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SUPLEMENTO AL

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SOL, PLANETAS Y ESTRELLAS

2025

BUENOS AIRES

INTRODUCCIÓN

Esta efemérides astronómica fue calculada, redactada y compaginada en la División Astronomía del Observatorio Naval Buenos Aires.

Se incluyen en ella datos necesarios para determinar la posición geográfica mediante observaciones astronómicas, como así también tablas de transformaciones, correcciones y equivalencias aplicables a diversos cálculos. Contiene las posiciones aparentes de 324 estrellas fundamentales brillantes, sin incluir en ellas los términos de corto período de la nutación (inferiores a 35 días).

Las notaciones que aparecen en esta edición son las recomendadas en la XXI Asamblea General de la Unión Astronómica Internacional (1991).

La edición 2025 se entrega en formato PDF en la página web http://www.hidro.gov.ar

El formato PDF demanda la instalación del programa Acrobat Reader, que es de libre distribución. Esta versión se recorrerá haciendo uso tanto de los **marcadores**, como así también de las **miniaturas**. Ambos elementos permitirán posicionarse en el tema deseado.

Toda sugerencia con respecto a esta publicación será bien recibida y convenientemente atendida.

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SUPLEMENTO AL ALMANAQUE NÁUTICO Y AERONÁUTICO
ÍNDICE

ESCALAS DE TIEMPO

Se enumeran las diversas escalas de tiempo cuya finalidad primordial ha sido la definición del segundo, algunas de ellas basadas en fenómenos astronómicos y otras en fenómenos físicos.

TIEMPO ATÓMICO INTERNACIONAL (TAI)

Es la coordenada de referencia temporal establecida por el Bureau International des Poids et Mesures (BIPM). Está basado en las lecturas de relojes atómicos que funcionan de conformidad con la definición del segundo del Sistema Internacional de Unidades (SI). Este segundo fue definido en 1967 como *"la duración de 9.192.631.770 períodos de la radiación correspondiente a la transición entre los dos niveles hiperfinos del estado fundamental del átomo de cesio 133".*

TIEMPO DE LAS EFEMÉRIDES (ET)

Actualmente en desuso, esta escala de tiempo fue utilizada entre 1960 y 1983 como argumento temporal de las efemérides de los cuerpos del Sistema Solar. El Tiempo de las Efemérides fue reemplazado por el Tiempo Terrestre (TT) y por el Tiempo Dinámico Baricéntrico (TDB), escalas definidas en el marco de la relatividad general y consideradas una continuación de ET.

TIEMPO DINÁMICO TERRESTRE (TDT) y TIEMPO TERRESTRE (TT)

Tiempo Dinámico Terrestre (TDT) es la escala de tiempo utilizada en las efemérides geocéntricas aparentes de los cuerpos del Sistema Solar y de estrellas desde 1984.

A partir de 1991 se lo denomina Tiempo Terrestre (TT). La relación con el TAI es: $TT=TAI+32^s.184$. La relación con el Tiempo Universal (UT) es ΔT

$$TT = UT + \Delta T$$

cuyos valores están dados en The Astronomical Almanac (extrapolados):

2023 $\Delta T = 69^s$ 2024 $\Delta T = 69^s$ 2025 $\Delta T = 69^s$

TIEMPO DINÁMICO BARICÉNTRICO (TDB)

Es la escala de tiempo utilizada en las efemérides referidas al baricentro del Sistema Solar. En la práctica se determina a partir de TT mediante una fórmula matemática, y difiere en menos de 0.002^s.

TIEMPO SIDÉREO (TS)

El Tiempo Sidéreo es la escala de tiempo definida por el movimiento diurno del equinoccio vernal. El Tiempo Sidéreo Aparente o verdadero se define como el ángulo horario del equinoccio verdadero, y se denomina Tiempo Sidéreo Medio cuando se considera el movimiento del equinoccio medio. La Ecuación de los Equinoccios representa la diferencia entre el Tiempo Sidéreo Aparente y el Tiempo Sidéreo Medio. Prescindiendo del movimiento del equinoccio debido a la precesión y a la nutación, esta escala de tiempo es una medida directa del movimiento de rotación de la Tierra con respecto a las estrellas.

TIEMPO UNIVERSAL (UT)

El Tiempo Universal es la escala de tiempo que se aproxima al movimiento diurno medio del Sol. Es tiempo solar medio en Greenwich, y se define formalmente a partir del Tiempo Sidéreo mediante una fórmula que los vincula, luego se lo determina a partir de observaciones del movimiento diurno de las estrellas. Se definen los siguientes tipos de Tiempo Universal:

UT0 : es el tiempo universal obtenido directamente de las observaciones antes mencionadas. Luego, está afectado del movimiento del polo y de las irregularidades de rotación de la Tierra.

UT1 : se obtiene al corregir UT0 de los efectos del movimiento del polo y se lo designa generalmente como UT.

TIEMPO UNIVERSAL COORDINADO (UTC)

Es la escala de tiempo uniforme que tiene como unidad el segundo del SI y no se aparta de la rotación terrestre, dada por UT1, en más de 0.9^s. Es la base del tiempo legal de los países. Se propaga mediante emisiones horarias con la aproximación necesaria para sus aplicaciones (navegación, astronomía, geodesia). La diferencia entre las escalas de UTC y de TAI es un número entero de segundos. La diferencia entre UTC y UT1 no puede exceder 0.9^s; para mantener este compromiso, el 1° de enero y/o el 1° de julio se efectúan saltos de 1^s en la escala de UTC. Las emisiones de señales horarias se adaptan al UTC con una precisión de $\pm 0.001^s$.

VOLVER AL INDICE

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Los ejemplos que se dan a continuación siguen el ordenamiento de las Efemérides Astronómicas que se publican en este Suplemento al Almanaque Náutico y Aeronáutico.

Ejemplo 1. Calcular el TS local aparente correspondiente a las $15^h\ 54^m\ 35^s.659$ de Tiempo Universal UT, el día 1° de enero del corriente año en Buenos Aires, sabiendo que la longitud es L = $3^h\ 53^m\ 25^s.194$ Oeste.

$$TSL = UT + \underline{\textbf{c.a}} + \underline{\textbf{TSG a 0h UT}} - L$$

Ene. 1, $\underline{E_o}$ = $+\ 0^s.0119$	UT = $15^h\ 54^m\ 35^s.659$
	c.a. = 2 36.816 **(Tab.1)**
Ene. 2, $\underline{E_o}$ = $+\ 0.^s0196$	
dE= Ene 2- Ene 1= +0 .0077	IS = $15^h\ 57^m\ 12^s.475$
	TSG a 0^h UT = 6 43 35.896 (Medio)
UT = $15^h\ 55^m \equiv 0^d.663$	TSG = $22^h\ 40^m\ 48^s.371$ (Medio)
dE . UT = $+\ 0^s.0051$	- L = 3 53 25 .194
$E = \underline{E_o} + dE \cdot UT$	TSL = $18^h\ 47^m\ 23^s.177$ (Medio)
	+ E = + 0 .017
E= $+0^s.0119 + (+\ 0^s.0051) = 0^s.017$	TSL = $18^h\ 47^m\ 23^s.194$ (Aparente)

Ejemplo 2. Hallar el instante en Tiempo Universal UT correspondiente a las $18^h\ 46^m\ 17^s.045$ de tiempo sidéreo local aparente el 1° de enero del corriente año en Buenos Aires, L = $3^h\ 53^m\ 25^s.194$ Oeste.

$$UT = TSL + L - \underline{\textbf{TSG a 0h UT}} - \underline{\textbf{c.s.}}$$

UT apr. =TSL-TSG a 0^h UT+L	TSL = $18^h\ 46^m\ 17^s.045$ (Aparente)
UT apr. = $15^h\ 55^m = 0^d.663$	- E = - +0.017
$\underline{E_o}$ = $+\ 0^s.0119$	TSL = $18^h\ 46^m\ 17^s.028$ (Medio)
dE = $+\ 0^s.0077$	+ L = 3 53 25.194
dE . UT = $+0^s.0051$	TSG = $22^h\ 39^m\ 42^s.222$
	-TSG a 0^hUT = 6 43 35.896 (Medio)
$E = \underline{E_o} + dE \cdot UT$	IS = $15^h\ 56^m\ 06^s.326$
E= $+0^s.0119 + (+\ 0^s.0051) = 0^s.017$	-c.s. = 2 36 .633 **(Tab.2)**
	UT = $15^h\ 53^m\ 29^s.693$

Ejemplo 3. ¿Cuál es el ángulo horario del Sol verdadero para las $19^h\ 29^m\ 05^s.44$ de UT el día 2 de enero del corriente año en Buenos Aires ($L = 3^h\ 53^m\ 25^s.194$ Oeste)?

$$AHL = TSL - \underline{AR}$$

Como la ascensión recta aparente (AR) está tabulada a 0^h TT, debe interpolarse para obtenerla a 0^h UT, siendo $\Delta T = TT-UT = 69^s$ para este año y las notaciones Δ-1 la diferencia entre la AR del día dado y la del día anterior y Δ1 la diferencia entre la AR del día posterior al dado y la del día en cuestión, resulta:

$AR\ a\ 0^h\ UT = AR\ a\ 0^h\ TT + \Delta T/86400 \cdot dAR$
$dAR = \Delta\text{-}1 = 264^s.80;\quad UT = 0^d.812$
$\Delta 1 = 264^s.44;\quad UT^2 = 0^d.659$

Ene.2 a 0^h TT, AR=	$18^h\ 51^m\ 27^s.021$
$\Delta T/86400 \cdot dAR$ =	+ 0 .21
Ene.2 a 0^h UT, AR=	$18^h\ 51^m\ 25^s.231$

$\frac{1}{2}(\Delta 1 + \Delta\text{-}1)$ =	$264^s.62$
$\frac{1}{2}(\Delta 1 - \Delta\text{-}1)$ =	$-0^s.18$
$AR_\circ$ UT =	$18^h\ 51^m\ 27^s.021$
$\frac{1}{2}(\Delta 1+\Delta\text{-}1)UT$ =	+ 3 34 .87
$\frac{1}{2}(\Delta 1-\Delta\text{-}1)UT^2$ =	- $0^s.1$
AR =	$18^h\ 55^m\ 01^s.791$

UT =	$19^h\ 29^m\ 05^s.44$
c.a.	3 12 .05 **(Tab.1)**
IS =	$19^h\ 32^m\ 17^s.49$
TSG a 0^h UT =	6 47 32.47 (Aparente)
TSG =	$2^h\ 19^m\ 49^s.96$ (Medio)
$+\underline{E_0}$ =	0 .81
TSG =	$2^h\ 19^m\ 50^s.77$ (Aparente)
-L =	3 53 25.19
TSL =	$22^h\ 26^m\ 25^s.58$ (Aparente)
- AR =	18 55 01 .79
AHL =	$3^h\ 31^m\ 23^s.79$
	$52°\ 50'\ 56''.85$ **(Tab.4)**

UT y UT^2 son los coeficientes presentes en la fórmula de interpolación utilizada.

Ejemplo 4. Hallar el tiempo sidéreo local aparente para el instante en que el ángulo horario del Sol verdadero es $5^h\ 02^m\ 20^s.20$ en Buenos Aires, $L = 3^h\ 53^m\ 25^s.194$ Oeste el día 2 de enero del corriente año.

$$TSL = \mathbf{\underline{AR}} + AHL$$

Como la ascensión recta aparente (AR) está dada con argumento 0^h de TT, deberá interpolarse por el TT que resulte para el ángulo horario local dado.

$TT = AHL + L + \Delta T + PE$ PE = Tránsito de efemérides del Sol

AHL =	$5^h\ 02^m\ 20^s.20$
L =	$3\ 53\ 25^s.194$
ΔT =	+ 69^s
PE =	12 04 09
TT =	$21^h\ 01^m\ 3.394^s$

$TT = 0^d.875$
$TT^2 = 0^d.766$

AR =	$18^h\ 51^m\ 01^s.78$
$\frac{1}{2}(\Delta 1 + \Delta\text{-}1)\ TT$ =	+ 3 51.54
$\frac{1}{2}(\Delta 1 - \Delta\text{-}1)\ TT^2$ =	- 0.14
AR =	$18^h\ 54^m\ 53^s.18$
AHL =	3 31 23 .79
TSL =	$22^h\ 26^m\ 16^s.97$

TT y TT^2 son los coeficientes presentes en la fórmula de interpolación utilizada.

