4	8-1 1-4	14-1 2-5	21	2 50-3	2 50-7	2 42-5	2-1 0-4	8-1 1-6	14-1 2-7
22	2 35-5	2 35-9	2 28-4	2-2 0-4	8-2 1-4	14-2 2-5	22	2 50-5	2 51-0	2 42-7	2-2 0-4	8-2 1-6	14-2 2-7
23	2 35-8	2 36-2	2 28-7	2-3 0-4	8-3 1-5	14-3 2-5	23	2 50-8	2 51-2	2 43-0	2-3 0-4	8-3 1-6	14-3 2-7
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51	2 42-8	2 43-2	2 35-3	5-1 0-9	11-1 1-9	17-1 3-0	51	2 57-8	2 58-2	2 49-7	5-1 1-0	11-1 2-1	17-1 3-3
52	2 43-0	2 43-4	2 35-6	5-2 0-9	11-2 2-0	17-2 3-0	52	2 58-0	2 58-5	2 49-9	5-2 1-0	11-2 2-1	17-2 3-3
53	2 43-3	2 43-7	2 35-8	5-3 0-9	11-3 2-0	17-3 3-0	53	2 58-3	2 58-7	2 50-1	5-3 1-0	11-3 2-2	17-3 3-3
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58	2 44-5	2 45-0	2 37-0	5-8 1-0	11-8 2-1	17-8 3-1	58	2 59-5	3 00-0	2 51-3	5-8 1-1	11-8 2-3	17-8 3-4
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60	2 45-0	2 45-5	2 37-5	6-0 1-1	12-0 2-1	18-0 3-2	60	3 00-0	3 00-5	2 51-8	6-0 1-2	12-0 2-3	18-0 3-5

12^m

INCREMENTOS Y CORRECCIONES

13^m

12 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	13 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	3 00-0	3 00-5	2 51-8	0-0	0-0	6-0	1-3	12-0	2-5	00	3 15-0	3 15-5	3 06-1	0-0	0-0	6-0	1-4	12-0	2-7
01	3 00-3	3 00-7	2 52-0	0-1	0-0	6-1	1-3	12-1	2-5	01	3 15-3	3 15-8	3 06-4	0-1	0-0	6-1	1-4	12-1	2-7
02	3 00-5	3 01-0	2 52-3	0-2	0-0	6-2	1-3	12-2	2-5	02	3 15-5	3 16-0	3 06-6	0-2	0-0	6-2	1-4	12-2	2-7
03	3 00-8	3 01-2	2 52-5	0-3	0-1	6-3	1-3	12-3	2-6	03	3 15-8	3 16-3	3 06-8	0-3	0-1	6-3	1-4	12-3	2-8
04	3 01-0	3 01-5	2 52-8	0-4	0-1	6-4	1-3	12-4	2-6	04	3 16-0	3 16-5	3 07-1	0-4	0-1	6-4	1-4	12-4	2-8
05	3 01-3	3 01-7	2 53-0	0-5	0-1	6-5	1-4	12-5	2-6	05	3 16-3	3 16-8	3 07-3	0-5	0-1	6-5	1-5	12-5	2-8
06	3 01-5	3 02-0	2 53-2	0-6	0-1	6-6	1-4	12-6	2-6	06	3 16-5	3 17-0	3 07-5	0-6	0-1	6-6	1-5	12-6	2-8
07	3 01-8	3 02-2	2 53-5	0-7	0-1	6-7	1-4	12-7	2-6	07	3 16-8	3 17-3	3 07-8	0-7	0-2	6-7	1-5	12-7	2-9
08	3 02-0	3 02-5	2 53-7	0-8	0-2	6-8	1-4	12-8	2-7	08	3 17-0	3 17-5	3 08-0	0-8	0-2	6-8	1-5	12-8	2-9
09	3 02-3	3 02-7	2 53-9	0-9	0-2	6-9	1-4	12-9	2-7	09	3 17-3	3 17-8	3 08-3	0-9	0-2	6-9	1-6	12-9	2-9
10	3 02-5	3 03-0	2 54-2	1-0	0-2	7-0	1-5	13-0	2-7	10	3 17-5	3 18-0	3 08-5	1-0	0-2	7-0	1-6	13-0	2-9
11	3 02-8	3 03-3	2 54-4	1-1	0-2	7-1	1-5	13-1	2-7	11	3 17-8	3 18-3	3 08-7	1-1	0-2	7-1	1-6	13-1	2-9
12	3 03-0	3 03-5	2 54-7	1-2	0-3	7-2	1-5	13-2	2-8	12	3 18-0	3 18-5	3 09-0	1-2	0-3	7-2	1-6	13-2	3-0
13	3 03-3	3 03-8	2 54-9	1-3	0-3	7-3	1-5	13-3	2-8	13	3 18-3	3 18-8	3 09-2	1-3	0-3	7-3	1-6	13-3	3-0
14	3 03-5	3 04-0	2 55-1	1-4	0-3	7-4	1-5	13-4	2-8	14	3 18-5	3 19-0	3 09-5	1-4	0-3	7-4	1-7	13-4	3-0
15	3 03-8	3 04-3	2 55-4	1-5	0-3	7-5	1-6	13-5	2-8	15	3 18-8	3 19-3	3 09-7	1-5	0-3	7-5	1-7	13-5	3-0
16	3 04-0	3 04-5	2 55-6	1-6	0-3	7-6	1-6	13-6	2-8	16	3 19-0	3 19-5	3 09-9	1-6	0-4	7-6	1-7	13-6	3-1
17	3 04-3	3 04-8	2 55-9	1-7	0-4	7-7	1-6	13-7	2-9	17	3 19-3	3 19-8	3 10-2	1-7	0-4	7-7	1-7	13-7	3-1
18	3 04-5	3 05-0	2 56-1	1-8	0-4	7-8	1-6	13-8	2-9	18	3 19-5	3 20-0	3 10-4	1-8	0-4	7-8	1-8	13-8	3-1
19	3 04-8	3 05-3	2 56-3	1-9	0-4	7-9	1-6	13-9	2-9	19	3 19-8	3 20-3	3 10-7	1-9	0-4	7-9	1-8	13-9	3-1
20	3 05-0	3 05-5	2 56-6	2-0	0-4	8-0	1-7	14-0	2-9	20	3 20-0	3 20-5	3 10-9	2-0	0-5	8-0	1-8	14-0	3-2
21	3 05-3	3 05-8	2 56-8	2-1	0-4	8-1	1-7	14-1	2-9	21	3 20-3	3 20-8	3 11-1	2-1	0-5	8-1	1-8	14-1	3-2
22	3 05-5	3 06-0	2 57-0	2-2	0-5	8-2	1-7	14-2	3-0	22	3 20-5	3 21-0	3 11-4	2-2	0-5	8-2	1-8	14-2	3-2
23	3 05-8	3 06-3	2 57-3	2-3	0-5	8-3	1-7	14-3	3-0	23	3 20-8	3 21-3	3 11-6	2-3	0-5	8-3	1-9	14-3	3-2
24	3 06-0	3 06-5	2 57-5	2-4	0-5	8-4	1-8	14-4	3-0	24	3 21-0	3 21-6	3 11-8	2-4	0-5	8-4	1-9	14-4	3-2
25	3 06-3	3 06-8	2 57-8	2-5	0-5	8-5	1-8	14-5	3-0	25	3 21-3	3 21-8	3 12-1	2-5	0-6	8-5	1-9	14-5	3-3
26	3 06-5	3 07-0	2 58-0	2-6	0-5	8-6	1-8	14-6	3-0	26	3 21-5	3 22-1	3 12-3	2-6	0-6	8-6	1-9	14-6	3-3
27	3 06-8	3 07-3	2 58-2	2-7	0-6	8-7	1-8	14-7	3-1	27	3 21-8	3 22-3	3 12-6	2-7	0-6	8-7	2-0	14-7	3-3
28	3 07-0	3 07-5	2 58-5	2-8	0-6	8-8	1-8	14-8	3-1	28	3 22-0	3 22-6	3 12-8	2-8	0-6	8-8	2-0	14-8	3-3
29	3 07-3	3 07-8	2 58-7	2-9	0-6	8-9	1-9	14-9	3-1	29	3 22-3	3 22-8	3 13-0	2-9	0-7	8-9	2-0	14-9	3-4
30	3 07-5	3 08-0	2 59-0	3-0	0-6	9-0	1-9	15-0	3-1	30	3 22-5	3 23-1	3 13-3	3-0	0-7	9-0	2-0	15-0	3-4
31	3 07-8	3 08-3	2 59-2	3-1	0-6	9-1	1-9	15-1	3-1	31	3 22-8	3 23-3	3 13-5	3-1	0-7	9-1	2-0	15-1	3-4
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33	3 08-3	3 08-8	2 59-7	3-3	0-7	9-3	1-9	15-3	3-2	33	3 23-3	3 23-8	3 14-0	3-3	0-7	9-3	2-1	15-3	3-4
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37	3 09-3	3 09-8	3 00-6	3-7	0-8	9-7	2-0	15-7	3-3	37	3 24-3	3 24-8	3 14-9	3-7	0-8	9-7	2-2	15-7	3-5
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43	3 10-8	3 11-3	3 02-1	4-3	0-9	10-3	2-1	16-3	3-4	43	3 25-8	3 26-3	3 16-4	4-3	1-0	10-3	2-3	16-3	3-7
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52	3 13-0	3 13-5	3 04-2	5-2	1-1	11-2	2-3	17-2	3-6	52	3 28-0	3 28-6	3 18-5	5-2	1-2	11-2	2-5	17-2	3-9
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54	3 13-5	3 14-0	3 04-7	5-4	1-1	11-4	2-4	17-4	3-6	54	3 28-5	3 29-1	3 19-0	5-4	1-2	11-4	2-6	17-4	3-9
55	3 13-8	3 14-3	3 04-9	5-5	1-1	11-5	2-4	17-5	3-6	55	3 28-8	3 29-3	3 19-2	5-5	1-2	11-5	2-6	17-5	3-9
56	3 14-0	3 14-5	3 05-2	5-6	1-2	11-6	2-4	17-6	3-7	56	3 29-0	3 29-6	3 19-5	5-6	1-3	11-6	2-6	17-6	4-0
57	3 14-3	3 14-8	3 05-4	5-7	1-2	11-7	2-4	17-7	3-7	57	3 29-3	3 29-8	3 19-7	5-7	1-3	11-7	2-6	17-7	4-0
58	3 14-5	3 15-0	3 05-6	5-8	1-2	11-8	2-5	17-8	3-7	58	3 29-5	3 30-1	3 20-0	5-8	1-3	11-8	2-7	17-8	4-0
59	3 14-8	3 15-3	3 05-9	5-9	1-2	11-9	2-5	17-9	3-7	59	3 29-8	3 30-3	3 20-2	5-9	1-3	11-9	2-7	17-9	4-0
60	3 15-0	3 15-5	3 06-1	6-0	1-3	12-0	2-5	18-0	3-8	60	3 30-0	3 30-6	3 20-4	6-0	1-4	12-0	2-7	18-0	4-1

14^m

INCREMENTOS Y CORRECCIONES

15^m

14 ^m	SOL PLANETAS	ARIES	LUNA	v d	Corr.	v d	Corr.	v d	Corr.	15 ^m	SOL PLANETAS	ARIES	LUNA	v d	Corr.	v d	Corr.	v d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	3 30-0	3 30-6	3 20-4	0-0	0-0	6-0	1-5	12-0	2-9	00	3 45-0	3 45-6	3 34-8	0-0	0-0	6-0	1-6	12-0	3-1
01	3 30-3	3 30-8	3 20-7	0-1	0-0	6-1	1-5	12-1	2-9	01	3 45-3	3 45-9	3 35-0	0-1	0-0	6-1	1-6	12-1	3-1
02	3 30-5	3 31-1	3 20-9	0-2	0-0	6-2	1-5	12-2	2-9	02	3 45-5	3 46-1	3 35-2	0-2	0-1	6-2	1-6	12-2	3-2
03	3 30-8	3 31-3	3 21-1	0-3	0-1	6-3	1-5	12-3	3-0	03	3 45-8	3 46-4	3 35-5	0-3	0-1	6-3	1-6	12-3	3-2
04	3 31-0	3 31-6	3 21-4	0-4	0-1	6-4	1-5	12-4	3-0	04	3 46-0	3 46-6	3 35-7	0-4	0-1	6-4	1-7	12-4	3-2
05	3 31-3	3 31-8	3 21-6	0-5	0-1	6-5	1-6	12-5	3-0	05	3 46-3	3 46-9	3 35-9	0-5	0-1	6-5	1-7	12-5	3-2
06	3 31-5	3 32-1	3 21-9	0-6	0-1	6-6	1-6	12-6	3-0	06	3 46-5	3 47-1	3 36-2	0-6	0-2	6-6	1-7	12-6	3-3
07	3 31-8	3 32-3	3 22-1	0-7	0-2	6-7	1-6	12-7	3-1	07	3 46-8	3 47-4	3 36-4	0-7	0-2	6-7	1-7	12-7	3-3
08	3 32-0	3 32-6	3 22-3	0-8	0-2	6-8	1-6	12-8	3-1	08	3 47-0	3 47-6	3 36-7	0-8	0-2	6-8	1-8	12-8	3-3
09	3 32-3	3 32-8	3 22-6	0-9	0-2	6-9	1-7	12-9	3-1	09	3 47-3	3 47-9	3 36-9	0-9	0-2	6-9	1-8	12-9	3-3
10	3 32-5	3 33-1	3 22-8	1-0	0-2	7-0	1-7	13-0	3-1	10	3 47-5	3 48-1	3 37-1	1-0	0-3	7-0	1-8	13-0	3-4
11	3 32-8	3 33-3	3 23-1	1-1	0-3	7-1	1-7	13-1	3-2	11	3 47-8	3 48-4	3 37-4	1-1	0-3	7-1	1-8	13-1	3-4
12	3 33-0	3 33-6	3 23-3	1-2	0-3	7-2	1-7	13-2	3-2	12	3 48-0	3 48-6	3 37-6	1-2	0-3	7-2	1-9	13-2	3-4
13	3 33-3	3 33-8	3 23-5	1-3	0-3	7-3	1-8	13-3	3-2	13	3 48-3	3 48-9	3 37-9	1-3	0-3	7-3	1-9	13-3	3-4
14	3 33-5	3 34-1	3 23-8	1-4	0-3	7-4	1-8	13-4	3-2	14	3 48-5	3 49-1	3 38-1	1-4	0-4	7-4	1-9	13-4	3-5
15	3 33-8	3 34-3	3 24-0	1-5	0-4	7-5	1-8	13-5	3-3	15	3 48-8	3 49-4	3 38-3	1-5	0-4	7-5	1-9	13-5	3-5
16	3 34-0	3 34-6	3 24-3	1-6	0-4	7-6	1-8	13-6	3-3	16	3 49-0	3 49-6	3 38-6	1-6	0-4	7-6	2-0	13-6	3-5
17	3 34-3	3 34-8	3 24-5	1-7	0-4	7-7	1-9	13-7	3-3	17	3 49-3	3 49-9	3 38-8	1-7	0-4	7-7	2-0	13-7	3-5
18	3 34-5	3 35-1	3 24-7	1-8	0-4	7-8	1-9	13-8	3-3	18	3 49-5	3 50-1	3 39-0	1-8	0-5	7-8	2-0	13-8	3-6
19	3 34-8	3 35-3	3 25-0	1-9	0-5	7-9	1-9	13-9	3-4	19	3 49-8	3 50-4	3 39-3	1-9	0-5	7-9	2-0	13-9	3-6
20	3 35-0	3 35-6	3 25-2	2-0	0-5	8-0	1-9	14-0	3-4	20	3 50-0	3 50-6	3 39-5	2-0	0-5	8-0	2-1	14-0	3-6
21	3 35-3	3 35-8	3 25-4	2-1	0-5	8-1	2-0	14-1	3-4	21	3 50-3	3 50-9	3 39-8	2-1	0-5	8-1	2-1	14-1	3-6
22	3 35-5	3 36-1	3 25-7	2-2	0-5	8-2	2-0	14-2	3-4	22	3 50-5	3 51-1	3 40-0	2-2	0-6	8-2	2-1	14-2	3-7
23	3 35-8	3 36-3	3 25-9	2-3	0-6	8-3	2-0	14-3	3-5	23	3 50-8	3 51-4	3 40-2	2-3	0-6	8-3	2-1	14-3	3-7
24	3 36-0	3 36-6	3 26-2	2-4	0-6	8-4	2-0	14-4	3-5	24	3 51-0	3 51-6	3 40-5	2-4	0-6	8-4	2-2	14-4	3-7
25	3 36-3	3 36-8	3 26-4	2-5	0-6	8-5	2-1	14-5	3-5	25	3 51-3	3 51-9	3 40-7	2-5	0-6	8-5	2-2	14-5	3-7
26	3 36-5	3 37-1	3 26-6	2-6	0-6	8-6	2-1	14-6	3-5	26	3 51-5	3 52-1	3 41-0	2-6	0-7	8-6	2-2	14-6	3-8
27	3 36-8	3 37-3	3 26-9	2-7	0-7	8-7	2-1	14-7	3-6	27	3 51-8	3 52-4	3 41-2	2-7	0-7	8-7	2-2	14-7	3-8
28	3 37-0	3 37-6	3 27-1	2-8	0-7	8-8	2-1	14-8	3-6	28	3 52-0	3 52-6	3 41-4	2-8	0-7	8-8	2-3	14-8	3-8
29	3 37-3	3 37-8	3 27-4	2-9	0-7	8-9	2-2	14-9	3-6	29	3 52-3	3 52-9	3 41-7	2-9	0-7	8-9	2-3	14-9	3-8
30	3 37-5	3 38-1	3 27-6	3-0	0-7	9-0	2-2	15-0	3-6	30	3 52-5	3 53-1	3 41-9	3-0	0-8	9-0	2-3	15-0	3-9
31	3 37-8	3 38-3	3 27-8	3-1	0-7	9-1	2-2	15-1	3-6	31	3 52-8	3 53-4	3 42-1	3-1	0-8	9-1	2-4	15-1	3-9
32	3 38-0	3 38-6	3 28-1	3-2	0-8	9-2	2-2	15-2	3-7	32	3 53-0	3 53-6	3 42-4	3-2	0-8	9-2	2-4	15-2	3-9
33	3 38-3	3 38-8	3 28-3	3-3	0-8	9-3	2-2	15-3	3-7	33	3 53-3	3 53-9	3 42-6	3-3	0-9	9-3	2-4	15-3	4-0
34	3 38-5	3 39-1	3 28-5	3-4	0-8	9-4	2-3	15-4	3-7	34	3 53-5	3 54-1	3 42-9	3-4	0-9	9-4	2-4	15-4	4-0
35	3 38-8	3 39-3	3 28-8	3-5	0-8	9-5	2-3	15-5	3-7	35	3 53-8	3 54-4	3 43-1	3-5	0-9	9-5	2-5	15-5	4-0
36	3 39-0	3 39-6	3 29-0	3-6	0-9	9-6	2-3	15-6	3-8	36	3 54-0	3 54-6	3 43-3	3-6	0-9	9-6	2-5	15-6	4-0
37	3 39-3	3 39-9	3 29-3	3-7	0-9	9-7	2-3	15-7	3-8	37	3 54-3	3 54-9	3 43-6	3-7	1-0	9-7	2-5	15-7	4-1
38	3 39-5	3 40-1	3 29-5	3-8	0-9	9-8	2-4	15-8	3-8	38	3 54-5	3 55-1	3 43-8	3-8	1-0	9-8	2-5	15-8	4-1
39	3 39-8	3 40-4	3 29-7	3-9	0-9	9-9	2-4	15-9	3-8	39	3 54-8	3 55-4	3 44-1	3-9	1-0	9-9	2-6	15-9	4-1
40	3 40-0	3 40-6	3 30-0	4-0	1-0	10-0	2-4	16-0	3-9	40	3 55-0	3 55-6	3 44-3	4-0	1-0	10-0	2-6	16-0	4-1
41	3 40-3	3 40-9	3 30-2	4-1	1-0	10-1	2-4	16-1	3-9	41	3 55-3	3 55-9	3 44-5	4-1	1-1	10-1	2-6	16-1	4-2
42	3 40-5	3 41-1	3 30-5	4-2	1-0	10-2	2-5	16-2	3-9	42	3 55-5	3 56-1	3 44-8	4-2	1-1	10-2	2-6	16-2	4-2
43	3 40-8	3 41-4	3 30-7	4-3	1-0	10-3	2-5	16-3	3-9	43	3 55-8	3 56-4	3 45-0	4-3	1-1	10-3	2-7	16-3	4-2
44	3 41-0	3 41-6	3 30-9	4-4	1-1	10-4	2-5	16-4	4-0	44	3 56-0	3 56-6	3 45-2	4-4	1-1	10-4	2-7	16-4	4-2
45	3 41-3	3 41-9	3 31-2	4-5	1-1	10-5	2-5	16-5	4-0	45	3 56-3	3 56-9	3 45-5	4-5	1-2	10-5	2-7	16-5	4-3
46	3 41-5	3 42-1	3 31-4	4-6	1-1	10-6	2-6	16-6	4-0	46	3 56-5	3 57-1	3 45-7	4-6	1-2	10-6	2-7	16-6	4-3
47	3 41-8	3 42-4	3 31-6	4-7	1-1	10-7	2-6	16-7	4-0	47	3 56-8	3 57-4	3 46-0	4-7	1-2	10-7	2-8	16-7	4-3
48	3 42-0	3 42-6	3 31-9	4-8	1-2	10-8	2-6	16-8	4-1	48	3 57-0	3 57-6	3 46-2	4-8	1-2	10-8	2-8	16-8	4-3
49	3 42-3	3 42-9	3 32-1	4-9	1-2	10-9	2-6	16-9	4-1	49	3 57-3	3 57-9	3 46-4	4-9	1-3	10-9	2-8	16-9	4-4
50	3 42-5	3 43-1	3 32-4	5-0	1-2	11-0	2-7	17-0	4-1	50	3 57-5	3 58-2	3 46-7	5-0	1-3	11-0	2-8	17-0	4-4
51	3 42-8	3 43-4	3 32-6	5-1	1-2	11-1	2-7	17-1	4-1	51	3 57-8	3 58-4	3 46-9	5-1	1-3	11-1	2-9	17-1	4-4
52	3 43-0	3 43-6	3 32-8	5-2	1-3	11-2	2-7	17-2	4-2	52	3 58-0	3 58-7	3 47-2	5-2	1-3	11-2	2-9	17-2	4-4
53	3 43-3	3 43-9	3 33-1	5-3	1-3	11-3	2-7	17-3	4-2	53	3 58-3	3 58-9	3 47-4	5-3	1-4	11-3	2-9	17-3	4-5
54	3 43-5	3 44-1	3 33-3	5-4	1-3	11-4	2-8	17-4	4-2	54	3 58-5	3 59-2	3 47-6	5-4	1-4	11-4	2-9	17-4	4-5
55	3 43-8	3 44-4	3 33-6	5-5	1-3	11-5	2-8	17-5	4-2	55	3 58-8	3 59-4	3 47-9	5-5	1-4	11-5	3-0	17-5	4-5
56	3 44-0	3 44-6	3 33-8	5-6	1-4	11-6	2-8	17-6	4-3	56	3 59-0	3 59-7	3 48-1	5-6	1-4	11-6	3-0	17-6	4-5
57	3 44-3	3 44-9	3 34-0	5-7	1-4	11-7	2-8	17-7	4-3	57	3 59-3	3 59-9	3 48-4	5-7	1-5	11-7	3-0	17-7	4-6
58	3 44-5	3 45-1	3 34-3	5-8	1-4	11-8	2-9	17-8	4-3	58	3 59-5	4 00-2	3 48-6	5-8	1-5	11-8	3-0	17-8	4-6
59	3 44-8	3 45-4	3 34-5	5-9	1-4	11-9	2-9	17-9	4-3	59	3 59-8	4 00-4	3 48-8	5-9	1-5	11-9	3-1	17-9	4-6
60	3 45-0	3 45-6	3 34-8	6-0	1-5	12-0	2-9	18-0	4-4	60	4 00-0	4 00-7	3 49-1	6-0	1-6	12-0	3-1	18-0	4-7

16^m

INCREMENTOS Y CORRECCIONES

17^m

16 ^m	SOL PLANETAS	ARIES	LUNA	v _o d Corr.	v _o d Corr.	v _o d Corr.	17 ^m	SOL PLANETAS	ARIES	LUNA	v _o d Corr.	v _o d Corr.	v _o d Corr.
s	° /	° /	° /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /
00	4 00-0	4 00-7	3 49-1	0-0 0-0	6-0 1-7	12-0 3-3	00	4 15-0	4 15-7	4 03-4	0-0 0-0	6-0 1-8	12-0 3-5
01	4 00-3	4 00-9	3 49-3	0-1 0-0	6-1 1-7	12-1 3-3	01	4 15-3	4 15-9	4 03-6	0-1 0-0	6-1 1-8	12-1 3-5
02	4 00-5	4 01-2	3 49-5	0-2 0-1	6-2 1-7	12-2 3-4	02	4 15-5	4 16-2	4 03-9	0-2 0-1	6-2 1-8	12-2 3-6
03	4 00-8	4 01-4	3 49-8	0-3 0-1	6-3 1-7	12-3 3-4	03	4 15-8	4 16-5	4 04-1	0-3 0-1	6-3 1-8	12-3 3-6
04	4 01-0	4 01-7	3 50-0	0-4 0-1	6-4 1-8	12-4 3-4	04	4 16-0	4 16-7	4 04-3	0-4 0-1	6-4 1-9	12-4 3-6
05	4 01-3	4 01-9	3 50-3	0-5 0-1	6-5 1-8	12-5 3-4	05	4 16-3	4 17-0	4 04-6	0-5 0-1	6-5 1-9	12-5 3-6
06	4 01-5	4 02-2	3 50-5	0-6 0-2	6-6 1-8	12-6 3-5	06	4 16-5	4 17-2	4 04-8	0-6 0-2	6-6 1-9	12-6 3-7
07	4 01-8	4 02-4	3 50-7	0-7 0-2	6-7 1-8	12-7 3-5	07	4 16-8	4 17-5	4 05-1	0-7 0-2	6-7 2-0	12-7 3-7
08	4 02-0	4 02-7	3 51-0	0-8 0-2	6-8 1-9	12-8 3-5	08	4 17-0	4 17-7	4 05-3	0-8 0-2	6-8 2-0	12-8 3-7
09	4 02-3	4 02-9	3 51-2	0-9 0-2	6-9 1-9	12-9 3-5	09	4 17-3	4 18-0	4 05-5	0-9 0-3	6-9 2-0	12-9 3-8
10	4 02-5	4 03-2	3 51-5	1-0 0-3	7-0 1-9	13-0 3-6	10	4 17-5	4 18-2	4 05-8	1-0 0-3	7-0 2-0	13-0 3-8
11	4 02-8	4 03-4	3 51-7	1-1 0-3	7-1 2-0	13-1 3-6	11	4 17-8	4 18-5	4 06-0	1-1 0-3	7-1 2-1	13-1 3-8
12	4 03-0	4 03-7	3 51-9	1-2 0-3	7-2 2-0	13-2 3-6	12	4 18-0	4 18-7	4 06-2	1-2 0-4	7-2 2-1	13-2 3-9
13	4 03-3	4 03-9	3 52-2	1-3 0-4	7-3 2-0	13-3 3-7	13	4 18-3	4 19-0	4 06-5	1-3 0-4	7-3 2-1	13-3 3-9
14	4 03-5	4 04-2	3 52-4	1-4 0-4	7-4 2-0	13-4 3-7	14	4 18-5	4 19-2	4 06-7	1-4 0-4	7-4 2-2	13-4 3-9
15	4 03-8	4 04-4	3 52-6	1-5 0-4	7-5 2-1	13-5 3-7	15	4 18-8	4 19-5	4 07-0	1-5 0-4	7-5 2-2	13-5 3-9
16	4 04-0	4 04-7	3 52-9	1-6 0-4	7-6 2-1	13-6 3-7	16	4 19-0	4 19-7	4 07-2	1-6 0-5	7-6 2-2	13-6 4-0
17	4 04-3	4 04-9	3 53-1	1-7 0-5	7-7 2-1	13-7 3-8	17	4 19-3	4 20-0	4 07-4	1-7 0-5	7-7 2-2	13-7 4-0
18	4 04-5	4 05-2	3 53-4	1-8 0-5	7-8 2-1	13-8 3-8	18	4 19-5	4 20-2	4 07-7	1-8 0-5	7-8 2-3	13-8 4-0
19	4 04-8	4 05-4	3 53-6	1-9 0-5	7-9 2-2	13-9 3-8	19	4 19-8	4 20-5	4 07-9	1-9 0-6	7-9 2-3	13-9 4-1
20	4 05-0	4 05-7	3 53-8	2-0 0-6	8-0 2-2	14-0 3-9	20	4 20-0	4 20-7	4 08-2	2-0 0-6	8-0 2-3	14-0 4-1
21	4 05-3	4 05-9	3 54-1	2-1 0-6	8-1 2-2	14-1 3-9	21	4 20-3	4 21-0	4 08-4	2-1 0-6	8-1 2-4	14-1 4-1
22	4 05-5	4 06-2	3 54-3	2-2 0-6	8-2 2-3	14-2 3-9	22	4 20-5	4 21-2	4 08-6	2-2 0-6	8-2 2-4	14-2 4-1
23	4 05-8	4 06-4	3 54-6	2-3 0-6	8-3 2-3	14-3 3-9	23	4 20-8	4 21-5	4 08-9	2-3 0-7	8-3 2-4	14-3 4-2
24	4 06-0	4 06-7	3 54-8	2-4 0-7	8-4 2-3	14-4 4-0	24	4 21-0	4 21-7	4 09-1	2-4 0-7	8-4 2-5	14-4 4-2
25	4 06-3	4 06-9	3 55-0	2-5 0-7	8-5 2-3	14-5 4-0	25	4 21-3	4 22-0	4 09-3	2-5 0-7	8-5 2-5	14-5 4-2
26	4 06-5	4 07-2	3 55-3	2-6 0-7	8-6 2-4	14-6 4-0	26	4 21-5	4 22-2	4 09-6	2-6 0-8	8-6 2-5	14-6 4-3
27	4 06-8	4 07-4	3 55-5	2-7 0-7	8-7 2-4	14-7 4-0	27	4 21-8	4 22-5	4 09-8	2-7 0-8	8-7 2-5	14-7 4-3
28	4 07-0	4 07-7	3 55-7	2-8 0-8	8-8 2-4	14-8 4-1	28	4 22-0	4 22-7	4 10-1	2-8 0-8	8-8 2-6	14-8 4-3
29	4 07-3	4 07-9	3 56-0	2-9 0-8	8-9 2-4	14-9 4-1	29	4 22-3	4 23-0	4 10-3	2-9 0-8	8-9 2-6	14-9 4-3
30	4 07-5	4 08-2	3 56-2	3-0 0-8	9-0 2-5	15-0 4-1	30	4 22-5	4 23-2	4 10-5	3-0 0-9	9-0 2-6	15-0 4-4
31	4 07-8	4 08-4	3 56-5	3-1 0-9	9-1 2-5	15-1 4-2	31	4 22-8	4 23-5	4 10-8	3-1 0-9	9-1 2-7	15-1 4-4
32	4 08-0	4 08-7	3 56-7	3-2 0-9	9-2 2-5	15-2 4-2	32	4 23-0	4 23-7	4 11-0	3-2 0-9	9-2 2-7	15-2 4-4
33	4 08-3	4 08-9	3 56-9	3-3 0-9	9-3 2-6	15-3 4-2	33	4 23-3	4 24-0	4 11-3	3-3 1-0	9-3 2-7	15-3 4-5
34	4 08-5	4 09-2	3 57-2	3-4 0-9	9-4 2-6	15-4 4-2	34	4 23-5	4 24-2	4 11-5	3-4 1-0	9-4 2-7	15-4 4-5
35	4 08-8	4 09-4	3 57-4	3-5 1-0	9-5 2-6	15-5 4-3	35	4 23-8	4 24-5	4 11-7	3-5 1-0	9-5 2-8	15-5 4-5
36	4 09-0	4 09-7	3 57-7	3-6 1-0	9-6 2-6	15-6 4-3	36	4 24-0	4 24-7	4 12-0	3-6 1-1	9-6 2-8	15-6 4-6
37	4 09-3	4 09-9	3 57-9	3-7 1-0	9-7 2-7	15-7 4-3	37	4 24-3	4 25-0	4 12-2	3-7 1-1	9-7 2-8	15-7 4-6
38	4 09-5	4 10-2	3 58-1	3-8 1-0	9-8 2-7	15-8 4-3	38	4 24-5	4 25-2	4 12-5	3-8 1-1	9-8 2-9	15-8 4-6
39	4 09-8	4 10-4	3 58-4	3-9 1-1	9-9 2-7	15-9 4-4	39	4 24-8	4 25-5	4 12-7	3-9 1-1	9-9 2-9	15-9 4-6
40	4 10-0	4 10-7	3 58-6	4-0 1-1	10-0 2-8	16-0 4-4	40	4 25-0	4 25-7	4 12-9	4-0 1-2	10-0 2-9	16-0 4-7
41	4 10-3	4 10-9	3 58-8	4-1 1-1	10-1 2-8	16-1 4-4	41	4 25-3	4 26-0	4 13-2	4-1 1-2	10-1 2-9	16-1 4-7
42	4 10-5	4 11-2	3 59-1	4-2 1-2	10-2 2-8	16-2 4-5	42	4 25-5	4 26-2	4 13-4	4-2 1-2	10-2 3-0	16-2 4-7
43	4 10-8	4 11-4	3 59-3	4-3 1-2	10-3 2-8	16-3 4-5	43	4 25-8	4 26-5	4 13-6	4-3 1-3	10-3 3-0	16-3 4-8
44	4 11-0	4 11-7	3 59-6	4-4 1-2	10-4 2-9	16-4 4-5	44	4 26-0	4 26-7	4 13-9	4-4 1-3	10-4 3-0	16-4 4-8
45	4 11-3	4 11-9	3 59-8	4-5 1-2	10-5 2-9	16-5 4-5	45	4 26-3	4 27-0	4 14-1	4-5 1-3	10-5 3-1	16-5 4-8
46	4 11-5	4 12-2	4 00-0	4-6 1-3	10-6 2-9	16-6 4-6	46	4 26-5	4 27-2	4 14-4	4-6 1-3	10-6 3-1	16-6 4-8
47	4 11-8	4 12-4	4 00-3	4-7 1-3	10-7 2-9	16-7 4-6	47	4 26-8	4 27-5	4 14-6	4-7 1-4	10-7 3-1	16-7 4-9
48	4 12-0	4 12-7	4 00-5	4-8 1-3	10-8 3-0	16-8 4-6	48	4 27-0	4 27-7	4 14-8	4-8 1-4	10-8 3-2	16-8 4-9
49	4 12-3	4 12-9	4 00-8	4-9 1-3	10-9 3-0	16-9 4-6	49	4 27-3	4 28-0	4 15-1	4-9 1-4	10-9 3-2	16-9 4-9
50	4 12-5	4 13-2	4 01-0	5-0 1-4	11-0 3-0	17-0 4-7	50	4 27-5	4 28-2	4 15-3	5-0 1-5	11-0 3-2	17-0 5-0
51	4 12-8	4 13-4	4 01-2	5-1 1-4	11-1 3-1	17-1 4-7	51	4 27-8	4 28-5	4 15-6	5-1 1-5	11-1 3-2	17-1 5-0
52	4 13-0	4 13-7	4 01-5	5-2 1-4	11-2 3-1	17-2 4-7	52	4 28-0	4 28-7	4 15-8	5-2 1-5	11-2 3-3	17-2 5-0
53	4 13-3	4 13-9	4 01-7	5-3 1-5	11-3 3-1	17-3 4-8	53	4 28-3	4 29-0	4 16-0	5-3 1-5	11-3 3-3	17-3 5-0
54	4 13-5	4 14-2	4 02-0	5-4 1-5	11-4 3-1	17-4 4-8	54	4 28-5	4 29-2	4 16-3	5-4 1-6	11-4 3-3	17-4 5-1
55	4 13-8	4 14-4	4 02-2	5-5 1-5	11-5 3-2	17-5 4-8	55	4 28-8	4 29-5	4 16-5	5-5 1-6	11-5 3-4	17-5 5-1
56	4 14-0	4 14-7	4 02-4	5-6 1-5	11-6 3-2	17-6 4-8	56	4 29-0	4 29-7	4 16-7	5-6 1-6	11-6 3-4	17-6 5-1
57	4 14-3	4 14-9	4 02-7	5-7 1-6	11-7 3-2	17-7 4-9	57	4 29-3	4 30-0	4 17-0	5-7 1-7	11-7 3-4	17-7 5-2
58	4 14-5	4 15-2	4 02-9	5-8 1-6	11-8 3-2	17-8 4-9	58	4 29-5	4 30-2	4 17-2	5-8 1-7	11-8 3-4	17-8 5-2
59	4 14-8	4 15-4	4 03-1	5-9 1-6	11-9 3-3	17-9 4-9	59	4 29-8	4 30-5	4 17-5	5-9 1-7	11-9 3-5	17-9 5-2
60	4 15-0	4 15-7	4 03-4	6-0 1-7	12-0 3-3	18-0 5-0	60	4 30-0	4 30-7	4 17-7	6-0 1-8	12-0 3-5	18-0 5-3

18^m

INCREMENTOS Y CORRECCIONES

19^m

18 ^m	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.	19 ^m	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.
s	° /	° /	° /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /
00	4 30-0	4 30-7	4 17-7	0-0 0-0	6-0 1-9	12-0 3-7	00	4 45-0	4 45-8	4 32-0	0-0 0-0	6-0 2-0	12-0 3-9
01	4 30-3	4 31-0	4 17-9	0-1 0-0	6-1 1-9	12-1 3-7	01	4 45-3	4 46-0	4 32-3	0-1 0-0	6-1 2-0	12-1 3-9
02	4 30-5	4 31-2	4 18-2	0-2 0-1	6-2 1-9	12-2 3-8	02	4 45-5	4 46-3	4 32-5	0-2 0-1	6-2 2-0	12-2 4-0
03	4 30-8	4 31-5	4 18-4	0-3 0-1	6-3 1-9	12-3 3-8	03	4 45-8	4 46-5	4 32-7	0-3 0-1	6-3 2-0	12-3 4-0
04	4 31-0	4 31-7	4 18-7	0-4 0-1	6-4 2-0	12-4 3-8	04	4 46-0	4 46-8	4 33-0	0-4 0-1	6-4 2-1	12-4 4-0
05	4 31-3	4 32-0	4 18-9	0-5 0-2	6-5 2-0	12-5 3-9	05	4 46-3	4 47-0	4 33-2	0-5 0-2	6-5 2-1	12-5 4-1
06	4 31-5	4 32-2	4 19-1	0-6 0-2	6-6 2-0	12-6 3-9	06	4 46-5	4 47-3	4 33-4	0-6 0-2	6-6 2-1	12-6 4-1
07	4 31-8	4 32-5	4 19-4	0-7 0-2	6-7 2-1	12-7 3-9	07	4 46-8	4 47-5	4 33-7	0-7 0-2	6-7 2-2	12-7 4-1
08	4 32-0	4 32-7	4 19-6	0-8 0-2	6-8 2-1	12-8 3-9	08	4 47-0	4 47-8	4 33-9	0-8 0-3	6-8 2-2	12-8 4-2
09	4 32-3	4 33-0	4 19-8	0-9 0-3	6-9 2-1	12-9 4-0	09	4 47-3	4 48-0	4 34-2	0-9 0-3	6-9 2-2	12-9 4-2
10	4 32-5	4 33-2	4 20-1	1-0 0-3	7-0 2-2	13-0 4-0	10	4 47-5	4 48-3	4 34-4	1-0 0-3	7-0 2-3	13-0 4-2
11	4 32-8	4 33-5	4 20-3	1-1 0-3	7-1 2-2	13-1 4-0	11	4 47-8	4 48-5	4 34-6	1-1 0-4	7-1 2-3	13-1 4-3
12	4 33-0	4 33-7	4 20-6	1-2 0-4	7-2 2-2	13-2 4-1	12	4 48-0	4 48-8	4 34-9	1-2 0-4	7-2 2-3	13-2 4-3
13	4 33-3	4 34-0	4 20-8	1-3 0-4	7-3 2-3	13-3 4-1	13	4 48-3	4 49-0	4 35-1	1-3 0-4	7-3 2-4	13-3 4-3
14	4 33-5	4 34-2	4 21-0	1-4 0-4	7-4 2-3	13-4 4-1	14	4 48-5	4 49-3	4 35-4	1-4 0-5	7-4 2-4	13-4 4-4
15	4 33-8	4 34-5	4 21-3	1-5 0-5	7-5 2-3	13-5 4-2	15	4 48-8	4 49-5	4 35-6	1-5 0-5	7-5 2-4	13-5 4-4
16	4 34-0	4 34-8	4 21-5	1-6 0-5	7-6 2-3	13-6 4-2	16	4 49-0	4 49-8	4 35-8	1-6 0-5	7-6 2-5	13-6 4-4
17	4 34-3	4 35-0	4 21-8	1-7 0-5	7-7 2-4	13-7 4-2	17	4 49-3	4 50-0	4 36-1	1-7 0-6	7-7 2-5	13-7 4-5
18	4 34-5	4 35-3	4 22-0	1-8 0-6	7-8 2-4	13-8 4-3	18	4 49-5	4 50-3	4 36-3	1-8 0-6	7-8 2-5	13-8 4-5
19	4 34-8	4 35-5	4 22-2	1-9 0-6	7-9 2-4	13-9 4-3	19	4 49-8	4 50-5	4 36-6	1-9 0-6	7-9 2-6	13-9 4-5
20	4 35-0	4 35-8	4 22-5	2-0 0-6	8-0 2-5	14-0 4-3	20	4 50-0	4 50-8	4 36-8	2-0 0-7	8-0 2-6	14-0 4-6
21	4 35-3	4 36-0	4 22-7	2-1 0-6	8-1 2-5	14-1 4-3	21	4 50-3	4 51-0	4 37-0	2-1 0-7	8-1 2-6	14-1 4-6
22	4 35-5	4 36-3	4 22-9	2-2 0-7	8-2 2-5	14-2 4-4	22	4 50-5	4 51-3	4 37-3	2-2 0-7	8-2 2-7	14-2 4-6
23	4 35-8	4 36-5	4 23-2	2-3 0-7	8-3 2-6	14-3 4-4	23	4 50-8	4 51-5	4 37-5	2-3 0-7	8-3 2-7	14-3 4-6
24	4 36-0	4 36-8	4 23-4	2-4 0-7	8-4 2-6	14-4 4-4	24	4 51-0	4 51-8	4 37-7	2-4 0-8	8-4 2-7	14-4 4-7
25	4 36-3	4 37-0	4 23-7	2-5 0-8	8-5 2-6	14-5 4-5	25	4 51-3	4 52-0	4 38-0	2-5 0-8	8-5 2-8	14-5 4-7
26	4 36-5	4 37-3	4 23-9	2-6 0-8	8-6 2-7	14-6 4-5	26	4 51-5	4 52-3	4 38-2	2-6 0-8	8-6 2-8	14-6 4-7
27	4 36-8	4 37-5	4 24-1	2-7 0-8	8-7 2-7	14-7 4-5	27	4 51-8	4 52-5	4 38-5	2-7 0-9	8-7 2-8	14-7 4-8
28	4 37-0	4 37-8	4 24-4	2-8 0-9	8-8 2-7	14-8 4-6	28	4 52-0	4 52-8	4 38-7	2-8 0-9	8-8 2-9	14-8 4-8
29	4 37-3	4 38-0	4 24-6	2-9 0-9	8-9 2-7	14-9 4-6	29	4 52-3	4 53-1	4 38-9	2-9 0-9	8-9 2-9	14-9 4-8
30	4 37-5	4 38-3	4 24-9	3-0 0-9	9-0 2-8	15-0 4-6	30	4 52-5	4 53-3	4 39-2	3-0 1-0	9-0 2-9	15-0 4-9
31	4 37-8	4 38-5	4 25-1	3-1 1-0	9-1 2-8	15-1 4-7	31	4 52-8	4 53-6	4 39-4	3-1 1-0	9-1 3-0	15-1 4-9
32	4 38-0	4 38-8	4 25-3	3-2 1-0	9-2 2-8	15-2 4-7	32	4 53-0	4 53-8	4 39-7	3-2 1-0	9-2 3-0	15-2 4-9
33	4 38-3	4 39-0	4 25-6	3-3 1-0	9-3 2-9	15-3 4-7	33	4 53-3	4 54-1	4 39-9	3-3 1-1	9-3 3-0	15-3 5-0
34	4 38-5	4 39-3	4 25-8	3-4 1-0	9-4 2-9	15-4 4-7	34	4 53-5	4 54-3	4 40-1	3-4 1-1	9-4 3-1	15-4 5-0
35	4 38-8	4 39-5	4 26-1	3-5 1-1	9-5 2-9	15-5 4-8	35	4 53-8	4 54-6	4 40-4	3-5 1-1	9-5 3-1	15-5 5-0
36	4 39-0	4 39-8	4 26-3	3-6 1-1	9-6 3-0	15-6 4-8	36	4 54-0	4 54-8	4 40-6	3-6 1-2	9-6 3-1	15-6 5-1
37	4 39-3	4 40-0	4 26-5	3-7 1-1	9-7 3-0	15-7 4-8	37	4 54-3	4 55-1	4 40-8	3-7 1-2	9-7 3-2	15-7 5-1
38	4 39-5	4 40-3	4 26-8	3-8 1-2	9-8 3-0	15-8 4-9	38	4 54-5	4 55-3	4 41-1	3-8 1-2	9-8 3-2	15-8 5-1
39	4 39-8	4 40-5	4 27-0	3-9 1-2	9-9 3-1	15-9 4-9	39	4 54-8	4 55-6	4 41-3	3-9 1-3	9-9 3-2	15-9 5-2
40	4 40-0	4 40-8	4 27-2	4-0 1-2	10-0 3-1	16-0 4-9	40	4 55-0	4 55-8	4 41-6	4-0 1-3	10-0 3-3	16-0 5-2
41	4 40-3	4 41-0	4 27-5	4-1 1-3	10-1 3-1	16-1 5-0	41	4 55-3	4 56-1	4 41-8	4-1 1-3	10-1 3-3	16-1 5-2
42	4 40-5	4 41-3	4 27-7	4-2 1-3	10-2 3-1	16-2 5-0	42	4 55-5	4 56-3	4 42-0	4-2 1-4	10-2 3-3	16-2 5-3
43	4 40-8	4 41-5	4 28-0	4-3 1-3	10-3 3-2	16-3 5-0	43	4 55-8	4 56-6	4 42-3	4-3 1-4	10-3 3-3	16-3 5-3
44	4 41-0	4 41-8	4 28-2	4-4 1-4	10-4 3-2	16-4 5-1	44	4 56-0	4 56-8	4 42-5	4-4 1-4	10-4 3-4	16-4 5-3
45	4 41-3	4 42-0	4 28-4	4-5 1-4	10-5 3-2	16-5 5-1	45	4 56-3	4 57-1	4 42-8	4-5 1-5	10-5 3-4	16-5 5-4
46	4 41-5	4 42-3	4 28-7	4-6 1-4	10-6 3-3	16-6 5-1	46	4 56-5	4 57-3	4 43-0	4-6 1-5	10-6 3-4	16-6 5-4
47	4 41-8	4 42-5	4 28-9	4-7 1-4	10-7 3-3	16-7 5-1	47	4 56-8	4 57-6	4 43-2	4-7 1-5	10-7 3-5	16-7 5-4
48	4 42-0	4 42-8	4 29-2	4-8 1-5	10-8 3-3	16-8 5-2	48	4 57-0	4 57-8	4 43-5	4-8 1-6	10-8 3-5	16-8 5-5
49	4 42-3	4 43-0	4 29-4	4-9 1-5	10-9 3-4	16-9 5-2	49	4 57-3	4 58-1	4 43-7	4-9 1-6	10-9 3-5	16-9 5-5
50	4 42-5	4 43-3	4 29-6	5-0 1-5	11-0 3-4	17-0 5-2	50	4 57-5	4 58-3	4 43-9	5-0 1-6	11-0 3-6	17-0 5-5
51	4 42-8	4 43-5	4 29-9	5-1 1-6	11-1 3-4	17-1 5-3	51	4 57-8	4 58-6	4 44-2	5-1 1-7	11-1 3-6	17-1 5-6
52	4 43-0	4 43-8	4 30-1	5-2 1-6	11-2 3-5	17-2 5-3	52	4 58-0	4 58-8	4 44-4	5-2 1-7	11-2 3-6	17-2 5-6
53	4 43-3	4 44-0	4 30-3	5-3 1-6	11-3 3-5	17-3 5-3	53	4 58-3	4 59-1	4 44-7	5-3 1-7	11-3 3-7	17-3 5-6
54	4 43-5	4 44-3	4 30-6	5-4 1-7	11-4 3-5	17-4 5-4	54	4 58-5	4 59-3	4 44-9	5-4 1-8	11-4 3-7	17-4 5-7
55	4 43-8	4 44-5	4 30-8	5-5 1-7	11-5 3-5	17-5 5-4	55	4 58-8	4 59-6	4 45-1	5-5 1-8	11-5 3-7	17-5 5-7
56	4 44-0	4 44-8	4 31-1	5-6 1-7	11-6 3-6	17-6 5-4	56	4 59-0	4 59-8	4 45-4	5-6 1-8	11-6 3-8	17-6 5-7
57	4 44-3	4 45-0	4 31-3	5-7 1-8	11-7 3-6	17-7 5-5	57	4 59-3	5 00-1	4 45-6	5-7 1-9	11-7 3-8	17-7 5-8
58	4 44-5	4 45-3	4 31-5	5-8 1-8	11-8 3-6	17-8 5-5	58	4 59-5	5 00-3	4 45-9	5-8 1-9	11-8 3-8	17-8 5-8
59	4 44-8	4 45-5	4 31-8	5-9 1-8	11-9 3-7	17-9 5-5	59	4 59-8	5 00-6	4 46-1	5-9 1-9	11-9 3-9	17-9 5-8
60	4 45-0	4 45-8	4 32-0	6-0 1-9	12-0 3-7	18-0 5-6	60	5 00-0	5 00-8	4 46-3	6-0 2-0	12-0 3-9	18-0 5-9

20^m

INCREMENTOS Y CORRECCIONES

21^m

20 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	21 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	5 00-0	5 00-8	4 46-3	0-0	0-0	6-0	2-1	12-0	4-1	00	5 15-0	5 15-9	5 00-7	0-0	0-0	6-0	2-2	12-0	4-3
01	5 00-3	5 01-1	4 46-6	0-1	0-0	6-1	2-1	12-1	4-1	01	5 15-3	5 16-1	5 00-9	0-1	0-0	6-1	2-2	12-1	4-3
02	5 00-5	5 01-3	4 46-8	0-2	0-1	6-2	2-1	12-2	4-2	02	5 15-5	5 16-4	5 01-1	0-2	0-1	6-2	2-2	12-2	4-4
03	5 00-8	5 01-6	4 47-0	0-3	0-1	6-3	2-2	12-3	4-2	03	5 15-8	5 16-6	5 01-4	0-3	0-1	6-3	2-3	12-3	4-4
04	5 01-0	5 01-8	4 47-3	0-4	0-1	6-4	2-2	12-4	4-2	04	5 16-0	5 16-9	5 01-6	0-4	0-1	6-4	2-3	12-4	4-4
05	5 01-3	5 02-1	4 47-5	0-5	0-2	6-5	2-2	12-5	4-3	05	5 16-3	5 17-1	5 01-8	0-5	0-2	6-5	2-3	12-5	4-5
06	5 01-5	5 02-3	4 47-8	0-6	0-2	6-6	2-3	12-6	4-3	06	5 16-5	5 17-4	5 02-1	0-6	0-2	6-6	2-4	12-6	4-5
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^m 22	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	^m 23	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	5 30-0	5 30-9	5 15-0	0-0	0-0	6-0	2-3	12-0	4-5	00	5 45-0	5 45-9	5 29-3	0-0	0-0	6-0	2-4	12-0	4-7
01	5 30-3	5 31-2	5 15-2	0-1	0-0	6-1	2-3	12-1	4-5	01	5 45-3	5 46-2	5 29-5	0-1	0-0	6-1	2-4	12-1	4-7
02	5 30-5	5 31-4	5 15-4	0-2	0-1	6-2	2-3	12-2	4-6	02	5 45-5	5 46-4	5 29-8	0-2	0-1	6-2	2-4	12-2	4-8
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39	5 39-8	5 40-7	5 24-3	3-9	1-5	9-9	3-7	15-9	6-0	39	5 54-8	5 55-7	5 38-6	3-9	1-5	9-9	3-9	15-9	6-2
40	5 40-0	5 40-9	5 24-5	4-0	1-5	10-0	3-8	16-0	6-0	40	5 55-0	5 56-0	5 38-8	4-0	1-6	10-0	3-9	16-0	6-3
41	5 40-3	5 41-2	5 24-7	4-1	1-5	10-1	3-8	16-1	6-0	41	5 55-3	5 56-2	5 39-1	4-1	1-6	10-1	4-0	16-1	6-3
42	5 40-5	5 41-4	5 25-0	4-2	1-6	10-2	3-8	16-2	6-1	42	5 55-5	5 56-5	5 39-3	4-2	1-6	10-2	4-0	16-2	6-3
43	5 40-8	5 41-7	5 25-2	4-3	1-6	10-3	3-9	16-3	6-1	43	5 55-8	5 56-7	5 39-5	4-3	1-7	10-3	4-0	16-3	6-4
44	5 41-0	5 41-9	5 25-5	4-4	1-7	10-4	3-9	16-4	6-1	44	5 56-0	5 57-0	5 39-8	4-4	1-7	10-4	4-1	16-4	6-4
45	5 41-3	5 42-2	5 25-7	4-5	1-7	10-5	3-9	16-5	6-2	45	5 56-3	5 57-2	5 40-0	4-5	1-8	10-5	4-1	16-5	6-5
46	5 41-5	5 42-4	5 25-9	4-6	1-7	10-6	4-0	16-6	6-2	46	5 56-5	5 57-5	5 40-3	4-6	1-8	10-6	4-2	16-6	6-5
47	5 41-8	5 42-7	5 26-2	4-7	1-8	10-7	4-0	16-7	6-3	47	5 56-8	5 57-7	5 40-5	4-7	1-8	10-7	4-2	16-7	6-5
48	5 42-0	5 42-9	5 26-4	4-8	1-8	10-8	4-1	16-8	6-3	48	5 57-0	5 58-0	5 40-7	4-8	1-9	10-8	4-2	16-8	6-6
49	5 42-3	5 43-2	5 26-7	4-9	1-8	10-9	4-1	16-9	6-3	49	5 57-3	5 58-2	5 41-0	4-9	1-9	10-9	4-3	16-9	6-6
50	5 42-5	5 43-4	5 26-9	5-0	1-9	11-0	4-1	17-0	6-4	50	5 57-5	5 58-5	5 41-2	5-0	2-0	11-0	4-3	17-0	6-7
51	5 42-8	5 43-7	5 27-1	5-1	1-9	11-1	4-2	17-1	6-4	51	5 57-8	5 58-7	5 41-5	5-1	2-0	11-1	4-3	17-1	6-7
52	5 43-0	5 43-9	5 27-4	5-2	2-0	11-2	4-2	17-2	6-5	52	5 58-0	5 59-0	5 41-7	5-2	2-0	11-2	4-4	17-2	6-7
53	5 43-3	5 44-2	5 27-6	5-3	2-0	11-3	4-2	17-3	6-5	53	5 58-3	5 59-2	5 41-9	5-3	2-1	11-3	4-4	17-3	6-8
54	5 43-5	5 44-4	5 27-9	5-4	2-0	11-4	4-3	17-4	6-5	54	5 58-5	5 59-5	5 42-2	5-4	2-1	11-4	4-5	17-4	6-8
55	5 43-8	5 44-7	5 28-1	5-5	2-1	11-5	4-3	17-5	6-6	55	5 58-8	5 59-7	5 42-4	5-5	2-2	11-5	4-5	17-5	6-9
56	5 44-0	5 44-9	5 28-3	5-6	2-1	11-6	4-4	17-6	6-6	56	5 59-0	6 00-0	5 42-6	5-6	2-2	11-6	4-5	17-6	6-9
57	5 44-3	5 45-2	5 28-6	5-7	2-1	11-7	4-4	17-7	6-6	57	5 59-3	6 00-2	5 42-9	5-7	2-2	11-7	4-6	17-7	6-9
58	5 44-5	5 45-4	5 28-8	5-8	2-2	11-8	4-4	17-8	6-7	58	5 59-5	6 00-5	5 43-1	5-8	2-3	11-8	4-6	17-8	7-0
59	5 44-8	5 45-7	5 29-0	5-9	2-2	11-9	4-5	17-9	6-7	59	5 59-8	6 00-7	5 43-4	5-9	2-3	11-9	4-7	17-9	7-0
60	5 45-0	5 45-9	5 29-3	6-0	2-3	12-0	4-5	18-0	6-8	60	6 00-0	6 01-0	5 43-6	6-0	2-4	12-0	4-7	18-0	7-1

24^m

INCREMENTOS Y CORRECCIONES

25^m

24 ^m	SOL PLANETAS	ARIES	LUNA	v _o d Corr.	v _o d Corr.	v _o d Corr.	25 ^m	SOL PLANETAS	ARIES	LUNA	v _o d Corr.	v _o d Corr.	v _o d Corr.
s	o /	o /	o /	/ /	/ /	/ /	s	o /	o /	o /	/ /	/ /	/ /
00	6 00-0	6 01-0	5 43-6	0-0 0-0	6-0 2-5	12-0 4-9	00	6 15-0	6 16-0	5 57-9	0-0 0-0	6-0 2-6	12-0 5-1
01	6 00-3	6 01-2	5 43-8	0-1 0-0	6-1 2-5	12-1 4-9	01	6 15-3	6 16-3	5 58-2	0-1 0-0	6-1 2-6	12-1 5-1
02	6 00-5	6 01-5	5 44-1	0-2 0-1	6-2 2-5	12-2 5-0	02	6 15-5	6 16-5	5 58-4	0-2 0-1	6-2 2-6	12-2 5-2
03	6 00-8	6 01-7	5 44-3	0-3 0-1	6-3 2-6	12-3 5-0	03	6 15-8	6 16-8	5 58-6	0-3 0-1	6-3 2-7	12-3 5-2
04	6 01-0	6 02-0	5 44-6	0-4 0-2	6-4 2-6	12-4 5-1	04	6 16-0	6 17-0	5 58-9	0-4 0-2	6-4 2-7	12-4 5-3
05	6 01-3	6 02-2	5 44-8	0-5 0-2	6-5 2-7	12-5 5-1	05	6 16-3	6 17-3	5 59-1	0-5 0-2	6-5 2-8	12-5 5-3
06	6 01-5	6 02-5	5 45-0	0-6 0-2	6-6 2-7	12-6 5-1	06	6 16-5	6 17-5	5 59-3	0-6 0-3	6-6 2-8	12-6 5-4
07	6 01-8	6 02-7	5 45-3	0-7 0-3	6-7 2-7	12-7 5-2	07	6 16-8	6 17-8	5 59-6	0-7 0-3	6-7 2-8	12-7 5-4
08	6 02-0	6 03-0	5 45-5	0-8 0-3	6-8 2-8	12-8 5-2	08	6 17-0	6 18-0	5 59-8	0-8 0-3	6-8 2-9	12-8 5-4
09	6 02-3	6 03-2	5 45-7	0-9 0-4	6-9 2-8	12-9 5-3	09	6 17-3	6 18-3	6 00-1	0-9 0-4	6-9 2-9	12-9 5-5
10	6 02-5	6 03-5	5 46-0	1-0 0-4	7-0 2-9	13-0 5-3	10	6 17-5	6 18-5	6 00-3	1-0 0-4	7-0 3-0	13-0 5-5
11	6 02-8	6 03-7	5 46-2	1-1 0-4	7-1 2-9	13-1 5-3	11	6 17-8	6 18-8	6 00-5	1-1 0-5	7-1 3-0	13-1 5-6
12	6 03-0	6 04-0	5 46-5	1-2 0-5	7-2 2-9	13-2 5-4	12	6 18-0	6 19-0	6 00-8	1-2 0-5	7-2 3-1	13-2 5-6
13	6 03-3	6 04-2	5 46-7	1-3 0-5	7-3 3-0	13-3 5-4	13	6 18-3	6 19-3	6 01-0	1-3 0-6	7-3 3-1	13-3 5-7
14	6 03-5	6 04-5	5 46-9	1-4 0-6	7-4 3-0	13-4 5-5	14	6 18-5	6 19-5	6 01-3	1-4 0-6	7-4 3-1	13-4 5-7
15	6 03-8	6 04-7	5 47-2	1-5 0-6	7-5 3-1	13-5 5-5	15	6 18-8	6 19-8	6 01-5	1-5 0-6	7-5 3-2	13-5 5-7
16	6 04-0	6 05-0	5 47-4	1-6 0-7	7-6 3-1	13-6 5-6	16	6 19-0	6 20-0	6 01-7	1-6 0-7	7-6 3-2	13-6 5-8
17	6 04-3	6 05-2	5 47-7	1-7 0-7	7-7 3-1	13-7 5-6	17	6 19-3	6 20-3	6 02-0	1-7 0-7	7-7 3-3	13-7 5-8
18	6 04-5	6 05-5	5 47-9	1-8 0-7	7-8 3-2	13-8 5-6	18	6 19-5	6 20-5	6 02-2	1-8 0-8	7-8 3-3	13-8 5-9
19	6 04-8	6 05-7	5 48-1	1-9 0-8	7-9 3-2	13-9 5-7	19	6 19-8	6 20-8	6 02-5	1-9 0-8	7-9 3-4	13-9 5-9
20	6 05-0	6 06-0	5 48-4	2-0 0-8	8-0 3-3	14-0 5-7	20	6 20-0	6 21-0	6 02-7	2-0 0-9	8-0 3-4	14-0 6-0
21	6 05-3	6 06-3	5 48-6	2-1 0-9	8-1 3-3	14-1 5-8	21	6 20-3	6 21-3	6 02-9	2-1 0-9	8-1 3-4	14-1 6-0
22	6 05-5	6 06-5	5 48-8	2-2 0-9	8-2 3-3	14-2 5-8	22	6 20-5	6 21-5	6 03-2	2-2 0-9	8-2 3-5	14-2 6-0
23	6 05-8	6 06-8	5 49-1	2-3 0-9	8-3 3-4	14-3 5-8	23	6 20-8	6 21-8	6 03-4	2-3 1-0	8-3 3-5	14-3 6-1
24	6 06-0	6 07-0	5 49-3	2-4 1-0	8-4 3-4	14-4 5-9	24	6 21-0	6 22-0	6 03-6	2-4 1-0	8-4 3-6	14-4 6-1
25	6 06-3	6 07-3	5 49-6	2-5 1-0	8-5 3-5	14-5 5-9	25	6 21-3	6 22-3	6 03-9	2-5 1-1	8-5 3-6	14-5 6-2
26	6 06-5	6 07-5	5 49-8	2-6 1-1	8-6 3-5	14-6 6-0	26	6 21-5	6 22-5	6 04-1	2-6 1-1	8-6 3-7	14-6 6-2
27	6 06-8	6 07-8	5 50-0	2-7 1-1	8-7 3-6	14-7 6-0	27	6 21-8	6 22-8	6 04-4	2-7 1-1	8-7 3-7	14-7 6-2
28	6 07-0	6 08-0	5 50-3	2-8 1-1	8-8 3-6	14-8 6-0	28	6 22-0	6 23-0	6 04-6	2-8 1-2	8-8 3-7	14-8 6-3
29	6 07-3	6 08-3	5 50-5	2-9 1-2	8-9 3-6	14-9 6-1	29	6 22-3	6 23-3	6 04-8	2-9 1-2	8-9 3-8	14-9 6-3
30	6 07-5	6 08-5	5 50-8	3-0 1-2	9-0 3-7	15-0 6-1	30	6 22-5	6 23-5	6 05-1	3-0 1-3	9-0 3-8	15-0 6-4
31	6 07-8	6 08-8	5 51-0	3-1 1-3	9-1 3-7	15-1 6-2	31	6 22-8	6 23-8	6 05-3	3-1 1-3	9-1 3-9	15-1 6-4
32	6 08-0	6 09-0	5 51-2	3-2 1-3	9-2 3-8	15-2 6-2	32	6 23-0	6 24-0	6 05-6	3-2 1-4	9-2 3-9	15-2 6-5
33	6 08-3	6 09-3	5 51-5	3-3 1-3	9-3 3-8	15-3 6-2	33	6 23-3	6 24-3	6 05-8	3-3 1-4	9-3 4-0	15-3 6-5
34	6 08-5	6 09-5	5 51-7	3-4 1-4	9-4 3-8	15-4 6-3	34	6 23-5	6 24-5	6 06-0	3-4 1-4	9-4 4-0	15-4 6-5
35	6 08-8	6 09-8	5 52-0	3-5 1-4	9-5 3-9	15-5 6-3	35	6 23-8	6 24-8	6 06-3	3-5 1-5	9-5 4-0	15-5 6-6
36	6 09-0	6 10-0	5 52-2	3-6 1-5	9-6 3-9	15-6 6-4	36	6 24-0	6 25-1	6 06-5	3-6 1-5	9-6 4-1	15-6 6-6
37	6 09-3	6 10-3	5 52-4	3-7 1-5	9-7 4-0	15-7 6-4	37	6 24-3	6 25-3	6 06-7	3-7 1-6	9-7 4-1	15-7 6-7
38	6 09-5	6 10-5	5 52-7	3-8 1-6	9-8 4-0	15-8 6-5	38	6 24-5	6 25-6	6 07-0	3-8 1-6	9-8 4-2	15-8 6-7
39	6 09-8	6 10-8	5 52-9	3-9 1-6	9-9 4-0	15-9 6-5	39	6 24-8	6 25-8	6 07-2	3-9 1-7	9-9 4-2	15-9 6-8
40	6 10-0	6 11-0	5 53-1	4-0 1-6	10-0 4-1	16-0 6-5	40	6 25-0	6 26-1	6 07-5	4-0 1-7	10-0 4-3	16-0 6-8
41	6 10-3	6 11-3	5 53-4	4-1 1-7	10-1 4-1	16-1 6-6	41	6 25-3	6 26-3	6 07-7	4-1 1-7	10-1 4-3	16-1 6-8
42	6 10-5	6 11-5	5 53-6	4-2 1-7	10-2 4-2	16-2 6-6	42	6 25-5	6 26-6	6 07-9	4-2 1-8	10-2 4-3	16-2 6-9
43	6 10-8	6 11-8	5 53-9	4-3 1-8	10-3 4-2	16-3 6-7	43	6 25-8	6 26-8	6 08-2	4-3 1-8	10-3 4-4	16-3 6-9
44	6 11-0	6 12-0	5 54-1	4-4 1-8	10-4 4-2	16-4 6-7	44	6 26-0	6 27-1	6 08-4	4-4 1-9	10-4 4-4	16-4 7-0
45	6 11-3	6 12-3	5 54-3	4-5 1-8	10-5 4-3	16-5 6-7	45	6 26-3	6 27-3	6 08-7	4-5 1-9	10-5 4-5	16-5 7-0
46	6 11-5	6 12-5	5 54-6	4-6 1-9	10-6 4-3	16-6 6-8	46	6 26-5	6 27-6	6 08-9	4-6 2-0	10-6 4-5	16-6 7-1
47	6 11-8	6 12-8	5 54-8	4-7 1-9	10-7 4-4	16-7 6-8	47	6 26-8	6 27-8	6 09-1	4-7 2-0	10-7 4-5	16-7 7-1
48	6 12-0	6 13-0	5 55-1	4-8 2-0	10-8 4-4	16-8 6-9	48	6 27-0	6 28-1	6 09-4	4-8 2-0	10-8 4-6	16-8 7-1
49	6 12-3	6 13-3	5 55-3	4-9 2-0	10-9 4-5	16-9 6-9	49	6 27-3	6 28-3	6 09-6	4-9 2-1	10-9 4-6	16-9 7-2
50	6 12-5	6 13-5	5 55-5	5-0 2-0	11-0 4-5	17-0 6-9	50	6 27-5	6 28-6	6 09-8	5-0 2-1	11-0 4-7	17-0 7-2
51	6 12-8	6 13-8	5 55-8	5-1 2-1	11-1 4-5	17-1 7-0	51	6 27-8	6 28-8	6 10-1	5-1 2-2	11-1 4-7	17-1 7-3
52	6 13-0	6 14-0	5 56-0	5-2 2-1	11-2 4-6	17-2 7-0	52	6 28-0	6 29-1	6 10-3	5-2 2-2	11-2 4-8	17-2 7-3
53	6 13-3	6 14-3	5 56-2	5-3 2-2	11-3 4-6	17-3 7-1	53	6 28-3	6 29-3	6 10-6	5-3 2-3	11-3 4-8	17-3 7-4
54	6 13-5	6 14-5	5 56-5	5-4 2-2	11-4 4-7	17-4 7-1	54	6 28-5	6 29-6	6 10-8	5-4 2-3	11-4 4-8	17-4 7-4
55	6 13-8	6 14-8	5 56-7	5-5 2-2	11-5 4-7	17-5 7-1	55	6 28-8	6 29-8	6 11-0	5-5 2-3	11-5 4-9	17-5 7-4
56	6 14-0	6 15-0	5 57-0	5-6 2-3	11-6 4-7	17-6 7-2	56	6 29-0	6 30-1	6 11-3	5-6 2-4	11-6 4-9	17-6 7-5
57	6 14-3	6 15-3	5 57-2	5-7 2-3	11-7 4-8	17-7 7-2	57	6 29-3	6 30-3	6 11-5	5-7 2-4	11-7 5-0	17-7 7-5
58	6 14-5	6 15-5	5 57-4	5-8 2-4	11-8 4-8	17-8 7-3	58	6 29-5	6 30-6	6 11-8	5-8 2-5	11-8 5-0	17-8 7-6
59	6 14-8	6 15-8	5 57-7	5-9 2-4	11-9 4-9	17-9 7-3	59	6 29-8	6 30-8	6 12-0	5-9 2-5	11-9 5-1	17-9 7-6
60	6 15-0	6 16-0	5 57-9	6-0 2-5	12-0 4-9	18-0 7-4	60	6 30-0	6 31-1	6 12-2	6-0 2-6	12-0 5-1	18-0 7-7