VOLVER AL INDICE

DATOS ASTRONOMICOS

Paralaje solar	8″.794 148
Constante de nutación	9″.2025 (J2000.0)
Constante de aberración	20″.49552 (J2000.0)
Precesión anual general época J2007.5	p = 0°.0139693
Oblicuidad media de la eclíptica época J2007.5	ε = 23° 26'17″.93
Precesión anual en ascensión recta época J2007.5	m = 0°.0128121
Precesión anual en declinación época J2007.5	n = 0°.0055670
Velocidad de la luz	c = 299 792 458 m/s
Longitud de la unidad astronómica	1UA = 1.49597870 x 10^{11} m
Duración del día sidéreo medio	23^h 56^m 04^s.09053 de tiempo solar medio
Duración del día solar medio	24^h 03^m 56^s.55537 de tiempo sidéreo medio

FORMA Y DIMENSIONES DE LA TIERRA

Radio ecuatorial (UAI 1976, UIGG)	a = 6 378 140 m
Factor de aplanamiento	f = 0.00335281 = 1 / 298.257
Reducción de la latitud geográfica ϕ a la latitud geocéntrica ϕ'	$\phi' - \phi$ = -11'32″.74 sen 2ϕ +1″.16 sen 4ϕ
Radio geocéntrico	R = a (0.9983271 + 0.0016764 cos 2ϕ - - 0.0000035 cos 4ϕ)
Aceleración de la gravedad (en cm/s^2)	g = 978.0318 (1 + 0.0053024 sen2 ϕ - - 0.0000059 sen^2 2ϕ)
Corrección de g (en cm/s) por elevación H (en metros)	c = -(0.00030855 +0.00000022 cos 2ϕ)H + + 0.000072 $(H/1000)^2$

VOLVER AL INDICE

ECUACIÓN DE TIEMPO 2025 (Aparente – Medio) Para 0h Tiempo Universal

Fecha		E de T	Δ (E de T)	Fecha		E de T	Δ (E de T)
		m s	s			m s	s
Enero	1	- 3 26.545	-28.239	**Marzo**	1	-12 20.770	+11.765
	2	- 3 54.784	-27.880		2	-12 09.005	+12.263
	3	- 4 22.664	-27.487		3	-11 56.742	+12.745
	4	- 4 50.151	-27.060		4	-11 43.997	+13.213
	5	- 5 17.211	-26.603		5	-11 30.784	+13.662
	6	- 5 43.814	-26.115		6	-11 17.122	+14.093
	7	- 6 09.929	-25.603		7	-11 03.028	+14.504
	8	- 6 35.532	-25.063		8	-10 48.524	+14.895
	9	- 7 00.596	-24.502		9	-10 33.629	+15.262
	10	- 7 25.098	-23.920		10	-10 18.367	+15.608
	11	- 7 49.018	-23.318		11	-10 02.759	+15.932
	12	- 8 12.336	-22.699		12	- 9 46.827	+16.232
	13	- 8 35.036	-22.064		13	- 9 30.594	+16.509
	14	- 8 57.100	-21.413		14	- 9 14.085	+16.763
	15	- 9 18.513	-20.748		15	- 8 57.322	+16.993
	16	- 9 39.261	-20.069		16	- 8 40.329	+17.200
	17	- 9 59.330	-19.377		17	- 8 23.129	+17.385
	18	-10 18.707	-18.671		18	- 8 05.744	+17.545
	19	-10 37.378	-17.953		19	- 7 48.198	+17.684
	20	-10 55.331	-17.224		20	- 7 30.514	+17.801
	21	-11 12.556	-16.483		21	- 7 12.713	+17.895
	22	-11 29.038	-15.731		22	- 6 54.818	+17.970
	23	-11 44.770	-14.971		23	- 6 36.848	+18.023
	24	-11 59.741	-14.199		24	- 6 18.826	+18.054
	25	-12 13.940	-13.419		25	- 6 00.772	+18.069
	26	-12 27.359	-12.631		26	- 5 42.703	+18.063
	27	-12 39.990	-11.833		27	- 5 24.640	+18.041
	28	-12 51.823	-11.029		28	- 5 06.599	+18.003
	29	-13 02.851	-10.216		29	- 4 48.596	+17.949
	30	-13 13.067	-09.397		30	- 4 30.647	+17.880
	31	-13 22.464	-08.570		31	- 4 12.767	+17.797
Febrero	1	-13 31.034	-07.741	**Abril**	1	- 3 54.970	+17.699
	2	-13 38.776	-06.910		2	- 3 37.271	+17.584
	3	-13 45.686	-06.076		3	- 3 19.686	+17.455
	4	-13 51.762	-05.247		4	- 3 02.232	+17.307
	5	-13 57.008	-04.418		5	- 2 44.925	+17.139
	6	-14 01.426	-03.598		6	- 2 27.785	+16.954
	7	-14 05.023	-02.783		7	- 2 10.832	+16.750
	8	-14 07.807	-01.978		8	- 1 54.082	+16.524
	9	-14 09.785	-01.185		9	- 1 37.558	+16.281
	10	-14 10.969	-00.401		10	- 1 21.276	+16.017
	11	-14 11.371	+00.369		11	- 1 05.259	+15.734
	12	-14 11.001	+01.127		12	- 0 49.525	+15.431
	13	-14 09.874	+01.870		13	- 0 34.094	+15.109
	14	-14 08.004	+02.598		14	- 0 18.985	+14.768
	15	-14 05.405	+03.314		15	- 0 04.217	+14.410
	16	-14 02.091	+04.014		16	+ 0 10.194	+14.035
	17	-13 58.077	+04.699		17	+ 0 24.229	+13.640
	18	-13 53.378	+05.368		18	+ 0 37.868	+13.231
	19	-13 48.010	+06.025		19	+ 0 51.099	+12.805
	20	-13 41.985	+06.663		20	+ 1 03.904	+12.364
	21	-13 35.322	+07.287		21	+ 1 16.267	+11.909
	22	-13 28.035	+07.897		22	+ 1 28.176	+11.441
	23	-13 20.138	+08.491		23	+ 1 39.617	+10.961
	24	-13 11.646	+09.071		24	+ 1 50.578	+10.471
	25	-13 02.575	+09.637		25	+ 2 01.050	+09.974
	26	-12 52.938	+10.188		26	+ 2 11.023	+09.468
	27	-12 42.750	+10.728		27	+ 2 20.491	+08.959
	28	-12 32.022	+11.252		28	+ 2 29.450	+08.445
					29	+ 2 37.894	+07.928

ECUACIÓN DE TIEMPO 2025 (Aparente – Medio) Para 0h Tiempo Universal

Fecha		E de T	Δ (E de T)	Fecha		E de T	Δ (E de T)
		m s	s			m s	s
Mayo	1	+ 2 53.230	+06.885	**Julio**	1	- 3 51.290	-11.524
	2	+ 3 00.115	+06.358		2	- 4 02.813	-11.224
	3	+ 3 06.473	+05.827		3	- 4 14.037	-10.903
	4	+ 3 12.300	+05.290		4	- 4 24.940	-10.563
	5	+ 3 17.590	+04.748		5	- 4 35.503	-10.206
	6	+ 3 22.338	+04.202		6	- 4 45.709	-09.830
	7	+ 3 26.540	+03.651		7	- 4 55.539	-09.438
	8	+ 3 30.191	+03.094		8	- 5 04.977	-09.031
	9	+ 3 33.286	+02.534		9	- 5 14.009	-08.610
	10	+ 3 35.820	+01.971		10	- 5 22.618	-08.175
	11	+ 3 37.791	+01.403		11	- 5 30.793	-07.728
	12	+ 3 39.194	+00.834		12	- 5 38.521	-07.270
	13	+ 3 40.028	+00.263		13	- 5 45.791	-06.802
	14	+ 3 40.290	-00.312		14	- 5 52.593	-06.322
	15	+ 3 39.979	-00.883		15	- 5 58.915	-05.834
	16	+ 3 39.096	-01.457		16	- 6 04.749	-05.335
	17	+ 3 37.639	-02.028		17	- 6 10.085	-04.828
	18	+ 3 35.610	-02.597		18	- 6 14.913	-04.310
	19	+ 3 33.013	-03.163		19	- 6 19.223	-03.781
	20	+ 3 29.850	-03.722		20	- 6 23.003	-03.242
	21	+ 3 26.128	-04.277		21	- 6 26.245	-02.691
	22	+ 3 21.852	-04.821		22	- 6 28.936	-02.127
	23	+ 3 17.031	-05.357		23	- 6 31.063	-01.554
	24	+ 3 11.674	-05.878		24	- 6 32.617	-00.967
	25	+ 3 05.796	-06.385		25	- 6 33.584	-00.371
	26	+ 2 59.410	-06.877		26	- 6 33.955	+00.234
	27	+ 2 52.533	-07.347		27	- 6 33.721	+00.846
	28	+ 2 45.186	-07.800		28	- 6 32.875	+01.465
	29	+ 2 37.386	-08.232		29	- 6 31.410	+02.087
	30	+ 2 29.154	-08.646		30	- 6 29.323	+02.711
	31	+ 2 20.507	-09.042		31	- 6 26.612	+03.337
Junio	1	+ 2 11.465	-09.418	**Agosto**	1	- 6 23.275	+03.964
	2	+ 2 02.048	-09.779		2	- 6 19.311	+04.587
	3	+ 1 52.269	-10.120		3	- 6 14.724	+05.210
	4	+ 1 42.149	-10.445		4	- 6 09.514	+05.827
	5	+ 1 31.704	-10.752		5	- 6 03.687	+06.440
	6	+ 1 20.951	-11.043		6	- 5 57.247	+07.048
	7	+ 1 09.908	-11.315		7	- 5 50.198	+07.647
	8	+ 0 58.594	-11.569		8	- 5 42.552	+08.238
	9	+ 0 47.025	-11.805		9	- 5 34.313	+08.820
	10	+ 0 35.220	-12.025		10	- 5 25.493	+09.392
	11	+ 0 23.194	-12.225		11	- 5 16.102	+09.950
	12	+ 0 10.970	-12.406		12	- 5 06.152	+10.498
	13	- 0 01.437	-12.570		13	- 4 55.653	+11.033
	14	- 0 14.007	-12.714		14	- 4 44.620	+11.558
	15	- 0 26.721	-12.839		15	- 4 33.062	+12.071
	16	- 0 39.560	-12.944		16	- 4 20.991	+12.573
	17	- 0 52.504	-13.029		17	- 4 08.418	+13.065
	18	- 1 05.533	-13.092		18	- 3 55.353	+13.547
	19	- 1 18.625	-13.132		19	- 3 41.806	+14.021
	20	- 1 31.757	-13.148		20	- 3 27.785	+14.486
	21	- 1 44.906	-13.139		21	- 3 13.299	+14.942
	22	- 1 58.045	-13.105		22	- 2 58.357	+15.388
	23	- 2 11.150	-13.041		23	- 2 42.969	+15.826
	24	- 2 24.191	-12.949		24	- 2 27.143	+16.252
	25	- 2 37.140	-12.827		25	- 2 10.891	+16.668
	26	- 2 49.967	-12.676		26	- 1 54.223	+17.072
	27	- 3 02.643	-12.496		27	- 1 37.151	+17.463
	28	- 3 15.139	-12.290		28	- 1 19.687	+17.839
	29	- 3 27.429	-12.058		29	- 1 01.849	+18.201
	30	- 3 39.487	-11.802		30	- 0 43.648	+18.548
					31	- 0 25.100	+18.877