^m 26	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	^m 27	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	6 30-0	6 31-1	6 12-2	0-0	0-0	6-0	2-7	12-0	5-3	00	6 45-0	6 46-1	6 26-6	0-0	0-0	6-0	2-8	12-0	5-5
01	6 30-3	6 31-3	6 12-5	0-1	0-0	6-1	2-7	12-1	5-3	01	6 45-3	6 46-4	6 26-8	0-1	0-0	6-1	2-8	12-1	5-5
02	6 30-5	6 31-6	6 12-7	0-2	0-1	6-2	2-7	12-2	5-4	02	6 45-5	6 46-6	6 27-0	0-2	0-1	6-2	2-8	12-2	5-6
03	6 30-8	6 31-8	6 12-9	0-3	0-1	6-3	2-8	12-3	5-4	03	6 45-8	6 46-9	6 27-3	0-3	0-1	6-3	2-9	12-3	5-6
04	6 31-0	6 32-1	6 13-2	0-4	0-2	6-4	2-8	12-4	5-5	04	6 46-0	6 47-1	6 27-5	0-4	0-2	6-4	2-9	12-4	5-7
05	6 31-3	6 32-3	6 13-4	0-5	0-2	6-5	2-9	12-5	5-5	05	6 46-3	6 47-4	6 27-7	0-5	0-2	6-5	3-0	12-5	5-7
06	6 31-5	6 32-6	6 13-7	0-6	0-3	6-6	2-9	12-6	5-6	06	6 46-5	6 47-6	6 28-0	0-6	0-3	6-6	3-0	12-6	5-8
07	6 31-8	6 32-8	6 13-9	0-7	0-3	6-7	3-0	12-7	5-6	07	6 46-8	6 47-9	6 28-2	0-7	0-3	6-7	3-1	12-7	5-8
08	6 32-0	6 33-1	6 14-1	0-8	0-4	6-8	3-0	12-8	5-7	08	6 47-0	6 48-1	6 28-5	0-8	0-4	6-8	3-1	12-8	5-9
09	6 32-3	6 33-3	6 14-4	0-9	0-4	6-9	3-0	12-9	5-7	09	6 47-3	6 48-4	6 28-7	0-9	0-4	6-9	3-2	12-9	5-9
10	6 32-5	6 33-6	6 14-6	1-0	0-4	7-0	3-1	13-0	5-7	10	6 47-5	6 48-6	6 28-9	1-0	0-5	7-0	3-2	13-0	6-0
11	6 32-8	6 33-8	6 14-9	1-1	0-5	7-1	3-1	13-1	5-8	11	6 47-8	6 48-9	6 29-2	1-1	0-5	7-1	3-3	13-1	6-0
12	6 33-0	6 34-1	6 15-1	1-2	0-5	7-2	3-2	13-2	5-8	12	6 48-0	6 49-1	6 29-4	1-2	0-6	7-2	3-3	13-2	6-1
13	6 33-3	6 34-3	6 15-3	1-3	0-6	7-3	3-2	13-3	5-9	13	6 48-3	6 49-4	6 29-7	1-3	0-6	7-3	3-3	13-3	6-1
14	6 33-5	6 34-6	6 15-6	1-4	0-6	7-4	3-3	13-4	5-9	14	6 48-5	6 49-6	6 29-9	1-4	0-6	7-4	3-4	13-4	6-1
15	6 33-8	6 34-8	6 15-8	1-5	0-7	7-5	3-3	13-5	6-0	15	6 48-8	6 49-9	6 30-1	1-5	0-7	7-5	3-4	13-5	6-2
16	6 34-0	6 35-1	6 16-1	1-6	0-7	7-6	3-4	13-6	6-0	16	6 49-0	6 50-1	6 30-4	1-6	0-7	7-6	3-5	13-6	6-2
17	6 34-3	6 35-3	6 16-3	1-7	0-8	7-7	3-4	13-7	6-1	17	6 49-3	6 50-4	6 30-6	1-7	0-8	7-7	3-5	13-7	6-3
18	6 34-5	6 35-6	6 16-5	1-8	0-8	7-8	3-4	13-8	6-1	18	6 49-5	6 50-6	6 30-8	1-8	0-8	7-8	3-6	13-8	6-3
19	6 34-8	6 35-8	6 16-8	1-9	0-8	7-9	3-5	13-9	6-1	19	6 49-8	6 50-9	6 31-1	1-9	0-9	7-9	3-6	13-9	6-4
20	6 35-0	6 36-1	6 17-0	2-0	0-9	8-0	3-5	14-0	6-2	20	6 50-0	6 51-1	6 31-3	2-0	0-9	8-0	3-7	14-0	6-4
21	6 35-3	6 36-3	6 17-2	2-1	0-9	8-1	3-6	14-1	6-2	21	6 50-3	6 51-4	6 31-6	2-1	1-0	8-1	3-7	14-1	6-5
22	6 35-5	6 36-6	6 17-5	2-2	1-0	8-2	3-6	14-2	6-3	22	6 50-5	6 51-6	6 31-8	2-2	1-0	8-2	3-8	14-2	6-5
23	6 35-8	6 36-8	6 17-7	2-3	1-0	8-3	3-7	14-3	6-3	23	6 50-8	6 51-9	6 32-0	2-3	1-1	8-3	3-8	14-3	6-6
24	6 36-0	6 37-1	6 18-0	2-4	1-1	8-4	3-7	14-4	6-4	24	6 51-0	6 52-1	6 32-3	2-4	1-1	8-4	3-9	14-4	6-6
25	6 36-3	6 37-3	6 18-2	2-5	1-1	8-5	3-8	14-5	6-4	25	6 51-3	6 52-4	6 32-5	2-5	1-1	8-5	3-9	14-5	6-6
26	6 36-5	6 37-6	6 18-4	2-6	1-1	8-6	3-8	14-6	6-4	26	6 51-5	6 52-6	6 32-8	2-6	1-2	8-6	3-9	14-6	6-7
27	6 36-8	6 37-8	6 18-7	2-7	1-2	8-7	3-8	14-7	6-5	27	6 51-8	6 52-9	6 33-0	2-7	1-2	8-7	4-0	14-7	6-7
28	6 37-0	6 38-1	6 18-9	2-8	1-2	8-8	3-9	14-8	6-5	28	6 52-0	6 53-1	6 33-2	2-8	1-3	8-8	4-0	14-8	6-8
29	6 37-3	6 38-3	6 19-2	2-9	1-3	8-9	3-9	14-9	6-6	29	6 52-3	6 53-4	6 33-5	2-9	1-3	8-9	4-1	14-9	6-8
30	6 37-5	6 38-6	6 19-4	3-0	1-3	9-0	4-0	15-0	6-6	30	6 52-5	6 53-6	6 33-7	3-0	1-4	9-0	4-1	15-0	6-9
31	6 37-8	6 38-8	6 19-6	3-1	1-4	9-1	4-0	15-1	6-7	31	6 52-8	6 53-9	6 33-9	3-1	1-4	9-1	4-2	15-1	6-9
32	6 38-0	6 39-1	6 19-9	3-2	1-4	9-2	4-1	15-2	6-7	32	6 53-0	6 54-1	6 34-2	3-2	1-5	9-2	4-2	15-2	7-0
33	6 38-3	6 39-3	6 20-1	3-3	1-5	9-3	4-1	15-3	6-8	33	6 53-3	6 54-4	6 34-4	3-3	1-5	9-3	4-3	15-3	7-0
34	6 38-5	6 39-6	6 20-3	3-4	1-5	9-4	4-2	15-4	6-8	34	6 53-5	6 54-6	6 34-7	3-4	1-6	9-4	4-3	15-4	7-1
35	6 38-8	6 39-8	6 20-6	3-5	1-5	9-5	4-2	15-5	6-8	35	6 53-8	6 54-9	6 34-9	3-5	1-6	9-5	4-4	15-5	7-1
36	6 39-0	6 40-1	6 20-8	3-6	1-6	9-6	4-2	15-6	6-9	36	6 54-0	6 55-1	6 35-1	3-6	1-7	9-6	4-4	15-6	7-2
37	6 39-3	6 40-3	6 21-1	3-7	1-6	9-7	4-3	15-7	6-9	37	6 54-3	6 55-4	6 35-4	3-7	1-7	9-7	4-4	15-7	7-2
38	6 39-5	6 40-6	6 21-3	3-8	1-7	9-8	4-3	15-8	7-0	38	6 54-5	6 55-6	6 35-6	3-8	1-7	9-8	4-5	15-8	7-2
39	6 39-8	6 40-8	6 21-5	3-9	1-7	9-9	4-4	15-9	7-0	39	6 54-8	6 55-9	6 35-9	3-9	1-8	9-9	4-5	15-9	7-3
40	6 40-0	6 41-1	6 21-8	4-0	1-8	10-0	4-4	16-0	7-1	40	6 55-0	6 56-1	6 36-1	4-0	1-8	10-0	4-6	16-0	7-3
41	6 40-3	6 41-3	6 22-0	4-1	1-8	10-1	4-5	16-1	7-1	41	6 55-3	6 56-4	6 36-3	4-1	1-9	10-1	4-6	16-1	7-4
42	6 40-5	6 41-6	6 22-3	4-2	1-9	10-2	4-5	16-2	7-2	42	6 55-5	6 56-6	6 36-6	4-2	1-9	10-2	4-7	16-2	7-4
43	6 40-8	6 41-8	6 22-5	4-3	1-9	10-3	4-5	16-3	7-2	43	6 55-8	6 56-9	6 36-8	4-3	2-0	10-3	4-7	16-3	7-5
44	6 41-0	6 42-1	6 22-7	4-4	1-9	10-4	4-6	16-4	7-2	44	6 56-0	6 57-1	6 37-0	4-4	2-0	10-4	4-8	16-4	7-5
45	6 41-3	6 42-3	6 23-0	4-5	2-0	10-5	4-6	16-5	7-3	45	6 56-3	6 57-4	6 37-3	4-5	2-1	10-5	4-8	16-5	7-6
46	6 41-5	6 42-6	6 23-2	4-6	2-0	10-6	4-7	16-6	7-3	46	6 56-5	6 57-6	6 37-5	4-6	2-1	10-6	4-9	16-6	7-6
47	6 41-8	6 42-8	6 23-4	4-7	2-1	10-7	4-7	16-7	7-4	47	6 56-8	6 57-9	6 37-8	4-7	2-2	10-7	4-9	16-7	7-7
48	6 42-0	6 43-1	6 23-7	4-8	2-1	10-8	4-8	16-8	7-4	48	6 57-0	6 58-1	6 38-0	4-8	2-2	10-8	5-0	16-8	7-7
49	6 42-3	6 43-4	6 23-9	4-9	2-2	10-9	4-8	16-9	7-5	49	6 57-3	6 58-4	6 38-2	4-9	2-2	10-9	5-0	16-9	7-7
50	6 42-5	6 43-6	6 24-2	5-0	2-2	11-0	4-9	17-0	7-5	50	6 57-5	6 58-6	6 38-5	5-0	2-3	11-0	5-0	17-0	7-8
51	6 42-8	6 43-9	6 24-4	5-1	2-3	11-1	4-9	17-1	7-6	51	6 57-8	6 58-9	6 38-7	5-1	2-3	11-1	5-1	17-1	7-8
52	6 43-0	6 44-1	6 24-6	5-2	2-3	11-2	4-9	17-2	7-6	52	6 58-0	6 59-1	6 39-0	5-2	2-4	11-2	5-1	17-2	7-9
53	6 43-3	6 44-4	6 24-9	5-3	2-3	11-3	5-0	17-3	7-6	53	6 58-3	6 59-4	6 39-2	5-3	2-4	11-3	5-2	17-3	7-9
54	6 43-5	6 44-6	6 25-1	5-4	2-4	11-4	5-0	17-4	7-7	54	6 58-5	6 59-6	6 39-4	5-4	2-5	11-4	5-2	17-4	8-0
55	6 43-8	6 44-9	6 25-4	5-5	2-4	11-5	5-1	17-5	7-7	55	6 58-8	6 59-9	6 39-7	5-5	2-5	11-5	5-3	17-5	8-0
56	6 44-0	6 45-1	6 25-6	5-6	2-5	11-6	5-1	17-6	7-8	56	6 59-0	7 00-1	6 39-9	5-6	2-6	11-6	5-3	17-6	8-1
57	6 44-3	6 45-4	6 25-8	5-7	2-5	11-7	5-2	17-7	7-8	57	6 59-3	7 00-4	6 40-2	5-7	2-6	11-7	5-4	17-7	8-1
58	6 44-5	6 45-6	6 26-1	5-8	2-6	11-8	5-2	17-8	7-9	58	6 59-5	7 00-6	6 40-4	5-8	2-7	11-8	5-4	17-8	8-2
59	6 44-8	6 45-9	6 26-3	5-9	2-6	11-9	5-3	17-9	7-9	59	6 59-8	7 00-9	6 40-6	5-9	2-7	11-9	5-5	17-9	8-2
60	6 45-0	6 46-1	6 26-6	6-0	2-7	12-0	5-3	18-0	8-0	60	7 00-0	7 01-1	6 40-9	6-0	2-8	12-0	5-5	18-0	8-3

28^m

INCREMENTOS Y CORRECCIONES

29^m

^m 28	SOL PLANETAS	ARIES	LUNA	$\frac{1}{d}$ Corr.	$\frac{1}{d}$ Corr.	$\frac{1}{d}$ Corr.	^m 29	SOL PLANETAS	ARIES	LUNA	$\frac{1}{d}$ Corr.	$\frac{1}{d}$ Corr.	$\frac{1}{d}$ Corr.
s	o /	o /	o /	/ /	/ /	/ /	s	o /	o /	o /	/ /	/ /	/ /
00	7 00-0	7 01-1	6 40-9	0-0 0-0	6-0 2-9	12-0 5-7	00	7 15-0	7 16-2	6 55-2	0-0 0-0	6-0 3-0	12-0 5-9
01	7 00-3	7 01-4	6 41-1	0-1 0-0	6-1 2-9	12-1 5-7	01	7 15-3	7 16-4	6 55-4	0-1 0-0	6-1 3-0	12-1 5-9
02	7 00-5	7 01-7	6 41-3	0-2 0-1	6-2 2-9	12-2 5-8	02	7 15-5	7 16-7	6 55-7	0-2 0-1	6-2 3-0	12-2 6-0
03	7 00-8	7 01-9	6 41-6	0-3 0-1	6-3 3-0	12-3 5-8	03	7 15-8	7 16-9	6 55-9	0-3 0-1	6-3 3-1	12-3 6-0
04	7 01-0	7 02-2	6 41-8	0-4 0-2	6-4 3-0	12-4 5-9	04	7 16-0	7 17-2	6 56-1	0-4 0-2	6-4 3-1	12-4 6-1
05	7 01-3	7 02-4	6 42-1	0-5 0-2	6-5 3-1	12-5 5-9	05	7 16-3	7 17-4	6 56-4	0-5 0-2	6-5 3-2	12-5 6-1
06	7 01-5	7 02-7	6 42-3	0-6 0-3	6-6 3-1	12-6 6-0	06	7 16-5	7 17-7	6 56-6	0-6 0-3	6-6 3-2	12-6 6-2
07	7 01-8	7 02-9	6 42-5	0-7 0-3	6-7 3-2	12-7 6-0	07	7 16-8	7 17-9	6 56-9	0-7 0-3	6-7 3-3	12-7 6-2
08	7 02-0	7 03-2	6 42-8	0-8 0-4	6-8 3-2	12-8 6-1	08	7 17-0	7 18-2	6 57-1	0-8 0-4	6-8 3-3	12-8 6-3
09	7 02-3	7 03-4	6 43-0	0-9 0-4	6-9 3-3	12-9 6-1	09	7 17-3	7 18-4	6 57-3	0-9 0-4	6-9 3-4	12-9 6-3
10	7 02-5	7 03-7	6 43-3	1-0 0-5	7-0 3-3	13-0 6-2	10	7 17-5	7 18-7	6 57-6	1-0 0-5	7-0 3-4	13-0 6-4
11	7 02-8	7 03-9	6 43-5	1-1 0-5	7-1 3-4	13-1 6-2	11	7 17-8	7 18-9	6 57-8	1-1 0-5	7-1 3-5	13-1 6-4
12	7 03-0	7 04-2	6 43-7	1-2 0-6	7-2 3-4	13-2 6-3	12	7 18-0	7 19-2	6 58-0	1-2 0-6	7-2 3-5	13-2 6-5
13	7 03-3	7 04-4	6 44-0	1-3 0-6	7-3 3-5	13-3 6-3	13	7 18-3	7 19-4	6 58-3	1-3 0-6	7-3 3-6	13-3 6-5
14	7 03-5	7 04-7	6 44-2	1-4 0-7	7-4 3-5	13-4 6-4	14	7 18-5	7 19-7	6 58-5	1-4 0-7	7-4 3-6	13-4 6-6
15	7 03-8	7 04-9	6 44-4	1-5 0-7	7-5 3-6	13-5 6-4	15	7 18-8	7 20-0	6 58-8	1-5 0-7	7-5 3-7	13-5 6-6
16	7 04-0	7 05-2	6 44-7	1-6 0-8	7-6 3-6	13-6 6-5	16	7 19-0	7 20-2	6 59-0	1-6 0-8	7-6 3-7	13-6 6-7
17	7 04-3	7 05-4	6 44-9	1-7 0-8	7-7 3-7	13-7 6-5	17	7 19-3	7 20-5	6 59-2	1-7 0-8	7-7 3-8	13-7 6-7
18	7 04-5	7 05-7	6 45-2	1-8 0-9	7-8 3-7	13-8 6-6	18	7 19-5	7 20-7	6 59-5	1-8 0-9	7-8 3-8	13-8 6-8
19	7 04-8	7 05-9	6 45-4	1-9 0-9	7-9 3-8	13-9 6-6	19	7 19-8	7 21-0	6 59-7	1-9 0-9	7-9 3-9	13-9 6-8
20	7 05-0	7 06-2	6 45-6	2-0 1-0	8-0 3-8	14-0 6-7	20	7 20-0	7 21-2	7 00-0	2-0 1-0	8-0 3-9	14-0 6-9
21	7 05-3	7 06-4	6 45-9	2-1 1-0	8-1 3-8	14-1 6-7	21	7 20-3	7 21-5	7 00-2	2-1 1-0	8-1 4-0	14-1 6-9
22	7 05-5	7 06-7	6 46-1	2-2 1-0	8-2 3-9	14-2 6-7	22	7 20-5	7 21-7	7 00-4	2-2 1-1	8-2 4-0	14-2 7-0
23	7 05-8	7 06-9	6 46-4	2-3 1-1	8-3 3-9	14-3 6-8	23	7 20-8	7 22-0	7 00-7	2-3 1-1	8-3 4-1	14-3 7-0
24	7 06-0	7 07-2	6 46-6	2-4 1-1	8-4 4-0	14-4 6-8	24	7 21-0	7 22-2	7 00-9	2-4 1-2	8-4 4-1	14-4 7-1
25	7 06-3	7 07-4	6 46-8	2-5 1-2	8-5 4-0	14-5 6-9	25	7 21-3	7 22-5	7 01-1	2-5 1-2	8-5 4-2	14-5 7-1
26	7 06-5	7 07-7	6 47-1	2-6 1-2	8-6 4-1	14-6 6-9	26	7 21-5	7 22-7	7 01-4	2-6 1-3	8-6 4-2	14-6 7-2
27	7 06-8	7 07-9	6 47-3	2-7 1-3	8-7 4-1	14-7 7-0	27	7 21-8	7 23-0	7 01-6	2-7 1-3	8-7 4-3	14-7 7-2
28	7 07-0	7 08-2	6 47-5	2-8 1-3	8-8 4-2	14-8 7-0	28	7 22-0	7 23-2	7 01-9	2-8 1-4	8-8 4-3	14-8 7-3
29	7 07-3	7 08-4	6 47-8	2-9 1-4	8-9 4-2	14-9 7-1	29	7 22-3	7 23-5	7 02-1	2-9 1-4	8-9 4-4	14-9 7-3
30	7 07-5	7 08-7	6 48-0	3-0 1-4	9-0 4-3	15-0 7-1	30	7 22-5	7 23-7	7 02-3	3-0 1-5	9-0 4-4	15-0 7-4
31	7 07-8	7 08-9	6 48-3	3-1 1-5	9-1 4-3	15-1 7-2	31	7 22-8	7 24-0	7 02-6	3-1 1-5	9-1 4-5	15-1 7-4
32	7 08-0	7 09-2	6 48-5	3-2 1-5	9-2 4-4	15-2 7-2	32	7 23-0	7 24-2	7 02-8	3-2 1-6	9-2 4-5	15-2 7-5
33	7 08-3	7 09-4	6 48-7	3-3 1-6	9-3 4-4	15-3 7-3	33	7 23-3	7 24-5	7 03-1	3-3 1-6	9-3 4-6	15-3 7-5
34	7 08-5	7 09-7	6 49-0	3-4 1-6	9-4 4-5	15-4 7-3	34	7 23-5	7 24-7	7 03-3	3-4 1-7	9-4 4-6	15-4 7-6
35	7 08-8	7 09-9	6 49-2	3-5 1-7	9-5 4-5	15-5 7-4	35	7 23-8	7 25-0	7 03-5	3-5 1-7	9-5 4-7	15-5 7-6
36	7 09-0	7 10-2	6 49-5	3-6 1-7	9-6 4-6	15-6 7-4	36	7 24-0	7 25-2	7 03-8	3-6 1-8	9-6 4-7	15-6 7-7
37	7 09-3	7 10-4	6 49-7	3-7 1-8	9-7 4-6	15-7 7-5	37	7 24-3	7 25-5	7 04-0	3-7 1-8	9-7 4-8	15-7 7-7
38	7 09-5	7 10-7	6 49-9	3-8 1-8	9-8 4-7	15-8 7-5	38	7 24-5	7 25-7	7 04-3	3-8 1-9	9-8 4-8	15-8 7-8
39	7 09-8	7 10-9	6 50-2	3-9 1-9	9-9 4-7	15-9 7-6	39	7 24-8	7 26-0	7 04-5	3-9 1-9	9-9 4-9	15-9 7-8
40	7 10-0	7 11-2	6 50-4	4-0 1-9	10-0 4-8	16-0 7-6	40	7 25-0	7 26-2	7 04-7	4-0 2-0	10-0 4-9	16-0 7-9
41	7 10-3	7 11-4	6 50-6	4-1 1-9	10-1 4-8	16-1 7-6	41	7 25-3	7 26-5	7 05-0	4-1 2-0	10-1 5-0	16-1 7-9
42	7 10-5	7 11-7	6 50-9	4-2 2-0	10-2 4-8	16-2 7-7	42	7 25-5	7 26-7	7 05-2	4-2 2-1	10-2 5-0	16-2 8-0
43	7 10-8	7 11-9	6 51-1	4-3 2-0	10-3 4-9	16-3 7-7	43	7 25-8	7 27-0	7 05-4	4-3 2-1	10-3 5-1	16-3 8-0
44	7 11-0	7 12-2	6 51-4	4-4 2-1	10-4 4-9	16-4 7-8	44	7 26-0	7 27-2	7 05-7	4-4 2-2	10-4 5-1	16-4 8-1
45	7 11-3	7 12-4	6 51-6	4-5 2-1	10-5 5-0	16-5 7-8	45	7 26-3	7 27-5	7 05-9	4-5 2-2	10-5 5-2	16-5 8-1
46	7 11-5	7 12-7	6 51-8	4-6 2-2	10-6 5-0	16-6 7-9	46	7 26-5	7 27-7	7 06-2	4-6 2-3	10-6 5-2	16-6 8-2
47	7 11-8	7 12-9	6 52-1	4-7 2-2	10-7 5-1	16-7 7-9	47	7 26-8	7 28-0	7 06-4	4-7 2-3	10-7 5-3	16-7 8-2
48	7 12-0	7 13-2	6 52-3	4-8 2-3	10-8 5-1	16-8 8-0	48	7 27-0	7 28-2	7 06-6	4-8 2-4	10-8 5-3	16-8 8-3
49	7 12-3	7 13-4	6 52-6	4-9 2-3	10-9 5-2	16-9 8-0	49	7 27-3	7 28-5	7 06-9	4-9 2-4	10-9 5-4	16-9 8-3
50	7 12-5	7 13-7	6 52-8	5-0 2-4	11-0 5-2	17-0 8-1	50	7 27-5	7 28-7	7 07-1	5-0 2-5	11-0 5-4	17-0 8-4
51	7 12-8	7 13-9	6 53-0	5-1 2-4	11-1 5-3	17-1 8-1	51	7 27-8	7 29-0	7 07-4	5-1 2-5	11-1 5-5	17-1 8-4
52	7 13-0	7 14-2	6 53-3	5-2 2-5	11-2 5-3	17-2 8-2	52	7 28-0	7 29-2	7 07-6	5-2 2-6	11-2 5-5	17-2 8-5
53	7 13-3	7 14-4	6 53-5	5-3 2-5	11-3 5-4	17-3 8-2	53	7 28-3	7 29-5	7 07-8	5-3 2-6	11-3 5-6	17-3 8-5
54	7 13-5	7 14-7	6 53-8	5-4 2-6	11-4 5-4	17-4 8-3	54	7 28-5	7 29-7	7 08-1	5-4 2-7	11-4 5-6	17-4 8-6
55	7 13-8	7 14-9	6 54-0	5-5 2-6	11-5 5-5	17-5 8-3	55	7 28-8	7 30-0	7 08-3	5-5 2-7	11-5 5-7	17-5 8-6
56	7 14-0	7 15-2	6 54-2	5-6 2-7	11-6 5-5	17-6 8-4	56	7 29-0	7 30-2	7 08-5	5-6 2-8	11-6 5-7	17-6 8-7
57	7 14-3	7 15-4	6 54-5	5-7 2-7	11-7 5-6	17-7 8-4	57	7 29-3	7 30-5	7 08-8	5-7 2-8	11-7 5-8	17-7 8-7
58	7 14-5	7 15-7	6 54-7	5-8 2-8	11-8 5-6	17-8 8-5	58	7 29-5	7 30-7	7 09-0	5-8 2-9	11-8 5-8	17-8 8-8
59	7 14-8	7 15-9	6 54-9	5-9 2-8	11-9 5-7	17-9 8-5	59	7 29-8	7 31-0	7 09-3	5-9 2-9	11-9 5-9	17-9 8-8
60	7 15-0	7 16-2	6 55-2	6-0 2-9	12-0 5-7	18-0 8-6	60	7 30-0	7 31-2	7 09-5	6-0 3-0	12-0 5-9	18-0 8-9

30^m

INCREMENTOS Y CORRECCIONES

31^m

30 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	31 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	7 30-0	7 31-2	7 09-5	0-0	0-0	6-0	3-1	12-0	6-1	00	7 45-0	7 46-3	7 23-8	0-0	0-0	6-0	3-2	12-0	6-3
01	7 30-3	7 31-5	7 09-7	0-1	0-1	6-1	3-1	12-1	6-2	01	7 45-3	7 46-5	7 24-1	0-1	0-1	6-1	3-2	12-1	6-4
02	7 30-5	7 31-7	7 10-0	0-2	0-1	6-2	3-2	12-2	6-2	02	7 45-5	7 46-8	7 24-3	0-2	0-1	6-2	3-3	12-2	6-4
03	7 30-8	7 32-0	7 10-2	0-3	0-2	6-3	3-2	12-3	6-3	03	7 45-8	7 47-0	7 24-5	0-3	0-2	6-3	3-3	12-3	6-5
04	7 31-0	7 32-2	7 10-5	0-4	0-2	6-4	3-3	12-4	6-3	04	7 46-0	7 47-3	7 24-8	0-4	0-2	6-4	3-4	12-4	6-5
05	7 31-3	7 32-5	7 10-7	0-5	0-3	6-5	3-3	12-5	6-4	05	7 46-3	7 47-5	7 25-0	0-5	0-3	6-5	3-4	12-5	6-6
06	7 31-5	7 32-7	7 10-9	0-6	0-3	6-6	3-4	12-6	6-4	06	7 46-5	7 47-8	7 25-2	0-6	0-3	6-6	3-5	12-6	6-6
07	7 31-8	7 33-0	7 11-2	0-7	0-4	6-7	3-4	12-7	6-5	07	7 46-8	7 48-0	7 25-5	0-7	0-4	6-7	3-5	12-7	6-7
08	7 32-0	7 33-2	7 11-4	0-8	0-4	6-8	3-5	12-8	6-5	08	7 47-0	7 48-3	7 25-7	0-8	0-4	6-8	3-6	12-8	6-7
09	7 32-3	7 33-5	7 11-6	0-9	0-5	6-9	3-5	12-9	6-6	09	7 47-3	7 48-5	7 26-0	0-9	0-5	6-9	3-6	12-9	6-8
10	7 32-5	7 33-7	7 11-9	1-0	0-5	7-0	3-6	13-0	6-6	10	7 47-5	7 48-8	7 26-2	1-0	0-5	7-0	3-7	13-0	6-8
11	7 32-8	7 34-0	7 12-1	1-1	0-6	7-1	3-6	13-1	6-7	11	7 47-8	7 49-0	7 26-4	1-1	0-6	7-1	3-7	13-1	6-9
12	7 33-0	7 34-2	7 12-4	1-2	0-6	7-2	3-7	13-2	6-7	12	7 48-0	7 49-3	7 26-7	1-2	0-6	7-2	3-8	13-2	6-9
13	7 33-3	7 34-5	7 12-6	1-3	0-7	7-3	3-7	13-3	6-8	13	7 48-3	7 49-5	7 26-9	1-3	0-7	7-3	3-8	13-3	7-0
14	7 33-5	7 34-7	7 12-8	1-4	0-7	7-4	3-8	13-4	6-8	14	7 48-5	7 49-8	7 27-2	1-4	0-7	7-4	3-9	13-4	7-0
15	7 33-8	7 35-0	7 13-1	1-5	0-8	7-5	3-8	13-5	6-9	15	7 48-8	7 50-0	7 27-4	1-5	0-8	7-5	3-9	13-5	7-1
16	7 34-0	7 35-2	7 13-3	1-6	0-8	7-6	3-9	13-6	6-9	16	7 49-0	7 50-3	7 27-6	1-6	0-8	7-6	4-0	13-6	7-1
17	7 34-3	7 35-5	7 13-6	1-7	0-9	7-7	3-9	13-7	7-0	17	7 49-3	7 50-5	7 27-9	1-7	0-9	7-7	4-0	13-7	7-2
18	7 34-5	7 35-7	7 13-8	1-8	0-9	7-8	4-0	13-8	7-0	18	7 49-5	7 50-8	7 28-1	1-8	0-9	7-8	4-1	13-8	7-2
19	7 34-8	7 36-0	7 14-0	1-9	1-0	7-9	4-0	13-9	7-1	19	7 49-8	7 51-0	7 28-4	1-9	1-0	7-9	4-1	13-9	7-3
20	7 35-0	7 36-2	7 14-3	2-0	1-0	8-0	4-1	14-0	7-1	20	7 50-0	7 51-3	7 28-6	2-0	1-1	8-0	4-2	14-0	7-4
21	7 35-3	7 36-5	7 14-5	2-1	1-1	8-1	4-1	14-1	7-2	21	7 50-3	7 51-5	7 28-8	2-1	1-1	8-1	4-3	14-1	7-4
22	7 35-5	7 36-7	7 14-7	2-2	1-1	8-2	4-2	14-2	7-2	22	7 50-5	7 51-8	7 29-1	2-2	1-2	8-2	4-3	14-2	7-5
23	7 35-8	7 37-0	7 15-0	2-3	1-2	8-3	4-2	14-3	7-3	23	7 50-8	7 52-0	7 29-3	2-3	1-2	8-3	4-4	14-3	7-5
24	7 36-0	7 37-2	7 15-2	2-4	1-2	8-4	4-3	14-4	7-3	24	7 51-0	7 52-3	7 29-5	2-4	1-3	8-4	4-4	14-4	7-6
25	7 36-3	7 37-5	7 15-5	2-5	1-3	8-5	4-3	14-5	7-4	25	7 51-3	7 52-5	7 29-8	2-5	1-3	8-5	4-5	14-5	7-6
26	7 36-5	7 37-7	7 15-7	2-6	1-3	8-6	4-4	14-6	7-4	26	7 51-5	7 52-8	7 30-0	2-6	1-4	8-6	4-5	14-6	7-7
27	7 36-8	7 38-0	7 15-9	2-7	1-4	8-7	4-4	14-7	7-5	27	7 51-8	7 53-0	7 30-3	2-7	1-4	8-7	4-6	14-7	7-7
28	7 37-0	7 38-3	7 16-2	2-8	1-4	8-8	4-5	14-8	7-5	28	7 52-0	7 53-3	7 30-5	2-8	1-5	8-8	4-6	14-8	7-8
29	7 37-3	7 38-5	7 16-4	2-9	1-5	8-9	4-5	14-9	7-6	29	7 52-3	7 53-5	7 30-7	2-9	1-5	8-9	4-7	14-9	7-8
30	7 37-5	7 38-8	7 16-7	3-0	1-5	9-0	4-6	15-0	7-6	30	7 52-5	7 53-8	7 31-0	3-0	1-6	9-0	4-7	15-0	7-9
31	7 37-8	7 39-0	7 16-9	3-1	1-6	9-1	4-6	15-1	7-7	31	7 52-8	7 54-0	7 31-2	3-1	1-6	9-1	4-8	15-1	7-9
32	7 38-0	7 39-3	7 17-1	3-2	1-6	9-2	4-7	15-2	7-7	32	7 53-0	7 54-3	7 31-5	3-2	1-7	9-2	4-8	15-2	8-0
33	7 38-3	7 39-5	7 17-4	3-3	1-7	9-3	4-7	15-3	7-8	33	7 53-3	7 54-5	7 31-7	3-3	1-7	9-3	4-9	15-3	8-0
34	7 38-5	7 39-8	7 17-6	3-4	1-7	9-4	4-8	15-4	7-8	34	7 53-5	7 54-8	7 31-9	3-4	1-8	9-4	4-9	15-4	8-1
35	7 38-8	7 40-0	7 17-9	3-5	1-8	9-5	4-8	15-5	7-9	35	7 53-8	7 55-0	7 32-2	3-5	1-8	9-5	5-0	15-5	8-1
36	7 39-0	7 40-3	7 18-1	3-6	1-8	9-6	4-9	15-6	7-9	36	7 54-0	7 55-3	7 32-4	3-6	1-9	9-6	5-0	15-6	8-2
37	7 39-3	7 40-5	7 18-3	3-7	1-9	9-7	4-9	15-7	8-0	37	7 54-3	7 55-5	7 32-6	3-7	1-9	9-7	5-1	15-7	8-2
38	7 39-5	7 40-8	7 18-6	3-8	1-9	9-8	5-0	15-8	8-0	38	7 54-5	7 55-8	7 32-9	3-8	2-0	9-8	5-1	15-8	8-3
39	7 39-8	7 41-0	7 18-8	3-9	2-0	9-9	5-0	15-9	8-1	39	7 54-8	7 56-0	7 33-1	3-9	2-0	9-9	5-2	15-9	8-3
40	7 40-0	7 41-3	7 19-0	4-0	2-0	10-0	5-1	16-0	8-1	40	7 55-0	7 56-3	7 33-4	4-0	2-1	10-0	5-3	16-0	8-4
41	7 40-3	7 41-5	7 19-3	4-1	2-1	10-1	5-1	16-1	8-2	41	7 55-3	7 56-6	7 33-6	4-1	2-2	10-1	5-3	16-1	8-5
42	7 40-5	7 41-8	7 19-5	4-2	2-1	10-2	5-2	16-2	8-2	42	7 55-5	7 56-8	7 33-8	4-2	2-2	10-2	5-4	16-2	8-5
43	7 40-8	7 42-0	7 19-8	4-3	2-2	10-3	5-2	16-3	8-3	43	7 55-8	7 57-1	7 34-1	4-3	2-3	10-3	5-4	16-3	8-6
44	7 41-0	7 42-3	7 20-0	4-4	2-2	10-4	5-3	16-4	8-3	44	7 56-0	7 57-3	7 34-3	4-4	2-3	10-4	5-5	16-4	8-6
45	7 41-3	7 42-5	7 20-2	4-5	2-3	10-5	5-3	16-5	8-4	45	7 56-3	7 57-6	7 34-6	4-5	2-4	10-5	5-5	16-5	8-7
46	7 41-5	7 42-8	7 20-5	4-6	2-3	10-6	5-4	16-6	8-4	46	7 56-5	7 57-8	7 34-8	4-6	2-4	10-6	5-6	16-6	8-7
47	7 41-8	7 43-0	7 20-7	4-7	2-4	10-7	5-4	16-7	8-5	47	7 56-8	7 58-1	7 35-0	4-7	2-5	10-7	5-6	16-7	8-8
48	7 42-0	7 43-3	7 21-0	4-8	2-4	10-8	5-5	16-8	8-5	48	7 57-0	7 58-3	7 35-3	4-8	2-5	10-8	5-7	16-8	8-8
49	7 42-3	7 43-5	7 21-2	4-9	2-5	10-9	5-5	16-9	8-6	49	7 57-3	7 58-6	7 35-5	4-9	2-6	10-9	5-7	16-9	8-9
50	7 42-5	7 43-8	7 21-4	5-0	2-5	11-0	5-6	17-0	8-6	50	7 57-5	7 58-8	7 35-7	5-0	2-6	11-0	5-8	17-0	8-9
51	7 42-8	7 44-0	7 21-7	5-1	2-6	11-1	5-6	17-1	8-7	51	7 57-8	7 59-1	7 36-0	5-1	2-7	11-1	5-8	17-1	9-0
52	7 43-0	7 44-3	7 21-9	5-2	2-6	11-2	5-7	17-2	8-7	52	7 58-0	7 59-3	7 36-2	5-2	2-7	11-2	5-9	17-2	9-0
53	7 43-3	7 44-5	7 22-1	5-3	2-7	11-3	5-7	17-3	8-8	53	7 58-3	7 59-6	7 36-5	5-3	2-8	11-3	5-9	17-3	9-1
54	7 43-5	7 44-8	7 22-4	5-4	2-7	11-4	5-8	17-4	8-8	54	7 58-5	7 59-8	7 36-7	5-4	2-8	11-4	6-0	17-4	9-1
55	7 43-8	7 45-0	7 22-6	5-5	2-8	11-5	5-8	17-5	8-9	55	7 58-8	8 00-1	7 36-9	5-5	2-9	11-5	6-0	17-5	9-2
56	7 44-0	7 45-3	7 22-9	5-6	2-8	11-6	5-9	17-6	8-9	56	7 59-0	8 00-3	7 37-2	5-6	2-9	11-6	6-1	17-6	9-2
57	7 44-3	7 45-5	7 23-1	5-7	2-9	11-7	5-9	17-7	9-0	57	7 59-3	8 00-6	7 37-4	5-7	3-0	11-7	6-1	17-7	9-3
58	7 44-5	7 45-8	7 23-3	5-8	2-9	11-8	6-0	17-8	9-0	58	7 59-5	8 00-8	7 37-7	5-8	3-0	11-8	6-2	17-8	9-3
59	7 44-8	7 46-0	7 23-6	5-9	3-0	11-9	6-0	17-9	9-1	59	7 59-8	8 01-1	7 37-9	5-9	3-1	11-9	6-2	17-9	9-4
60	7 45-0	7 46-3	7 23-8	6-0	3-1	12-0	6-1	18-0	9-2	60	8 00-0	8 01-3	7 38-1	6-0	3-2	12-0	6-3	18-0	9-5

32 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	33 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/ /	/ /	/ /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /	/ /	/ /	/ /
00	8 00-0	8 01-3	7 38-1	0-0	0-0	6-0	3-3	12-0	6-5	00	8 15-0	8 16-4	7 52-5	0-0	0-0	6-0	3-4	12-0	6-7
01	8 00-3	8 01-6	7 38-4	0-1	0-1	6-1	3-3	12-1	6-6	01	8 15-3	8 16-6	7 52-7	0-1	0-1	6-1	3-4	12-1	6-8
02	8 00-5	8 01-8	7 38-6	0-2	0-1	6-2	3-4	12-2	6-6	02	8 15-5	8 16-9	7 52-9	0-2	0-1	6-2	3-5	12-2	6-8
03	8 00-8	8 02-1	7 38-8	0-3	0-2	6-3	3-4	12-3	6-7	03	8 15-8	8 17-1	7 53-2	0-3	0-2	6-3	3-5	12-3	6-9
04	8 01-0	8 02-3	7 39-1	0-4	0-2	6-4	3-5	12-4	6-7	04	8 16-0	8 17-4	7 53-4	0-4	0-2	6-4	3-6	12-4	6-9
05	8 01-3	8 02-6	7 39-3	0-5	0-3	6-5	3-5	12-5	6-8	05	8 16-3	8 17-6	7 53-6	0-5	0-3	6-5	3-6	12-5	7-0
06	8 01-5	8 02-8	7 39-6	0-6	0-3	6-6	3-6	12-6	6-8	06	8 16-5	8 17-9	7 53-9	0-6	0-3	6-6	3-7	12-6	7-0
07	8 01-8	8 03-1	7 39-8	0-7	0-4	6-7	3-6	12-7	6-9	07	8 16-8	8 18-1	7 54-1	0-7	0-4	6-7	3-7	12-7	7-1
08	8 02-0	8 03-3	7 40-0	0-8	0-4	6-8	3-7	12-8	6-9	08	8 17-0	8 18-4	7 54-4	0-8	0-4	6-8	3-8	12-8	7-1
09	8 02-3	8 03-6	7 40-3	0-9	0-5	6-9	3-7	12-9	7-0	09	8 17-3	8 18-6	7 54-6	0-9	0-5	6-9	3-9	12-9	7-2
10	8 02-5	8 03-8	7 40-5	1-0	0-5	7-0	3-8	13-0	7-0	10	8 17-5	8 18-9	7 54-8	1-0	0-6	7-0	3-9	13-0	7-3
11	8 02-8	8 04-1	7 40-8	1-1	0-6	7-1	3-8	13-1	7-1	11	8 17-8	8 19-1	7 55-1	1-1	0-6	7-1	4-0	13-1	7-3
12	8 03-0	8 04-3	7 41-0	1-2	0-7	7-2	3-9	13-2	7-2	12	8 18-0	8 19-4	7 55-3	1-2	0-7	7-2	4-0	13-2	7-4
13	8 03-3	8 04-6	7 41-2	1-3	0-7	7-3	4-0	13-3	7-2	13	8 18-3	8 19-6	7 55-6	1-3	0-7	7-3	4-1	13-3	7-4
14	8 03-5	8 04-8	7 41-5	1-4	0-8	7-4	4-0	13-4	7-3	14	8 18-5	8 19-9	7 55-8	1-4	0-8	7-4	4-1	13-4	7-5
15	8 03-8	8 05-1	7 41-7	1-5	0-8	7-5	4-1	13-5	7-3	15	8 18-8	8 20-1	7 56-0	1-5	0-8	7-5	4-2	13-5	7-5
16	8 04-0	8 05-3	7 42-0	1-6	0-9	7-6	4-1	13-6	7-4	16	8 19-0	8 20-4	7 56-3	1-6	0-9	7-6	4-2	13-6	7-6
17	8 04-3	8 05-6	7 42-2	1-7	0-9	7-7	4-2	13-7	7-4	17	8 19-3	8 20-6	7 56-5	1-7	0-9	7-7	4-3	13-7	7-6
18	8 04-5	8 05-8	7 42-4	1-8	1-0	7-8	4-2	13-8	7-5	18	8 19-5	8 20-9	7 56-7	1-8	1-0	7-8	4-4	13-8	7-7
19	8 04-8	8 06-1	7 42-7	1-9	1-0	7-9	4-3	13-9	7-5	19	8 19-8	8 21-1	7 57-0	1-9	1-1	7-9	4-4	13-9	7-8
20	8 05-0	8 06-3	7 42-9	2-0	1-1	8-0	4-3	14-0	7-6	20	8 20-0	8 21-4	7 57-2	2-0	1-1	8-0	4-5	14-0	7-8
21	8 05-3	8 06-6	7 43-1	2-1	1-1	8-1	4-4	14-1	7-6	21	8 20-3	8 21-6	7 57-5	2-1	1-2	8-1	4-5	14-1	7-9
22	8 05-5	8 06-8	7 43-4	2-2	1-2	8-2	4-4	14-2	7-7	22	8 20-5	8 21-9	7 57-7	2-2	1-2	8-2	4-6	14-2	7-9
23	8 05-8	8 07-1	7 43-6	2-3	1-2	8-3	4-5	14-3	7-7	23	8 20-8	8 22-1	7 57-9	2-3	1-3	8-3	4-6	14-3	8-0
24	8 06-0	8 07-3	7 43-9	2-4	1-3	8-4	4-6	14-4	7-8	24	8 21-0	8 22-4	7 58-2	2-4	1-3	8-4	4-7	14-4	8-0
25	8 06-3	8 07-6	7 44-1	2-5	1-4	8-5	4-6	14-5	7-9	25	8 21-3	8 22-6	7 58-4	2-5	1-4	8-5	4-7	14-5	8-1
26	8 06-5	8 07-8	7 44-3	2-6	1-4	8-6	4-7	14-6	7-9	26	8 21-5	8 22-9	7 58-7	2-6	1-5	8-6	4-8	14-6	8-2
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31	8 07-8	8 09-1	7 45-5	3-1	1-7	9-1	4-9	15-1	8-2	31	8 22-8	8 24-1	7 59-8	3-1	1-7	9-1	5-1	15-1	8-4
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50	8 12-5	8 13-8	7 50-1	5-0	2-7	11-0	6-0	17-0	9-2	50	8 27-5	8 28-9	8 04-4	5-0	2-8	11-0	6-1	17-0	9-5
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53	8 13-3	8 14-6	7 50-8	5-3	2-9	11-3	6-1	17-3	9-4	53	8 28-3	8 29-6	8 05-1	5-3	3-0	11-3	6-3	17-3	9-7
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56	8 14-0	8 15-4	7 51-5	5-6	3-0	11-6	6-3	17-6	9-5	56	8 29-0	8 30-4	8 05-8	5-6	3-1	11-6	6-5	17-6	9-8
57	8 14-3	8 15-6	7 51-7	5-7	3-1	11-7	6-3	17-7	9-6	57	8 29-3	8 30-6	8 06-1	5-7	3-2	11-7	6-5	17-7	9-9
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60	8 15-0	8 16-4	7 52-5	6-0	3-3	12-0	6-5	18-0	9-8	60	8 30-0	8 31-4	8 06-8	6-0	3-4	12-0	6-7	18-0	10-1

34 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	35 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	8 30-0	8 31-4	8 06-8	0-0	0-0	6-0	3-5	12-0	6-9	00	8 45-0	8 46-4	8 21-1	0-0	0-0	6-0	3-6	12-0	7-1
01	8 30-3	8 31-6	8 07-0	0-1	0-1	6-1	3-5	12-1	7-0	01	8 45-3	8 46-7	8 21-3	0-1	0-1	6-1	3-6	12-1	7-2
02	8 30-5	8 31-9	8 07-2	0-2	0-1	6-2	3-6	12-2	7-0	02	8 45-5	8 46-9	8 21-6	0-2	0-1	6-2	3-7	12-2	7-2
03	8 30-8	8 32-1	8 07-5	0-3	0-2	6-3	3-6	12-3	7-1	03	8 45-8	8 47-2	8 21-8	0-3	0-2	6-3	3-7	12-3	7-3
04	8 31-0	8 32-4	8 07-7	0-4	0-2	6-4	3-7	12-4	7-1	04	8 46-0	8 47-4	8 22-0	0-4	0-2	6-4	3-8	12-4	7-3
05	8 31-3	8 32-6	8 08-0	0-5	0-3	6-5	3-7	12-5	7-2	05	8 46-3	8 47-7	8 22-3	0-5	0-3	6-5	3-8	12-5	7-4
06	8 31-5	8 32-9	8 08-2	0-6	0-3	6-6	3-8	12-6	7-2	06	8 46-5	8 47-9	8 22-5	0-6	0-4	6-6	3-9	12-6	7-5
07	8 31-8	8 33-2	8 08-4	0-7	0-4	6-7	3-9	12-7	7-3	07	8 46-8	8 48-2	8 22-8	0-7	0-4	6-7	4-0	12-7	7-5
08	8 32-0	8 33-4	8 08-7	0-8	0-5	6-8	3-9	12-8	7-4	08	8 47-0	8 48-4	8 23-0	0-8	0-5	6-8	4-0	12-8	7-6
09	8 32-3	8 33-7	8 08-9	0-9	0-5	6-9	4-0	12-9	7-4	09	8 47-3	8 48-7	8 23-2	0-9	0-5	6-9	4-1	12-9	7-6
10	8 32-5	8 33-9	8 09-2	1-0	0-6	7-0	4-0	13-0	7-5	10	8 47-5	8 48-9	8 23-5	1-0	0-6	7-0	4-1	13-0	7-7
11	8 32-8	8 34-2	8 09-4	1-1	0-6	7-1	4-1	13-1	7-5	11	8 47-8	8 49-2	8 23-7	1-1	0-7	7-1	4-2	13-1	7-8
12	8 33-0	8 34-4	8 09-6	1-2	0-7	7-2	4-1	13-2	7-6	12	8 48-0	8 49-4	8 23-9	1-2	0-7	7-2	4-3	13-2	7-8
13	8 33-3	8 34-7	8 09-9	1-3	0-7	7-3	4-2	13-3	7-6	13	8 48-3	8 49-7	8 24-2	1-3	0-8	7-3	4-3	13-3	7-9
14	8 33-5	8 34-9	8 10-1	1-4	0-8	7-4	4-3	13-4	7-7	14	8 48-5	8 49-9	8 24-4	1-4	0-8	7-4	4-4	13-4	7-9
15	8 33-8	8 35-2	8 10-3	1-5	0-9	7-5	4-3	13-5	7-8	15	8 48-8	8 50-2	8 24-7	1-5	0-9	7-5	4-4	13-5	8-0
16	8 34-0	8 35-4	8 10-6	1-6	0-9	7-6	4-4	13-6	7-8	16	8 49-0	8 50-4	8 24-9	1-6	0-9	7-6	4-5	13-6	8-0
17	8 34-3	8 35-7	8 10-8	1-7	1-0	7-7	4-4	13-7	7-9	17	8 49-3	8 50-7	8 25-1	1-7	1-0	7-7	4-6	13-7	8-1
18	8 34-5	8 35-9	8 11-1	1-8	1-0	7-8	4-5	13-8	7-9	18	8 49-5	8 50-9	8 25-4	1-8	1-1	7-8	4-6	13-8	8-2
19	8 34-8	8 36-2	8 11-3	1-9	1-1	7-9	4-5	13-9	8-0	19	8 49-8	8 51-2	8 25-6	1-9	1-1	7-9	4-7	13-9	8-2
20	8 35-0	8 36-4	8 11-5	2-0	1-2	8-0	4-6	14-0	8-1	20	8 50-0	8 51-5	8 25-9	2-0	1-2	8-0	4-7	14-0	8-3
21	8 35-3	8 36-7	8 11-8	2-1	1-2	8-1	4-7	14-1	8-1	21	8 50-3	8 51-7	8 26-1	2-1	1-2	8-1	4-8	14-1	8-3
22	8 35-5	8 36-9	8 12-0	2-2	1-3	8-2	4-7	14-2	8-2	22	8 50-5	8 52-0	8 26-3	2-2	1-3	8-2	4-9	14-2	8-4
23	8 35-8	8 37-2	8 12-3	2-3	1-3	8-3	4-8	14-3	8-2	23	8 50-8	8 52-2	8 26-6	2-3	1-4	8-3	4-9	14-3	8-5
24	8 36-0	8 37-4	8 12-5	2-4	1-4	8-4	4-8	14-4	8-3	24	8 51-0	8 52-5	8 26-8	2-4	1-4	8-4	5-0	14-4	8-5
25	8 36-3	8 37-7	8 12-7	2-5	1-4	8-5	4-9	14-5	8-3	25	8 51-3	8 52-7	8 27-0	2-5	1-5	8-5	5-0	14-5	8-6
26	8 36-5	8 37-9	8 13-0	2-6	1-5	8-6	4-9	14-6	8-4	26	8 51-5	8 53-0	8 27-3	2-6	1-5	8-6	5-1	14-6	8-6
27	8 36-8	8 38-2	8 13-2	2-7	1-6	8-7	5-0	14-7	8-5	27	8 51-8	8 53-2	8 27-5	2-7	1-6	8-7	5-1	14-7	8-7
28	8 37-0	8 38-4	8 13-4	2-8	1-6	8-8	5-1	14-8	8-5	28	8 52-0	8 53-5	8 27-8	2-8	1-7	8-8	5-2	14-8	8-8
29	8 37-3	8 38-7	8 13-7	2-9	1-7	8-9	5-1	14-9	8-6	29	8 52-3	8 53-7	8 28-0	2-9	1-7	8-9	5-3	14-9	8-8
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32	8 38-0	8 39-4	8 14-4	3-2	1-8	9-2	5-3	15-2	8-7	32	8 53-0	8 54-5	8 28-7	3-2	1-9	9-2	5-4	15-2	9-0
33	8 38-3	8 39-7	8 14-6	3-3	1-9	9-3	5-3	15-3	8-8	33	8 53-3	8 54-7	8 29-0	3-3	2-0	9-3	5-5	15-3	9-1
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38	8 39-5	8 40-9	8 15-8	3-8	2-2	9-8	5-6	15-8	9-1	38	8 54-5	8 56-0	8 30-2	3-8	2-2	9-8	5-8	15-8	9-3
39	8 39-8	8 41-2	8 16-1	3-9	2-2	9-9	5-7	15-9	9-1	39	8 54-8	8 56-2	8 30-4	3-9	2-3	9-9	5-9	15-9	9-4
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42	8 40-5	8 41-9	8 16-8	4-2	2-4	10-2	5-9	16-2	9-3	42	8 55-5	8 57-0	8 31-1	4-2	2-5	10-2	6-0	16-2	9-6
43	8 40-8	8 42-2	8 17-0	4-3	2-5	10-3	5-9	16-3	9-4	43	8 55-8	8 57-2	8 31-3	4-3	2-5	10-3	6-1	16-3	9-6
44	8 41-0	8 42-4	8 17-3	4-4	2-5	10-4	6-0	16-4	9-4	44	8 56-0	8 57-5	8 31-6	4-4	2-6	10-4	6-2	16-4	9-7
45	8 41-3	8 42-7	8 17-5	4-5	2-6	10-5	6-0	16-5	9-5	45	8 56-3	8 57-7	8 31-8	4-5	2-7	10-5	6-2	16-5	9-8
46	8 41-5	8 42-9	8 17-7	4-6	2-6	10-6	6-1	16-6	9-5	46	8 56-5	8 58-0	8 32-1	4-6	2-7	10-6	6-3	16-6	9-8
47	8 41-8	8 43-2	8 18-0	4-7	2-7	10-7	6-2	16-7	9-6	47	8 56-8	8 58-2	8 32-3	4-7	2-8	10-7	6-3	16-7	9-9
48	8 42-0	8 43-4	8 18-2	4-8	2-8	10-8	6-2	16-8	9-7	48	8 57-0	8 58-5	8 32-5	4-8	2-8	10-8	6-4	16-8	9-9
49	8 42-3	8 43-7	8 18-5	4-9	2-8	10-9	6-3	16-9	9-7	49	8 57-3	8 58-7	8 32-8	4-9	2-9	10-9	6-4	16-9	10-0
50	8 42-5	8 43-9	8 18-7	5-0	2-9	11-0	6-3	17-0	9-8	50	8 57-5	8 59-0	8 33-0	5-0	3-0	11-0	6-5	17-0	10-1
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56	8 44-0	8 45-4	8 20-1	5-6	3-2	11-6	6-7	17-6	10-1	56	8 59-0	9 00-5	8 34-4	5-6	3-3	11-6	6-9	17-6	10-4
57	8 44-3	8 45-7	8 20-4	5-7	3-3	11-7	6-7	17-7	10-2	57	8 59-3	9 00-7	8 34-7	5-7	3-4	11-7	6-9	17-7	10-5
58	8 44-5	8 45-9	8 20-6	5-8	3-3	11-8	6-8	17-8	10-2	58	8 59-5	9 01-0	8 34-9	5-8	3-4	11-8	7-0	17-8	10-5
59	8 44-8	8 46-2	8 20-8	5-9	3-4	11-9	6-8	17-9	10-3	59	8 59-8	9 01-2	8 35-2	5-9	3-5	11-9	7-0	17-9	10-6
60	8 45-0	8 46-4	8 21-1	6-0	3-5	12-0	6-9	18-0	10-4	60	9 00-0	9 01-5	8 35-4	6-0	3-6	12-0	7-1	18-0	10-7

36 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	37 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	9 00-0	9 01-5	8 35-4	0-0	0-0	6-0	3-7	12-0	7-3	00	9 15-0	9 16-5	8 49-7	0-0	0-0	6-0	3-8	12-0	7-5
01	9 00-3	9 01-7	8 35-6	0-1	0-1	6-1	3-7	12-1	7-4	01	9 15-3	9 16-8	8 50-0	0-1	0-1	6-1	3-8	12-1	7-6
02	9 00-5	9 02-0	8 35-9	0-2	0-1	6-2	3-8	12-2	7-4	02	9 15-5	9 17-0	8 50-2	0-2	0-1	6-2	3-9	12-2	7-6
03	9 00-8	9 02-2	8 36-1	0-3	0-2	6-3	3-8	12-3	7-5	03	9 15-8	9 17-3	8 50-4	0-3	0-2	6-3	3-9	12-3	7-7
04	9 01-0	9 02-5	8 36-4	0-4	0-2	6-4	3-9	12-4	7-5	04	9 16-0	9 17-5	8 50-7	0-4	0-3	6-4	4-0	12-4	7-8
05	9 01-3	9 02-7	8 36-6	0-5	0-3	6-5	4-0	12-5	7-6	05	9 16-3	9 17-8	8 50-9	0-5	0-3	6-5	4-1	12-5	7-8
06	9 01-5	9 03-0	8 36-8	0-6	0-4	6-6	4-0	12-6	7-7	06	9 16-5	9 18-0	8 51-1	0-6	0-4	6-6	4-1	12-6	7-9
07	9 01-8	9 03-2	8 37-1	0-7	0-4	6-7	4-1	12-7	7-7	07	9 16-8	9 18-3	8 51-4	0-7	0-4	6-7	4-2	12-7	7-9
08	9 02-0	9 03-5	8 37-3	0-8	0-5	6-8	4-1	12-8	7-8	08	9 17-0	9 18-5	8 51-6	0-8	0-5	6-8	4-3	12-8	8-0
09	9 02-3	9 03-7	8 37-5	0-9	0-5	6-9	4-2	12-9	7-8	09	9 17-3	9 18-8	8 51-9	0-9	0-6	6-9	4-3	12-9	8-1
10	9 02-5	9 04-0	8 37-8	1-0	0-6	7-0	4-3	13-0	7-9	10	9 17-5	9 19-0	8 52-1	1-0	0-6	7-0	4-4	13-0	8-1
11	9 02-8	9 04-2	8 38-0	1-1	0-7	7-1	4-3	13-1	8-0	11	9 17-8	9 19-3	8 52-3	1-1	0-7	7-1	4-4	13-1	8-2
12	9 03-0	9 04-5	8 38-3	1-2	0-7	7-2	4-4	13-2	8-0	12	9 18-0	9 19-5	8 52-6	1-2	0-8	7-2	4-5	13-2	8-3
13	9 03-3	9 04-7	8 38-5	1-3	0-8	7-3	4-4	13-3	8-1	13	9 18-3	9 19-8	8 52-8	1-3	0-8	7-3	4-6	13-3	8-3
14	9 03-5	9 05-0	8 38-7	1-4	0-9	7-4	4-5	13-4	8-2	14	9 18-5	9 20-0	8 53-1	1-4	0-9	7-4	4-6	13-4	8-4
15	9 03-8	9 05-2	8 39-0	1-5	0-9	7-5	4-6	13-5	8-2	15	9 18-8	9 20-3	8 53-3	1-5	0-9	7-5	4-7	13-5	8-4
16	9 04-0	9 05-5	8 39-2	1-6	1-0	7-6	4-6	13-6	8-3	16	9 19-0	9 20-5	8 53-5	1-6	1-0	7-6	4-8	13-6	8-5
17	9 04-3	9 05-7	8 39-5	1-7	1-0	7-7	4-7	13-7	8-3	17	9 19-3	9 20-8	8 53-8	1-7	1-1	7-7	4-8	13-7	8-6
18	9 04-5	9 06-0	8 39-7	1-8	1-1	7-8	4-7	13-8	8-4	18	9 19-5	9 21-0	8 54-0	1-8	1-1	7-8	4-9	13-8	8-6
19	9 04-8	9 06-2	8 39-9	1-9	1-2	7-9	4-8	13-9	8-5	19	9 19-8	9 21-3	8 54-3	1-9	1-2	7-9	4-9	13-9	8-7
20	9 05-0	9 06-5	8 40-2	2-0	1-2	8-0	4-9	14-0	8-5	20	9 20-0	9 21-5	8 54-5	2-0	1-3	8-0	5-0	14-0	8-8
21	9 05-3	9 06-7	8 40-4	2-1	1-3	8-1	4-9	14-1	8-6	21	9 20-3	9 21-8	8 54-7	2-1	1-3	8-1	5-1	14-1	8-8
22	9 05-5	9 07-0	8 40-6	2-2	1-3	8-2	5-0	14-2	8-6	22	9 20-5	9 22-0	8 55-0	2-2	1-4	8-2	5-1	14-2	8-9
23	9 05-8	9 07-2	8 40-9	2-3	1-4	8-3	5-0	14-3	8-7	23	9 20-8	9 22-3	8 55-2	2-3	1-4	8-3	5-2	14-3	8-9
24	9 06-0	9 07-5	8 41-1	2-4	1-5	8-4	5-1	14-4	8-8	24	9 21-0	9 22-5	8 55-4	2-4	1-5	8-4	5-3	14-4	9-0
25	9 06-3	9 07-7	8 41-4	2-5	1-5	8-5	5-2	14-5	8-8	25	9 21-3	9 22-8	8 55-7	2-5	1-6	8-5	5-3	14-5	9-1
26	9 06-5	9 08-0	8 41-6	2-6	1-6	8-6	5-2	14-6	8-9	26	9 21-5	9 23-0	8 55-9	2-6	1-6	8-6	5-4	14-6	9-1
27	9 06-8	9 08-2	8 41-8	2-7	1-6	8-7	5-3	14-7	8-9	27	9 21-8	9 23-3	8 56-2	2-7	1-7	8-7	5-4	14-7	9-2
28	9 07-0	9 08-5	8 42-1	2-8	1-7	8-8	5-4	14-8	9-0	28	9 22-0	9 23-5	8 56-4	2-8	1-8	8-8	5-5	14-8	9-3
29	9 07-3	9 08-7	8 42-3	2-9	1-8	8-9	5-4	14-9	9-1	29	9 22-3	9 23-8	8 56-6	2-9	1-8	8-9	5-6	14-9	9-3
30	9 07-5	9 09-0	8 42-6	3-0	1-8	9-0	5-5	15-0	9-1	30	9 22-5	9 24-0	8 56-9	3-0	1-9	9-0	5-6	15-0	9-4
31	9 07-8	9 09-2	8 42-8	3-1	1-9	9-1	5-5	15-1	9-2	31	9 22-8	9 24-3	8 57-1	3-1	1-9	9-1	5-7	15-1	9-4
32	9 08-0	9 09-5	8 43-0	3-2	1-9	9-2	5-6	15-2	9-2	32	9 23-0	9 24-5	8 57-4	3-2	2-0	9-2	5-8	15-2	9-5
33	9 08-3	9 09-8	8 43-3	3-3	2-0	9-3	5-7	15-3	9-3	33	9 23-3	9 24-8	8 57-6	3-3	2-1	9-3	5-8	15-3	9-6
34	9 08-5	9 10-0	8 43-5	3-4	2-1	9-4	5-7	15-4	9-4	34	9 23-5	9 25-0	8 57-8	3-4	2-1	9-4	5-9	15-4	9-6
35	9 08-8	9 10-3	8 43-8	3-5	2-1	9-5	5-8	15-5	9-4	35	9 23-8	9 25-3	8 58-1	3-5	2-2	9-5	5-9	15-5	9-7
36	9 09-0	9 10-5	8 44-0	3-6	2-2	9-6	5-8	15-6	9-5	36	9 24-0	9 25-5	8 58-3	3-6	2-3	9-6	6-0	15-6	9-8
37	9 09-3	9 10-8	8 44-2	3-7	2-3	9-7	5-9	15-7	9-6	37	9 24-3	9 25-8	8 58-5	3-7	2-3	9-7	6-1	15-7	9-8
38	9 09-5	9 11-0	8 44-5	3-8	2-3	9-8	6-0	15-8	9-6	38	9 24-5	9 26-0	8 58-8	3-8	2-4	9-8	6-1	15-8	9-9
39	9 09-8	9 11-3	8 44-7	3-9	2-4	9-9	6-0	15-9	9-7	39	9 24-8	9 26-3	8 59-0	3-9	2-4	9-9	6-2	15-9	9-9
40	9 10-0	9 11-5	8 44-9	4-0	2-4	10-0	6-1	16-0	9-7	40	9 25-0	9 26-5	8 59-3	4-0	2-5	10-0	6-3	16-0	10-0
41	9 10-3	9 11-8	8 45-2	4-1	2-5	10-1	6-1	16-1	9-8	41	9 25-3	9 26-8	8 59-5	4-1	2-6	10-1	6-3	16-1	10-1
42	9 10-5	9 12-0	8 45-4	4-2	2-6	10-2	6-2	16-2	9-9	42	9 25-5	9 27-0	8 59-7	4-2	2-6	10-2	6-4	16-2	10-1
43	9 10-8	9 12-3	8 45-7	4-3	2-6	10-3	6-3	16-3	9-9	43	9 25-8	9 27-3	9 00-0	4-3	2-7	10-3	6-4	16-3	10-2
44	9 11-0	9 12-5	8 45-9	4-4	2-7	10-4	6-3	16-4	10-0	44	9 26-0	9 27-5	9 00-2	4-4	2-8	10-4	6-5	16-4	10-3
45	9 11-3	9 12-8	8 46-1	4-5	2-7	10-5	6-4	16-5	10-0	45	9 26-3	9 27-8	9 00-5	4-5	2-8	10-5	6-6	16-5	10-3
46	9 11-5	9 13-0	8 46-4	4-6	2-8	10-6	6-4	16-6	10-1	46	9 26-5	9 28-1	9 00-7	4-6	2-9	10-6	6-6	16-6	10-4
47	9 11-8	9 13-3	8 46-6	4-7	2-9	10-7	6-5	16-7	10-2	47	9 26-8	9 28-3	9 00-9	4-7	2-9	10-7	6-7	16-7	10-4
48	9 12-0	9 13-5	8 46-9	4-8	2-9	10-8	6-6	16-8	10-2	48	9 27-0	9 28-6	9 01-2	4-8	3-0	10-8	6-8	16-8	10-5
49	9 12-3	9 13-8	8 47-1	4-9	3-0	10-9	6-6	16-9	10-3	49	9 27-3	9 28-8	9 01-4	4-9	3-1	10-9	6-8	16-9	10-6
50	9 12-5	9 14-0	8 47-3	5-0	3-0	11-0	6-7	17-0	10-3	50	9 27-5	9 29-1	9 01-6	5-0	3-1	11-0	6-9	17-0	10-6
51	9 12-8	9 14-3	8 47-6	5-1	3-1	11-1	6-8	17-1	10-4	51	9 27-8	9 29-3	9 01-9	5-1	3-2	11-1	6-9	17-1	10-7
52	9 13-0	9 14-5	8 47-8	5-2	3-2	11-2	6-8	17-2	10-5	52	9 28-0	9 29-6	9 02-1	5-2	3-3	11-2	7-0	17-2	10-8
53	9 13-3	9 14-8	8 48-0	5-3	3-2	11-3	6-9	17-3	10-5	53	9 28-3	9 29-8	9 02-4	5-3	3-3	11-3	7-1	17-3	10-8
54	9 13-5	9 15-0	8 48-3	5-4	3-3	11-4	6-9	17-4	10-6	54	9 28-5	9 30-1	9 02-6	5-4	3-4	11-4	7-1	17-4	10-9
55	9 13-8	9 15-3	8 48-5	5-5	3-3	11-5	7-0	17-5	10-6	55	9 28-8	9 30-3	9 02-8	5-5	3-4	11-5	7-2	17-5	10-9
56	9 14-0	9 15-5	8 48-8	5-6	3-4	11-6	7-1	17-6	10-7	56	9 29-0	9 30-6	9 03-1	5-6	3-5	11-6	7-3	17-6	11-0
57	9 14-3	9 15-8	8 49-0	5-7	3-5	11-7	7-1	17-7	10-8	57	9 29-3	9 30-8	9 03-3	5-7	3-6	11-7	7-3	17-7	11-1
58	9 14-5	9 16-0	8 49-2	5-8	3-5	11-8	7-2	17-8	10-8	58	9 29-5	9 31-1	9 03-6	5-8	3-6	11-8	7-4	17-8	11-1
59	9 14-8	9 16-3	8 49-5	5-9	3-6	11-9	7-2	17-9	10-9	59	9 29-8	9 31-3	9 03-8	5-9	3-7	11-9	7-4	17-9	11-2
60	9 15-0	9 16-5	8 49-7	6-0	3-7	12-0	7-3	18-0	11-0	60	9 30-0	9 31-6	9 04-0	6-0	3-8	12-0	7-5	18-0	11-3