ECUACIÓN DE TIEMPO 2025 (Aparente – Medio) Para 0^h Tiempo Universal

Fecha	E de T	Δ (E de T)	Fecha	E de T	Δ (E de T)
	m s	s		m s	s
Septiembre 1	- 0 06.222	+19.192	**Noviembre** 1	+16 24.073	+01.364
2	+ 0 12.970	+19.487	2	+16 25.437	+00.573
3	+ 0 32.457	+19.765	3	+16 26.011	-00.228
4	+ 0 52.223	+20.023	4	+16 25.783	-01.042
5	+ 1 12.246	+20.260	5	+16 24.741	-01.866
6	+ 1 32.506	+20.478	6	+16 22.875	-02.703
7	+ 1 52.984	+20.672	7	+16 20.172	-03.548
8	+ 2 13.656	+20.844	8	+16 16.624	-04.403
9	+ 2 34.500	+20.993	9	+16 12.221	-05.264
10	+ 2 55.493	+21.118	10	+16 06.957	-06.130
11	+ 3 16.611	+21.220	11	+16 00.827	-06.998
12	+ 3 37.831	+21.301	12	+15 53.829	-07.868
13	+ 3 59.132	+21.359	13	+15 45.961	-08.735
14	+ 4 20.491	+21.398	14	+15 37.226	-09.601
15	+ 4 41.889	+21.418	15	+15 27.625	-10.461
16	+ 5 03.307	+21.419	16	+15 17.164	-11.315
17	+ 5 24.726	+21.402	17	+15 05.849	-12.162
18	+ 5 46.128	+21.367	18	+14 53.686	-12.999
19	+ 6 07.495	+21.315	19	+14 40.687	-13.828
20	+ 6 28.809	+21.245	20	+14 26.859	-14.642
21	+ 6 50.055	+21.160	21	+14 12.218	-15.444
22	+ 7 11.215	+21.055	22	+13 56.773	-16.233
23	+ 7 32.270	+20.935	23	+13 40.540	-17.006
24	+ 7 53.205	+20.796	24	+13 23.534	-17.762
25	+ 8 14.001	+20.639	25	+13 05.773	-18.502
26	+ 8 34.640	+20.464	26	+12 47.271	-19.224
27	+ 8 55.104	+20.269	27	+12 28.047	-19.926
28	+ 9 15.373	+20.058	28	+12 08.121	-20.611
29	+ 9 35.431	+19.824	29	+11 47.510	-21.276
30	+ 9 55.255	+19.572	30	+11 26.234	-21.922
Octubre 1	+10 14.827	+19.301	**Diciembre** 1	+11 04.313	-22.549
2	+10 34.128	+19.008	2	+10 41.764	-23.158
3	+10 53.136	+18.694	3	+10 18.607	-23.748
4	+11 11.830	+18.358	4	+ 9 54.859	-24.320
5	+11 30.188	+17.999	5	+ 9 30.539	-24.872
6	+11 48.186	+17.616	6	+ 9 05.667	-25.404
7	+12 05.803	+17.209	7	+ 8 40.263	-25.916
8	+12 23.012	+16.777	8	+ 8 14.347	-26.403
9	+12 39.790	+16.323	9	+ 7 47.945	-26.866
10	+12 56.113	+15.843	10	+ 7 21.078	-27.300
11	+13 11.956	+15.343	11	+ 6 53.778	-27.707
12	+13 27.299	+14.822	12	+ 6 26.071	-28.082
13	+13 42.121	+14.281	13	+ 5 57.988	-28.426
14	+13 56.402	+13.723	14	+ 5 29.563	-28.736
15	+14 10.125	+13.146	15	+ 5 00.827	-29.012
16	+14 23.271	+12.554	16	+ 4 31.815	-29.252
17	+14 35.825	+11.947	17	+ 4 02.562	-29.457
18	+14 47.772	+11.325	18	+ 3 33.105	-29.624
19	+14 59.098	+10.688	19	+ 3 03.481	-29.755
20	+15 09.786	+10.039	20	+ 2 33.727	-29.847
21	+15 19.825	+09.378	21	+ 2 03.880	-29.900
22	+15 29.204	+08.704	22	+ 1 33.980	-29.917
23	+15 37.908	+08.017	23	+ 1 04.063	-29.894
24	+15 45.925	+07.321	24	+ 0 34.168	-29.833
25	+15 53.246	+06.613	25	+ 0 04.335	-29.736
26	+15 59.859	+05.893	26	- 0 25.401	-29.603
27	+16 05.751	+05.165	27	- 0 55.004	-29.433
28	+16 10.916	+04.423	28	- 1 24.437	-29.230
29	+16 15.340	+03.674	29	- 1 53.666	-28.995
30	+16 19.014	+02.914	30	- 2 22.661	-28.728
31	+16 21.928	+02.145	31	- 2 51.390	-28.434

VOLVER AL INDICE

set

ECLIPSES DE SOL Y LUNA 2025

Los eclipses de Luna son visibles para cualquier observador que tenga la Luna sobre el horizonte durante el período en que se manifiesta el fenómeno. No ocurre lo mismo con los eclipses de Sol, que pueden observarse en las zonas de la superficie terrestre que se detallan a continuación.

Marzo 14: Eclipse total de Luna. El eclipse umbral comienza a las 05 hs 09 min y finaliza a las 08 hs 47 min. La totalidad comienza a las 06 hs 25 min hasta las 07 hs 31 min. Es visible en todo el Pacífico, América, oeste de Europa, oeste de África.

Marzo 29: Eclipse parcial de Sol. El eclipse comienza a las 08 hs 50 min y finaliza a las 12 hs 43 min. El momento máximo del eclipse es a las 10 hs 47 min cuando el 0.93 del diámetro el Sol esté oscurecido. Es visible desde el noroeste de África, Europa y norte de Rusia.

Septiembre 07: Eclipse total de luna. El eclipse comienza a las 16 hs 27 min y finaliza a las 19 hs 56 min. La totalidad comienza a las 17 hs 25 min hasta las 07 hs 31 min. Es visible en Europa, Äfrica, Asia y Australia

Septiembre 21: Eclipse parcial de Sol. El eclipse comienza a las 17 hs 29 min y finaliza a las 21 hs 53 min. El momento máximo del eclipse es a las 19 hs 41 min cuando el 0.85 del diámetro el Sol esté oscurecido. Es visible desde el sur del Pacífico, Nueva Zelanda y la Antártida.

EQUINOCCIOS Y SOLSTICIOS 2025

EQUINOCCIOS EN UT	SOLSTICIOS EN UT
Marzo $20^{d}\ 09^{h}\ 01^{m}$	**Junio** $21^{d}\ 02^{h}\ 42^{m}$
Septiembre $22^{d}\ 18^{h}\ 19^{m}$	**Diciembre** $21^{d}\ 15^{h}\ 03^{m}$

FASES DE LA LUNA PARA EL AÑO 2025 EN UT




NUEVA	CRECIENTE	LLENA	MENGUANTE
d h m	d h m	d h m	d h m
	Ene.06 23:56	Ene.13 22:27	Ene.21 20:31
Mar.29 10:58	Abr.05 02:15	Abr.13 00:22	Abr.21 01:35
Abr.27 19:31	May.04 13:52	May.12 16:56	May.20 11:59
May.27 03:02	Jun.03 03:41	Jun.11 07:44	Jun.18 19:19
Jun.25 10:32	Jul.02 19:30	Jul.10 20:37	Jul.18 00:38
Jul.24 19:11	Ago.01 12:41	Ago.09 07:55	Ago.16 05:12
Ago.23 06:06	Ago.31 06:25	Sep.07 18:09	Sep.14 10:33
Sep.21 19:54	Sep.29 23:54	Oct.07 03:47	Oct.13 18:13
Oct.21 12:25	Oct.29 16:21	Nov.05 13:19	Nov.12 05:28
Nov.20 06:47	Nov.28 06:59	Dic.04 23:14	Dic.11 20:52
Dic.20 01:43	Dic.27 19:10		

VOLVER AL INDICE

LUNA 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha 0^h TT		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Tránsito Superior	Tránsito Inferior
		h m s	° ' "	' "	h	h
Enero	00	18 47 45.761	-27 56 6.87	15 29.9	12.6191	0.1405
	01	19 46 40.480	-25 51 45.93	15 38.7	13.5571	1.0924
	02	20 43 49.976	-22 17 45.64	15 46.6	14.4520	2.0106
	03	21 38 26.378	-17 28 25.48	15 53.3	15.2985	2.8810
	04	22 30 32.090	-11 42 18.34	15 58.6	16.1056	3.7060
	05	23 20 48.005	- 5 19 12.78	16 02.7	16.8917	4.4999
	06	0 10 17.926	+ 1 21 12.07	16 05.7	17.6796	5.2839
	07	1 0 16.269	+ 7 59 27.31	16 07.4	18.4934	6.0818
	08	1 51 58.401	+14 15 28.21	16 08.1	19.3550	6.9171
	09	2 46 29.122	+19 47 47.96	16 07.4	20.2789	7.8088
	10	3 44 24.774	+24 13 49.82	16 05.2	21.2639	8.7647
	11	4 45 30.048	+27 12 2.40	16 01.3	22.2866	9.7729
	12	5 48 23.380	+28 26 38.65	15 55.5	23.3051	10.7993
	13	6 50 53.125	+27 52 47.99	15 47.9	-------	11.7987
	14	7 50 46.927	+25 38 38.58	15 38.9	0.2758	12.7340
	15	8 46 40.730	+22 2 12.67	15 28.9	1.1718	13.5893
	16	9 38 14.310	+17 25 32.24	15 18.6	1.9877	14.3685
	17	10 25 56.390	+12 9 39.21	15 08.7	2.7340	15.0865
	18	11 10 41.876	+ 6 32 10.14	15 00.0	3.4288	15.7633
	19	11 53 35.424	+ 0 46 59.31	14 53.0	4.0927	16.4195
	20	12 35 43.336	- 4 54 49.88	14 48.4	4.7462	17.0753
	21	13 18 10.703	-10 23 47.63	14 46.4	5.4094	17.7506
	22	14 2 0.313	-15 30 35.57	14 47.3	6.1015	18.4641
	23	14 48 10.425	-20 4 50.64	14 51.0	6.8403	19.2319
	24	15 37 28.830	-23 54 8.04	14 57.4	7.6398	20.0644
	25	16 30 21.493	-26 43 48.49	15 06.3	8.5054	20.9612
	26	17 26 37.549	-28 18 7.42	15 17.0	9.4294	21.9064
	27	18 25 19.470	-28 23 11.14	15 28.8	10.3881	22.8701
	28	19 24 51.881	-26 51 1.37	15 40.8	11.3483	23.8191
	29	20 23 32.749	-23 42 47.51	15 52.1	12.2801	-------
	30	21 20 9.838	-19 9 10.61	16 01.8	13.1680	0.7299
	31	22 14 19.638	-13 28 2.37	16 09.1	14.0126	1.5951
Febrero	01	23 6 23.784	- 7 1 5.64	16 13.6	14.8271	2.4225
	02	23 57 14.300	- 0 11 14.92	16 15.2	15.6315	3.2292
	03	0 47 58.717	+ 6 38 48.98	16 14.3	16.4484	4.0370
	04	1 39 48.185	+13 7 1.26	16 11.3	17.2991	4.8683
	05	2 33 45.957	+18 51 44.68	16 06.8	18.1994	5.7425
	06	3 30 32.339	+23 31 55.58	16 01.2	19.1533	6.6701
	07	4 30 5.823	+26 48 19.02	15 54.9	20.1464	7.6466
	08	5 31 29.157	+28 26 24.45	15 48.0	21.1469	8.6482
	09	6 32 56.917	+28 20 11.00	15 40.8	22.1159	9.6375
	10	7 32 31.085	+26 34 17.16	15 33.2	23.0240	10.5788
	11	8 28 44.380	+23 22 38.19	15 25.4	23.8596	11.4509
	12	9 21 2.317	+19 4 18.75	15 17.3	-------	12.2511
	13	10 9 37.827	+13 59 15.78	15 09.4	0.6270	12.9893
	14	10 55 13.409	+ 8 25 37.14	15 01.9	1.3401	13.6818
	15	11 38 45.131	+ 2 38 44.27	14 55.2	2.0167	14.3471
	16	12 21 13.192	- 3 8 37.08	14 49.9	2.6756	15.0042
	17	13 3 37.757	- 8 45 32.30	14 46.4	3.3354	15.6714
	18	13 46 57.291	-14 1 59.62	14 45.1	4.0142	16.3661
	19	14 32 6.859	-18 47 48.83	14 46.2	4.7290	17.1045
	20	15 19 54.163	-22 51 47.27	14 50.2	5.4941	17.8987
	21	16 10 51.625	-26 1 9.81	14 56.9	6.3186	18.7535
	22	17 5 4.719	-28 1 59.33	15 06.3	7.2021	19.6621
	23	18 2 1.279	-28 40 45.02	15 18.0	8.1308	20.6045
	24	19 0 31.599	-27 47 16.21	15 31.6	9.0795	21.5523
	25	19 59 6.926	-25 17 51.44	15 45.9	10.0198	22.4797
	26	20 56 30.179	-21 17 8.22	16 00.1	10.9308	23.3727
	27	21 52 0.749	-15 57 46.14	16 12.6	11.8058	-------
	28	22 45 41.164	- 9 38 39.98	16 22.4	12.6514	0.2315

LUNA 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha 0^h TT		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Tránsito Superior	Tránsito Inferior
		h m s	° ' "	' "	h	h
Marzo	01	23 38 8.757	- 2 42 51.37	16 28.3	13.4836	1.0680
	02	0 30 21.989	+ 4 24 21.86	16 30.0	14.3228	1.9010
	03	1 23 27.105	+11 16 52.44	16 27.5	15.1896	2.7515
	04	2 18 24.848	+17 28 54.73	16 21.5	16.1000	3.6387
	05	3 15 54.481	+22 36 18.84	16 13.0	17.0593	4.5739
	06	4 15 55.137	+26 18 19.53	16 02.9	18.0553	5.5542
	07	5 17 32.715	+28 20 20.72	15 52.3	19.0591	6.5586
	08	6 19 7.361	+28 36 52.72	15 41.7	20.0337	7.5522
	09	7 18 47.037	+27 12 47.33	15 31.6	20.9499	8.5003
	10	8 15 8.271	+24 21 28.05	15 22.4	21.7947	9.3813
	11	9 7 37.331	+20 20 52.28	15 14.0	22.5712	10.1909
	12	9 56 25.732	+15 29 42.85	15 06.4	23.2917	10.9374
	13	10 42 13.615	+10 5 13.22	14 59.8	23.9733	11.6363
	14	11 25 54.406	+ 4 22 24.82	14 54.0	-------	12.3051
	15	12 8 25.468	- 1 25 41.14	14 49.3	0.6338	12.9617
	16	12 50 43.756	- 7 7 29.07	14 45.7	1.2909	13.6235
	17	13 33 43.989	-12 32 7.83	14 43.6	1.9615	14.3068
	18	14 18 17.053	-17 28 49.98	14 43.3	2.6613	15.0266
	19	15 5 6.790	-21 46 17.14	14 44.9	3.4039	15.7944
	20	15 54 43.853	-25 12 21.83	14 48.9	4.1984	16.6160
	21	16 47 16.754	-27 34 22.72	14 55.4	5.0464	17.4882
	22	17 42 23.384	-28 40 11.03	15 04.5	5.9391	18.3966
	23	18 39 9.951	-28 20 7.87	15 16.1	6.8575	19.3188
	24	19 36 23.510	-26 29 16.84	15 29.8	7.7777	20.2319
	25	20 32 55.571	-23 8 53.13	15 45.0	8.6798	21.1206
	26	21 28 4.487	-18 26 35.91	16 00.6	9.5543	21.9817
	27	22 21 45.492	-12 35 46.53	16 15.5	10.4042	22.8237
	28	23 14 27.634	- 5 54 39.34	16 28.0	11.2424	23.6629
	29	0 7 3.885	+ 1 14 13.24	16 36.7	12.0879	-------
	30	1 0 39.445	+ 8 24 35.95	16 40.5	12.9620	0.5201
	31	1 56 18.548	+15 7 36.16	16 39.1	13.8833	1.4159
Abril	01	2 54 46.977	+20 53 44.95	16 32.7	14.8601	2.3648
	02	3 56 9.509	+25 16 11.16	16 22.5	15.8831	3.3672
	03	4 59 30.974	+27 55 4.10	16 09.8	16.9217	4.4030
	04	6 3 0.294	+28 41 51.64	15 56.0	17.9337	5.4336
	05	7 4 28.188	+27 41 1.03	15 42.1	18.8835	6.4179
	06	8 2 17.113	+25 7 21.10	15 29.1	19.7542	7.3290
	07	8 55 47.870	+21 20 39.25	15 17.6	20.5480	8.1601
	08	9 45 13.749	+16 40 50.32	15 07.7	21.2786	8.9201
	09	10 31 19.819	+11 25 25.62	14 59.5	21.9642	9.6258
	10	11 15 4.549	+ 5 49 5.70	14 53.0	22.6240	10.2961
	11	11 57 29.161	+ 0 4 17.04	14 48.1	23.2766	10.9501
	12	12 39 33.032	- 5 37 52.65	14 44.7	23.9393	11.6057
	13	13 22 12.008	-11 6 42.06	14 42.6	-------	12.2795
	14	14 6 17.043	-16 11 14.48	14 42.0	0.6279	12.9863
	15	14 52 31.269	-20 39 50.87	14 42.8	1.3560	13.7379
	16	15 41 24.298	-24 20 4.95	14 45.3	2.1327	14.5404
	17	16 33 3.992	-26 59 12.07	14 49.5	2.9603	15.3912
	18	17 27 8.863	-28 25 22.37	14 55.7	3.8311	16.2776
	19	18 22 47.465	-28 29 31.06	15 04.1	4.7277	17.1786
	20	19 18 50.266	-27 7 7.91	15 14.6	5.6275	18.0720
	21	20 14 11.621	-24 19 13.53	15 27.1	6.5106	18.9422
	22	21 8 10.764	-20 12 0.58	15 41.3	7.3668	19.7848
	23	22 0 41.782	-14 55 52.86	15 56.5	8.1975	20.6065
	24	22 52 11.720	- 8 44 38.66	16 11.6	9.0142	21.4229
	25	23 43 32.516	- 1 55 30.72	16 25.2	9.8354	22.2548
	26	0 35 51.632	+ 5 10 16.66	16 35.9	10.6839	23.1255
	27	1 30 21.646	+12 6 53.75	16 42.2	11.5821	-------
	28	2 28 5.105	+18 24 22.35	16 43.2	12.5466	0.0555
	29	3 29 30.469	+23 31 5.45	16 38.7	13.5779	1.0549
	30	4 34 2.972	+26 58 59.86	16 29.4	14.6510	2.1119

LUNA 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha 0^h TT		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Tránsito Superior	Tránsito Inferior
		h m s	° ' "	' "	h	h
Mayo	01	5 39 51.819	+28 30 38.18	16 16.5	15.7186	3.1889
	02	6 44 20.687	+28 4 23.59	16 01.5	16.7308	4.2341
	03	7 45 12.377	+25 53 45.83	15 46.0	17.6576	5.2057
	04	8 41 17.406	+22 20 53.05	15 31.1	18.4942	6.0866
	05	9 32 36.710	+17 49 9.56	15 17.7	19.2534	6.8823
	06	10 19 56.209	+12 38 53.56	15 06.3	19.9553	7.6101
	07	11 4 20.936	+ 7 6 12.60	14 57.2	20.6217	8.2916
	08	11 46 59.658	+ 1 23 49.62	14 50.3	21.2734	8.9482
	09	12 28 58.436	- 4 17 35.97	14 45.6	21.9295	9.5997
	10	13 11 18.680	- 9 48 9.32	14 43.0	22.6075	10.2647
	11	13 54 56.161	-14 57 36.53	14 42.1	23.3225	10.9596
	12	14 40 38.567	-19 34 42.19	14 42.8	-------	11.6977
	13	15 29 0.023	-23 26 56.19	14 45.0	0.0857	12.4870
	14	16 20 12.462	-26 21 3.03	14 48.5	0.9012	13.3271
	15	17 13 56.777	-28 4 25.64	14 53.4	1.7630	14.2062
	16	18 9 20.595	-28 27 15.43	14 59.7	2.6539	15.1029
	17	19 5 9.518	-27 24 43.31	15 07.4	3.5500	15.9925
	18	20 0 10.472	-24 58 3.99	15 16.6	4.4284	16.8563
	19	20 53 35.237	-21 14 0.34	15 27.4	5.2757	17.6868
	20	21 45 12.202	-16 23 4.07	15 39.4	6.0905	18.4885
	21	22 35 24.732	-10 38 4.45	15 52.3	6.8828	19.2757
	22	23 25 2.772	- 4 13 35.25	16 05.5	7.6700	20.0686
	23	0 15 13.859	+ 2 33 33.37	16 17.9	8.4747	20.8914
	24	1 7 15.021	+ 9 23 2.26	16 28.3	9.3218	21.7687
	25	2 2 22.358	+15 49 55.79	16 35.4	10.2344	22.7202
	26	3 1 32.379	+21 24 48.78	16 38.1	11.2260	23.7501
	27	4 4 51.708	+25 36 38.87	16 35.9	12.2886	-------
	28	5 11 6.426	+27 59 22.52	16 28.9	13.3842	0.8357
	29	6 17 43.995	+28 20 21.94	16 17.9	14.4554	1.9265
	30	7 21 49.870	+26 45 4.31	16 04.0	15.4529	2.9655
	31	8 21 21.990	+23 33 34.58	15 48.8	16.3546	3.9159
Junio	01	9 15 42.820	+19 11 54.57	15 33.7	17.1649	4.7702
	02	10 5 21.725	+14 4 34.94	15 19.6	17.9024	5.5413
	03	10 51 22.074	+ 8 31 18.64	15 07.5	18.5902	6.2510
	04	11 34 57.482	+ 2 46 59.14	14 57.7	19.2513	6.9227
	05	12 17 20.526	- 2 56 56.46	14 50.5	19.9071	7.5786
	06	12 59 39.071	- 8 30 47.53	14 45.9	20.5772	8.2392
	07	13 42 55.253	-13 45 11.03	14 43.8	21.2791	8.9232
	08	14 28 3.796	-18 29 53.28	14 43.9	22.0268	9.6465
	09	15 15 47.416	-22 33 10.77	14 45.9	22.8285	10.4207
	10	16 6 28.297	-25 41 55.21	14 49.6	23.6822	11.2494
	11	16 59 57.471	-27 42 42.11	14 54.6	-------	12.1246
	12	17 55 28.586	-28 24 7.49	15 00.7	0.5737	13.0263
	13	18 51 45.077	-27 39 34.46	15 07.6	1.4788	13.9278
	14	19 47 23.199	-25 29 7.71	15 15.3	2.3705	14.8048
	15	20 41 19.956	-21 59 28.65	15 23.6	3.2296	15.6444
	16	21 33 10.234	-17 22 5.32	15 32.6	4.0497	16.4467
	17	22 23 7.744	-11 50 57.00	15 42.1	4.8370	17.2229
	18	23 11 56.217	- 5 41 6.72	15 51.8	5.6068	17.9915
	19	0 0 39.159	+ 0 51 33.20	16 01.6	6.3800	18.7754
	20	0 50 31.678	+ 7 29 34.84	16 10.7	7.1809	19.5996
	21	1 42 52.727	+13 52 37.66	16 18.5	8.0345	20.4879
	22	2 38 52.708	+19 36 27.39	16 24.1	8.9614	21.4555
	23	3 39 10.637	+24 13 25.21	16 26.6	9.9689	22.4983
	24	4 43 21.983	+27 16 3.12	16 25.5	11.0387	23.5832
	25	5 49 37.803	+28 24 14.78	16 20.4	12.1244	-------
	26	6 55 9.247	+27 32 53.89	16 11.7	13.1690	0.6550
	27	7 57 17.791	+24 54 1.84	16 00.3	14.1316	1.6619
	28	8 54 36.219	+20 51 13.56	15 47.0	15.0004	2.5775
	29	9 46 57.567	+15 51 4.04	15 33.3	15.7855	3.4022
	30	10 35 7.746	+10 17 7.53	15 20.1	16.5074	4.1529