38 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	39 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	9 30-0	9 31-6	9 04-0	0-0	0-0	6-0	3-9	12-0	7-7	00	9 45-0	9 46-6	9 18-4	0-0	0-0	6-0	4-0	12-0	7-9
01	9 30-3	9 31-8	9 04-3	0-1	0-1	6-1	3-9	12-1	7-8	01	9 45-3	9 46-9	9 18-6	0-1	0-1	6-1	4-0	12-1	8-0
02	9 30-5	9 32-1	9 04-5	0-2	0-1	6-2	4-0	12-2	7-8	02	9 45-5	9 47-1	9 18-8	0-2	0-1	6-2	4-1	12-2	8-0
03	9 30-8	9 32-3	9 04-7	0-3	0-2	6-3	4-0	12-3	7-9	03	9 45-8	9 47-4	9 19-1	0-3	0-2	6-3	4-1	12-3	8-1
04	9 31-0	9 32-6	9 05-0	0-4	0-3	6-4	4-1	12-4	8-0	04	9 46-0	9 47-6	9 19-3	0-4	0-3	6-4	4-2	12-4	8-2
05	9 31-3	9 32-8	9 05-2	0-5	0-3	6-5	4-2	12-5	8-0	05	9 46-3	9 47-9	9 19-5	0-5	0-3	6-5	4-3	12-5	8-2
06	9 31-5	9 33-1	9 05-5	0-6	0-4	6-6	4-2	12-6	8-1	06	9 46-5	9 48-1	9 19-8	0-6	0-4	6-6	4-3	12-6	8-3
07	9 31-8	9 33-3	9 05-7	0-7	0-4	6-7	4-3	12-7	8-1	07	9 46-8	9 48-4	9 20-0	0-7	0-5	6-7	4-4	12-7	8-4
08	9 32-0	9 33-6	9 05-9	0-8	0-5	6-8	4-4	12-8	8-2	08	9 47-0	9 48-6	9 20-3	0-8	0-5	6-8	4-5	12-8	8-4
09	9 32-3	9 33-8	9 06-2	0-9	0-6	6-9	4-4	12-9	8-3	09	9 47-3	9 48-9	9 20-5	0-9	0-6	6-9	4-5	12-9	8-5
10	9 32-5	9 34-1	9 06-4	1-0	0-6	7-0	4-5	13-0	8-3	10	9 47-5	9 49-1	9 20-7	1-0	0-7	7-0	4-6	13-0	8-6
11	9 32-8	9 34-3	9 06-7	1-1	0-7	7-1	4-6	13-1	8-4	11	9 47-8	9 49-4	9 21-0	1-1	0-7	7-1	4-7	13-1	8-6
12	9 33-0	9 34-6	9 06-9	1-2	0-8	7-2	4-6	13-2	8-5	12	9 48-0	9 49-6	9 21-2	1-2	0-8	7-2	4-7	13-2	8-7
13	9 33-3	9 34-8	9 07-1	1-3	0-8	7-3	4-7	13-3	8-5	13	9 48-3	9 49-9	9 21-5	1-3	0-9	7-3	4-8	13-3	8-8
14	9 33-5	9 35-1	9 07-4	1-4	0-9	7-4	4-7	13-4	8-6	14	9 48-5	9 50-1	9 21-7	1-4	0-9	7-4	4-9	13-4	8-8
15	9 33-8	9 35-3	9 07-6	1-5	1-0	7-5	4-8	13-5	8-7	15	9 48-8	9 50-4	9 21-9	1-5	1-0	7-5	4-9	13-5	8-9
16	9 34-0	9 35-6	9 07-9	1-6	1-0	7-6	4-9	13-6	8-7	16	9 49-0	9 50-6	9 22-2	1-6	1-1	7-6	5-0	13-6	9-0
17	9 34-3	9 35-8	9 08-1	1-7	1-1	7-7	4-9	13-7	8-8	17	9 49-3	9 50-9	9 22-4	1-7	1-1	7-7	5-1	13-7	9-0
18	9 34-5	9 36-1	9 08-3	1-8	1-2	7-8	5-0	13-8	8-9	18	9 49-5	9 51-1	9 22-6	1-8	1-2	7-8	5-1	13-8	9-1
19	9 34-8	9 36-3	9 08-6	1-9	1-2	7-9	5-1	13-9	8-9	19	9 49-8	9 51-4	9 22-9	1-9	1-3	7-9	5-2	13-9	9-2
20	9 35-0	9 36-6	9 08-8	2-0	1-3	8-0	5-1	14-0	9-0	20	9 50-0	9 51-6	9 23-1	2-0	1-3	8-0	5-3	14-0	9-2
21	9 35-3	9 36-8	9 09-0	2-1	1-3	8-1	5-2	14-1	9-0	21	9 50-3	9 51-9	9 23-4	2-1	1-4	8-1	5-3	14-1	9-3
22	9 35-5	9 37-1	9 09-3	2-2	1-4	8-2	5-3	14-2	9-1	22	9 50-5	9 52-1	9 23-6	2-2	1-4	8-2	5-4	14-2	9-3
23	9 35-8	9 37-3	9 09-5	2-3	1-5	8-3	5-3	14-3	9-2	23	9 50-8	9 52-4	9 23-8	2-3	1-5	8-3	5-5	14-3	9-4
24	9 36-0	9 37-6	9 09-8	2-4	1-5	8-4	5-4	14-4	9-2	24	9 51-0	9 52-6	9 24-1	2-4	1-6	8-4	5-5	14-4	9-5
25	9 36-3	9 37-8	9 10-0	2-5	1-6	8-5	5-5	14-5	9-3	25	9 51-3	9 52-9	9 24-3	2-5	1-6	8-5	5-6	14-5	9-5
26	9 36-5	9 38-1	9 10-2	2-6	1-7	8-6	5-5	14-6	9-4	26	9 51-5	9 53-1	9 24-6	2-6	1-7	8-6	5-7	14-6	9-6
27	9 36-8	9 38-3	9 10-5	2-7	1-7	8-7	5-6	14-7	9-4	27	9 51-8	9 53-4	9 24-8	2-7	1-8	8-7	5-7	14-7	9-7
28	9 37-0	9 38-6	9 10-7	2-8	1-8	8-8	5-6	14-8	9-5	28	9 52-0	9 53-6	9 25-0	2-8	1-8	8-8	5-8	14-8	9-7
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34	9 38-5	9 40-1	9 12-1	3-4	2-2	9-4	6-0	15-4	9-9	34	9 53-5	9 55-1	9 26-5	3-4	2-2	9-4	6-2	15-4	10-1
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54	9 43-5	9 45-1	9 16-9	5-4	3-5	11-4	7-3	17-4	11-2	54	9 58-5	10 00-1	9 31-2	5-4	3-6	11-4	7-5	17-4	11-5
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60	9 45-0	9 46-6	9 18-4	6-0	3-9	12-0	7-7	18-0	11-6	60	10 00-0	10 01-6	9 32-7	6-0	4-0	12-0	7-9	18-0	11-9

40^m

INCREMENTOS Y CORRECCIONES

41^m

40 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	41 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/	s	° /	° /	° /	/	/	/	/	/	/
00	10 00:0	10 01:6	9 32:7	0:0	0:0	6:0	4:1	12:0	8:1	00	10 15:0	10 16:7	9 47:0	0:0	0:0	6:0	4:2	12:0	8:3
01	10 00:3	10 01:9	9 32:9	0:1	0:1	6:1	4:1	12:1	8:2	01	10 15:3	10 16:9	9 47:2	0:1	0:1	6:1	4:2	12:1	8:4
02	10 00:5	10 02:1	9 33:1	0:2	0:1	6:2	4:2	12:2	8:2	02	10 15:5	10 17:2	9 47:5	0:2	0:1	6:2	4:3	12:2	8:4
03	10 00:8	10 02:4	9 33:4	0:3	0:2	6:3	4:3	12:3	8:3	03	10 15:8	10 17:4	9 47:7	0:3	0:2	6:3	4:4	12:3	8:5
04	10 01:0	10 02:6	9 33:6	0:4	0:3	6:4	4:3	12:4	8:4	04	10 16:0	10 17:7	9 47:9	0:4	0:3	6:4	4:4	12:4	8:6
05	10 01:3	10 02:9	9 33:9	0:5	0:3	6:5	4:4	12:5	8:4	05	10 16:3	10 17:9	9 48:2	0:5	0:3	6:5	4:5	12:5	8:6
06	10 01:5	10 03:1	9 34:1	0:6	0:4	6:6	4:5	12:6	8:5	06	10 16:5	10 18:2	9 48:4	0:6	0:4	6:6	4:6	12:6	8:7
07	10 01:8	10 03:4	9 34:3	0:7	0:5	6:7	4:5	12:7	8:6	07	10 16:8	10 18:4	9 48:7	0:7	0:5	6:7	4:6	12:7	8:8
08	10 02:0	10 03:6	9 34:6	0:8	0:5	6:8	4:6	12:8	8:6	08	10 17:0	10 18:7	9 48:9	0:8	0:6	6:8	4:7	12:8	8:9
09	10 02:3	10 03:9	9 34:8	0:9	0:6	6:9	4:7	12:9	8:7	09	10 17:3	10 18:9	9 49:1	0:9	0:6	6:9	4:8	12:9	8:9
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11	10 02:8	10 04:4	9 35:3	1:1	0:7	7:1	4:8	13:1	8:8	11	10 17:8	10 19:4	9 49:6	1:1	0:8	7:1	4:9	13:1	9:1
12	10 03:0	10 04:7	9 35:5	1:2	0:8	7:2	4:9	13:2	8:9	12	10 18:0	10 19:7	9 49:8	1:2	0:8	7:2	5:0	13:2	9:1
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18	10 04:5	10 06:2	9 37:0	1:8	1:2	7:8	5:3	13:8	9:3	18	10 19:5	10 21:2	9 51:3	1:8	1:2	7:8	5:4	13:8	9:5
19	10 04:8	10 06:4	9 37:2	1:9	1:3	7:9	5:3	13:9	9:4	19	10 19:8	10 21:4	9 51:5	1:9	1:3	7:9	5:5	13:9	9:6
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22	10 05:5	10 07:2	9 37:9	2:2	1:5	8:2	5:5	14:2	9:6	22	10 20:5	10 22:2	9 52:2	2:2	1:5	8:2	5:7	14:2	9:8
23	10 05:8	10 07:4	9 38:2	2:3	1:6	8:3	5:6	14:3	9:7	23	10 20:8	10 22:4	9 52:5	2:3	1:6	8:3	5:7	14:3	9:9
24	10 06:0	10 07:7	9 38:4	2:4	1:6	8:4	5:7	14:4	9:7	24	10 21:0	10 22:7	9 52:7	2:4	1:7	8:4	5:8	14:4	10:0
25	10 06:3	10 07:9	9 38:6	2:5	1:7	8:5	5:7	14:5	9:8	25	10 21:3	10 23:0	9 52:9	2:5	1:7	8:5	5:9	14:5	10:0
26	10 06:5	10 08:2	9 38:9	2:6	1:8	8:6	5:8	14:6	9:9	26	10 21:5	10 23:2	9 53:2	2:6	1:8	8:6	5:9	14:6	10:1
27	10 06:8	10 08:4	9 39:1	2:7	1:8	8:7	5:9	14:7	9:9	27	10 21:8	10 23:5	9 53:4	2:7	1:9	8:7	6:0	14:7	10:2
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29	10 07:3	10 08:9	9 39:6	2:9	2:0	8:9	6:0	14:9	10:1	29	10 22:3	10 24:0	9 53:9	2:9	2:0	8:9	6:2	14:9	10:3
30	10 07:5	10 09:2	9 39:8	3:0	2:0	9:0	6:1	15:0	10:1	30	10 22:5	10 24:2	9 54:1	3:0	2:1	9:0	6:2	15:0	10:4
31	10 07:8	10 09:4	9 40:1	3:1	2:1	9:1	6:1	15:1	10:2	31	10 22:8	10 24:5	9 54:4	3:1	2:1	9:1	6:3	15:1	10:4
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51	10 12:8	10 14:4	9 44:8	5:1	3:4	11:1	7:5	17:1	11:5	51	10 27:8	10 29:5	9 59:2	5:1	3:5	11:1	7:7	17:1	11:8
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53	10 13:3	10 14:9	9 45:3	5:3	3:6	11:3	7:6	17:3	11:7	53	10 28:3	10 30:0	9 59:6	5:3	3:7	11:3	7:8	17:3	12:0
54	10 13:5	10 15:2	9 45:6	5:4	3:6	11:4	7:7	17:4	11:7	54	10 28:5	10 30:2	9 59:9	5:4	3:7	11:4	7:9	17:4	12:0
55	10 13:8	10 15:4	9 45:8	5:5	3:7	11:5	7:8	17:5	11:8	55	10 28:8	10 30:5	10 00:1	5:5	3:8	11:5	8:0	17:5	12:1
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57	10 14:3	10 15:9	9 46:3	5:7	3:8	11:7	7:9	17:7	11:9	57	10 29:3	10 31:0	10 00:6	5:7	3:9	11:7	8:1	17:7	12:2
58	10 14:5	10 16:2	9 46:5	5:8	3:9	11:8	8:0	17:8	12:0	58	10 29:5	10 31:2	10 00:8	5:8	4:0	11:8	8:2	17:8	12:3
59	10 14:8	10 16:4	9 46:7	5:9	4:0	11:9	8:0	17:9	12:1	59	10 29:8	10 31:5	10 01:1	5:9	4:1	11:9	8:2	17:9	12:4
60	10 15:0	10 16:7	9 47:0	6:0	4:1	12:0	8:1	18:0	12:2	60	10 30:0	10 31:7	10 01:3	6:0	4:2	12:0	8:3	18:0	12:5

42 ^m	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.	43 ^m	SOL PLANETAS	ARIES	LUNA	v d Corr.	v d Corr.	v d Corr.
s	° /	° /	° /	/ /	/ /	/ /	s	° /	° /	° /	/ /	/ /	/ /
00	10 30.0	10 31.7	10 01.3	0.0 0.0	6.0 4.3	12.0 8.5	00	10 45.0	10 46.8	10 15.6	0.0 0.0	6.0 4.4	12.0 8.7
01	10 30.3	10 32.0	10 01.5	0.1 0.1	6.1 4.3	12.1 8.6	01	10 45.3	10 47.0	10 15.9	0.1 0.1	6.1 4.4	12.1 8.8
02	10 30.5	10 32.2	10 01.8	0.2 0.1	6.2 4.4	12.2 8.6	02	10 45.5	10 47.3	10 16.1	0.2 0.1	6.2 4.5	12.2 8.8
03	10 30.8	10 32.5	10 02.0	0.3 0.2	6.3 4.5	12.3 8.7	03	10 45.8	10 47.5	10 16.3	0.3 0.2	6.3 4.6	12.3 8.9
04	10 31.0	10 32.7	10 02.3	0.4 0.3	6.4 4.5	12.4 8.8	04	10 46.0	10 47.8	10 16.6	0.4 0.3	6.4 4.6	12.4 9.0
05	10 31.3	10 33.0	10 02.5	0.5 0.4	6.5 4.6	12.5 8.9	05	10 46.3	10 48.0	10 16.8	0.5 0.4	6.5 4.7	12.5 9.1
06	10 31.5	10 33.2	10 02.7	0.6 0.4	6.6 4.7	12.6 8.9	06	10 46.5	10 48.3	10 17.0	0.6 0.4	6.6 4.8	12.6 9.1
07	10 31.8	10 33.5	10 03.0	0.7 0.5	6.7 4.7	12.7 9.0	07	10 46.8	10 48.5	10 17.3	0.7 0.5	6.7 4.9	12.7 9.2
08	10 32.0	10 33.7	10 03.2	0.8 0.6	6.8 4.8	12.8 9.1	08	10 47.0	10 48.8	10 17.5	0.8 0.6	6.8 4.9	12.8 9.3
09	10 32.3	10 34.0	10 03.4	0.9 0.6	6.9 4.9	12.9 9.1	09	10 47.3	10 49.0	10 17.8	0.9 0.7	6.9 5.0	12.9 9.4
10	10 32.5	10 34.2	10 03.7	1.0 0.7	7.0 5.0	13.0 9.2	10	10 47.5	10 49.3	10 18.0	1.0 0.7	7.0 5.1	13.0 9.4
11	10 32.8	10 34.5	10 03.9	1.1 0.8	7.1 5.0	13.1 9.3	11	10 47.8	10 49.5	10 18.2	1.1 0.8	7.1 5.1	13.1 9.5
12	10 33.0	10 34.7	10 04.2	1.2 0.9	7.2 5.1	13.2 9.4	12	10 48.0	10 49.8	10 18.5	1.2 0.9	7.2 5.2	13.2 9.6
13	10 33.3	10 35.0	10 04.4	1.3 0.9	7.3 5.2	13.3 9.4	13	10 48.3	10 50.0	10 18.7	1.3 0.9	7.3 5.3	13.3 9.6
14	10 33.5	10 35.2	10 04.6	1.4 1.0	7.4 5.2	13.4 9.5	14	10 48.5	10 50.3	10 19.0	1.4 1.0	7.4 5.4	13.4 9.7
15	10 33.8	10 35.5	10 04.9	1.5 1.1	7.5 5.3	13.5 9.6	15	10 48.8	10 50.5	10 19.2	1.5 1.1	7.5 5.4	13.5 9.8
16	10 34.0	10 35.7	10 05.1	1.6 1.1	7.6 5.4	13.6 9.6	16	10 49.0	10 50.8	10 19.4	1.6 1.2	7.6 5.5	13.6 9.9
17	10 34.3	10 36.0	10 05.4	1.7 1.2	7.7 5.5	13.7 9.7	17	10 49.3	10 51.0	10 19.7	1.7 1.2	7.7 5.6	13.7 9.9
18	10 34.5	10 36.2	10 05.6	1.8 1.3	7.8 5.5	13.8 9.8	18	10 49.5	10 51.3	10 19.9	1.8 1.3	7.8 5.7	13.8 10.0
19	10 34.8	10 36.5	10 05.8	1.9 1.3	7.9 5.6	13.9 9.8	19	10 49.8	10 51.5	10 20.2	1.9 1.4	7.9 5.7	13.9 10.1
20	10 35.0	10 36.7	10 06.1	2.0 1.4	8.0 5.7	14.0 9.9	20	10 50.0	10 51.8	10 20.4	2.0 1.5	8.0 5.8	14.0 10.2
21	10 35.3	10 37.0	10 06.3	2.1 1.5	8.1 5.7	14.1 10.0	21	10 50.3	10 52.0	10 20.6	2.1 1.5	8.1 5.9	14.1 10.2
22	10 35.5	10 37.2	10 06.5	2.2 1.6	8.2 5.8	14.2 10.1	22	10 50.5	10 52.3	10 20.9	2.2 1.6	8.2 5.9	14.2 10.3
23	10 35.8	10 37.5	10 06.8	2.3 1.6	8.3 5.9	14.3 10.1	23	10 50.8	10 52.5	10 21.1	2.3 1.7	8.3 6.0	14.3 10.4
24	10 36.0	10 37.7	10 07.0	2.4 1.7	8.4 6.0	14.4 10.2	24	10 51.0	10 52.8	10 21.3	2.4 1.7	8.4 6.1	14.4 10.4
25	10 36.3	10 38.0	10 07.3	2.5 1.8	8.5 6.0	14.5 10.3	25	10 51.3	10 53.0	10 21.6	2.5 1.8	8.5 6.2	14.5 10.5
26	10 36.5	10 38.2	10 07.5	2.6 1.8	8.6 6.1	14.6 10.3	26	10 51.5	10 53.3	10 21.8	2.6 1.9	8.6 6.2	14.6 10.6
27	10 36.8	10 38.5	10 07.7	2.7 1.9	8.7 6.2	14.7 10.4	27	10 51.8	10 53.5	10 22.1	2.7 2.0	8.7 6.3	14.7 10.7
28	10 37.0	10 38.7	10 08.0	2.8 2.0	8.8 6.2	14.8 10.5	28	10 52.0	10 53.8	10 22.3	2.8 2.0	8.8 6.4	14.8 10.7
29	10 37.3	10 39.0	10 08.2	2.9 2.1	8.9 6.3	14.9 10.6	29	10 52.3	10 54.0	10 22.5	2.9 2.1	8.9 6.5	14.9 10.8
30	10 37.5	10 39.2	10 08.5	3.0 2.1	9.0 6.4	15.0 10.6	30	10 52.5	10 54.3	10 22.8	3.0 2.2	9.0 6.5	15.0 10.9
31	10 37.8	10 39.5	10 08.7	3.1 2.2	9.1 6.4	15.1 10.7	31	10 52.8	10 54.5	10 23.0	3.1 2.2	9.1 6.6	15.1 10.9
32	10 38.0	10 39.7	10 08.9	3.2 2.3	9.2 6.5	15.2 10.8	32	10 53.0	10 54.8	10 23.3	3.2 2.3	9.2 6.7	15.2 11.0
33	10 38.3	10 40.0	10 09.2	3.3 2.3	9.3 6.6	15.3 10.8	33	10 53.3	10 55.0	10 23.5	3.3 2.4	9.3 6.7	15.3 11.1
34	10 38.5	10 40.2	10 09.4	3.4 2.4	9.4 6.7	15.4 10.9	34	10 53.5	10 55.3	10 23.7	3.4 2.5	9.4 6.8	15.4 11.2
35	10 38.8	10 40.5	10 09.7	3.5 2.5	9.5 6.7	15.5 11.0	35	10 53.8	10 55.5	10 24.0	3.5 2.5	9.5 6.9	15.5 11.2
36	10 39.0	10 40.7	10 09.9	3.6 2.6	9.6 6.8	15.6 11.1	36	10 54.0	10 55.8	10 24.2	3.6 2.6	9.6 7.0	15.6 11.3
37	10 39.3	10 41.0	10 10.1	3.7 2.6	9.7 6.9	15.7 11.1	37	10 54.3	10 56.0	10 24.4	3.7 2.7	9.7 7.0	15.7 11.4
38	10 39.5	10 41.3	10 10.4	3.8 2.7	9.8 6.9	15.8 11.2	38	10 54.5	10 56.3	10 24.7	3.8 2.8	9.8 7.1	15.8 11.5
39	10 39.8	10 41.5	10 10.6	3.9 2.8	9.9 7.0	15.9 11.3	39	10 54.8	10 56.5	10 24.9	3.9 2.8	9.9 7.2	15.9 11.5
40	10 40.0	10 41.8	10 10.8	4.0 2.8	10.0 7.1	16.0 11.3	40	10 55.0	10 56.8	10 25.2	4.0 2.9	10.0 7.3	16.0 11.6
41	10 40.3	10 42.0	10 11.1	4.1 2.9	10.1 7.2	16.1 11.4	41	10 55.3	10 57.0	10 25.4	4.1 3.0	10.1 7.3	16.1 11.7
42	10 40.5	10 42.3	10 11.3	4.2 3.0	10.2 7.2	16.2 11.5	42	10 55.5	10 57.3	10 25.6	4.2 3.0	10.2 7.4	16.2 11.7
43	10 40.8	10 42.5	10 11.6	4.3 3.0	10.3 7.3	16.3 11.5	43	10 55.8	10 57.5	10 25.9	4.3 3.1	10.3 7.5	16.3 11.8
44	10 41.0	10 42.8	10 11.8	4.4 3.1	10.4 7.4	16.4 11.6	44	10 56.0	10 57.8	10 26.1	4.4 3.2	10.4 7.5	16.4 11.9
45	10 41.3	10 43.0	10 12.0	4.5 3.2	10.5 7.4	16.5 11.7	45	10 56.3	10 58.0	10 26.4	4.5 3.3	10.5 7.6	16.5 12.0
46	10 41.5	10 43.3	10 12.3	4.6 3.3	10.6 7.5	16.6 11.8	46	10 56.5	10 58.3	10 26.6	4.6 3.3	10.6 7.7	16.6 12.0
47	10 41.8	10 43.5	10 12.5	4.7 3.3	10.7 7.6	16.7 11.8	47	10 56.8	10 58.5	10 26.8	4.7 3.4	10.7 7.8	16.7 12.1
48	10 42.0	10 43.8	10 12.8	4.8 3.4	10.8 7.7	16.8 11.9	48	10 57.0	10 58.8	10 27.1	4.8 3.5	10.8 7.8	16.8 12.2
49	10 42.3	10 44.0	10 13.0	4.9 3.5	10.9 7.7	16.9 12.0	49	10 57.3	10 59.0	10 27.3	4.9 3.6	10.9 7.9	16.9 12.3
50	10 42.5	10 44.3	10 13.2	5.0 3.5	11.0 7.8	17.0 12.0	50	10 57.5	10 59.3	10 27.5	5.0 3.6	11.0 8.0	17.0 12.3
51	10 42.8	10 44.5	10 13.5	5.1 3.6	11.1 7.9	17.1 12.1	51	10 57.8	10 59.6	10 27.8	5.1 3.7	11.1 8.0	17.1 12.4
52	10 43.0	10 44.8	10 13.7	5.2 3.7	11.2 7.9	17.2 12.2	52	10 58.0	10 59.8	10 28.0	5.2 3.8	11.2 8.1	17.2 12.5
53	10 43.3	10 45.0	10 13.9	5.3 3.8	11.3 8.0	17.3 12.3	53	10 58.3	11 00.1	10 28.3	5.3 3.8	11.3 8.2	17.3 12.5
54	10 43.5	10 45.3	10 14.2	5.4 3.8	11.4 8.1	17.4 12.3	54	10 58.5	11 00.3	10 28.5	5.4 3.9	11.4 8.3	17.4 12.6
55	10 43.8	10 45.5	10 14.4	5.5 3.9	11.5 8.1	17.5 12.4	55	10 58.8	11 00.6	10 28.7	5.5 4.0	11.5 8.3	17.5 12.7
56	10 44.0	10 45.8	10 14.7	5.6 4.0	11.6 8.2	17.6 12.5	56	10 59.0	11 00.8	10 29.0	5.6 4.1	11.6 8.4	17.6 12.8
57	10 44.3	10 46.0	10 14.9	5.7 4.0	11.7 8.3	17.7 12.5	57	10 59.3	11 01.1	10 29.2	5.7 4.1	11.7 8.5	17.7 12.8
58	10 44.5	10 46.3	10 15.1	5.8 4.1	11.8 8.4	17.8 12.6	58	10 59.5	11 01.3	10 29.5	5.8 4.2	11.8 8.6	17.8 12.9
59	10 44.8	10 46.5	10 15.4	5.9 4.2	11.9 8.4	17.9 12.7	59	10 59.8	11 01.6	10 29.7	5.9 4.3	11.9 8.6	17.9 13.0
60	10 45.0	10 46.8	10 15.6	6.0 4.3	12.0 8.5	18.0 12.8	60	11 00.0	11 01.8	10 29.9	6.0 4.4	12.0 8.7	18.0 13.1

44^m

INCREMENTOS Y CORRECCIONES

45^m

44 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	45 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	°	′	°	′	″	°	′	″	″	s	°	′	°	′	″	°	′	″	″
00	11 00:0	11 01:8	10 29:9	0:0	0:0	6:0	4:5	12:0	8:9	00	11 15:0	11 16:8	10 44:3	0:0	0:0	6:0	4:6	12:0	9:1
01	11 00:3	11 02:1	10 30:2	0:1	0:1	6:1	4:5	12:1	9:0	01	11 15:3	11 17:1	10 44:5	0:1	0:1	6:1	4:6	12:1	9:2
02	11 00:5	11 02:3	10 30:4	0:2	0:1	6:2	4:6	12:2	9:0	02	11 15:5	11 17:3	10 44:7	0:2	0:2	6:2	4:7	12:2	9:3
03	11 00:8	11 02:6	10 30:6	0:3	0:2	6:3	4:7	12:3	9:1	03	11 15:8	11 17:6	10 45:0	0:3	0:2	6:3	4:8	12:3	9:3
04	11 01:0	11 02:8	10 30:9	0:4	0:3	6:4	4:7	12:4	9:2	04	11 16:0	11 17:9	10 45:2	0:4	0:3	6:4	4:9	12:4	9:4
05	11 01:3	11 03:1	10 31:1	0:5	0:4	6:5	4:8	12:5	9:3	05	11 16:3	11 18:1	10 45:4	0:5	0:4	6:5	4:9	12:5	9:5
06	11 01:5	11 03:3	10 31:4	0:6	0:4	6:6	4:9	12:6	9:3	06	11 16:5	11 18:4	10 45:7	0:6	0:5	6:6	5:0	12:6	9:6
07	11 01:8	11 03:6	10 31:6	0:7	0:5	6:7	5:0	12:7	9:4	07	11 16:8	11 18:6	10 45:9	0:7	0:5	6:7	5:1	12:7	9:6
08	11 02:0	11 03:8	10 31:8	0:8	0:6	6:8	5:0	12:8	9:5	08	11 17:0	11 18:9	10 46:2	0:8	0:6	6:8	5:2	12:8	9:7
09	11 02:3	11 04:1	10 32:1	0:9	0:7	6:9	5:1	12:9	9:6	09	11 17:3	11 19:1	10 46:4	0:9	0:7	6:9	5:2	12:9	9:8
10	11 02:5	11 04:3	10 32:3	1:0	0:7	7:0	5:2	13:0	9:6	10	11 17:5	11 19:4	10 46:6	1:0	0:8	7:0	5:3	13:0	9:9
11	11 02:8	11 04:6	10 32:6	1:1	0:8	7:1	5:3	13:1	9:7	11	11 17:8	11 19:6	10 46:9	1:1	0:8	7:1	5:4	13:1	9:9
12	11 03:0	11 04:8	10 32:8	1:2	0:9	7:2	5:3	13:2	9:8	12	11 18:0	11 19:9	10 47:1	1:2	0:9	7:2	5:5	13:2	10:0
13	11 03:3	11 05:1	10 33:0	1:3	1:0	7:3	5:4	13:3	9:9	13	11 18:3	11 20:1	10 47:4	1:3	1:0	7:3	5:5	13:3	10:1
14	11 03:5	11 05:3	10 33:3	1:4	1:0	7:4	5:5	13:4	9:9	14	11 18:5	11 20:4	10 47:6	1:4	1:1	7:4	5:6	13:4	10:2
15	11 03:8	11 05:6	10 33:5	1:5	1:1	7:5	5:6	13:5	10:0	15	11 18:8	11 20:6	10 47:8	1:5	1:1	7:5	5:7	13:5	10:2
16	11 04:0	11 05:8	10 33:8	1:6	1:2	7:6	5:6	13:6	10:1	16	11 19:0	11 20:9	10 48:1	1:6	1:2	7:6	5:8	13:6	10:3
17	11 04:3	11 06:1	10 34:0	1:7	1:3	7:7	5:7	13:7	10:2	17	11 19:3	11 21:1	10 48:3	1:7	1:3	7:7	5:8	13:7	10:4
18	11 04:5	11 06:3	10 34:2	1:8	1:3	7:8	5:8	13:8	10:2	18	11 19:5	11 21:4	10 48:5	1:8	1:4	7:8	5:9	13:8	10:5
19	11 04:8	11 06:6	10 34:5	1:9	1:4	7:9	5:9	13:9	10:3	19	11 19:8	11 21:6	10 48:8	1:9	1:4	7:9	6:0	13:9	10:5
20	11 05:0	11 06:8	10 34:7	2:0	1:5	8:0	5:9	14:0	10:4	20	11 20:0	11 21:9	10 49:0	2:0	1:5	8:0	6:1	14:0	10:6
21	11 05:3	11 07:1	10 34:9	2:1	1:6	8:1	6:0	14:1	10:5	21	11 20:3	11 22:1	10 49:3	2:1	1:6	8:1	6:1	14:1	10:7
22	11 05:5	11 07:3	10 35:2	2:2	1:6	8:2	6:1	14:2	10:5	22	11 20:5	11 22:4	10 49:5	2:2	1:7	8:2	6:2	14:2	10:8
23	11 05:8	11 07:6	10 35:4	2:3	1:7	8:3	6:2	14:3	10:6	23	11 20:8	11 22:6	10 49:7	2:3	1:7	8:3	6:3	14:3	10:8
24	11 06:0	11 07:8	10 35:7	2:4	1:8	8:4	6:2	14:4	10:7	24	11 21:0	11 22:9	10 50:0	2:4	1:8	8:4	6:4	14:4	10:9
25	11 06:3	11 08:1	10 35:9	2:5	1:9	8:5	6:3	14:5	10:8	25	11 21:3	11 23:1	10 50:2	2:5	1:9	8:5	6:4	14:5	11:0
26	11 06:5	11 08:3	10 36:1	2:6	1:9	8:6	6:4	14:6	10:8	26	11 21:5	11 23:4	10 50:5	2:6	2:0	8:6	6:5	14:6	11:1
27	11 06:8	11 08:6	10 36:4	2:7	2:0	8:7	6:5	14:7	10:9	27	11 21:8	11 23:6	10 50:7	2:7	2:0	8:7	6:6	14:7	11:1
28	11 07:0	11 08:8	10 36:6	2:8	2:1	8:8	6:5	14:8	11:0	28	11 22:0	11 23:9	10 50:9	2:8	2:1	8:8	6:7	14:8	11:2
29	11 07:3	11 09:1	10 36:9	2:9	2:2	8:9	6:6	14:9	11:1	29	11 22:3	11 24:1	10 51:2	2:9	2:2	8:9	6:7	14:9	11:3
30	11 07:5	11 09:3	10 37:1	3:0	2:2	9:0	6:7	15:0	11:1	30	11 22:5	11 24:4	10 51:4	3:0	2:3	9:0	6:8	15:0	11:4
31	11 07:8	11 09:6	10 37:3	3:1	2:3	9:1	6:7	15:1	11:2	31	11 22:8	11 24:6	10 51:6	3:1	2:4	9:1	6:9	15:1	11:5
32	11 08:0	11 09:8	10 37:6	3:2	2:4	9:2	6:8	15:2	11:3	32	11 23:0	11 24:9	10 51:9	3:2	2:4	9:2	7:0	15:2	11:5
33	11 08:3	11 10:1	10 37:8	3:3	2:4	9:3	6:9	15:3	11:3	33	11 23:3	11 25:1	10 52:1	3:3	2:5	9:3	7:1	15:3	11:6
34	11 08:5	11 10:3	10 38:0	3:4	2:5	9:4	7:0	15:4	11:4	34	11 23:5	11 25:4	10 52:4	3:4	2:6	9:4	7:1	15:4	11:7
35	11 08:8	11 10:6	10 38:3	3:5	2:6	9:5	7:0	15:5	11:5	35	11 23:8	11 25:6	10 52:6	3:5	2:7	9:5	7:2	15:5	11:8
36	11 09:0	11 10:8	10 38:5	3:6	2:7	9:6	7:1	15:6	11:6	36	11 24:0	11 25:9	10 52:8	3:6	2:7	9:6	7:3	15:6	11:8
37	11 09:3	11 11:1	10 38:8	3:7	2:7	9:7	7:2	15:7	11:6	37	11 24:3	11 26:1	10 53:1	3:7	2:8	9:7	7:4	15:7	11:9
38	11 09:5	11 11:3	10 39:0	3:8	2:8	9:8	7:3	15:8	11:7	38	11 24:5	11 26:4	10 53:3	3:8	2:9	9:8	7:4	15:8	12:0
39	11 09:8	11 11:6	10 39:2	3:9	2:9	9:9	7:3	15:9	11:8	39	11 24:8	11 26:6	10 53:6	3:9	3:0	9:9	7:5	15:9	12:1
40	11 10:0	11 11:8	10 39:5	4:0	3:0	10:0	7:4	16:0	11:9	40	11 25:0	11 26:9	10 53:8	4:0	3:0	10:0	7:6	16:0	12:1
41	11 10:3	11 12:1	10 39:7	4:1	3:0	10:1	7:5	16:1	11:9	41	11 25:3	11 27:1	10 54:0	4:1	3:1	10:1	7:7	16:1	12:2
42	11 10:5	11 12:3	10 40:0	4:2	3:1	10:2	7:6	16:2	12:0	42	11 25:5	11 27:4	10 54:3	4:2	3:2	10:2	7:7	16:2	12:3
43	11 10:8	11 12:6	10 40:2	4:3	3:2	10:3	7:6	16:3	12:1	43	11 25:8	11 27:6	10 54:5	4:3	3:3	10:3	7:8	16:3	12:4
44	11 11:0	11 12:8	10 40:4	4:4	3:3	10:4	7:7	16:4	12:2	44	11 26:0	11 27:9	10 54:7	4:4	3:3	10:4	7:9	16:4	12:4
45	11 11:3	11 13:1	10 40:7	4:5	3:3	10:5	7:8	16:5	12:2	45	11 26:3	11 28:1	10 55:0	4:5	3:4	10:5	8:0	16:5	12:5
46	11 11:5	11 13:3	10 40:9	4:6	3:4	10:6	7:9	16:6	12:3	46	11 26:5	11 28:4	10 55:2	4:6	3:5	10:6	8:0	16:6	12:6
47	11 11:8	11 13:6	10 41:1	4:7	3:5	10:7	7:9	16:7	12:4	47	11 26:8	11 28:6	10 55:5	4:7	3:6	10:7	8:1	16:7	12:7
48	11 12:0	11 13:8	10 41:4	4:8	3:6	10:8	8:0	16:8	12:5	48	11 27:0	11 28:9	10 55:7	4:8	3:6	10:8	8:2	16:8	12:7
49	11 12:3	11 14:1	10 41:6	4:9	3:6	10:9	8:1	16:9	12:5	49	11 27:3	11 29:1	10 55:9	4:9	3:7	10:9	8:3	16:9	12:8
50	11 12:5	11 14:3	10 41:9	5:0	3:7	11:0	8:2	17:0	12:6	50	11 27:5	11 29:4	10 56:2	5:0	3:8	11:0	8:3	17:0	12:9
51	11 12:8	11 14:6	10 42:1	5:1	3:8	11:1	8:2	17:1	12:7	51	11 27:8	11 29:6	10 56:4	5:1	3:9	11:1	8:4	17:1	13:0
52	11 13:0	11 14:8	10 42:3	5:2	3:9	11:2	8:3	17:2	12:8	52	11 28:0	11 29:9	10 56:7	5:2	3:9	11:2	8:5	17:2	13:0
53	11 13:3	11 15:1	10 42:6	5:3	3:9	11:3	8:4	17:3	12:8	53	11 28:3	11 30:1	10 56:9	5:3	4:0	11:3	8:6	17:3	13:1
54	11 13:5	11 15:3	10 42:8	5:4	4:0	11:4	8:5	17:4	12:9	54	11 28:5	11 30:4	10 57:1	5:4	4:1	11:4	8:6	17:4	13:2
55	11 13:8	11 15:6	10 43:1	5:5	4:1	11:5	8:5	17:5	13:0	55	11 28:8	11 30:6	10 57:4	5:5	4:2	11:5	8:7	17:5	13:3
56	11 14:0	11 15:8	10 43:3	5:6	4:2	11:6	8:6	17:6	13:1	56	11 29:0	11 30:9	10 57:6	5:6	4:2	11:6	8:8	17:6	13:3
57	11 14:3	11 16:1	10 43:5	5:7	4:2	11:7	8:7	17:7	13:1	57	11 29:3	11 31:1	10 57:9	5:7	4:3	11:7	8:9	17:7	13:4
58	11 14:5	11 16:3	10 43:8	5:8	4:3	11:8	8:8	17:8	13:2	58	11 29:5	11 31:4	10 58:1	5:8	4:4	11:8	8:9	17:8	13:5
59	11 14:8	11 16:6	10 44:0	5:9	4:4	11:9	8:8	17:9	13:3	59	11 29:8	11 31:6	10 58:3	5:9	4:5	11:9	9:0	17:9	13:6
60	11 15:0	11 16:8	10 44:3	6:0	4:5	12:0	8:9	18:0	13:4	60	11 30:0	11 31:9	10 58:6	6:0	4:6	12:0	9:1	18:0	13:7