LUNA 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha 0^h TT		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Tránsito Superior	Tránsito Inferior
		h m s	° ' "	' "	h	h
Julio	01	11 20 15.574	+ 4 27 53.55	15 08.3	17.1894	4.8519
	02	12 3 34.741	- 1 22 43.36	14 58.7	17.8542	5.5226
	03	12 46 16.310	- 7 3 53.40	14 51.6	18.5226	6.1867
	04	13 29 26.434	-12 26 12.22	14 47.2	19.2138	6.8642
	05	14 14 5.046	-17 20 13.74	14 45.6	19.9443	7.5732
	06	15 1 2.561	-21 35 25.45	14 46.6	20.7262	8.3284
	07	15 50 52.776	-24 59 39.90	14 50.0	21.5634	9.1381
	08	16 43 42.159	-27 19 44.05	14 55.2	22.4479	10.0008
	09	17 39 0.043	-28 23 5.30	15 02.1	23.3590	10.9018
	10	18 35 38.912	-28 0 41.63	15 09.9	-------	11.8159
	11	19 32 11.877	-26 9 47.34	15 18.3	0.2691	12.7156
	12	20 27 21.791	-22 55 1.62	15 26.9	1.1533	13.5809
	13	21 20 25.307	-18 27 24.49	15 35.2	1.9981	14.4055
	14	22 11 20.272	-13 1 55.62	15 43.1	2.8040	15.1956
	15	23 0 39.135	- 6 55 22.77	15 50.4	3.5822	15.9665
	16	23 49 17.718	- 0 25 10.90	15 57.0	4.3511	16.7389
	17	0 38 25.452	+ 6 10 43.12	16 02.7	5.1330	17.5363
	18	1 29 17.483	+12 33 9.92	16 07.6	5.9518	18.3820
	19	2 23 5.066	+18 20 53.42	16 11.2	6.8293	19.2951
	20	3 20 39.143	+23 10 13.73	16 13.3	7.7795	20.2815
	21	4 22 4.890	+26 36 41.61	16 13.5	8.7981	21.3248
	22	5 26 17.231	+28 19 28.37	16 11.3	9.8557	22.3841
	23	6 31 3.289	+28 7 55.78	16 06.7	10.9036	23.4086
	24	7 33 48.702	+26 6 4.95	15 59.6	11.8949	-------
	25	8 32 40.147	+22 31 10.71	15 50.3	12.8042	0.3604
	26	9 26 56.206	+17 47 23.83	15 39.6	13.6299	1.2269
	27	10 16 56.712	+12 19 18.08	15 28.1	14.3860	2.0155
	28	11 3 35.911	+ 6 28 3.91	15 16.8	15.0930	2.7443
	29	11 48 0.891	+ 0 30 30.36	15 06.5	15.7724	3.4348
	30	12 31 20.188	- 5 20 15.58	14 57.9	16.4451	4.1084
	31	13 14 39.290	-10 53 31.46	14 51.5	17.1305	4.7851
Agosto	01	13 58 58.798	-15 59 35.70	14 47.7	17.8460	5.4835
	02	14 45 12.004	-20 28 34.17	14 46.7	18.6058	6.2197
	03	15 33 59.668	-24 9 30.33	14 48.5	19.4181	7.0052
	04	16 25 41.134	-26 50 17.26	14 52.9	20.2817	7.8441
	05	17 20 4.038	-28 18 34.08	14 59.7	21.1830	8.7289
	06	18 16 19.419	-28 23 54.27	15 08.5	22.0985	9.6407
	07	19 13 10.748	-27 0 31.39	15 18.5	23.0021	10.5532
	08	20 9 17.747	-24 9 24.14	15 29.1	23.8748	11.4430
	09	21 3 43.098	-19 58 34.09	15 39.6	-------	12.2970
	10	21 56 7.298	-14 41 41.21	15 49.2	0.7102	13.1153
	11	22 46 47.914	- 8 36 1.30	15 57.3	1.5141	13.9086
	12	23 36 30.027	- 2 0 45.67	16 03.5	2.3012	14.6945
	13	0 26 15.479	+ 4 43 53.63	16 07.7	3.0913	15.4944
	14	1 17 13.591	+11 16 57.56	16 09.9	3.9065	16.3302
	15	2 10 31.479	+17 16 32.00	16 10.3	4.7677	17.2207
	16	3 6 59.983	+22 19 51.26	16 09.2	5.6899	18.1750
	17	4 6 52.980	+26 4 25.93	16 06.7	6.6743	19.1847
	18	5 9 26.284	+28 11 7.07	16 03.1	7.7015	20.2194
	19	6 12 54.745	+28 28 48.78	15 58.2	8.7327	21.2359
	20	7 15 3.879	+26 58 19.87	15 52.2	9.7246	22.1958
	21	8 14 1.917	+23 52 19.34	15 45.1	10.6478	23.0802
	22	9 8 54.635	+19 31 4.86	15 37.0	11.4936	23.8897
	23	9 59 45.432	+14 17 12.14	15 28.2	12.2703	-------
	24	10 47 15.312	+ 8 31 48.60	15 19.0	12.9945	0.6377
	25	11 32 22.540	+ 2 32 57.56	15 09.9	13.6857	1.3430
	26	12 16 9.976	- 3 24 26.75	15 01.6	14.3635	2.0251
	27	12 59 39.117	- 9 7 58.88	14 54.6	15.0463	2.7032
	28	13 43 47.517	-14 26 45.07	14 49.3	15.7511	3.3950
	29	14 29 26.578	-19 10 25.08	14 46.4	16.4921	4.1163
	30	15 17 17.605	-23 8 25.02	14 46.0	17.2791	4.8794
	31	16 7 45.037	-26 9 36.07	14 48.3	18.1148	5.6910

LUNA 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha 0^h TT		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Tránsito Superior	Tránsito Inferior
		h m s	° ' "	' "	h	h
Septiembre	01	17 0 47.892	-28 2 37.39	14 53.5	18.9917	6.5490
	02	17 55 53.870	-28 37 14.96	15 01.4	19.8926	7.4405
	03	18 52 2.979	-27 46 23.58	15 11.6	20.7947	8.3449
	04	19 48 4.078	-25 28 4.65	15 23.6	21.6781	9.2396
	05	20 42 58.114	-21 46 24.18	15 36.6	22.5321	10.1090
	06	21 36 15.809	-16 51 14.20	15 49.7	23.3579	10.9481
	07	22 28 2.566	-10 57 9.40	16 01.7	-------	11.7631
	08	23 18 53.061	- 4 22 22.16	16 11.5	0.1660	12.5686
	09	0 9 41.833	+ 2 32 5.14	16 18.4	0.9737	13.3838
	10	1 1 33.585	+ 9 22 55.27	16 21.9	1.8016	14.2296
	11	1 55 32.623	+15 45 13.31	16 22.0	2.6701	15.1247
	12	2 52 28.353	+21 13 25.87	16 19.0	3.5945	16.0792
	13	3 52 34.962	+25 23 13.67	16 13.5	4.5776	17.0868
	14	4 55 11.183	+27 54 48.21	16 06.4	5.6029	18.1207
	15	5 58 37.382	+28 37 6.81	15 58.3	6.6347	19.1397
	16	7 0 45.035	+27 30 55.47	15 49.8	7.6312	20.1060
	17	7 59 45.879	+24 48 10.84	15 41.1	8.5620	20.9988
	18	8 54 45.805	+20 47 50.20	15 32.5	9.4167	21.8170
	19	9 45 46.184	+15 50 56.69	15 24.2	10.2015	22.5723
	20	10 33 25.398	+10 17 22.10	15 16.1	10.9318	23.2824
	21	11 18 39.252	+ 4 24 30.41	15 08.4	11.6264	23.9662
	22	12 2 28.346	- 1 32 41.81	15 01.2	12.3041	-------
	23	12 45 51.903	- 7 21 12.43	14 54.8	12.9828	0.6423
	24	13 29 45.000	-12 49 12.92	14 49.6	13.6787	1.3277
	25	14 14 56.443	-17 45 30.25	14 45.8	14.4056	2.0375
	26	15 2 5.364	-21 58 58.45	14 43.8	15.1732	2.7839
	27	15 51 35.624	-25 18 28.75	14 44.0	15.9854	3.5738
	28	16 43 28.837	-27 33 10.37	14 46.7	16.8371	4.4069
	29	17 37 19.455	-28 33 29.46	14 52.1	17.7148	5.2739
	30	18 32 17.296	-28 12 36.25	15 00.2	18.5993	6.1575
Octubre	01	19 27 20.542	-26 27 47.41	15 11.0	19.4719	7.0380
	02	20 21 35.205	-23 21 5.86	15 23.9	20.3215	7.9000
	03	21 14 31.580	-18 59 8.49	15 38.5	21.1468	8.7369
	04	22 6 10.912	-13 32 30.08	15 53.7	21.9561	9.5526
	05	22 57 2.875	- 7 15 20.77	16 08.4	22.7650	10.3594
	06	23 47 58.518	- 0 25 32.29	16 21.0	23.5937	11.1755
	07	0 40 2.041	+ 6 35 1.93	16 30.3	-------	12.0222
	08	1 34 21.010	+13 20 25.92	16 35.2	0.4638	12.9204
	09	2 31 51.636	+19 21 38.89	16 35.4	1.3935	13.8837
	10	3 32 56.049	+24 9 11.39	16 31.0	2.3899	14.9097
	11	4 36 56.431	+27 17 44.62	16 22.9	3.4390	15.9724
	12	5 42 6.014	+28 32 5.85	16 12.2	4.5037	17.0267
	13	6 45 59.164	+27 51 22.88	16 00.1	5.5359	18.0272
	14	7 46 29.792	+25 28 17.31	15 47.8	6.4981	18.9475
	15	8 42 34.083	+21 43 33.05	15 35.8	7.3759	19.7844
	16	9 34 12.787	+16 59 37.40	15 24.9	8.1750	20.5500
	17	10 22 8.630	+11 36 48.12	15 15.1	8.9121	21.2637
	18	11 7 22.826	+ 5 52 5.94	15 06.6	9.6075	21.9459
	19	11 51 0.568	- 0 0 17.67	14 59.3	10.2814	22.6163
	20	12 34 4.396	- 5 48 1.28	14 53.3	10.9528	23.2928
	21	13 17 31.569	-11 19 36.24	14 48.4	11.6384	23.9911
	22	14 2 12.225	-16 23 43.78	14 44.8	12.3525	-------
	23	14 48 46.244	-20 48 51.86	14 42.5	13.1056	0.7238
	24	15 37 37.877	-24 23 17.50	14 41.7	13.9020	1.4985
	25	16 28 48.965	-26 55 41.92	14 42.6	14.7377	2.3156
	26	17 21 54.155	-28 16 20.44	14 45.6	15.5998	3.1666
	27	18 16 3.439	-28 18 31.65	14 50.8	16.4694	4.0349
	28	19 10 14.995	-26 59 49.16	14 58.4	17.3275	4.9008
	29	20 3 34.410	-24 22 19.07	15 08.5	18.1619	5.7481
	30	20 55 31.011	-20 31 59.25	15 21.0	18.9700	6.5690
	31	21 46 4.650	-15 37 36.90	15 35.5	19.7589	7.3661

LUNA 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha 0^h TT		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Tránsito Superior	Tránsito Inferior
		h m s	° ' "	' "	h	h
Noviembre	01	22 35 43.597	- 9 50 11.12	15 51.3	20.5434	8.1506
	02	23 25 18.349	- 3 23 6.63	16 07.2	21.3438	8.9402
	03	0 15 54.974	+ 3 26 45.22	16 22.0	22.1835	9.7572
	04	1 8 47.963	+10 17 46.62	16 34.0	23.0860	10.6256
	05	2 5 8.831	+16 42 45.35	16 41.8	-------	11.5664
	06	3 5 44.708	+22 9 53.49	16 44.2	0.0675	12.5883
	07	4 10 25.574	+26 6 58.24	16 41.1	1.1259	13.6752
	08	5 17 36.759	+28 9 6.26	16 33.0	2.2296	14.7814
	09	6 24 32.548	+28 7 2.24	16 21.0	3.3231	15.8482
	10	7 28 22.928	+26 10 0.08	16 06.7	4.3520	16.8320
	11	8 27 23.596	+22 40 20.01	15 51.5	5.2874	17.7190
	12	9 21 15.096	+18 4 26.00	15 36.7	6.1287	18.5189
	13	10 10 37.860	+12 46 11.94	15 23.2	6.8924	19.2523
	14	10 56 39.546	+ 7 4 43.70	15 11.5	7.6014	19.9427
	15	11 40 33.914	+ 1 14 47.15	15 01.8	8.2788	20.6124
	16	12 23 31.434	- 4 31 43.70	14 54.1	8.9460	21.2817
	17	13 6 36.163	-10 4 15.97	14 48.3	9.6219	21.9684
	18	13 50 44.320	-15 12 26.52	14 44.4	10.3230	22.6871
	19	14 36 41.698	-19 45 17.67	14 42.0	11.0618	23.4478
	20	15 24 58.484	-23 31 7.13	14 41.1	11.8452	-------
	21	16 15 41.801	-26 18 1.63	14 41.7	12.6712	0.2534
	22	17 8 29.278	-27 55 18.29	14 43.6	13.5281	1.0969
	23	18 2 29.663	-28 15 17.65	14 47.1	14.3959	1.9620
	24	18 56 35.146	-27 15 2.75	14 52.2	15.2529	2.8270
	25	19 49 42.388	-24 56 50.72	14 59.2	16.0833	3.6721
	26	20 41 11.819	-21 27 20.82	15 08.0	16.8811	4.4862
	27	21 30 56.424	-16 55 57.49	15 18.9	17.6511	5.2689
	28	22 19 19.876	-11 33 28.68	15 31.6	18.4065	6.0295
	29	23 7 9.717	- 5 31 38.99	15 45.8	19.1664	6.7845
	30	23 55 30.593	+ 0 56 14.34	16 00.7	19.9542	7.5552
Diciembre	01	0 45 38.800	+ 7 33 55.72	16 15.3	20.7957	8.3666
	02	1 38 55.514	+14 0 24.21	16 28.3	21.7152	9.2444
	03	2 36 32.758	+19 48 40.08	16 38.1	22.7268	10.2094
	04	3 39 5.307	+24 26 43.89	16 43.3	23.8196	11.2650
	05	4 45 51.270	+27 22 51.98	16 43.1	-------	12.3836
	06	5 54 30.887	+28 15 18.62	16 37.4	0.9488	13.5064
	07	7 1 46.246	+27 1 20.37	16 26.9	2.0488	14.5700
	08	8 4 50.161	+23 57 55.66	16 13.0	3.0663	15.5366
	09	9 2 27.638	+19 33 11.41	15 57.3	3.9812	16.4019
	10	9 54 50.953	+14 16 9.41	15 41.2	4.8014	17.1827
	11	10 43 1.586	+ 8 30 59.15	15 26.1	5.5490	17.9034
	12	11 28 17.653	+ 2 35 50.89	15 12.7	6.2491	18.5889
	13	12 11 57.109	- 3 15 47.63	15 01.6	6.9258	19.2623
	14	12 55 11.688	- 8 53 17.06	14 53.1	7.6008	19.9437
	15	13 39 5.101	-14 7 2.61	14 47.1	8.2931	20.6507
	16	14 24 31.219	-18 47 17.01	14 43.5	9.0182	21.3966
	17	15 12 9.821	-22 43 18.71	14 42.0	9.7866	22.1882
	18	16 2 19.274	-25 43 36.73	14 42.4	10.6009	23.0233
	19	16 54 48.287	-27 36 53.67	14 44.4	11.4533	23.8884
	20	17 48 52.580	-28 14 3.28	14 47.8	12.3256	-------
	21	18 43 23.263	-27 30 23.30	14 52.4	13.1941	0.7618
	22	19 37 7.423	-25 26 56.60	14 58.1	14.0381	1.6202
	23	20 29 11.294	-22 10 13.43	15 04.8	14.8463	2.4469
	24	21 19 14.024	-17 50 32.38	15 12.7	15.6188	3.2366
	25	22 7 28.467	-12 40 4.26	15 21.7	16.3653	3.9944
	26	22 54 34.260	- 6 51 36.47	15 31.8	17.1027	4.7339
	27	23 41 29.825	- 0 38 19.60	15 42.9	17.8520	5.4744
	28	0 29 26.360	+ 5 45 28.48	15 54.7	18.6378	6.2388
	29	1 19 42.868	+12 2 57.72	16 06.5	19.4856	7.0524
	30	2 13 38.080	+17 53 8.59	16 17.6	20.4172	7.9400
	31	3 12 12.748	+22 49 59.79	16 26.6	21.4405	8.9179

VOLVER AL INDICE

VOLVER AL EJEMPLO 1 **VOLVER A EJEMPLO 2** **VOLVER AL EJEMPLO 3**

TIEMPO SIDÉREO 2025

Fecha 0^h UT		Día Juliano	Tiempo Sidéreo Ángulo Horario de Aries		Ecuación de los Equinoccios
			Aparente	Medio	(E_0)
		245	h m s	s	s
Enero	01	0676.5	6 43 35.9082	35.8963	.0119
	02	0677.5	6 47 32.4713	32.4517	.0196
	03	0678.5	6 51 29.0310	29.0070	.0240
	04	0679.5	6 55 25.5871	25.5624	.0247
	05	0680.5	6 59 22.1402	22.1178	.0224
	06	0681.5	7 3 18.6917	18.6731	.0186
	07	0682.5	7 7 15.2437	15.2285	.0152
	08	0683.5	7 11 11.7978	11.7839	.0139
	09	0684.5	7 15 8.3554	8.3392	.0162
	10	0685.5	7 19 4.9170	4.8946	.0224
	11	0686.5	7 23 1.4820	1.4500	.0320
	12	0687.5	7 26 58.0487	58.0053	.0434
	13	0688.5	7 30 54.6154	54.5607	.0547
	14	0689.5	7 34 51.1803	51.1161	.0642
	15	0690.5	7 38 47.7421	47.6715	.0706
	16	0691.5	7 42 44.3001	44.2268	.0733
	17	0692.5	7 46 40.8550	40.7822	.0728
	18	0693.5	7 50 37.4073	37.3376	.0697
	19	0694.5	7 54 33.9582	33.8929	.0653
	20	0695.5	7 58 30.5089	30.4483	.0606
	21	0696.5	8 2 27.0604	27.0037	.0567
	22	0697.5	8 6 23.6135	23.5590	.0545
	23	0698.5	8 10 20.1691	20.1144	.0547
	24	0699.5	8 14 16.7274	16.6698	.0576
	25	0700.5	8 18 13.2882	13.2251	.0631
	26	0701.5	8 22 9.8512	9.7805	.0707
	27	0702.5	8 26 6.4154	6.3359	.0795
	28	0703.5	8 30 2.9795	2.8913	.0882
	29	0704.5	8 33 59.5417	59.4466	.0951
	30	0705.5	8 37 56.1008	56.0020	.0988
	31	0706.5	8 41 52.6560	52.5574	.0986
Febrero	01	0707.5	8 45 49.2076	49.1127	.0949
	02	0708.5	8 49 45.7571	45.6681	.0890
	03	0709.5	8 53 42.3064	42.2235	.0829
	04	0710.5	8 57 38.8574	38.7788	.0786
	05	0711.5	9 1 35.4119	35.3342	.0777
	06	0712.5	9 5 31.9701	31.8896	.0805
	07	0713.5	9 9 28.5316	28.4449	.0867
	08	0714.5	9 13 25.0952	25.0003	.0949
	09	0715.5	9 17 21.6591	21.5557	.1034
	10	0716.5	9 21 18.2217	18.1111	.1106
	11	0717.5	9 25 14.7815	14.6664	.1151
	12	0718.5	9 29 11.3380	11.2218	.1162
	13	0719.5	9 33 7.8912	7.7772	.1140
	14	0720.5	9 37 4.4414	4.3325	.1089
	15	0721.5	9 41 .9900	.8879	.1021
	16	0722.5	9 44 57.5379	57.4433	.0946
	17	0723.5	9 48 54.0862	53.9986	.0876
	18	0724.5	9 52 50.6361	50.5540	.0821
	19	0725.5	9 56 47.1881	47.1094	.0787
	20	0726.5	10 0 43.7426	43.6647	.0779
	21	0727.5	10 4 40.2998	40.2201	.0797
	22	0728.5	10 8 36.8592	36.7755	.0837
	23	0729.5	10 12 33.4202	33.3309	.0893
	24	0730.5	10 16 29.9815	29.8862	.0953
	25	0731.5	10 20 26.5420	26.4416	.1004
	26	0732.5	10 24 23.1001	22.9970	.1031
	27	0733.5	10 28 19.6544	19.5523	.1021
	28	0734.5	10 32 16.2049	16.1077	.0972

TIEMPO SIDÉREO 2025

Fecha 0^h UT		Día Juliano	Tiempo Sidéreo Ángulo Horario de Aries		Ecuación de los Equinoccios
			Aparente	Medio	(E_0)
		245	h m s	s	s
Marzo	01	0735.5	10 36 12.7526	12.6631	.0895
	02	0736.5	10 40 9.2991	9.2184	.0807
	03	0737.5	10 44 5.8471	5.7738	.0733
	04	0738.5	10 48 2.3983	2.3292	.0691
	05	0739.5	10 51 58.9535	58.8845	.0690
	06	0740.5	10 55 55.5125	55.4399	.0726
	07	0741.5	10 59 52.0738	51.9953	.0785
	08	0742.5	11 3 48.6358	48.5507	.0851
	09	0743.5	11 7 45.1965	45.1060	.0905
	10	0744.5	11 11 41.7550	41.6614	.0936
	11	0745.5	11 15 38.3104	38.2168	.0936
	12	0746.5	11 19 34.8623	34.7721	.0902
	13	0747.5	11 23 31.4115	31.3275	.0840
	14	0748.5	11 27 27.9588	27.8829	.0759
	15	0749.5	11 31 24.5050	24.4382	.0668
	16	0750.5	11 35 21.0515	20.9936	.0579
	17	0751.5	11 39 17.5993	17.5490	.0503
	18	0752.5	11 43 14.1491	14.1043	.0448
	19	0753.5	11 47 10.7015	10.6597	.0418
	20	0754.5	11 51 7.2565	7.2151	.0414
	21	0755.5	11 55 3.8138	3.7705	.0433
	22	0756.5	11 59 .3728	.3258	.0470
	23	0757.5	12 2 56.9328	56.8812	.0516
	24	0758.5	12 6 53.4924	53.4366	.0558
	25	0759.5	12 10 50.0502	49.9919	.0583
	26	0760.5	12 14 46.6053	46.5473	.0580
	27	0761.5	12 18 43.1568	43.1027	.0541
	28	0762.5	12 22 39.7049	39.6580	.0469
	29	0763.5	12 26 36.2511	36.2134	.0377
	30	0764.5	12 30 32.7978	32.7688	.0290
	31	0765.5	12 34 29.3472	29.3241	.0231
Abril	01	0766.5	12 38 25.9010	25.8795	.0215
	02	0767.5	12 42 22.4593	22.4349	.0244
	03	0768.5	12 46 19.0207	18.9903	.0304
	04	0769.5	12 50 15.5832	15.5456	.0376
	05	0770.5	12 54 12.1451	12.1010	.0441
	06	0771.5	12 58 8.7047	8.6564	.0483
	07	0772.5	13 2 5.2611	5.2117	.0494
	08	0773.5	13 6 1.8143	1.7671	.0472
	09	0774.5	13 9 58.3645	58.3225	.0420
	10	0775.5	13 13 54.9126	54.8778	.0348
	11	0776.5	13 17 51.4597	51.4332	.0265
	12	0777.5	13 21 48.0067	47.9886	.0181
	13	0778.5	13 25 44.5548	44.5439	.0109
	14	0779.5	13 29 41.1049	41.0993	.0056
	15	0780.5	13 33 37.6576	37.6547	.0029
	16	0781.5	13 37 34.2128	34.2101	.0027
	17	0782.5	13 41 30.7705	30.7654	.0051
	18	0783.5	13 45 27.3302	27.3208	.0094
	19	0784.5	13 49 23.8909	23.8762	.0147
	20	0785.5	13 53 20.4515	20.4315	.0200
	21	0786.5	13 57 17.0110	16.9869	.0241
	22	0787.5	14 1 13.5682	13.5423	.0259
	23	0788.5	14 5 10.1222	10.0976	.0246
	24	0789.5	14 9 6.6732	6.6530	.0202
	25	0790.5	14 13 3.2216	3.2084	.0132
	26	0791.5	14 16 59.7694	59.7637	.0057
	27	0792.5	14 20 56.3191	56.3191	.0000
	28	0793.5	14 24 52.8727	52.8745	-.0018
	29	0794.5	14 28 49.4312	49.4299	.0013
	30	0795.5	14 32 45.9939	45.9852	.0087