46 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	47 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	°	'	°	'	°	'	°	'	°	s	°	'	°	'	°	'	°	'	°
00	11 30.0	11 31.9	10 58.6	0.0	0.0	6.0	4.7	12.0	9.3	00	11 45.0	11 46.9	11 12.9	0.0	0.0	6.0	4.8	12.0	9.5
01	11 30.3	11 32.1	10 58.8	0.1	0.1	6.1	4.7	12.1	9.4	01	11 45.3	11 47.2	11 13.1	0.1	0.1	6.1	4.8	12.1	9.6
02	11 30.5	11 32.4	10 59.0	0.2	0.2	6.2	4.8	12.2	9.5	02	11 45.5	11 47.4	11 13.4	0.2	0.2	6.2	4.9	12.2	9.7
03	11 30.8	11 32.6	10 59.3	0.3	0.2	6.3	4.9	12.3	9.5	03	11 45.8	11 47.7	11 13.6	0.3	0.2	6.3	5.0	12.3	9.7
04	11 31.0	11 32.9	10 59.5	0.4	0.3	6.4	5.0	12.4	9.6	04	11 46.0	11 47.9	11 13.8	0.4	0.3	6.4	5.1	12.4	9.8
05	11 31.3	11 33.1	10 59.8	0.5	0.4	6.5	5.0	12.5	9.7	05	11 46.3	11 48.2	11 14.1	0.5	0.4	6.5	5.1	12.5	9.9
06	11 31.5	11 33.4	11 00.0	0.6	0.5	6.6	5.1	12.6	9.8	06	11 46.5	11 48.4	11 14.3	0.6	0.5	6.6	5.2	12.6	10.0
07	11 31.8	11 33.6	11 00.2	0.7	0.5	6.7	5.2	12.7	9.8	07	11 46.8	11 48.7	11 14.6	0.7	0.6	6.7	5.3	12.7	10.1
08	11 32.0	11 33.9	11 00.5	0.8	0.6	6.8	5.3	12.8	9.9	08	11 47.0	11 48.9	11 14.8	0.8	0.6	6.8	5.4	12.8	10.1
09	11 32.3	11 34.1	11 00.7	0.9	0.7	6.9	5.3	12.9	10.0	09	11 47.3	11 49.2	11 15.0	0.9	0.7	6.9	5.5	12.9	10.2
10	11 32.5	11 34.4	11 01.0	1.0	0.8	7.0	5.4	13.0	10.1	10	11 47.5	11 49.4	11 15.3	1.0	0.8	7.0	5.5	13.0	10.3
11	11 32.8	11 34.6	11 01.2	1.1	0.9	7.1	5.5	13.1	10.2	11	11 47.8	11 49.7	11 15.5	1.1	0.9	7.1	5.6	13.1	10.4
12	11 33.0	11 34.9	11 01.4	1.2	0.9	7.2	5.6	13.2	10.2	12	11 48.0	11 49.9	11 15.7	1.2	1.0	7.2	5.7	13.2	10.5
13	11 33.3	11 35.1	11 01.7	1.3	1.0	7.3	5.7	13.3	10.3	13	11 48.3	11 50.2	11 16.0	1.3	1.0	7.3	5.8	13.3	10.5
14	11 33.5	11 35.4	11 01.9	1.4	1.1	7.4	5.7	13.4	10.4	14	11 48.5	11 50.4	11 16.2	1.4	1.1	7.4	5.9	13.4	10.6
15	11 33.8	11 35.6	11 02.1	1.5	1.2	7.5	5.8	13.5	10.5	15	11 48.8	11 50.7	11 16.5	1.5	1.2	7.5	5.9	13.5	10.7
16	11 34.0	11 35.9	11 02.4	1.6	1.2	7.6	5.9	13.6	10.5	16	11 49.0	11 50.9	11 16.7	1.6	1.3	7.6	6.0	13.6	10.8
17	11 34.3	11 36.2	11 02.6	1.7	1.3	7.7	6.0	13.7	10.6	17	11 49.3	11 51.2	11 16.9	1.7	1.3	7.7	6.1	13.7	10.8
18	11 34.5	11 36.4	11 02.9	1.8	1.4	7.8	6.0	13.8	10.7	18	11 49.5	11 51.4	11 17.2	1.8	1.4	7.8	6.2	13.8	10.9
19	11 34.8	11 36.7	11 03.1	1.9	1.5	7.9	6.1	13.9	10.8	19	11 49.8	11 51.7	11 17.4	1.9	1.5	7.9	6.3	13.9	11.0
20	11 35.0	11 36.9	11 03.3	2.0	1.6	8.0	6.2	14.0	10.9	20	11 50.0	11 51.9	11 17.7	2.0	1.6	8.0	6.3	14.0	11.1
21	11 35.3	11 37.2	11 03.6	2.1	1.6	8.1	6.3	14.1	10.9	21	11 50.3	11 52.2	11 17.9	2.1	1.7	8.1	6.4	14.1	11.2
22	11 35.5	11 37.4	11 03.8	2.2	1.7	8.2	6.4	14.2	11.0	22	11 50.5	11 52.4	11 18.1	2.2	1.7	8.2	6.5	14.2	11.2
23	11 35.8	11 37.7	11 04.1	2.3	1.8	8.3	6.4	14.3	11.1	23	11 50.8	11 52.7	11 18.4	2.3	1.8	8.3	6.6	14.3	11.3
24	11 36.0	11 37.9	11 04.3	2.4	1.9	8.4	6.5	14.4	11.2	24	11 51.0	11 52.9	11 18.6	2.4	1.9	8.4	6.7	14.4	11.4
25	11 36.3	11 38.2	11 04.5	2.5	1.9	8.5	6.6	14.5	11.2	25	11 51.3	11 53.2	11 18.8	2.5	2.0	8.5	6.7	14.5	11.5
26	11 36.5	11 38.4	11 04.8	2.6	2.0	8.6	6.7	14.6	11.3	26	11 51.5	11 53.4	11 19.1	2.6	2.1	8.6	6.8	14.6	11.6
27	11 36.8	11 38.7	11 05.0	2.7	2.1	8.7	6.7	14.7	11.4	27	11 51.8	11 53.7	11 19.3	2.7	2.1	8.7	6.9	14.7	11.6
28	11 37.0	11 38.9	11 05.2	2.8	2.2	8.8	6.8	14.8	11.5	28	11 52.0	11 53.9	11 19.6	2.8	2.2	8.8	7.0	14.8	11.7
29	11 37.3	11 39.2	11 05.5	2.9	2.2	8.9	6.9	14.9	11.5	29	11 52.3	11 54.2	11 19.8	2.9	2.3	8.9	7.0	14.9	11.8
30	11 37.5	11 39.4	11 05.7	3.0	2.3	9.0	7.0	15.0	11.6	30	11 52.5	11 54.5	11 20.0	3.0	2.4	9.0	7.1	15.0	11.9
31	11 37.8	11 39.7	11 06.0	3.1	2.4	9.1	7.1	15.1	11.7	31	11 52.8	11 54.7	11 20.3	3.1	2.5	9.1	7.2	15.1	12.0
32	11 38.0	11 39.9	11 06.2	3.2	2.5	9.2	7.1	15.2	11.8	32	11 53.0	11 55.0	11 20.5	3.2	2.5	9.2	7.3	15.2	12.0
33	11 38.3	11 40.2	11 06.4	3.3	2.6	9.3	7.2	15.3	11.9	33	11 53.3	11 55.2	11 20.8	3.3	2.6	9.3	7.4	15.3	12.1
34	11 38.5	11 40.4	11 06.7	3.4	2.6	9.4	7.3	15.4	11.9	34	11 53.5	11 55.5	11 21.0	3.4	2.7	9.4	7.4	15.4	12.2
35	11 38.8	11 40.7	11 06.9	3.5	2.7	9.5	7.4	15.5	12.0	35	11 53.8	11 55.7	11 21.2	3.5	2.8	9.5	7.5	15.5	12.3
36	11 39.0	11 40.9	11 07.2	3.6	2.8	9.6	7.4	15.6	12.1	36	11 54.0	11 56.0	11 21.5	3.6	2.9	9.6	7.6	15.6	12.4
37	11 39.3	11 41.2	11 07.4	3.7	2.9	9.7	7.5	15.7	12.2	37	11 54.3	11 56.2	11 21.7	3.7	2.9	9.7	7.7	15.7	12.4
38	11 39.5	11 41.4	11 07.6	3.8	2.9	9.8	7.6	15.8	12.2	38	11 54.5	11 56.5	11 22.0	3.8	3.0	9.8	7.8	15.8	12.5
39	11 39.8	11 41.7	11 07.9	3.9	3.0	9.9	7.7	15.9	12.3	39	11 54.8	11 56.7	11 22.2	3.9	3.1	9.9	7.8	15.9	12.6
40	11 40.0	11 41.9	11 08.1	4.0	3.1	10.0	7.8	16.0	12.4	40	11 55.0	11 57.0	11 22.4	4.0	3.2	10.0	7.9	16.0	12.7
41	11 40.3	11 42.2	11 08.3	4.1	3.2	10.1	7.8	16.1	12.5	41	11 55.3	11 57.2	11 22.7	4.1	3.2	10.1	8.0	16.1	12.7
42	11 40.5	11 42.4	11 08.6	4.2	3.3	10.2	7.9	16.2	12.6	42	11 55.5	11 57.5	11 22.9	4.2	3.3	10.2	8.1	16.2	12.8
43	11 40.8	11 42.7	11 08.8	4.3	3.3	10.3	8.0	16.3	12.6	43	11 55.8	11 57.7	11 23.1	4.3	3.4	10.3	8.2	16.3	12.9
44	11 41.0	11 42.9	11 09.1	4.4	3.4	10.4	8.1	16.4	12.7	44	11 56.0	11 58.0	11 23.4	4.4	3.5	10.4	8.2	16.4	13.0
45	11 41.3	11 43.2	11 09.3	4.5	3.5	10.5	8.1	16.5	12.8	45	11 56.3	11 58.2	11 23.6	4.5	3.6	10.5	8.3	16.5	13.1
46	11 41.5	11 43.4	11 09.5	4.6	3.6	10.6	8.2	16.6	12.9	46	11 56.5	11 58.5	11 23.9	4.6	3.6	10.6	8.4	16.6	13.1
47	11 41.8	11 43.7	11 09.8	4.7	3.6	10.7	8.3	16.7	12.9	47	11 56.8	11 58.7	11 24.1	4.7	3.7	10.7	8.5	16.7	13.2
48	11 42.0	11 43.9	11 10.0	4.8	3.7	10.8	8.4	16.8	13.0	48	11 57.0	11 59.0	11 24.3	4.8	3.8	10.8	8.6	16.8	13.3
49	11 42.3	11 44.2	11 10.3	4.9	3.8	10.9	8.4	16.9	13.1	49	11 57.3	11 59.2	11 24.6	4.9	3.9	10.9	8.6	16.9	13.4
50	11 42.5	11 44.4	11 10.5	5.0	3.9	11.0	8.5	17.0	13.2	50	11 57.5	11 59.5	11 24.8	5.0	4.0	11.0	8.7	17.0	13.5
51	11 42.8	11 44.7	11 10.7	5.1	4.0	11.1	8.6	17.1	13.3	51	11 57.8	11 59.7	11 25.1	5.1	4.0	11.1	8.8	17.1	13.5
52	11 43.0	11 44.9	11 11.0	5.2	4.0	11.2	8.7	17.2	13.3	52	11 58.0	12 00.0	11 25.3	5.2	4.1	11.2	8.9	17.2	13.6
53	11 43.3	11 45.2	11 11.2	5.3	4.1	11.3	8.8	17.3	13.4	53	11 58.3	12 00.2	11 25.5	5.3	4.2	11.3	8.9	17.3	13.7
54	11 43.5	11 45.4	11 11.5	5.4	4.2	11.4	8.8	17.4	13.5	54	11 58.5	12 00.5	11 25.8	5.4	4.3	11.4	9.0	17.4	13.8
55	11 43.8	11 45.7	11 11.7	5.5	4.3	11.5	8.9	17.5	13.6	55	11 58.8	12 00.7	11 26.0	5.5	4.4	11.5	9.1	17.5	13.9
56	11 44.0	11 45.9	11 11.9	5.6	4.3	11.6	9.0	17.6	13.6	56	11 59.0	12 01.0	11 26.2	5.6	4.4	11.6	9.2	17.6	13.9
57	11 44.3	11 46.2	11 12.2	5.7	4.4	11.7	9.1	17.7	13.7	57	11 59.3	12 01.2	11 26.5	5.7	4.5	11.7	9.3	17.7	14.0
58	11 44.5	11 46.4	11 12.4	5.8	4.5	11.8	9.1	17.8	13.8	58	11 59.5	12 01.5	11 26.7	5.8	4.6	11.8	9.3	17.8	14.1
59	11 44.8	11 46.7	11 12.6	5.9	4.6	11.9	9.2	17.9	13.9	59	11 59.8	12 01.7	11 27.0	5.9	4.7	11.9	9.4	17.9	14.2
60	11 45.0	11 46.9	11 12.9	6.0	4.7	12.0	9.3	18.0	14.0	60	12 00.0	12 02.0	11 27.2	6.0	4.8	12.0	9.5	18.0	14.3

48 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	49 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	°	'	°	'	°	'	°	'	°	s	°	'	°	'	°	'	°	'	°
00	12 00:0	12 02:0	11 27:2	0:0	0:0	6:0	4:9	12:0	9:7	00	12 15:0	12 17:0	11 41:5	0:0	0:0	6:0	5:0	12:0	9:9
01	12 00:3	12 02:2	11 27:4	0:1	0:1	6:1	4:9	12:1	9:8	01	12 15:3	12 17:3	11 41:8	0:1	0:1	6:1	5:0	12:1	10:0
02	12 00:5	12 02:5	11 27:7	0:2	0:2	6:2	5:0	12:2	9:9	02	12 15:5	12 17:5	11 42:0	0:2	0:2	6:2	5:1	12:2	10:1
03	12 00:8	12 02:7	11 27:9	0:3	0:2	6:3	5:1	12:3	9:9	03	12 15:8	12 17:8	11 42:2	0:3	0:2	6:3	5:2	12:3	10:1
04	12 01:0	12 03:0	11 28:2	0:4	0:3	6:4	5:2	12:4	10:0	04	12 16:0	12 18:0	11 42:5	0:4	0:3	6:4	5:3	12:4	10:2
05	12 01:3	12 03:2	11 28:4	0:5	0:4	6:5	5:3	12:5	10:1	05	12 16:3	12 18:3	11 42:7	0:5	0:4	6:5	5:4	12:5	10:3
06	12 01:5	12 03:5	11 28:6	0:6	0:5	6:6	5:3	12:6	10:2	06	12 16:5	12 18:5	11 42:9	0:6	0:5	6:6	5:4	12:6	10:4
07	12 01:8	12 03:7	11 28:9	0:7	0:6	6:7	5:4	12:7	10:3	07	12 16:8	12 18:8	11 43:2	0:7	0:6	6:7	5:5	12:7	10:5
08	12 02:0	12 04:0	11 29:1	0:8	0:6	6:8	5:5	12:8	10:3	08	12 17:0	12 19:0	11 43:4	0:8	0:7	6:8	5:6	12:8	10:6
09	12 02:3	12 04:2	11 29:3	0:9	0:7	6:9	5:6	12:9	10:4	09	12 17:3	12 19:3	11 43:7	0:9	0:7	6:9	5:7	12:9	10:6
10	12 02:5	12 04:5	11 29:6	1:0	0:8	7:0	5:7	13:0	10:5	10	12 17:5	12 19:5	11 43:9	1:0	0:8	7:0	5:8	13:0	10:7
11	12 02:8	12 04:7	11 29:8	1:1	0:9	7:1	5:7	13:1	10:6	11	12 17:8	12 19:8	11 44:1	1:1	0:9	7:1	5:9	13:1	10:8
12	12 03:0	12 05:0	11 30:1	1:2	1:0	7:2	5:8	13:2	10:7	12	12 18:0	12 20:0	11 44:4	1:2	1:0	7:2	5:9	13:2	10:9
13	12 03:3	12 05:2	11 30:3	1:3	1:1	7:3	5:9	13:3	10:8	13	12 18:3	12 20:3	11 44:6	1:3	1:1	7:3	6:0	13:3	11:0
14	12 03:5	12 05:5	11 30:5	1:4	1:1	7:4	6:0	13:4	10:8	14	12 18:5	12 20:5	11 44:9	1:4	1:2	7:4	6:1	13:4	11:1
15	12 03:8	12 05:7	11 30:8	1:5	1:2	7:5	6:1	13:5	10:9	15	12 18:8	12 20:8	11 45:1	1:5	1:2	7:5	6:2	13:5	11:1
16	12 04:0	12 06:0	11 31:0	1:6	1:3	7:6	6:1	13:6	11:0	16	12 19:0	12 21:0	11 45:3	1:6	1:3	7:6	6:3	13:6	11:2
17	12 04:3	12 06:2	11 31:3	1:7	1:4	7:7	6:2	13:7	11:1	17	12 19:3	12 21:3	11 45:6	1:7	1:4	7:7	6:4	13:7	11:3
18	12 04:5	12 06:5	11 31:5	1:8	1:5	7:8	6:3	13:8	11:2	18	12 19:5	12 21:5	11 45:8	1:8	1:5	7:8	6:4	13:8	11:4
19	12 04:8	12 06:7	11 31:7	1:9	1:5	7:9	6:4	13:9	11:2	19	12 19:8	12 21:8	11 46:1	1:9	1:6	7:9	6:5	13:9	11:5
20	12 05:0	12 07:0	11 32:0	2:0	1:6	8:0	6:5	14:0	11:3	20	12 20:0	12 22:0	11 46:3	2:0	1:7	8:0	6:6	14:0	11:6
21	12 05:3	12 07:2	11 32:2	2:1	1:7	8:1	6:5	14:1	11:4	21	12 20:3	12 22:3	11 46:5	2:1	1:7	8:1	6:7	14:1	11:6
22	12 05:5	12 07:5	11 32:4	2:2	1:8	8:2	6:6	14:2	11:5	22	12 20:5	12 22:5	11 46:8	2:2	1:8	8:2	6:8	14:2	11:7
23	12 05:8	12 07:7	11 32:7	2:3	1:9	8:3	6:7	14:3	11:6	23	12 20:8	12 22:8	11 47:0	2:3	1:9	8:3	6:8	14:3	11:8
24	12 06:0	12 08:0	11 32:9	2:4	1:9	8:4	6:8	14:4	11:6	24	12 21:0	12 23:0	11 47:2	2:4	2:0	8:4	6:9	14:4	11:9
25	12 06:3	12 08:2	11 33:2	2:5	2:0	8:5	6:9	14:5	11:7	25	12 21:3	12 23:3	11 47:5	2:5	2:1	8:5	7:0	14:5	12:0
26	12 06:5	12 08:5	11 33:4	2:6	2:1	8:6	7:0	14:6	11:8	26	12 21:5	12 23:5	11 47:7	2:6	2:1	8:6	7:1	14:6	12:0
27	12 06:8	12 08:7	11 33:6	2:7	2:2	8:7	7:0	14:7	11:9	27	12 21:8	12 23:8	11 48:0	2:7	2:2	8:7	7:2	14:7	12:1
28	12 07:0	12 09:0	11 33:9	2:8	2:3	8:8	7:1	14:8	12:0	28	12 22:0	12 24:0	11 48:2	2:8	2:3	8:8	7:3	14:8	12:2
29	12 07:3	12 09:2	11 34:1	2:9	2:3	8:9	7:2	14:9	12:0	29	12 22:3	12 24:3	11 48:4	2:9	2:4	8:9	7:3	14:9	12:3
30	12 07:5	12 09:5	11 34:4	3:0	2:4	9:0	7:3	15:0	12:1	30	12 22:5	12 24:5	11 48:7	3:0	2:5	9:0	7:4	15:0	12:4
31	12 07:8	12 09:7	11 34:6	3:1	2:5	9:1	7:4	15:1	12:2	31	12 22:8	12 24:8	11 48:9	3:1	2:6	9:1	7:5	15:1	12:5
32	12 08:0	12 10:0	11 34:8	3:2	2:6	9:2	7:4	15:2	12:3	32	12 23:0	12 25:0	11 49:2	3:2	2:6	9:2	7:6	15:2	12:5
33	12 08:3	12 10:2	11 35:1	3:3	2:7	9:3	7:5	15:3	12:4	33	12 23:3	12 25:3	11 49:4	3:3	2:7	9:3	7:7	15:3	12:6
34	12 08:5	12 10:5	11 35:3	3:4	2:7	9:4	7:6	15:4	12:4	34	12 23:5	12 25:5	11 49:6	3:4	2:8	9:4	7:8	15:4	12:7
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36	12 09:0	12 11:0	11 35:8	3:6	2:9	9:6	7:8	15:6	12:6	36	12 24:0	12 26:0	11 50:1	3:6	3:0	9:6	7:9	15:6	12:9
37	12 09:3	12 11:2	11 36:0	3:7	3:0	9:7	7:8	15:7	12:7	37	12 24:3	12 26:3	11 50:3	3:7	3:1	9:7	8:0	15:7	13:0
38	12 09:5	12 11:5	11 36:3	3:8	3:1	9:8	7:9	15:8	12:8	38	12 24:5	12 26:5	11 50:6	3:8	3:1	9:8	8:1	15:8	13:0
39	12 09:8	12 11:7	11 36:5	3:9	3:2	9:9	8:0	15:9	12:9	39	12 24:8	12 26:8	11 50:8	3:9	3:2	9:9	8:2	15:9	13:1
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41	12 10:3	12 12:2	11 37:0	4:1	3:3	10:1	8:2	16:1	13:0	41	12 25:3	12 27:3	11 51:3	4:1	3:4	10:1	8:3	16:1	13:3
42	12 10:5	12 12:5	11 37:2	4:2	3:4	10:2	8:2	16:2	13:1	42	12 25:5	12 27:5	11 51:5	4:2	3:5	10:2	8:4	16:2	13:4
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49	12 12:3	12 14:3	11 38:9	4:9	4:0	10:9	8:8	16:9	13:7	49	12 27:3	12 29:3	11 53:2	4:9	4:0	10:9	9:0	16:9	13:9
50	12 12:5	12 14:5	11 39:1	5:0	4:0	11:0	8:9	17:0	13:7	50	12 27:5	12 29:5	11 53:4	5:0	4:1	11:0	9:1	17:0	14:0
51	12 12:8	12 14:8	11 39:4	5:1	4:1	11:1	9:0	17:1	13:8	51	12 27:8	12 29:8	11 53:7	5:1	4:2	11:1	9:2	17:1	14:1
52	12 13:0	12 15:0	11 39:6	5:2	4:2	11:2	9:1	17:2	13:9	52	12 28:0	12 30:0	11 53:9	5:2	4:3	11:2	9:2	17:2	14:2
53	12 13:3	12 15:3	11 39:8	5:3	4:3	11:3	9:1	17:3	14:0	53	12 28:3	12 30:3	11 54:2	5:3	4:4	11:3	9:3	17:3	14:3
54	12 13:5	12 15:5	11 40:1	5:4	4:4	11:4	9:2	17:4	14:1	54	12 28:5	12 30:5	11 54:4	5:4	4:5	11:4	9:4	17:4	14:4
55	12 13:8	12 15:8	11 40:3	5:5	4:4	11:5	9:3	17:5	14:1	55	12 28:8	12 30:8	11 54:6	5:5	4:5	11:5	9:5	17:5	14:4
56	12 14:0	12 16:0	11 40:6	5:6	4:5	11:6	9:4	17:6	14:2	56	12 29:0	12 31:1	11 54:9	5:6	4:6	11:6	9:6	17:6	14:5
57	12 14:3	12 16:3	11 40:8	5:7	4:6	11:7	9:5	17:7	14:3	57	12 29:3	12 31:3	11 55:1	5:7	4:7	11:7	9:7	17:7	14:6
58	12 14:5	12 16:5	11 41:0	5:8	4:7	11:8	9:5	17:8	14:4	58	12 29:5	12 31:6	11 55:4	5:8	4:8	11:8	9:7	17:8	14:7
59	12 14:8	12 16:8	11 41:3	5:9	4:8	11:9	9:6	17:9	14:5	59	12 29:8	12 31:8	11 55:6	5:9	4:9	11:9	9:8	17:9	14:8
60	12 15:0	12 17:0	11 41:5	6:0	4:9	12:0	9:7	18:0	14:6	60	12 30:0	12 32:1	11 55:8	6:0	5:0	12:0	9:9	18:0	14:9

50^m

INCREMENTOS Y CORRECCIONES

51^m

50 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	51 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	°	'	°	'	°	'	°	'	'	s	°	'	°	'	'	°	'	'	'
00	12 30.0	12 32.1	11 55.8	0.0	0.0	6.0	5.1	12.0	10.1	00	12 45.0	12 47.1	12 10.2	0.0	0.0	6.0	5.2	12.0	10.3
01	12 30.3	12 32.3	11 56.1	0.1	0.1	6.1	5.1	12.1	10.2	01	12 45.3	12 47.3	12 10.4	0.1	0.1	6.1	5.2	12.1	10.4
02	12 30.5	12 32.6	11 56.3	0.2	0.2	6.2	5.2	12.2	10.3	02	12 45.5	12 47.6	12 10.6	0.2	0.2	6.2	5.3	12.2	10.5
03	12 30.8	12 32.8	11 56.5	0.3	0.3	6.3	5.3	12.3	10.4	03	12 45.8	12 47.8	12 10.9	0.3	0.3	6.3	5.4	12.3	10.6
04	12 31.0	12 33.1	11 56.8	0.4	0.3	6.4	5.4	12.4	10.4	04	12 46.0	12 48.1	12 11.1	0.4	0.3	6.4	5.5	12.4	10.6
05	12 31.3	12 33.3	11 57.0	0.5	0.4	6.5	5.5	12.5	10.5	05	12 46.3	12 48.3	12 11.3	0.5	0.4	6.5	5.6	12.5	10.7
06	12 31.5	12 33.6	11 57.3	0.6	0.5	6.6	5.6	12.6	10.6	06	12 46.5	12 48.6	12 11.6	0.6	0.5	6.6	5.7	12.6	10.8
07	12 31.8	12 33.8	11 57.5	0.7	0.6	6.7	5.6	12.7	10.7	07	12 46.8	12 48.8	12 11.8	0.7	0.6	6.7	5.8	12.7	10.9
08	12 32.0	12 34.1	11 57.7	0.8	0.7	6.8	5.7	12.8	10.8	08	12 47.0	12 49.1	12 12.1	0.8	0.7	6.8	5.8	12.8	11.0
09	12 32.3	12 34.3	11 58.0	0.9	0.8	6.9	5.8	12.9	10.9	09	12 47.3	12 49.4	12 12.3	0.9	0.8	6.9	5.9	12.9	11.1
10	12 32.5	12 34.6	11 58.2	1.0	0.8	7.0	5.9	13.0	10.9	10	12 47.5	12 49.6	12 12.5	1.0	0.9	7.0	6.0	13.0	11.2
11	12 32.8	12 34.8	11 58.5	1.1	0.9	7.1	6.0	13.1	11.0	11	12 47.8	12 49.9	12 12.8	1.1	0.9	7.1	6.1	13.1	11.2
12	12 33.0	12 35.1	11 58.7	1.2	1.0	7.2	6.1	13.2	11.1	12	12 48.0	12 50.1	12 13.0	1.2	1.0	7.2	6.2	13.2	11.3
13	12 33.3	12 35.3	11 58.9	1.3	1.1	7.3	6.1	13.3	11.2	13	12 48.3	12 50.4	12 13.3	1.3	1.1	7.3	6.3	13.3	11.4
14	12 33.5	12 35.6	11 59.2	1.4	1.2	7.4	6.2	13.4	11.3	14	12 48.5	12 50.6	12 13.5	1.4	1.2	7.4	6.4	13.4	11.5
15	12 33.8	12 35.8	11 59.4	1.5	1.3	7.5	6.3	13.5	11.4	15	12 48.8	12 50.9	12 13.7	1.5	1.3	7.5	6.4	13.5	11.6
16	12 34.0	12 36.1	11 59.7	1.6	1.3	7.6	6.4	13.6	11.4	16	12 49.0	12 51.1	12 14.0	1.6	1.4	7.6	6.5	13.6	11.7
17	12 34.3	12 36.3	11 59.9	1.7	1.4	7.7	6.5	13.7	11.5	17	12 49.3	12 51.4	12 14.2	1.7	1.5	7.7	6.6	13.7	11.8
18	12 34.5	12 36.6	12 00.1	1.8	1.5	7.8	6.6	13.8	11.6	18	12 49.5	12 51.6	12 14.4	1.8	1.5	7.8	6.7	13.8	11.8
19	12 34.8	12 36.8	12 00.4	1.9	1.6	7.9	6.6	13.9	11.7	19	12 49.8	12 51.9	12 14.7	1.9	1.6	7.9	6.8	13.9	11.9
20	12 35.0	12 37.1	12 00.6	2.0	1.7	8.0	6.7	14.0	11.8	20	12 50.0	12 52.1	12 14.9	2.0	1.7	8.0	6.9	14.0	12.0
21	12 35.3	12 37.3	12 00.8	2.1	1.8	8.1	6.8	14.1	11.9	21	12 50.3	12 52.4	12 15.2	2.1	1.8	8.1	7.0	14.1	12.1
22	12 35.5	12 37.6	12 01.1	2.2	1.9	8.2	6.9	14.2	12.0	22	12 50.5	12 52.6	12 15.4	2.2	1.9	8.2	7.0	14.2	12.2
23	12 35.8	12 37.8	12 01.3	2.3	1.9	8.3	7.0	14.3	12.0	23	12 50.8	12 52.9	12 15.6	2.3	2.0	8.3	7.1	14.3	12.3
24	12 36.0	12 38.1	12 01.6	2.4	2.0	8.4	7.1	14.4	12.1	24	12 51.0	12 53.1	12 15.9	2.4	2.1	8.4	7.2	14.4	12.4
25	12 36.3	12 38.3	12 01.8	2.5	2.1	8.5	7.2	14.5	12.2	25	12 51.3	12 53.4	12 16.1	2.5	2.1	8.5	7.3	14.5	12.4
26	12 36.5	12 38.6	12 02.0	2.6	2.2	8.6	7.2	14.6	12.3	26	12 51.5	12 53.6	12 16.4	2.6	2.2	8.6	7.4	14.6	12.5
27	12 36.8	12 38.8	12 02.3	2.7	2.3	8.7	7.3	14.7	12.4	27	12 51.8	12 53.9	12 16.6	2.7	2.3	8.7	7.5	14.7	12.6
28	12 37.0	12 39.1	12 02.5	2.8	2.4	8.8	7.4	14.8	12.5	28	12 52.0	12 54.1	12 16.8	2.8	2.4	8.8	7.6	14.8	12.7
29	12 37.3	12 39.3	12 02.8	2.9	2.4	8.9	7.5	14.9	12.5	29	12 52.3	12 54.4	12 17.1	2.9	2.5	8.9	7.6	14.9	12.8
30	12 37.5	12 39.6	12 03.0	3.0	2.5	9.0	7.6	15.0	12.6	30	12 52.5	12 54.6	12 17.3	3.0	2.6	9.0	7.7	15.0	12.9
31	12 37.8	12 39.8	12 03.2	3.1	2.6	9.1	7.7	15.1	12.7	31	12 52.8	12 54.9	12 17.5	3.1	2.7	9.1	7.8	15.1	13.0
32	12 38.0	12 40.1	12 03.5	3.2	2.7	9.2	7.7	15.2	12.8	32	12 53.0	12 55.1	12 17.8	3.2	2.7	9.2	7.9	15.2	13.0
33	12 38.3	12 40.3	12 03.7	3.3	2.8	9.3	7.8	15.3	12.9	33	12 53.3	12 55.4	12 18.0	3.3	2.8	9.3	8.0	15.3	13.1
34	12 38.5	12 40.6	12 03.9	3.4	2.9	9.4	7.9	15.4	13.0	34	12 53.5	12 55.6	12 18.3	3.4	2.9	9.4	8.1	15.4	13.2
35	12 38.8	12 40.8	12 04.2	3.5	2.9	9.5	8.0	15.5	13.0	35	12 53.8	12 55.9	12 18.5	3.5	3.0	9.5	8.2	15.5	13.3
36	12 39.0	12 41.1	12 04.4	3.6	3.0	9.6	8.1	15.6	13.1	36	12 54.0	12 56.1	12 18.7	3.6	3.1	9.6	8.2	15.6	13.4
37	12 39.3	12 41.3	12 04.7	3.7	3.1	9.7	8.2	15.7	13.2	37	12 54.3	12 56.4	12 19.0	3.7	3.2	9.7	8.3	15.7	13.5
38	12 39.5	12 41.6	12 04.9	3.8	3.2	9.8	8.2	15.8	13.3	38	12 54.5	12 56.6	12 19.2	3.8	3.3	9.8	8.4	15.8	13.6
39	12 39.8	12 41.8	12 05.1	3.9	3.3	9.9	8.3	15.9	13.4	39	12 54.8	12 56.9	12 19.5	3.9	3.3	9.9	8.5	15.9	13.6
40	12 40.0	12 42.1	12 05.4	4.0	3.4	10.0	8.4	16.0	13.5	40	12 55.0	12 57.1	12 19.7	4.0	3.4	10.0	8.6	16.0	13.7
41	12 40.3	12 42.3	12 05.6	4.1	3.5	10.1	8.5	16.1	13.6	41	12 55.3	12 57.4	12 19.9	4.1	3.5	10.1	8.7	16.1	13.8
42	12 40.5	12 42.6	12 05.9	4.2	3.5	10.2	8.6	16.2	13.6	42	12 55.5	12 57.6	12 20.2	4.2	3.6	10.2	8.8	16.2	13.9
43	12 40.8	12 42.8	12 06.1	4.3	3.6	10.3	8.7	16.3	13.7	43	12 55.8	12 57.9	12 20.4	4.3	3.7	10.3	8.8	16.3	14.0
44	12 41.0	12 43.1	12 06.3	4.4	3.7	10.4	8.8	16.4	13.8	44	12 56.0	12 58.1	12 20.6	4.4	3.8	10.4	8.9	16.4	14.1
45	12 41.3	12 43.3	12 06.6	4.5	3.8	10.5	8.8	16.5	13.9	45	12 56.3	12 58.4	12 20.9	4.5	3.9	10.5	9.0	16.5	14.2
46	12 41.5	12 43.6	12 06.8	4.6	3.9	10.6	8.9	16.6	14.0	46	12 56.5	12 58.6	12 21.1	4.6	3.9	10.6	9.1	16.6	14.2
47	12 41.8	12 43.8	12 07.0	4.7	4.0	10.7	9.0	16.7	14.1	47	12 56.8	12 58.9	12 21.4	4.7	4.0	10.7	9.2	16.7	14.3
48	12 42.0	12 44.1	12 07.3	4.8	4.0	10.8	9.1	16.8	14.1	48	12 57.0	12 59.1	12 21.6	4.8	4.1	10.8	9.3	16.8	14.4
49	12 42.3	12 44.3	12 07.5	4.9	4.1	10.9	9.2	16.9	14.2	49	12 57.3	12 59.4	12 21.8	4.9	4.2	10.9	9.4	16.9	14.5
50	12 42.5	12 44.6	12 07.8	5.0	4.2	11.0	9.3	17.0	14.3	50	12 57.5	12 59.6	12 22.1	5.0	4.3	11.0	9.4	17.0	14.6
51	12 42.8	12 44.8	12 08.0	5.1	4.3	11.1	9.3	17.1	14.4	51	12 57.8	12 59.9	12 22.3	5.1	4.4	11.1	9.5	17.1	14.7
52	12 43.0	12 45.1	12 08.2	5.2	4.4	11.2	9.4	17.2	14.5	52	12 58.0	13 00.1	12 22.6	5.2	4.5	11.2	9.6	17.2	14.8
53	12 43.3	12 45.3	12 08.5	5.3	4.5	11.3	9.5	17.3	14.6	53	12 58.3	13 00.4	12 22.8	5.3	4.5	11.3	9.7	17.3	14.8
54	12 43.5	12 45.6	12 08.7	5.4	4.5	11.4	9.6	17.4	14.6	54	12 58.5	13 00.6	12 23.0	5.4	4.6	11.4	9.8	17.4	14.9
55	12 43.8	12 45.8	12 09.0	5.5	4.6	11.5	9.7	17.5	14.7	55	12 58.8	13 00.9	12 23.3	5.5	4.7	11.5	9.9	17.5	15.0
56	12 44.0	12 46.1	12 09.2	5.6	4.7	11.6	9.8	17.6	14.8	56	12 59.0	13 01.1	12 23.5	5.6	4.8	11.6	10.0	17.6	15.1
57	12 44.3	12 46.3	12 09.4	5.7	4.8	11.7	9.8	17.7	14.9	57	12 59.3	13 01.4	12 23.8	5.7	4.9	11.7	10.0	17.7	15.2
58	12 44.5	12 46.6	12 09.7	5.8	4.9	11.8	9.9	17.8	15.0	58	12 59.5	13 01.6	12 24.0	5.8	5.0	11.8	10.1	17.8	15.3
59	12 44.8	12 46.8	12 09.9	5.9	5.0	11.9	10.0	17.9	15.1	59	12 59.8	13 01.9	12 24.2	5.9	5.1	11.9	10.2	17.9	15.4
60	12 45.0	12 47.1	12 10.2	6.0	5.1	12.0	10.1	18.0	15.2	60	13 00.0	13 02.1	12 24.5	6.0	5.2	12.0	10.3	18.0	15.5