TIEMPO SIDÉREO 2025

Fecha 0^h UT		Día Juliano	Tiempo Sidéreo Ángulo Horario de Aries		Ecuación de los Equinoccios
			Aparente	Medio	(E_0)
		245	h m s	s	s
Mayo	01	0796.5	14 36 42.5590	42.5406	.0184
	02	0797.5	14 40 39.1240	39.0960	.0280
	03	0798.5	14 44 35.6870	35.6513	.0357
	04	0799.5	14 48 32.2469	32.2067	.0402
	05	0800.5	14 52 28.8032	28.7621	.0411
	06	0801.5	14 56 25.3563	25.3174	.0389
	07	0802.5	15 0 21.9071	21.8728	.0343
	08	0803.5	15 4 18.4565	18.4282	.0283
	09	0804.5	15 8 15.0056	14.9835	.0221
	10	0805.5	15 12 11.5557	11.5389	.0168
	11	0806.5	15 16 8.1076	8.0943	.0133
	12	0807.5	15 20 4.6618	4.6497	.0121
	13	0808.5	15 24 1.2187	1.2050	.0137
	14	0809.5	15 27 57.7782	57.7604	.0178
	15	0810.5	15 31 54.3398	54.3158	.0240
	16	0811.5	15 35 50.9025	50.8711	.0314
	17	0812.5	15 39 47.4655	47.4265	.0390
	18	0813.5	15 43 44.0274	43.9819	.0455
	19	0814.5	15 47 40.5872	40.5372	.0500
	20	0815.5	15 51 37.1443	37.0926	.0517
	21	0816.5	15 55 33.6983	33.6480	.0503
	22	0817.5	15 59 30.2496	30.2033	.0463
	23	0818.5	16 3 26.7998	26.7587	.0411
	24	0819.5	16 7 23.3508	23.3141	.0367
	25	0820.5	16 11 19.9048	19.8695	.0353
	26	0821.5	16 15 16.4631	16.4248	.0383
	27	0822.5	16 19 13.0264	12.9802	.0462
	28	0823.5	16 23 9.5931	9.5356	.0575
	29	0824.5	16 27 6.1610	6.0909	.0701
	30	0825.5	16 31 2.7277	2.6463	.0814
	31	0826.5	16 34 59.2914	59.2017	.0897
Junio	01	0827.5	16 38 55.8512	55.7570	.0942
	02	0828.5	16 42 52.4076	52.3124	.0952
	03	0829.5	16 46 48.9610	48.8678	.0932
	04	0830.5	16 50 45.5126	45.4231	.0895
	05	0831.5	16 54 42.0637	41.9785	.0852
	06	0832.5	16 58 38.6154	38.5339	.0815
	07	0833.5	17 2 35.1686	35.0893	.0793
	08	0834.5	17 6 31.7239	31.6446	.0793
	09	0835.5	17 10 28.2819	28.2000	.0819
	10	0836.5	17 14 24.8425	24.7554	.0871
	11	0837.5	17 18 21.4052	21.3107	.0945
	12	0838.5	17 22 17.9695	17.8661	.1034
	13	0839.5	17 26 14.5342	14.4215	.1127
	14	0840.5	17 30 11.0979	10.9768	.1211
	15	0841.5	17 34 7.6597	7.5322	.1275
	16	0842.5	17 38 4.2187	4.0876	.1311
	17	0843.5	17 42 .7744	.6429	.1315
	18	0844.5	17 45 57.3275	57.1983	.1292
	19	0845.5	17 49 53.8790	53.7537	.1253
	20	0846.5	17 53 50.4307	50.3091	.1216
	21	0847.5	17 57 46.9843	46.8644	.1199
	22	0848.5	18 1 43.5418	43.4198	.1220
	23	0849.5	18 5 40.1038	39.9752	.1286
	24	0850.5	18 9 36.6697	36.5305	.1392
	25	0851.5	18 13 33.2379	33.0859	.1520
	26	0852.5	18 17 29.8061	29.6413	.1648
	27	0853.5	18 21 26.3718	26.1966	.1752
	28	0854.5	18 25 22.9340	22.7520	.1820
	29	0855.5	18 29 19.4922	19.3074	.1848
	30	0856.5	18 33 16.0469	15.8627	.1842

TIEMPO SIDÉREO 2025

Fecha 0^h UT		Día Juliano	Tiempo Sidéreo Ángulo Horario de Aries		Ecuación de los Equinoccios
			Aparente	Medio	(E_0)
		245	h m s	s	s
Julio	01	0857.5	18 37 12.5994	12.4181	.1813
	02	0858.5	18 41 9.1507	8.9735	.1772
	03	0859.5	18 45 5.7023	5.5289	.1734
	04	0860.5	18 49 2.2549	2.0842	.1707
	05	0861.5	18 52 58.8096	58.6396	.1700
	06	0862.5	18 56 55.3668	55.1950	.1718
	07	0863.5	19 0 51.9265	51.7503	.1762
	08	0864.5	19 4 48.4886	48.3057	.1829
	09	0865.5	19 8 45.0524	44.8611	.1913
	10	0866.5	19 12 41.6168	41.4164	.2004
	11	0867.5	19 16 38.1807	37.9718	.2089
	12	0868.5	19 20 34.7428	34.5272	.2156
	13	0869.5	19 24 31.3019	31.0825	.2194
	14	0870.5	19 28 27.8578	27.6379	.2199
	15	0871.5	19 32 24.4107	24.1933	.2174
	16	0872.5	19 36 20.9616	20.7487	.2129
	17	0873.5	19 40 17.5121	17.3040	.2081
	18	0874.5	19 44 14.0642	13.8594	.2048
	19	0875.5	19 48 10.6195	10.4148	.2047
	20	0876.5	19 52 7.1787	6.9701	.2086
	21	0877.5	19 56 3.7420	3.5255	.2165
	22	0878.5	20 0 .3079	.0809	.2270
	23	0879.5	20 3 56.8745	56.6362	.2383
	24	0880.5	20 7 53.4398	53.1916	.2482
	25	0881.5	20 11 50.0019	49.7470	.2549
	26	0882.5	20 15 46.5601	46.3023	.2578
	27	0883.5	20 19 43.1145	42.8577	.2568
	28	0884.5	20 23 39.6661	39.4131	.2530
	29	0885.5	20 27 36.2161	35.9685	.2476
	30	0886.5	20 31 32.7657	32.5238	.2419
	31	0887.5	20 35 29.3162	29.0792	.2370
Agosto	01	0888.5	20 39 25.8685	25.6346	.2339
	02	0889.5	20 43 22.4230	22.1899	.2331
	03	0890.5	20 47 18.9801	18.7453	.2348
	04	0891.5	20 51 15.5396	15.3007	.2389
	05	0892.5	20 55 12.1009	11.8560	.2449
	06	0893.5	20 59 8.6633	8.4114	.2519
	07	0894.5	21 3 5.2256	4.9668	.2588
	08	0895.5	21 7 1.7864	1.5221	.2643
	09	0896.5	21 10 58.3448	58.0775	.2673
	10	0897.5	21 14 54.8997	54.6329	.2668
	11	0898.5	21 18 51.4512	51.1882	.2630
	12	0899.5	21 22 48.0003	47.7436	.2567
	13	0900.5	21 26 44.5486	44.2990	.2496
	14	0901.5	21 30 41.0980	40.8544	.2436
	15	0902.5	21 34 37.6502	37.4097	.2405
	16	0903.5	21 38 34.2063	33.9651	.2412
	17	0904.5	21 42 30.7663	30.5205	.2458
	18	0905.5	21 46 27.3290	27.0758	.2532
	19	0906.5	21 50 23.8930	23.6312	.2618
	20	0907.5	21 54 20.4561	20.1866	.2695
	21	0908.5	21 58 17.0166	16.7419	.2747
	22	0909.5	22 2 13.5737	13.2973	.2764
	23	0910.5	22 6 10.1270	9.8527	.2743
	24	0911.5	22 10 6.6770	6.4080	.2690
	25	0912.5	22 14 3.2251	2.9634	.2617
	26	0913.5	22 17 59.7724	59.5188	.2536
	27	0914.5	22 21 56.3202	56.0742	.2460
	28	0915.5	22 25 52.8695	52.6295	.2400
	29	0916.5	22 29 49.4211	49.1849	.2362
	30	0917.5	22 33 45.9751	45.7403	.2348
	31	0918.5	22 37 42.5315	42.2956	.2359

TIEMPO SIDÉREO 2025

Fecha 0^h U T		Día Juliano	Tiempo Sidéreo Ángulo Horario de Aries		Ecuación de los Equinoccios
			Aparente	Medio	(E_0)
		245	h m s	s	s
Septiembre	01	0919.5	22 41 39.0900	38.8510	.2390
	02	0920.5	22 45 35.6499	35.4064	.2435
	03	0921.5	22 49 32.2100	31.9617	.2483
	04	0922.5	22 53 28.7694	28.5171	.2523
	05	0923.5	22 57 25.3268	25.0725	.2543
	06	0924.5	23 1 21.8811	21.6278	.2533
	07	0925.5	23 5 18.4320	18.1832	.2488
	08	0926.5	23 9 14.9799	14.7386	.2413
	09	0927.5	23 13 11.5263	11.2940	.2323
	10	0928.5	23 17 8.0732	7.8493	.2239
	11	0929.5	23 21 4.6228	4.4047	.2181
	12	0930.5	23 25 1.1763	.9601	.2162
	13	0931.5	23 28 57.7339	57.5154	.2185
	14	0932.5	23 32 54.2948	54.0708	.2240
	15	0933.5	23 36 50.8571	50.6262	.2309
	16	0934.5	23 40 47.4189	47.1815	.2374
	17	0935.5	23 44 43.9785	43.7369	.2416
	18	0936.5	23 48 40.5350	40.2923	.2427
	19	0937.5	23 52 37.0877	36.8476	.2401
	20	0938.5	23 56 33.6373	33.4030	.2343
	21	0939.5	0 0 30.1846	29.9584	.2262
	22	0940.5	0 4 26.7308	26.5138	.2170
	23	0941.5	0 8 23.2772	23.0691	.2081
	24	0942.5	0 12 19.8250	19.6245	.2005
	25	0943.5	0 16 16.3749	16.1799	.1950
	26	0944.5	0 20 12.9272	12.7352	.1920
	27	0945.5	0 24 9.4820	9.2906	.1914
	28	0946.5	0 28 6.0391	5.8460	.1931
	29	0947.5	0 32 2.5977	2.4013	.1964
	30	0948.5	0 35 59.1570	58.9567	.2003
Octubre	01	0949.5	0 39 55.7161	55.5121	.2040
	02	0950.5	0 43 52.2736	52.0674	.2062
	03	0951.5	0 47 48.8287	48.6228	.2059
	04	0952.5	0 51 45.3808	45.1782	.2026
	05	0953.5	0 55 41.9297	41.7336	.1961
	06	0954.5	0 59 38.4764	38.2889	.1875
	07	0955.5	1 3 35.0228	34.8443	.1785
	08	0956.5	1 7 31.5713	31.3997	.1716
	09	0957.5	1 11 28.1235	27.9550	.1685
	10	0958.5	1 15 24.6806	24.5104	.1702
	11	0959.5	1 19 21.2417	21.0658	.1759
	12	0960.5	1 23 17.8048	17.6211	.1837
	13	0961.5	1 27 14.3680	14.1765	.1915
	14	0962.5	1 31 10.9291	10.7319	.1972
	15	0963.5	1 35 7.4870	7.2872	.1998
	16	0964.5	1 39 4.0414	3.8426	.1988
	17	0965.5	1 43 .5925	.3980	.1945
	18	0966.5	1 46 57.1412	56.9534	.1878
	19	0967.5	1 50 53.6886	53.5087	.1799
	20	0968.5	1 54 50.2360	50.0641	.1719
	21	0969.5	1 58 46.7845	46.6195	.1650
	22	0970.5	2 2 43.3348	43.1748	.1600
	23	0971.5	2 6 39.8878	39.7302	.1576
	24	0972.5	2 10 36.4434	36.2856	.1578
	25	0973.5	2 14 33.0012	32.8409	.1603
	26	0974.5	2 18 29.5608	29.3963	.1645
	27	0975.5	2 22 26.1215	25.9517	.1698
	28	0976.5	2 26 22.6819	22.5070	.1749
	29	0977.5	2 30 19.2415	19.0624	.1791
	30	0978.5	2 34 15.7990	15.6178	.1812
	31	0979.5	2 38 12.3539	12.1732	.1807