52 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	53 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	°	'	°	'	°	'	°	'	°	s	°	'	°	'	°	'	°	'	°
00	13 00-0	13 02-1	12 24-5	0-0	0-0	6-0	5-3	12-0	10-5	00	13 15-0	13 17-2	12 38-8	0-0	0-0	6-0	5-4	12-0	10-7
01	13 00-3	13 02-4	12 24-7	0-1	0-1	6-1	5-3	12-1	10-6	01	13 15-3	13 17-4	12 39-0	0-1	0-1	6-1	5-4	12-1	10-8
02	13 00-5	13 02-6	12 24-9	0-2	0-2	6-2	5-4	12-2	10-7	02	13 15-5	13 17-7	12 39-3	0-2	0-2	6-2	5-5	12-2	10-9
03	13 00-8	13 02-9	12 25-2	0-3	0-3	6-3	5-5	12-3	10-8	03	13 15-8	13 17-9	12 39-5	0-3	0-3	6-3	5-6	12-3	11-0
04	13 01-0	13 03-1	12 25-4	0-4	0-4	6-4	5-6	12-4	10-9	04	13 16-0	13 18-2	12 39-7	0-4	0-4	6-4	5-7	12-4	11-1
05	13 01-3	13 03-4	12 25-7	0-5	0-4	6-5	5-7	12-5	10-9	05	13 16-3	13 18-4	12 40-0	0-5	0-4	6-5	5-8	12-5	11-1
06	13 01-5	13 03-6	12 25-9	0-6	0-5	6-6	5-8	12-6	11-0	06	13 16-5	13 18-7	12 40-2	0-6	0-5	6-6	5-9	12-6	11-2
07	13 01-8	13 03-9	12 26-1	0-7	0-6	6-7	5-9	12-7	11-1	07	13 16-8	13 18-9	12 40-5	0-7	0-6	6-7	6-0	12-7	11-3
08	13 02-0	13 04-1	12 26-4	0-8	0-7	6-8	6-0	12-8	11-2	08	13 17-0	13 19-2	12 40-7	0-8	0-7	6-8	6-1	12-8	11-4
09	13 02-3	13 04-4	12 26-6	0-9	0-8	6-9	6-0	12-9	11-3	09	13 17-3	13 19-4	12 40-9	0-9	0-8	6-9	6-2	12-9	11-5
10	13 02-5	13 04-6	12 26-9	1-0	0-9	7-0	6-1	13-0	11-4	10	13 17-5	13 19-7	12 41-2	1-0	0-9	7-0	6-2	13-0	11-6
11	13 02-8	13 04-9	12 27-1	1-1	1-0	7-1	6-2	13-1	11-5	11	13 17-8	13 19-9	12 41-4	1-1	1-0	7-1	6-3	13-1	11-7
12	13 03-0	13 05-1	12 27-3	1-2	1-1	7-2	6-3	13-2	11-6	12	13 18-0	13 20-2	12 41-6	1-2	1-1	7-2	6-4	13-2	11-8
13	13 03-3	13 05-4	12 27-6	1-3	1-1	7-3	6-4	13-3	11-6	13	13 18-3	13 20-4	12 41-9	1-3	1-2	7-3	6-5	13-3	11-9
14	13 03-5	13 05-6	12 27-8	1-4	1-2	7-4	6-5	13-4	11-7	14	13 18-5	13 20-7	12 42-1	1-4	1-2	7-4	6-6	13-4	11-9
15	13 03-8	13 05-9	12 28-0	1-5	1-3	7-5	6-6	13-5	11-8	15	13 18-8	13 20-9	12 42-4	1-5	1-3	7-5	6-7	13-5	12-0
16	13 04-0	13 06-1	12 28-3	1-6	1-4	7-6	6-7	13-6	11-9	16	13 19-0	13 21-2	12 42-6	1-6	1-4	7-6	6-8	13-6	12-1
17	13 04-3	13 06-4	12 28-5	1-7	1-5	7-7	6-7	13-7	12-0	17	13 19-3	13 21-4	12 42-8	1-7	1-5	7-7	6-9	13-7	12-2
18	13 04-5	13 06-6	12 28-8	1-8	1-6	7-8	6-8	13-8	12-1	18	13 19-5	13 21-7	12 43-1	1-8	1-6	7-8	7-0	13-8	12-3
19	13 04-8	13 06-9	12 29-0	1-9	1-7	7-9	6-9	13-9	12-2	19	13 19-8	13 21-9	12 43-3	1-9	1-7	7-9	7-0	13-9	12-4
20	13 05-0	13 07-1	12 29-2	2-0	1-8	8-0	7-0	14-0	12-3	20	13 20-0	13 22-2	12 43-6	2-0	1-8	8-0	7-1	14-0	12-5
21	13 05-3	13 07-4	12 29-5	2-1	1-8	8-1	7-1	14-1	12-3	21	13 20-3	13 22-4	12 43-8	2-1	1-9	8-1	7-2	14-1	12-6
22	13 05-5	13 07-7	12 29-7	2-2	1-9	8-2	7-2	14-2	12-4	22	13 20-5	13 22-7	12 44-0	2-2	2-0	8-2	7-3	14-2	12-7
23	13 05-8	13 07-9	12 30-0	2-3	2-0	8-3	7-3	14-3	12-5	23	13 20-8	13 22-9	12 44-3	2-3	2-1	8-3	7-4	14-3	12-8
24	13 06-0	13 08-2	12 30-2	2-4	2-1	8-4	7-4	14-4	12-6	24	13 21-0	13 23-2	12 44-5	2-4	2-1	8-4	7-5	14-4	12-8
25	13 06-3	13 08-4	12 30-4	2-5	2-2	8-5	7-4	14-5	12-7	25	13 21-3	13 23-4	12 44-7	2-5	2-2	8-5	7-6	14-5	12-9
26	13 06-5	13 08-7	12 30-7	2-6	2-3	8-6	7-5	14-6	12-8	26	13 21-5	13 23-7	12 45-0	2-6	2-3	8-6	7-7	14-6	13-0
27	13 06-8	13 08-9	12 30-9	2-7	2-4	8-7	7-6	14-7	12-9	27	13 21-8	13 23-9	12 45-2	2-7	2-4	8-7	7-8	14-7	13-1
28	13 07-0	13 09-2	12 31-1	2-8	2-5	8-8	7-7	14-8	13-0	28	13 22-0	13 24-2	12 45-5	2-8	2-5	8-8	7-8	14-8	13-2
29	13 07-3	13 09-4	12 31-4	2-9	2-5	8-9	7-8	14-9	13-0	29	13 22-3	13 24-4	12 45-7	2-9	2-6	8-9	7-9	14-9	13-3
30	13 07-5	13 09-7	12 31-6	3-0	2-6	9-0	7-9	15-0	13-1	30	13 22-5	13 24-7	12 45-9	3-0	2-7	9-0	8-0	15-0	13-4
31	13 07-8	13 09-9	12 31-9	3-1	2-7	9-1	8-0	15-1	13-2	31	13 22-8	13 24-9	12 46-2	3-1	2-8	9-1	8-1	15-1	13-5
32	13 08-0	13 10-2	12 32-1	3-2	2-8	9-2	8-0	15-2	13-3	32	13 23-0	13 25-2	12 46-4	3-2	2-9	9-2	8-2	15-2	13-6
33	13 08-3	13 10-4	12 32-3	3-3	2-9	9-3	8-1	15-3	13-4	33	13 23-3	13 25-4	12 46-7	3-3	2-9	9-3	8-3	15-3	13-6
34	13 08-5	13 10-7	12 32-6	3-4	3-0	9-4	8-2	15-4	13-5	34	13 23-5	13 25-7	12 46-9	3-4	3-0	9-4	8-4	15-4	13-7
35	13 08-8	13 10-9	12 32-8	3-5	3-1	9-5	8-3	15-5	13-6	35	13 23-8	13 26-0	12 47-1	3-5	3-1	9-5	8-5	15-5	13-8
36	13 09-0	13 11-2	12 33-1	3-6	3-2	9-6	8-4	15-6	13-7	36	13 24-0	13 26-2	12 47-4	3-6	3-2	9-6	8-6	15-6	13-9
37	13 09-3	13 11-4	12 33-3	3-7	3-2	9-7	8-5	15-7	13-7	37	13 24-3	13 26-5	12 47-6	3-7	3-3	9-7	8-6	15-7	14-0
38	13 09-5	13 11-7	12 33-5	3-8	3-3	9-8	8-6	15-8	13-8	38	13 24-5	13 26-7	12 47-9	3-8	3-4	9-8	8-7	15-8	14-1
39	13 09-8	13 11-9	12 33-8	3-9	3-4	9-9	8-7	15-9	13-9	39	13 24-8	13 27-0	12 48-1	3-9	3-5	9-9	8-8	15-9	14-2
40	13 10-0	13 12-2	12 34-0	4-0	3-5	10-0	8-8	16-0	14-0	40	13 25-0	13 27-2	12 48-3	4-0	3-6	10-0	8-9	16-0	14-3
41	13 10-3	13 12-4	12 34-2	4-1	3-6	10-1	8-8	16-1	14-1	41	13 25-3	13 27-5	12 48-6	4-1	3-7	10-1	9-0	16-1	14-4
42	13 10-5	13 12-7	12 34-5	4-2	3-7	10-2	8-9	16-2	14-2	42	13 25-5	13 27-7	12 48-8	4-2	3-7	10-2	9-1	16-2	14-4
43	13 10-8	13 12-9	12 34-7	4-3	3-8	10-3	9-0	16-3	14-3	43	13 25-8	13 28-0	12 49-0	4-3	3-8	10-3	9-2	16-3	14-5
44	13 11-0	13 13-2	12 35-0	4-4	3-9	10-4	9-1	16-4	14-3	44	13 26-0	13 28-2	12 49-3	4-4	3-9	10-4	9-3	16-4	14-6
45	13 11-3	13 13-4	12 35-2	4-5	3-9	10-5	9-2	16-5	14-4	45	13 26-3	13 28-5	12 49-5	4-5	4-0	10-5	9-4	16-5	14-7
46	13 11-5	13 13-7	12 35-4	4-6	4-0	10-6	9-3	16-6	14-5	46	13 26-5	13 28-7	12 49-8	4-6	4-1	10-6	9-5	16-6	14-8
47	13 11-8	13 13-9	12 35-7	4-7	4-1	10-7	9-4	16-7	14-6	47	13 26-8	13 29-0	12 50-0	4-7	4-2	10-7	9-5	16-7	14-9
48	13 12-0	13 14-2	12 35-9	4-8	4-2	10-8	9-5	16-8	14-7	48	13 27-0	13 29-2	12 50-2	4-8	4-3	10-8	9-6	16-8	15-0
49	13 12-3	13 14-4	12 36-2	4-9	4-3	10-9	9-5	16-9	14-8	49	13 27-3	13 29-5	12 50-5	4-9	4-4	10-9	9-7	16-9	15-1
50	13 12-5	13 14-7	12 36-4	5-0	4-4	11-0	9-6	17-0	14-9	50	13 27-5	13 29-7	12 50-7	5-0	4-5	11-0	9-8	17-0	15-2
51	13 12-8	13 14-9	12 36-6	5-1	4-5	11-1	9-7	17-1	15-0	51	13 27-8	13 30-0	12 51-0	5-1	4-5	11-1	9-9	17-1	15-2
52	13 13-0	13 15-2	12 36-9	5-2	4-6	11-2	9-8	17-2	15-1	52	13 28-0	13 30-2	12 51-2	5-2	4-6	11-2	10-0	17-2	15-3
53	13 13-3	13 15-4	12 37-1	5-3	4-6	11-3	9-9	17-3	15-1	53	13 28-3	13 30-5	12 51-4	5-3	4-7	11-3	10-1	17-3	15-4
54	13 13-5	13 15-7	12 37-4	5-4	4-7	11-4	10-0	17-4	15-2	54	13 28-5	13 30-7	12 51-7	5-4	4-8	11-4	10-2	17-4	15-5
55	13 13-8	13 15-9	12 37-6	5-5	4-8	11-5	10-1	17-5	15-3	55	13 28-8	13 31-0	12 51-9	5-5	4-9	11-5	10-3	17-5	15-6
56	13 14-0	13 16-2	12 37-8	5-6	4-9	11-6	10-2	17-6	15-4	56	13 29-0	13 31-2	12 52-1	5-6	5-0	11-6	10-3	17-6	15-7
57	13 14-3	13 16-4	12 38-1	5-7	5-0	11-7	10-2	17-7	15-5	57	13 29-3	13 31-5	12 52-4	5-7	5-1	11-7	10-4	17-7	15-8
58	13 14-5	13 16-7	12 38-3	5-8	5-1	11-8	10-3	17-8	15-6	58	13 29-5	13 31-7	12 52-6	5-8	5-2	11-8	10-5	17-8	15-9
59	13 14-8	13 16-9	12 38-5	5-9	5-2	11-9	10-4	17-9	15-7	59	13 29-8	13 32-0	12 52-9	5-9	5-3	11-9	10-6	17-9	16-0
60	13 15-0	13 17-2	12 38-8	6-0	5-3	12-0	10-5	18-0	15-8	60	13 30-0	13 32-2	12 53-1	6-0	5-4	12-0	10-7	18-0	16-1

^m 54	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	^m 55	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	°	'	°	'	°	'	°	'	°	s	°	'	°	'	°	'	°	'	°
00	13 30-0	13 32-2	12 53-1	0-0	0-0	6-0	5-5	12-0	10-9	00	13 45-0	13 47-3	13 07-4	0-0	0-0	6-0	5-6	12-0	11-1
01	13 30-3	13 32-5	12 53-3	0-1	0-1	6-1	5-5	12-1	11-0	01	13 45-3	13 47-5	13 07-7	0-1	0-1	6-1	5-6	12-1	11-2
02	13 30-5	13 32-7	12 53-6	0-2	0-2	6-2	5-6	12-2	11-1	02	13 45-5	13 47-8	13 07-9	0-2	0-2	6-2	5-7	12-2	11-3
03	13 30-8	13 33-0	12 53-8	0-3	0-3	6-3	5-7	12-3	11-2	03	13 45-8	13 48-0	13 08-1	0-3	0-3	6-3	5-8	12-3	11-4
04	13 31-0	13 33-2	12 54-1	0-4	0-4	6-4	5-8	12-4	11-3	04	13 46-0	13 48-3	13 08-4	0-4	0-4	6-4	5-9	12-4	11-5
05	13 31-3	13 33-5	12 54-3	0-5	0-5	6-5	5-9	12-5	11-4	05	13 46-3	13 48-5	13 08-6	0-5	0-5	6-5	6-0	12-5	11-6
06	13 31-5	13 33-7	12 54-5	0-6	0-5	6-6	6-0	12-6	11-4	06	13 46-5	13 48-8	13 08-8	0-6	0-6	6-6	6-1	12-6	11-7
07	13 31-8	13 34-0	12 54-8	0-7	0-6	6-7	6-1	12-7	11-5	07	13 46-8	13 49-0	13 09-1	0-7	0-6	6-7	6-2	12-7	11-7
08	13 32-0	13 34-2	12 55-0	0-8	0-7	6-8	6-2	12-8	11-6	08	13 47-0	13 49-3	13 09-3	0-8	0-7	6-8	6-3	12-8	11-8
09	13 32-3	13 34-5	12 55-2	0-9	0-8	6-9	6-3	12-9	11-7	09	13 47-3	13 49-5	13 09-6	0-9	0-8	6-9	6-4	12-9	11-9
10	13 32-5	13 34-7	12 55-5	1-0	0-9	7-0	6-4	13-0	11-8	10	13 47-5	13 49-8	13 09-8	1-0	0-9	7-0	6-5	13-0	12-0
11	13 32-8	13 35-0	12 55-7	1-1	1-0	7-1	6-4	13-1	11-9	11	13 47-8	13 50-0	13 10-0	1-1	1-0	7-1	6-6	13-1	12-1
12	13 33-0	13 35-2	12 56-0	1-2	1-1	7-2	6-5	13-2	12-0	12	13 48-0	13 50-3	13 10-3	1-2	1-1	7-2	6-7	13-2	12-2
13	13 33-3	13 35-5	12 56-2	1-3	1-2	7-3	6-6	13-3	12-1	13	13 48-3	13 50-5	13 10-5	1-3	1-2	7-3	6-8	13-3	12-3
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60	13 45-0	13 47-3	13 07-4	6-0	5-5	12-0	10-9	18-0	16-4	60	14 00-0	14 02-3	13 21-7	6-0	5-6	12-0	11-1	18-0	16-7

56 ^m	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	°	°	°	°	°	°	°	°	°
00	14 00:0	14 02:3	13 21:7	0:0	0:0	6:0	5:7	12:0	11:3
01	14 00:3	14 02:6	13 22:0	0:1	0:1	6:1	5:7	12:1	11:4
02	14 00:5	14 02:8	13 22:2	0:2	0:2	6:2	5:8	12:2	11:5
03	14 00:8	14 03:1	13 22:4	0:3	0:3	6:3	5:9	12:3	11:6
04	14 01:0	14 03:3	13 22:7	0:4	0:4	6:4	6:0	12:4	11:7
05	14 01:3	14 03:6	13 22:9	0:5	0:5	6:5	6:1	12:5	11:8
06	14 01:5	14 03:8	13 23:2	0:6	0:6	6:6	6:2	12:6	11:9
07	14 01:8	14 04:1	13 23:4	0:7	0:7	6:7	6:3	12:7	12:0
08	14 02:0	14 04:3	13 23:6	0:8	0:8	6:8	6:4	12:8	12:1
09	14 02:3	14 04:6	13 23:9	0:9	0:8	6:9	6:5	12:9	12:1
10	14 02:5	14 04:8	13 24:1	1:0	0:9	7:0	6:6	13:0	12:2
11	14 02:8	14 05:1	13 24:4	1:1	1:0	7:1	6:7	13:1	12:3
12	14 03:0	14 05:3	13 24:6	1:2	1:1	7:2	6:8	13:2	12:4
13	14 03:3	14 05:6	13 24:8	1:3	1:2	7:3	6:9	13:3	12:5
14	14 03:5	14 05:8	13 25:1	1:4	1:3	7:4	7:0	13:4	12:6
15	14 03:8	14 06:1	13 25:3	1:5	1:4	7:5	7:1	13:5	12:7
16	14 04:0	14 06:3	13 25:6	1:6	1:5	7:6	7:2	13:6	12:8
17	14 04:3	14 06:6	13 25:8	1:7	1:6	7:7	7:3	13:7	12:9
18	14 04:5	14 06:8	13 26:0	1:8	1:7	7:8	7:3	13:8	13:0
19	14 04:8	14 07:1	13 26:3	1:9	1:8	7:9	7:4	13:9	13:1
20	14 05:0	14 07:3	13 26:5	2:0	1:9	8:0	7:5	14:0	13:2
21	14 05:3	14 07:6	13 26:7	2:1	2:0	8:1	7:6	14:1	13:3
22	14 05:5	14 07:8	13 27:0	2:2	2:1	8:2	7:7	14:2	13:4
23	14 05:8	14 08:1	13 27:2	2:3	2:2	8:3	7:8	14:3	13:5
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29	14 07:3	14 09:6	13 28:7	2:9	2:7	8:9	8:4	14:9	14:0
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42	14 10:5	14 12:8	13 31:8	4:2	4:0	10:2	9:6	16:2	15:3
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59	14 14:8	14 17:1	13 35:8	5:9	5:6	11:9	11:2	17:9	16:9
60	14 15:0	14 17:3	13 36:1	6:0	5:7	12:0	11:3	18:0	17:0

m 57	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	° /	° /	° /	/	/	/	/	/	/
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01	14 15:3	14 17:6	13 36:3	0:1	0:1	6:1	5:8	12:1	11:6
02	14 15:5	14 17:8	13 36:5	0:2	0:2	6:2	5:9	12:2	11:7
03	14 15:8	14 18:1	13 36:8	0:3	0:3	6:3	6:0	12:3	11:8
04	14 16:0	14 18:3	13 37:0	0:4	0:4	6:4	6:1	12:4	11:9
05	14 16:3	14 18:6	13 37:2	0:5	0:5	6:5	6:2	12:5	12:0
06	14 16:5	14 18:8	13 37:5	0:6	0:6	6:6	6:3	12:6	12:1
07	14 16:8	14 19:1	13 37:7	0:7	0:7	6:7	6:4	12:7	12:2
08	14 17:0	14 19:3	13 38:0	0:8	0:8	6:8	6:5	12:8	12:3
09	14 17:3	14 19:6	13 38:2	0:9	0:9	6:9	6:6	12:9	12:4
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11	14 17:8	14 20:1	13 38:7	1:1	1:1	7:1	6:8	13:1	12:6
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23	14 20:8	14 23:1	13 41:5	2:3	2:2	8:3	8:0	14:3	13:7
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32	14 23:0	14 25:4	13 43:7	3:2	3:1	9:2	8:8	15:2	14:6
33	14 23:3	14 25:6	13 43:9	3:3	3:2	9:3	8:9	15:3	14:7
34	14 23:5	14 25:9	13 44:2	3:4	3:3	9:4	9:0	15:4	14:8
35	14 23:8	14 26:1	13 44:4	3:5	3:4	9:5	9:1	15:5	14:9
36	14 24:0	14 26:4	13 44:6	3:6	3:5	9:6	9:2	15:6	15:0
37	14 24:3	14 26:6	13 44:9	3:7	3:5	9:7	9:3	15:7	15:0
38	14 24:5	14 26:9	13 45:1	3:8	3:6	9:8	9:4	15:8	15:1
39	14 24:8	14 27:1	13 45:4	3:9	3:7	9:9	9:5	15:9	15:2
40	14 25:0	14 27:4	13 45:6	4:0	3:8	10:0	9:6	16:0	15:3
41	14 25:3	14 27:6	13 45:8	4:1	3:9	10:1	9:7	16:1	15:4
42	14 25:5	14 27:9	13 46:1	4:2	4:0	10:2	9:8	16:2	15:5
43	14 25:8	14 28:1	13 46:3	4:3	4:1	10:3	9:9	16:3	15:6
44	14 26:0	14 28:4	13 46:5	4:4	4:2	10:4	10:0	16:4	15:7
45	14 26:3	14 28:6	13 46:8	4:5	4:3	10:5	10:1	16:5	15:8
46	14 26:5	14 28:9	13 47:0	4:6	4:4	10:6	10:2	16:6	15:9
47	14 26:8	14 29:1	13 47:3	4:7	4:5	10:7	10:3	16:7	16:0
48	14 27:0	14 29:4	13 47:5	4:8	4:6	10:8	10:4	16:8	16:1
49	14 27:3	14 29:6	13 47:7	4:9	4:7	10:9	10:4	16:9	16:2
50	14 27:5	14 29:9	13 48:0	5:0	4:8	11:0	10:5	17:0	16:3
51	14 27:8	14 30:1	13 48:2	5:1	4:9	11:1	10:6	17:1	16:4
52	14 28:0	14 30:4	13 48:5	5:2	5:0	11:2	10:7	17:2	16:5
53	14 28:3	14 30:6	13 48:7	5:3	5:1	11:3	10:8	17:3	16:6
54	14 28:5	14 30:9	13 48:9	5:4	5:2	11:4	10:9	17:4	16:7
55	14 28:8	14 31:1	13 49:2	5:5	5:3	11:5	11:0	17:5	16:8
56	14 29:0	14 31:4	13 49:4	5:6	5:4	11:6	11:1	17:6	16:9
57	14 29:3	14 31:6	13 49:7	5:7	5:5	11:7	11:2	17:7	17:0
58	14 29:5	14 31:9	13 49:9	5:8	5:6	11:8	11:3	17:8	17:1
59	14 29:8	14 32:1	13 50:1	5:9	5:7	11:9	11:4	17:9	17:2
60	14 30:0	14 32:4	13 50:4	6:0	5:8	12:0	11:5	18:0	17:3

^m 58	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.	^m 59	SOL PLANETAS	ARIES	LUNA	v ° d	Corr.	v ° d	Corr.	v ° d	Corr.
s	°	'	°	'	°	'	°	'	°	s	°	'	°	'	°	'	°	'	°
00	14 30.0	14 32.4	13 50.4	0.0	0.0	6.0	5.9	12.0	11.7	00	14 45.0	14 47.4	14 04.7	0.0	0.0	6.0	6.0	12.0	11.9
01	14 30.3	14 32.6	13 50.6	0.1	0.1	6.1	5.9	12.1	11.8	01	14 45.3	14 47.7	14 04.9	0.1	0.1	6.1	6.0	12.1	12.0
02	14 30.5	14 32.9	13 50.8	0.2	0.2	6.2	6.0	12.2	11.9	02	14 45.5	14 47.9	14 05.2	0.2	0.2	6.2	6.1	12.2	12.1
03	14 30.8	14 33.1	13 51.1	0.3	0.3	6.3	6.1	12.3	12.0	03	14 45.8	14 48.2	14 05.4	0.3	0.3	6.3	6.2	12.3	12.2
04	14 31.0	14 33.4	13 51.3	0.4	0.4	6.4	6.2	12.4	12.1	04	14 46.0	14 48.4	14 05.6	0.4	0.4	6.4	6.3	12.4	12.3
05	14 31.3	14 33.6	13 51.6	0.5	0.5	6.5	6.3	12.5	12.2	05	14 46.3	14 48.7	14 05.9	0.5	0.5	6.5	6.4	12.5	12.4
06	14 31.5	14 33.9	13 51.8	0.6	0.6	6.6	6.4	12.6	12.3	06	14 46.5	14 48.9	14 06.1	0.6	0.6	6.6	6.5	12.6	12.5
07	14 31.8	14 34.1	13 52.0	0.7	0.7	6.7	6.5	12.7	12.4	07	14 46.8	14 49.2	14 06.4	0.7	0.7	6.7	6.6	12.7	12.6
08	14 32.0	14 34.4	13 52.3	0.8	0.8	6.8	6.6	12.8	12.5	08	14 47.0	14 49.4	14 06.6	0.8	0.8	6.8	6.7	12.8	12.7
09	14 32.3	14 34.6	13 52.5	0.9	0.9	6.9	6.7	12.9	12.6	09	14 47.3	14 49.7	14 06.8	0.9	0.9	6.9	6.8	12.9	12.8
10	14 32.5	14 34.9	13 52.8	1.0	1.0	7.0	6.8	13.0	12.7	10	14 47.5	14 49.9	14 07.1	1.0	1.0	7.0	6.9	13.0	12.9
11	14 32.8	14 35.1	13 53.0	1.1	1.1	7.1	6.9	13.1	12.8	11	14 47.8	14 50.2	14 07.3	1.1	1.1	7.1	7.0	13.1	13.0
12	14 33.0	14 35.4	13 53.2	1.2	1.2	7.2	7.0	13.2	12.9	12	14 48.0	14 50.4	14 07.5	1.2	1.2	7.2	7.1	13.2	13.1
13	14 33.3	14 35.6	13 53.5	1.3	1.3	7.3	7.1	13.3	13.0	13	14 48.3	14 50.7	14 07.8	1.3	1.3	7.3	7.2	13.3	13.2
14	14 33.5	14 35.9	13 53.7	1.4	1.4	7.4	7.2	13.4	13.1	14	14 48.5	14 50.9	14 08.0	1.4	1.4	7.4	7.3	13.4	13.3
15	14 33.8	14 36.1	13 53.9	1.5	1.5	7.5	7.3	13.5	13.2	15	14 48.8	14 51.2	14 08.3	1.5	1.5	7.5	7.4	13.5	13.4
16	14 34.0	14 36.4	13 54.2	1.6	1.6	7.6	7.4	13.6	13.3	16	14 49.0	14 51.4	14 08.5	1.6	1.6	7.6	7.5	13.6	13.5
17	14 34.3	14 36.6	13 54.4	1.7	1.7	7.7	7.5	13.7	13.4	17	14 49.3	14 51.7	14 08.7	1.7	1.7	7.7	7.6	13.7	13.6
18	14 34.5	14 36.9	13 54.7	1.8	1.8	7.8	7.6	13.8	13.5	18	14 49.5	14 51.9	14 09.0	1.8	1.8	7.8	7.7	13.8	13.7
19	14 34.8	14 37.1	13 54.9	1.9	1.9	7.9	7.7	13.9	13.6	19	14 49.8	14 52.2	14 09.2	1.9	1.9	7.9	7.8	13.9	13.8
20	14 35.0	14 37.4	13 55.1	2.0	2.0	8.0	7.8	14.0	13.7	20	14 50.0	14 52.4	14 09.5	2.0	2.0	8.0	7.9	14.0	13.9
21	14 35.3	14 37.6	13 55.4	2.1	2.0	8.1	7.9	14.1	13.7	21	14 50.3	14 52.7	14 09.7	2.1	2.1	8.1	8.0	14.1	14.0
22	14 35.5	14 37.9	13 55.6	2.2	2.1	8.2	8.0	14.2	13.8	22	14 50.5	14 52.9	14 09.9	2.2	2.2	8.2	8.1	14.2	14.1
23	14 35.8	14 38.1	13 55.9	2.3	2.2	8.3	8.1	14.3	13.9	23	14 50.8	14 53.2	14 10.2	2.3	2.3	8.3	8.2	14.3	14.2
24	14 36.0	14 38.4	13 56.1	2.4	2.3	8.4	8.2	14.4	14.0	24	14 51.0	14 53.4	14 10.4	2.4	2.4	8.4	8.3	14.4	14.3
25	14 36.3	14 38.6	13 56.3	2.5	2.4	8.5	8.3	14.5	14.1	25	14 51.3	14 53.7	14 10.6	2.5	2.5	8.5	8.4	14.5	14.4
26	14 36.5	14 38.9	13 56.6	2.6	2.5	8.6	8.4	14.6	14.2	26	14 51.5	14 53.9	14 10.9	2.6	2.6	8.6	8.5	14.6	14.5
27	14 36.8	14 39.2	13 56.8	2.7	2.6	8.7	8.5	14.7	14.3	27	14 51.8	14 54.2	14 11.1	2.7	2.7	8.7	8.6	14.7	14.6
28	14 37.0	14 39.4	13 57.0	2.8	2.7	8.8	8.6	14.8	14.4	28	14 52.0	14 54.4	14 11.4	2.8	2.8	8.8	8.7	14.8	14.7
29	14 37.3	14 39.7	13 57.3	2.9	2.8	8.9	8.7	14.9	14.5	29	14 52.3	14 54.7	14 11.6	2.9	2.9	8.9	8.8	14.9	14.8
30	14 37.5	14 39.9	13 57.5	3.0	2.9	9.0	8.8	15.0	14.6	30	14 52.5	14 54.9	14 11.8	3.0	3.0	9.0	8.9	15.0	14.9
31	14 37.8	14 40.2	13 57.8	3.1	3.0	9.1	8.9	15.1	14.7	31	14 52.8	14 55.2	14 12.1	3.1	3.1	9.1	9.0	15.1	15.0
32	14 38.0	14 40.4	13 58.0	3.2	3.1	9.2	9.0	15.2	14.8	32	14 53.0	14 55.4	14 12.3	3.2	3.2	9.2	9.1	15.2	15.1
33	14 38.3	14 40.7	13 58.2	3.3	3.2	9.3	9.1	15.3	14.9	33	14 53.3	14 55.7	14 12.6	3.3	3.3	9.3	9.2	15.3	15.2
34	14 38.5	14 40.9	13 58.5	3.4	3.3	9.4	9.2	15.4	15.0	34	14 53.5	14 55.9	14 12.8	3.4	3.4	9.4	9.3	15.4	15.3
35	14 38.8	14 41.2	13 58.7	3.5	3.4	9.5	9.3	15.5	15.1	35	14 53.8	14 56.2	14 13.0	3.5	3.5	9.5	9.4	15.5	15.4
36	14 39.0	14 41.4	13 59.0	3.6	3.5	9.6	9.4	15.6	15.2	36	14 54.0	14 56.4	14 13.3	3.6	3.6	9.6	9.5	15.6	15.5
37	14 39.3	14 41.7	13 59.2	3.7	3.6	9.7	9.5	15.7	15.3	37	14 54.3	14 56.7	14 13.5	3.7	3.7	9.7	9.6	15.7	15.6
38	14 39.5	14 41.9	13 59.4	3.8	3.7	9.8	9.6	15.8	15.4	38	14 54.5	14 56.9	14 13.8	3.8	3.8	9.8	9.7	15.8	15.7
39	14 39.8	14 42.2	13 59.7	3.9	3.8	9.9	9.7	15.9	15.5	39	14 54.8	14 57.2	14 14.0	3.9	3.9	9.9	9.8	15.9	15.8
40	14 40.0	14 42.4	13 59.9	4.0	3.9	10.0	9.8	16.0	15.6	40	14 55.0	14 57.5	14 14.2	4.0	4.0	10.0	9.9	16.0	15.9
41	14 40.3	14 42.7	14 00.1	4.1	4.0	10.1	9.8	16.1	15.7	41	14 55.3	14 57.7	14 14.5	4.1	4.1	10.1	10.0	16.1	16.0
42	14 40.5	14 42.9	14 00.4	4.2	4.1	10.2	9.9	16.2	15.8	42	14 55.5	14 58.0	14 14.7	4.2	4.2	10.2	10.1	16.2	16.1
43	14 40.8	14 43.2	14 00.6	4.3	4.2	10.3	10.0	16.3	15.9	43	14 55.8	14 58.2	14 14.9	4.3	4.3	10.3	10.2	16.3	16.2
44	14 41.0	14 43.4	14 00.9	4.4	4.3	10.4	10.1	16.4	16.0	44	14 56.0	14 58.5	14 15.2	4.4	4.4	10.4	10.3	16.4	16.3
45	14 41.3	14 43.7	14 01.1	4.5	4.4	10.5	10.2	16.5	16.1	45	14 56.3	14 58.7	14 15.4	4.5	4.5	10.5	10.4	16.5	16.4
46	14 41.5	14 43.9	14 01.3	4.6	4.5	10.6	10.3	16.6	16.2	46	14 56.5	14 59.0	14 15.7	4.6	4.6	10.6	10.5	16.6	16.5
47	14 41.8	14 44.2	14 01.6	4.7	4.6	10.7	10.4	16.7	16.3	47	14 56.8	14 59.2	14 15.9	4.7	4.7	10.7	10.6	16.7	16.6
48	14 42.0	14 44.4	14 01.8	4.8	4.7	10.8	10.5	16.8	16.4	48	14 57.0	14 59.5	14 16.1	4.8	4.8	10.8	10.7	16.8	16.7
49	14 42.3	14 44.7	14 02.1	4.9	4.8	10.9	10.6	16.9	16.5	49	14 57.3	14 59.7	14 16.4	4.9	4.9	10.9	10.8	16.9	16.8
50	14 42.5	14 44.9	14 02.3	5.0	4.9	11.0	10.7	17.0	16.6	50	14 57.5	15 00.0	14 16.6	5.0	5.0	11.0	10.9	17.0	16.9
51	14 42.8	14 45.2	14 02.5	5.1	5.0	11.1	10.8	17.1	16.7	51	14 57.8	15 00.2	14 16.9	5.1	5.1	11.1	11.0	17.1	17.0
52	14 43.0	14 45.4	14 02.8	5.2	5.1	11.2	10.9	17.2	16.8	52	14 58.0	15 00.5	14 17.1	5.2	5.2	11.2	11.1	17.2	17.1
53	14 43.3	14 45.7	14 03.0	5.3	5.2	11.3	11.0	17.3	16.9	53	14 58.3	15 00.7	14 17.3	5.3	5.3	11.3	11.2	17.3	17.2
54	14 43.5	14 45.9	14 03.3	5.4	5.3	11.4	11.1	17.4	17.0	54	14 58.5	15 01.0	14 17.6	5.4	5.4	11.4	11.3	17.4	17.3
55	14 43.8	14 46.2	14 03.5	5.5	5.4	11.5	11.2	17.5	17.1	55	14 58.8	15 01.2	14 17.8	5.5	5.5	11.5	11.4	17.5	17.4
56	14 44.0	14 46.4	14 03.7	5.6	5.5	11.6	11.3	17.6	17.2	56	14 59.0	15 01.5	14 18.0	5.6	5.6	11.6	11.5	17.6	17.5
57	14 44.3	14 46.7	14 04.0	5.7	5.6	11.7	11.4	17.7	17.3	57	14 59.3	15 01.7	14 18.3	5.7	5.7	11.7	11.6	17.7	17.6
58	14 44.5	14 46.9	14 04.2	5.8	5.7	11.8	11.5	17.8	17.4	58	14 59.5	15 02.0	14 18.5	5.8	5.8	11.8	11.7	17.8	17.7
59	14 44.8	14 47.2	14 04.4	5.9	5.8	11.9	11.6	17.9	17.5	59	14 59.8	15 02.2	14 18.8	5.9	5.9	11.9	11.8	17.9	17.8
60	14 45.0	14 47.4	14 04.7	6.0	5.9	12.0	11.7	18.0	17.6	60	15 00.0	15 02.5	14 19.0	6.0	6.0	12.0	11.9	18.0	17.9

TABLAS PARA INTERPOLAR ORTOS DE SOL, ORTOS DE LA LUNA, ETC.

TABLA I — POR LATITUD

Intervalo Tabular			Diferencia entre los tiempos para latitudes consecutivas															
10°	5°	2°	5 ^m	10 ^m	15 ^m	20 ^m	25 ^m	30 ^m	35 ^m	40 ^m	45 ^m	50 ^m	55 ^m	60 ^m	1 ^h 05 ^m	1 ^h 10 ^m	1 ^h 15 ^m	1 ^h 20 ^m
0 30	0 15	0 06	0	0	0	1	1	1	1	2	2	2	2	2	0 02	0 02	0 02	0 02
1 00	0 30	0 12	0	1	1	2	2	3	3	3	4	4	4	5	05	05	05	05
1 30	0 45	0 18	1	1	2	3	3	4	4	5	5	6	7	7	07	07	07	07
2 00	1 00	0 24	1	2	3	4	5	5	6	7	7	8	9	10	10	10	10	10
2 30	1 15	0 30	1	2	4	5	6	7	8	9	9	10	11	12	12	13	13	13
3 00	1 30	0 36	1	3	4	6	7	8	9	10	11	12	13	14	0 15	0 15	0 16	0 16
3 30	1 45	0 42	2	3	5	7	8	10	11	12	13	14	16	17	18	18	19	19
4 00	2 00	0 48	2	4	6	8	9	11	13	14	15	16	18	19	20	21	22	22
4 30	2 15	0 54	2	4	7	9	11	13	15	16	18	19	21	22	23	24	25	26
5 00	2 30	1 00	2	5	7	10	12	14	16	18	20	22	23	25	26	27	28	29
5 30	2 45	1 06	3	5	8	11	13	16	18	20	22	24	26	28	0 29	0 30	0 31	0 32
6 00	3 00	1 12	3	6	9	12	14	17	20	22	24	26	29	31	32	33	34	36
6 30	3 15	1 18	3	6	10	13	16	19	22	24	26	29	31	34	36	37	38	40
7 00	3 30	1 24	3	7	10	14	17	20	23	26	29	31	34	37	39	41	42	44
7 30	3 45	1 30	4	7	11	15	18	22	25	28	31	34	37	40	43	44	46	48
8 00	4 00	1 36	4	8	12	16	20	23	27	30	34	37	41	44	0 47	0 48	0 51	0 53
8 30	4 15	1 42	4	8	13	17	21	25	29	33	36	40	44	48	0 51	0 53	0 56	0 58
9 00	4 30	1 48	4	9	13	18	22	27	31	35	39	43	47	52	0 55	0 58	1 01	1 04
9 30	4 45	1 54	5	9	14	19	24	28	33	38	42	47	51	56	1 00	1 04	1 08	1 12
10 00	5 00	2 00	5	10	15	20	25	30	35	40	45	50	55	60	1 05	1 10	1 15	1 20

La Tabla I se usa para interpolar por latitud la Hml del orto de Sol, crepúsculo, orto de la Luna, etc. Debe entrarse en la columna apropiada de la izquierda con la diferencia entre la latitud verdadera y la latitud tabulada más próxima, la cual es menor que la latitud verdadera, el otro argumento de entrada —en la parte superior— es el valor más próximo de la diferencia de las horas de la latitud tabular y la siguiente superior. La corrección así obtenida se aplica a la hora de la latitud tabular; el signo de la corrección puede determinarse por inspección. Nótese que la interpolación no es lineal, de manera que cuando se usa la tabla, es esencial tomar el dato tabular para la latitud *inferior* al de la latitud verdadera.

TABLA II — POR LONGITUD

Long. Este u Oeste	Diferencia entre las horas para la fecha dada y la fecha inmediatamente anterior (para longitudes este) o para la fecha dada y la inmediata posterior (para longitudes oeste).															
	10 ^m	20 ^m	30 ^m	40 ^m	50 ^m	60 ^m	1 ^h 0 ^m	1 ^h 10 ^m	1 ^h 20 ^m	1 ^h 30 ^m	1 ^h 40 ^m	1 ^h 50 ^m	2 ^h 00 ^m	2 ^h 10 ^m	2 ^h 20 ^m	2 ^h 30 ^m
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	1	1	1	1	2	2	2	3	3	3	04	04	04	04	05
20	1	1	2	2	3	3	4	4	5	6	6	07	08	08	09	10
30	1	2	2	3	4	5	6	7	7	8	9	10	11	12	12	13
40	1	2	3	4	6	7	8	9	10	11	12	13	14	16	17	18
50	1	3	4	6	7	8	10	11	12	14	15	17	0 18	0 19	0 21	0 22
60	2	3	5	7	8	10	12	13	15	17	18	20	22	23	25	27
70	2	4	6	8	10	12	14	16	17	19	21	23	25	27	29	31
80	2	4	7	9	11	13	16	18	20	22	24	27	29	31	33	36
90	2	5	7	10	12	15	17	20	22	25	27	30	32	35	37	40
100	3	6	8	11	14	17	19	22	25	28	31	33	0 36	0 39	0 42	0 44
110	3	6	9	12	15	18	21	24	27	31	34	37	40	43	46	49
120	3	7	10	13	17	20	23	27	30	33	37	40	43	47	50	53
130	4	7	11	14	18	22	25	29	32	36	40	43	47	51	54	0 58
140	4	8	12	16	19	23	27	31	35	39	43	47	51	54	0 58	1 02
150	4	8	13	17	21	25	29	33	38	42	46	50	0 54	0 58	1 03	1 07
160	4	9	13	18	22	27	31	36	40	44	49	53	0 58	1 02	1 07	1 11
170	5	9	14	19	24	28	33	38	42	47	52	57	1 01	1 06	1 11	1 16
180	5	10	15	20	25	30	35	40	45	50	55	60	1 05	1 10	1 15	1 20

La Tabla II se usa para interpolar por longitud la Hml del orto y ocaso de la Luna y del paso de la Luna por el meridiano. Se entra a la tabla con la longitud y con la diferencia entre las horas para la fecha dada y la fecha inmediatamente anterior (en longitudes E) o la fecha inmediatamente posterior (en longitudes W). Normalmente, la corrección se *suma* en las longitudes W y se *resta* en las longitudes E, pero si, como ocurre ocasionalmente, las horas aparecen más temprano cada día en lugar de más tarde, los signos de la corrección deben invertirse.

ÍNDICE DE ESTRELLAS SELECCIONADAS, 2014

Nombre	Nº	Mag	AHS	Dec	Nº	Nombre	Constelación
<i>Acamar</i>	7	3.2	315	S 40	1	<i>Alpheratz</i>	α <i>Andromedae</i>
<i>Achernar</i>	5	0.5	335	S 57	2	<i>Ankaa</i>	α <i>Phoenicis</i>
<i>Acrux</i>	30	1.3	173	S 63	3	<i>Schedar</i>	α <i>Cassiopeiae</i>
<i>Adhara</i>	19	1.5	255	S 29	4	<i>Diphda</i>	β <i>Ceti</i>
<i>Aldebarán</i>	10	0.9	291	N 17	5	<i>Achernar</i>	α <i>Eridani</i>
<i>Alioth</i>	32	1.8	166	N 56	6	<i>Hamal</i>	α <i>Arietis</i>
<i>Alkaid</i>	34	1.9	153	N 49	7	<i>Acamar</i>	θ <i>Eridani</i>
<i>Al Na'ir</i>	55	1.7	28	S 47	8	<i>Menkar</i>	α <i>Ceti</i>
<i>Alnilam</i>	15	1.7	276	S 1	9	<i>Mirfak</i>	α <i>Persei</i>
<i>Alphard</i>	25	2.0	218	S 9	10	<i>Aldebarán</i>	α <i>Tauri</i>
<i>Alphecca</i>	41	2.2	126	N 27	11	<i>Rigel</i>	β <i>Orionis</i>
<i>Alpheratz</i>	1	2.1	358	N 29	12	<i>Capella</i>	α <i>Aurigae</i>
<i>Altair</i>	51	0.8	62	N 9	13	<i>Bellatrix</i>	γ <i>Orionis</i>
<i>Ankaa</i>	2	2.4	353	S 42	14	<i>Elnath</i>	β <i>Tauri</i>
<i>Antares</i>	42	1.0	112	S 26	15	<i>Alnilam</i>	ε <i>Orionis</i>
<i>Arcturus</i>	37	0.0	146	N 19	16	<i>Betelgeuse</i>	α <i>Orionis</i>
<i>Atria</i>	43	1.9	107	S 69	17	<i>Canopus</i>	α <i>Carinae</i>
<i>Avior</i>	22	1.9	234	S 60	18	<i>Sirius</i>	α <i>Canis Majoris</i>
<i>Bellatrix</i>	13	1.6	279	N 6	19	<i>Adhara</i>	ε <i>Canis Majoris</i>
<i>Betelgeuse</i>	16	Var.*	271	N 7	20	<i>Procyon</i>	α <i>Canis Minoris</i>
<i>Canopus</i>	17	-0.7	264	S 53	21	<i>Póllux</i>	β <i>Geminorum</i>
<i>Capella</i>	12	0.1	281	N 46	22	<i>Avior</i>	ε <i>Carinae</i>
<i>Deneb</i>	53	1.3	50	N 45	23	<i>Suhail</i>	λ <i>Velorum</i>
<i>Denébola</i>	28	2.1	183	N 14	24	<i>Miaplacidus</i>	β <i>Carinae</i>
<i>Diphda</i>	4	2.0	349	S 18	25	<i>Alphard</i>	α <i>Hydrae</i>
<i>Dubhe</i>	27	1.8	194	N 62	26	<i>Régulus</i>	α <i>Leonis</i>
<i>Elnath</i>	14	1.7	278	N 29	27	<i>Dubhe</i>	α <i>Ursae Majoris</i>
<i>Eltanin</i>	47	2.2	91	N 51	28	<i>Denébola</i>	β <i>Leonis</i>
<i>Enif</i>	54	2.4	34	N 10	29	<i>Gienah</i>	γ <i>Corvi</i>
<i>Fomalhaut</i>	56	1.2	15	S 30	30	<i>Acrux</i>	α <i>Crucis</i>
<i>Gacrux</i>	31	1.6	172	S 57	31	<i>Gacrux</i>	γ <i>Crucis</i>
<i>Gienah</i>	29	2.6	176	S 18	32	<i>Alioth</i>	ε <i>Ursae Majoris</i>
<i>Hadar</i>	35	0.6	149	S 60	33	<i>Spica</i>	α <i>Virginis</i>
<i>Hamal</i>	6	2.0	328	N 24	34	<i>Alkaid</i>	η <i>Ursae Majoris</i>
<i>Kaus Australis</i>	48	1.9	84	S 34	35	<i>Hadar</i>	β <i>Centauri</i>
<i>Kochab</i>	40	2.1	137	N 74	36	<i>Menkent</i>	θ <i>Centauri</i>
<i>Markab</i>	57	2.5	14	N 15	37	<i>Arcturus</i>	α <i>Bootis</i>
<i>Menkar</i>	8	2.5	314	N 4	38	<i>Rigil Kentaurus</i>	α <i>Centauri</i>
<i>Menkent</i>	36	2.1	148	S 36	39	<i>Zubenelgenubi</i>	α <i>Librae</i>
<i>Miaplacidus</i>	24	1.7	222	S 70	40	<i>Kochab</i>	β <i>Ursae Minoris</i>
<i>Mirfak</i>	9	1.8	309	N 50	41	<i>Alphecca</i>	α <i>Coronae Bor.</i>
<i>Nunki</i>	50	2.0	76	S 26	42	<i>Antares</i>	α <i>Scorpii</i>
<i>Peacock</i>	52	1.9	53	S 57	43	<i>Atria</i>	α <i>Triang. Aust.</i>
<i>Póllux</i>	21	1.1	243	N 28	44	<i>Sabik</i>	η <i>Ophiuchi</i>
<i>Procyon</i>	20	0.4	245	N 5	45	<i>Shaula</i>	λ <i>Scorpii</i>
<i>Rasalhague</i>	46	2.1	96	N 13	46	<i>Rasalhague</i>	α <i>Ophiuchi</i>
<i>Régulus</i>	26	1.4	208	N 12	47	<i>Eltanin</i>	γ <i>Draconis</i>
<i>Rigel</i>	11	0.1	281	S 8	48	<i>Kaus Australis</i>	ε <i>Sagittarii</i>
<i>Rigil Kentaurus</i>	38	-0.3	140	S 61	49	<i>Vega</i>	α <i>Lyrae</i>
<i>Sabik</i>	44	2.4	102	S 16	50	<i>Nunki</i>	σ <i>Sagittarii</i>
<i>Schedar</i>	3	2.2	350	N 57	51	<i>Altair</i>	α <i>Aquilae</i>
<i>Shaula</i>	45	1.6	96	S 37	52	<i>Peacock</i>	α <i>Pavonis</i>
<i>Sirius</i>	18	-1.5	259	S 17	53	<i>Deneb</i>	α <i>Cygni</i>
<i>Spica</i>	33	1.0	159	S 11	54	<i>Enif</i>	ε <i>Pegasi</i>
<i>Suhail</i>	23	2.2	223	S 43	55	<i>Al Na'ir</i>	α <i>Gruis</i>
<i>Vega</i>	49	0.0	81	N 39	56	<i>Fomalhaut</i>	α <i>Piscis Aust.</i>
<i>Zubenelgenubi</i>	39	2.8	137	S 16	57	<i>Markab</i>	α <i>Pegasi</i>

*0.1 — 1.2

TABLA DE CORRECCIÓN DE ALTURAS 0° - 35° - LUNA

Alt. Ap	0°-4°	5°-9°	10°-14°	15°-19°	20°-24°	25°-29°	30°-34°	Alt. Ap
	Corr.	Corr.	Corr.	Corr.	Corr.	Corr.	Corr.	
00	0° 34'5	5° 58'2	10° 62'1	15° 62'8	20° 62'2	25° 60'8	30° 58'9	00
10	36'5	58'5	62'2	62'8	62'2	60'8	58'8	10
20	38'3	58'7	62'2	62'8	62'1	60'7	58'8	20
30	40'0	58'9	62'3	62'8	62'1	60'7	58'7	30
40	41'5	59'1	62'3	62'8	62'0	60'6	58'6	40
50	42'9	59'3	62'4	62'7	62'0	60'6	58'5	50
00	1° 44'2	6° 59'5	11° 62'4	16° 62'7	21° 62'0	26° 60'5	31° 58'5	00
10	45'4	59'7	62'4	62'7	61'9	60'4	58'4	10
20	46'5	59'9	62'5	62'7	61'9	60'4	58'3	20
30	47'5	60'0	62'5	62'7	61'9	60'3	58'2	30
40	48'4	60'2	62'5	62'7	61'8	60'3	58'2	40
50	49'3	60'3	62'6	62'7	61'8	60'2	58'1	50
00	2° 50'1	7° 60'5	12° 62'6	17° 62'7	22° 61'7	27° 60'1	32° 58'0	00
10	50'8	60'6	62'6	62'6	61'7	60'1	57'9	10
20	51'5	60'7	62'6	62'6	61'6	60'0	57'8	20
30	52'2	60'9	62'7	62'6	61'6	59'9	57'8	30
40	52'8	61'0	62'7	62'6	61'6	59'9	57'7	40
50	53'4	61'1	62'7	62'6	61'5	59'8	57'6	50
00	3° 53'9	8° 61'2	13° 62'7	18° 62'5	23° 61'5	28° 59'7	33° 57'5	00
10	54'4	61'3	62'7	62'5	61'4	59'7	57'4	10
20	54'9	61'4	62'7	62'5	61'4	59'6	57'4	20
30	55'3	61'5	62'8	62'5	61'3	59'5	57'3	30
40	55'7	61'6	62'8	62'4	61'3	59'5	57'2	40
50	56'1	61'6	62'8	62'4	61'2	59'4	57'1	50
00	4° 56'4	9° 61'7	14° 62'8	19° 62'4	24° 61'2	29° 59'3	34° 57'0	00
10	56'8	61'8	62'8	62'4	61'1	59'3	56'9	10
20	57'1	61'9	62'8	62'3	61'1	59'2	56'9	20
30	57'4	61'9	62'8	62'3	61'0	59'1	56'8	30
40	57'7	62'0	62'8	62'3	61'0	59'1	56'7	40
50	58'0	62'1	62'8	62'2	60'9	59'0	56'6	50
P.h.	I S	I S	I S	I S	I S	I S	I S	P.h.
54°0	0'3 0'9	0'3 0'9	0'4 1'0	0'5 1'1	0'6 1'2	0'7 1'3	0'9 1'5	54°0
54°3	0'7 1'1	0'7 1'2	0'8 1'2	0'8 1'3	0'9 1'4	1'1 1'5	1'2 1'7	54°3
54°6	1'1 1'4	1'1 1'4	1'1 1'4	1'2 1'5	1'3 1'6	1'4 1'7	1'5 1'8	54°6
54°9	1'4 1'6	1'5 1'6	1'5 1'6	1'6 1'7	1'6 1'8	1'8 1'9	1'9 2'0	54°9
55°2	1'8 1'8	1'8 1'8	1'9 1'8	1'9 1'9	2'0 2'0	2'1 2'1	2'2 2'2	55°2
55°5	2'2 2'0	2'2 2'0	2'3 2'1	2'3 2'1	2'4 2'2	2'4 2'3	2'5 2'4	55°5
55°8	2'6 2'2	2'6 2'2	2'6 2'3	2'7 2'3	2'7 2'4	2'8 2'4	2'9 2'5	55°8
56°1	3'0 2'4	3'0 2'5	3'0 2'5	3'0 2'5	3'1 2'6	3'1 2'6	3'2 2'7	56°1
56°4	3'3 2'7	3'4 2'7	3'4 2'7	3'4 2'7	3'4 2'8	3'5 2'8	3'5 2'9	56°4
56°7	3'7 2'9	3'7 2'9	3'8 2'9	3'8 2'9	3'8 3'0	3'8 3'0	3'9 3'0	56°7
57°0	4'1 3'1	4'1 3'1	4'1 3'1	4'1 3'1	4'2 3'2	4'2 3'2	4'2 3'2	57°0
57°3	4'5 3'3	4'5 3'3	4'5 3'3	4'5 3'3	4'5 3'3	4'5 3'4	4'6 3'4	57°3
57°6	4'9 3'5	4'9 3'5	4'9 3'5	4'9 3'5	4'9 3'5	4'9 3'5	4'9 3'6	57°6
57°9	5'3 3'8	5'3 3'8	5'2 3'8	5'2 3'7	5'2 3'7	5'2 3'7	5'2 3'7	57°9
58°2	5'6 4'0	5'6 4'0	5'6 4'0	5'6 4'0	5'6 3'9	5'6 3'9	5'6 3'9	58°2
58°5	6'0 4'2	6'0 4'2	6'0 4'2	6'0 4'2	6'0 4'1	5'9 4'1	5'9 4'1	58°5
58°8	6'4 4'4	6'4 4'4	6'4 4'4	6'3 4'4	6'3 4'3	6'3 4'3	6'2 4'2	58°8
59°1	6'8 4'6	6'8 4'6	6'7 4'6	6'7 4'6	6'7 4'5	6'6 4'5	6'6 4'4	59°1
59°4	7'2 4'8	7'1 4'8	7'1 4'8	7'1 4'8	7'0 4'7	7'0 4'7	6'9 4'6	59°4
59°7	7'5 5'1	7'5 5'0	7'5 5'0	7'5 5'0	7'4 4'9	7'3 4'8	7'2 4'8	59°7
60°0	7'9 5'3	7'9 5'3	7'9 5'2	7'8 5'2	7'8 5'1	7'7 5'0	7'6 4'9	60°0
60°3	8'3 5'5	8'3 5'5	8'2 5'4	8'2 5'4	8'1 5'3	8'0 5'2	7'9 5'1	60°3
60°6	8'7 5'7	8'7 5'7	8'6 5'7	8'6 5'6	8'5 5'5	8'4 5'4	8'2 5'3	60°6
60°9	9'1 5'9	9'0 5'9	9'0 5'9	8'9 5'8	8'8 5'7	8'7 5'6	8'6 5'4	60°9
61°2	9'5 6'2	9'4 6'1	9'4 6'1	9'3 6'0	9'2 5'9	9'1 5'8	8'9 5'6	61°2
61°5	9'8 6'4	9'8 6'3	9'7 6'3	9'7 6'2	9'5 6'1	9'4 5'9	9'2 5'8	61°5

DEPRESIÓN			
Elev. del ojo	Corr.	Elev. del ojo	Corr.
m		pies	
2'4	-2'8	8'0	9'5
2'6	-2'9	8'6	9'9
2'8	-3'0	9'2	10'3
3'0	-3'1	9'8	10'6
3'2	-3'2	10'5	11'0
3'4	-3'3	11'2	11'4
3'6	-3'4	11'9	11'8
3'8	-3'5	12'6	12'2
4'0	-3'6	13'3	12'6
4'3	-3'7	14'1	13'0
4'5	-3'8	14'9	13'4
4'7	-3'9	15'7	13'8
5'0	-4'0	16'5	14'2
5'2	-4'1	17'4	14'7
5'5	-4'2	18'3	15'1
5'8	-4'3	19'1	15'5
6'1	-4'4	20'1	16'0
6'3	-4'5	21'0	16'5
6'6	-4'6	22'0	16'9
6'9	-4'7	22'9	17'4
7'2	-4'8	23'9	17'9
7'5	-4'9	24'9	18'4
7'9	-5'0	26'0	18'8
8'2	-5'1	27'1	19'3
8'5	-5'2	28'1	19'8
8'8	-5'3	29'2	20'4
9'2	-5'4	30'4	20'9
9'5		31'5	21'4

**TABLA DE CORRECCIÓN
DE LUNA**

La corrección está dividida en dos partes: la primera corrección se toma de la parte superior de la tabla, usando la altura aparente como argumento, y la segunda de la parte inferior, usando el paralaje horizontal (P.h.) como argumento, en la misma columna que se usó para tomar la primera corrección. En la parte inferior se dan correcciones separadas para los limbos inferiores (I) y superiores (S). Todas las correcciones deben **sumarse** a la altura aparente, *pero deben restarse 30' de la altura correspondiente al limbo superior.*

Para correcciones por presión y temperatura ver página A₄.

Para observaciones con sextantes de burbuja, despreciar la depresión, tomar la medida de las correcciones para limbo superior y limbo inferior y restar 15' de la altura.

Alt. Ap. = Altura aparente = Altura sextante corregida por error de índice y depresión.

TABLA DE CORRECCIÓN DE ALTURAS 35° - 90° - LUNA

Alt. Ap	35°-39°	40°-44°	45°-49°	50°-54°	55°-59°	60°-64°	65°-69°	70°-74°	75°-79°	80°-84°	85°-89°	Alt. Ap
	Corr.	Corr.	Corr.	Corr.	Corr.	Corr.	Corr.	Corr.	Corr.	Corr.	Corr.	
/	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	/
00	56'5	53'7	50'5	46'9	43'1	38'9	34'6	30'0	25'3	20'5	15'6	00
10	56'4	53'6	50'4	46'8	42'9	38'8	34'4	29'9	25'2	20'4	15'5	10
20	56'3	53'5	50'2	46'7	42'8	38'7	34'3	29'7	25'0	20'2	15'3	20
30	56'2	53'4	50'1	46'5	42'7	38'5	34'1	29'6	24'9	20'0	15'1	30
40	56'2	53'3	50'0	46'4	42'5	38'4	34'0	29'4	24'7	19'9	15'0	40
50	56'1	53'2	49'9	46'3	42'4	38'2	33'8	29'3	24'5	19'7	14'8	50
00	36°	41°	46°	51°	56°	61°	66°	71°	76°	81°	86°	00
10	55'9	53'0	49'7	46'0	42'1	37'9	33'5	29'0	24'2	19'4	14'5	10
20	55'8	52'9	49'5	45'9	42'0	37'8	33'4	28'8	24'1	19'2	14'3	20
30	55'7	52'8	49'4	45'8	41'9	37'7	33'2	28'7	23'9	19'1	14'2	30
40	55'6	52'6	49'3	45'7	41'7	37'5	33'1	28'5	23'8	18'9	14'0	40
50	55'5	52'5	49'2	45'5	41'6	37'4	32'9	28'3	23'6	18'7	13'8	50
00	37°	42°	47°	52°	57°	62°	67°	72°	77°	82°	87°	00
10	55'3	52'3	49'0	45'3	41'3	37'1	32'6	28'0	23'3	18'4	13'5	10
20	55'2	52'2	48'8	45'2	41'2	36'9	32'5	27'9	23'1	18'2	13'3	20
30	55'1	52'1	48'7	45'0	41'0	36'8	32'3	27'7	22'9	18'1	13'2	30
40	55'0	52'0	48'6	44'9	40'9	36'6	32'2	27'6	22'8	17'9	13'0	40
50	55'0	51'9	48'5	44'8	40'8	36'5	32'0	27'4	22'6	17'8	12'8	50
00	38°	43°	48°	53°	58°	63°	68°	73°	78°	83°	88°	00
10	54'9	51'8	48'4	44'6	40'6	36'4	31'9	27'2	22'5	17'6	12'7	10
20	54'8	51'7	48'3	44'5	40'5	36'2	31'7	27'1	22'3	17'4	12'5	20
30	54'7	51'6	48'1	44'4	40'3	36'1	31'6	26'9	22'1	17'3	12'3	30
40	54'6	51'5	48'0	44'2	40'2	35'9	31'4	26'8	22'0	17'1	12'2	40
50	54'5	51'4	47'9	44'1	40'1	35'8	31'3	26'6	21'8	16'9	12'0	50
00	39°	44°	49°	54°	59°	64°	69°	74°	79°	84°	89°	00
10	54'3	51'1	47'7	43'9	39'8	35'5	31'0	26'3	21'5	16'6	11'7	10
20	54'2	51'0	47'5	43'7	39'6	35'3	30'8	26'1	21'3	16'4	11'5	20
30	54'1	50'9	47'4	43'6	39'5	35'2	30'7	26'0	21'2	16'3	11'4	30
40	54'0	50'8	47'3	43'5	39'4	35'0	30'5	25'8	21'0	16'1	11'2	40
50	53'9	50'7	47'2	43'3	39'2	34'9	30'4	25'7	20'9	16'0	11'0	50
00	53'8	50'6	47'0	43'2	39'1	34'7	30'2	25'5	20'7	15'8	10'9	50
P.h.	I S	I S	I S	I S	I S	I S	I S	I S	I S	I S	I S	P.h.
/	/	/	/	/	/	/	/	/	/	/	/	/
54'0	1'1 1'7	1'3 1'9	1'5 2'1	1'7 2'4	2'0 2'6	2'3 2'9	2'6 3'2	2'9 3'5	3'2 3'8	3'5 4'1	3'8 4'5	54'0
54'3	1'4 1'8	1'6 2'0	1'8 2'2	2'0 2'5	2'2 2'7	2'5 3'0	2'8 3'2	3'1 3'5	3'3 3'8	3'6 4'1	3'9 4'4	54'3
54'6	1'7 2'0	1'9 2'2	2'1 2'4	2'3 2'6	2'5 2'8	2'7 3'0	3'0 3'3	3'2 3'5	3'5 3'8	3'8 4'0	4'0 4'3	54'6
54'9	2'0 2'2	2'2 2'3	2'3 2'5	2'5 2'7	2'7 2'9	2'9 3'1	3'2 3'3	3'4 3'5	3'6 3'8	3'9 4'0	4'1 4'3	54'9
55'2	2'3 2'3	2'5 2'4	2'6 2'6	2'8 2'8	3'0 2'9	3'2 3'1	3'4 3'3	3'6 3'5	3'8 3'7	4'0 4'0	4'2 4'2	55'2
55'5	2'7 2'5	2'8 2'6	2'9 2'7	3'1 2'9	3'2 3'0	3'4 3'2	3'6 3'4	3'7 3'5	3'9 3'7	4'1 3'9	4'3 4'1	55'5
55'8	3'0 2'6	3'1 2'7	3'2 2'8	3'3 3'0	3'5 3'1	3'6 3'3	3'8 3'4	3'9 3'6	4'1 3'7	4'2 3'9	4'4 4'0	55'8
56'1	3'3 2'8	3'4 2'9	3'5 3'0	3'6 3'1	3'7 3'2	3'8 3'3	4'0 3'4	4'1 3'6	4'2 3'7	4'4 3'8	4'5 4'0	56'1
56'4	3'6 2'9	3'7 3'0	3'8 3'1	3'9 3'2	3'9 3'3	4'0 3'4	4'1 3'5	4'3 3'6	4'4 3'7	4'5 3'8	4'6 3'9	56'4
56'7	3'9 3'1	4'0 3'1	4'1 3'2	4'1 3'3	4'2 3'3	4'3 3'4	4'3 3'5	4'4 3'6	4'5 3'7	4'6 3'8	4'7 3'8	56'7
57'0	4'3 3'2	4'3 3'3	4'3 3'3	4'4 3'4	4'4 3'4	4'5 3'5	4'5 3'5	4'6 3'6	4'7 3'6	4'7 3'7	4'8 3'8	57'0
57'3	4'6 3'4	4'6 3'4	4'6 3'4	4'6 3'5	4'7 3'5	4'7 3'5	4'7 3'6	4'8 3'6	4'8 3'6	4'8 3'7	4'9 3'7	57'3
57'6	4'9 3'6	4'9 3'6	4'9 3'6	4'9 3'6	4'9 3'6	4'9 3'6	4'9 3'6	4'9 3'6	5'0 3'6	5'0 3'6	5'0 3'6	57'6
57'9	5'2 3'7	5'2 3'7	5'2 3'7	5'2 3'7	5'2 3'7	5'1 3'6	5'1 3'6	5'1 3'6	5'1 3'6	5'1 3'6	5'1 3'6	57'9
58'2	5'5 3'9	5'5 3'8	5'5 3'8	5'4 3'8	5'4 3'7	5'4 3'7	5'3 3'7	5'3 3'6	5'2 3'6	5'2 3'5	5'2 3'5	58'2
58'5	5'9 4'0	5'8 4'0	5'8 3'9	5'7 3'9	5'6 3'8	5'6 3'8	5'5 3'7	5'5 3'6	5'4 3'6	5'3 3'5	5'3 3'4	58'5
58'8	6'2 4'2	6'1 4'1	6'0 4'1	6'0 4'0	5'9 3'9	5'8 3'8	5'7 3'7	5'6 3'6	5'5 3'5	5'4 3'5	5'3 3'4	58'8
59'1	6'5 4'3	6'4 4'3	6'3 4'2	6'2 4'1	6'1 4'0	6'0 3'9	5'9 3'8	5'8 3'6	5'7 3'5	5'6 3'4	5'4 3'3	59'1
59'4	6'8 4'5	6'7 4'4	6'6 4'3	6'5 4'2	6'4 4'1	6'2 3'9	6'1 3'8	6'0 3'7	5'8 3'5	5'7 3'4	5'5 3'2	59'4
59'7	7'1 4'7	7'0 4'5	6'9 4'4	6'8 4'3	6'6 4'1	6'5 4'0	6'3 3'8	6'1 3'7	6'0 3'5	5'8 3'3	5'6 3'2	59'7
60'0	7'5 4'8	7'3 4'7	7'2 4'5	7'0 4'4	6'9 4'2	6'7 4'0	6'5 3'9	6'3 3'7	6'1 3'5	5'9 3'3	5'7 3'1	60'0
60'3	7'8 5'0	7'6 4'8	7'5 4'7	7'3 4'5	7'1 4'3	6'9 4'1	6'7 3'9	6'5 3'7	6'3 3'5	6'0 3'2	5'8 3'0	60'3
60'6	8'1 5'1	7'9 5'0	7'7 4'8	7'6 4'6	7'3 4'4	7'1 4'2	6'9 3'9	6'7 3'7	6'4 3'4	6'2 3'2	5'9 2'9	60'6
60'9	8'4 5'3	8'2 5'1	8'0 4'9	7'8 4'7	7'6 4'5	7'3 4'2	7'1 4'0	6'8 3'7	6'6 3'4	6'3 3'2	6'0 2'9	60'9
61'2	8'7 5'4	8'5 5'2	8'3 5'0	8'1 4'8	7'8 4'5	7'6 4'3	7'3 4'0	7'0 3'7	6'7 3'4	6'4 3'1	6'1 2'8	61'2
61'5	9'1 5'6	8'8 5'4	8'6 5'1	8'3 4'9	8'1 4'6	7'8 4'3	7'5 4'0	7'2 3'7	6'9 3'4	6'5 3'1	6'2 2'7	61'5



Impreso en los Talleres Gráficos del
Servicio Hidrográfico y Oceanográfico de la Armada de Chile
en el mes de octubre de 2013.

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