TIEMPO SIDÉREO 2025

Fecha 0^h U T		Día Juliano	Tiempo Sidéreo Ángulo Horario de Aries		Ecuación de los Equinoccios
			Aparente	Medio	(E_0)
		245	h m s	s	s
Noviembre	01	0980.5	2 42 8.9058	8.7285	.1773
	02	0981.5	2 46 5.4553	5.2839	.1714
	03	0982.5	2 50 2.0037	1.8393	.1644
	04	0983.5	2 53 58.5530	58.3946	.1584
	05	0984.5	2 57 55.1057	54.9500	.1557
	06	0985.5	3 1 51.6631	51.5054	.1577
	07	0986.5	3 5 48.2252	48.0607	.1645
	08	0987.5	3 9 44.7909	44.6161	.1748
	09	0988.5	3 13 41.3576	41.1715	.1861
	10	0989.5	3 17 37.9226	37.7268	.1958
	11	0990.5	3 21 34.4845	34.2822	.2023
	12	0991.5	3 25 31.0426	30.8376	.2050
	13	0992.5	3 29 27.5971	27.3930	.2041
	14	0993.5	3 33 24.1487	23.9483	.2004
	15	0994.5	3 37 20.6989	20.5037	.1952
	16	0995.5	3 41 17.2488	17.0591	.1897
	17	0996.5	3 45 13.7995	13.6144	.1851
	18	0997.5	3 49 10.3520	10.1698	.1822
	19	0998.5	3 53 6.9070	6.7252	.1818
	20	0999.5	3 57 3.4645	3.2805	.1840
	21	1000.5	4 0 60.0245	59.8359	.1886
	22	1001.5	4 4 56.5864	56.3913	.1951
	23	1002.5	4 8 53.1493	52.9466	.2027
	24	1003.5	4 12 49.7125	49.5020	.2105
	25	1004.5	4 16 46.2748	46.0574	.2174
	26	1005.5	4 20 42.8353	42.6128	.2225
	27	1006.5	4 24 39.3932	39.1681	.2251
	28	1007.5	4 28 35.9484	35.7235	.2249
	29	1008.5	4 32 32.5012	32.2789	.2223
	30	1009.5	4 36 29.0524	28.8342	.2182
Diciembre	01	1010.5	4 40 25.6037	25.3896	.2141
	02	1011.5	4 44 22.1572	21.9450	.2122
	03	1012.5	4 48 18.7146	18.5003	.2143
	04	1013.5	4 52 15.2770	15.0557	.2213
	05	1014.5	4 56 11.8439	11.6111	.2328
	06	1015.5	5 0 8.4131	8.1664	.2467
	07	1016.5	5 4 4.9821	4.7218	.2603
	08	1017.5	5 8 1.5483	1.2772	.2711
	09	1018.5	5 11 58.1105	57.8326	.2779
	10	1019.5	5 15 54.6684	54.3879	.2805
	11	1020.5	5 19 51.2230	50.9433	.2797
	12	1021.5	5 23 47.7756	47.4987	.2769
	13	1022.5	5 27 44.3274	44.0540	.2734
	14	1023.5	5 31 40.8798	40.6094	.2704
	15	1024.5	5 35 37.4337	37.1648	.2689
	16	1025.5	5 39 33.9897	33.7201	.2696
	17	1026.5	5 43 30.5484	30.2755	.2729
	18	1027.5	5 47 27.1095	26.8309	.2786
	19	1028.5	5 51 23.6725	23.3862	.2863
	20	1029.5	5 55 20.2369	19.9416	.2953
	21	1030.5	5 59 16.8016	16.4970	.3046
	22	1031.5	6 3 13.3655	13.0524	.3131
	23	1032.5	6 7 9.9276	9.6077	.3199
	24	1033.5	6 11 6.4872	6.1631	.3241
	25	1034.5	6 15 3.0440	2.7185	.3255
	26	1035.5	6 18 59.5981	59.2738	.3243
	27	1036.5	6 22 56.1505	55.8292	.3213
	28	1037.5	6 26 52.7024	52.3846	.3178
	29	1038.5	6 30 49.2555	48.9399	.3156
	30	1039.5	6 34 45.8118	45.4953	.3165
	31	1040.5	6 38 42.3724	42.0507	.3217

VOLVER AL INDICE

VOLVER AL EJEMPLO 3 VOLVER AL EJEMPLO 4

SOL 2025

PARA 0^h DE TIEMPO TERRESTRE

Fecha	Día Juliano	Asc. Recta Aparente	Declinación Aparente	P.H.	Semi Diámetro	Distancia Geocent.	Tránsito Efemérides
	245	h m s	° ' "	"	' "	UA	h m s
Ene. 01	0676.5	18 47 02.218	-22 59 53.78	8.94	16 15.89	.9833532	12 03 41
02	0677.5	18 51 27.021	-22 54 42.46	8.94	16 15.90	.9833409	12 04 9
03	0678.5	18 55 51.461	-22 49 03.74	8.94	16 15.91	.9833325	12 04 36
04	0679.5	19 00 15.504	-22 42 57.79	8.94	16 15.92	.9833281	12 05 4
05	0680.5	19 04 39.118	-22 36 24.80	8.94	16 15.92	.9833278	12 05 30
06	0681.5	19 09 02.273	-22 29 24.97	8.94	16 15.91	.9833320	12 05 57
07	0682.5	19 13 24.941	-22 21 58.51	8.94	16 15.90	.9833410	12 06 23
08	0683.5	19 17 47.098	-22 14 05.65	8.94	16 15.89	.9833551	12 06 48
09	0684.5	19 22 08.720	-22 05 46.65	8.94	16 15.87	.9833746	12 07 13
10	0685.5	19 26 29.784	-21 57 01.77	8.94	16 15.84	.9833999	12 07 37
11	0686.5	19 30 50.269	-21 47 51.28	8.94	16 15.81	.9834312	12 08 1
12	0687.5	19 35 10.155	-21 38 15.45	8.94	16 15.78	.9834687	12 08 24
13	0688.5	19 39 29.421	-21 28 14.56	8.94	16 15.73	.9835126	12 08 46
14	0689.5	19 43 48.051	-21 17 48.88	8.94	16 15.68	.9835629	12 09 8
15	0690.5	19 48 06.027	-21 06 58.70	8.94	16 15.63	.9836197	12 09 29
16	0691.5	19 52 23.333	-20 55 44.28	8.94	16 15.56	.9836828	12 09 49
17	0692.5	19 56 39.958	-20 44 05.92	8.94	16 15.49	.9837521	12 10 9
18	0693.5	20 00 55.887	-20 32 03.91	8.94	16 15.42	.9838274	12 10 28
19	0694.5	20 05 11.110	-20 19 38.56	8.94	16 15.34	.9839085	12 10 46
20	0695.5	20 09 25.615	-20 06 50.19	8.94	16 15.25	.9839951	12 11 4
21	0696.5	20 13 39.391	-19 53 39.12	8.94	16 15.16	.9840870	12 11 21
22	0697.5	20 17 52.428	-19 40 05.69	8.94	16 15.07	.9841840	12 11 37
23	0698.5	20 22 04.716	-19 26 10.27	8.93	16 14.97	.9842858	12 11 52
24	0699.5	20 26 16.245	-19 11 53.20	8.93	16 14.86	.9843921	12 12 7
25	0700.5	20 30 27.006	-18 57 14.86	8.93	16 14.75	.9845027	12 12 21
26	0701.5	20 34 36.989	-18 42 15.63	8.93	16 14.64	.9846173	12 12 34
27	0702.5	20 38 46.184	-18 26 55.90	8.93	16 14.52	.9847356	12 12 46
28	0703.5	20 42 54.583	-18 11 16.07	8.93	16 14.40	.9848574	12 12 57
29	0704.5	20 47 02.174	-17 55 16.55	8.93	16 14.28	.9849825	12 13 8
30	0705.5	20 51 08.950	-17 38 57.75	8.93	16 14.15	.9851108	12 13 18
31	0706.5	20 55 14.902	-17 22 20.09	8.93	16 14.02	.9852421	12 13 27
Feb. 01	0707.5	20 59 20.025	-17 05 23.99	8.92	16 13.89	.9853764	12 13 35
02	0708.5	21 03 24.317	-16 48 09.86	8.92	16 13.75	.9855140	12 13 42
03	0709.5	21 07 27.776	-16 30 38.12	8.92	16 13.61	.9856548	12 13 49
04	0710.5	21 11 30.405	-16 12 49.22	8.92	16 13.47	.9857992	12 13 54
05	0711.5	21 15 32.206	-15 54 43.56	8.92	16 13.32	.9859475	12 13 59
06	0712.5	21 19 33.183	-15 36 21.60	8.92	16 13.17	.9860999	12 14 3
07	0713.5	21 23 33.343	-15 17 43.76	8.92	16 13.02	.9862568	12 14 6
08	0714.5	21 27 32.690	-14 58 50.46	8.92	16 12.86	.9864183	12 14 9
09	0715.5	21 31 31.233	-14 39 42.13	8.91	16 12.69	.9865847	12 14 10
10	0716.5	21 35 28.981	-14 20 19.18	8.91	16 12.52	.9867562	12 14 11
11	0717.5	21 39 25.942	-14 00 42.00	8.91	16 12.35	.9869329	12 14 11
12	0718.5	21 43 22.130	-13 40 50.98	8.91	16 12.17	.9871147	12 14 10
13	0719.5	21 47 17.557	-13 20 46.52	8.91	16 11.99	.9873018	12 14 9
14	0720.5	21 51 12.238	-13 00 29.01	8.91	16 11.80	.9874940	12 14 6
15	0721.5	21 55 06.188	-12 39 58.82	8.90	16 11.60	.9876911	12 14 4
16	0722.5	21 58 59.422	-12 19 16.33	8.90	16 11.41	.9878931	12 13 60
17	0723.5	22 02 51.957	-11 58 21.95	8.90	16 11.20	.9880997	12 13 55
18	0724.5	22 06 43.809	-11 37 16.06	8.90	16 11.00	.9883106	12 13 50
19	0725.5	22 10 34.993	-11 15 59.06	8.90	16 10.78	.9885256	12 13 45
20	0726.5	22 14 25.524	-10 54 31.34	8.89	16 10.57	.9887444	12 13 38
21	0727.5	22 18 15.419	-10 32 53.31	8.89	16 10.35	.9889668	12 13 31
22	0728.5	22 22 04.691	-10 11 05.38	8.89	16 10.13	.9891924	12 13 24
23	0729.5	22 25 53.355	- 9 49 07.96	8.89	16 09.91	.9894209	12 13 16
24	0730.5	22 29 41.426	- 9 27 01.46	8.89	16 09.68	.9896520	12 13 7
25	0731.5	22 33 28.915	- 9 04 46.30	8.88	16 09.45	.9898853	12 12 57
26	0732.5	22 37 15.837	- 8 42 22.92	8.88	16 09.22	.9901205	12 12 48
27	0733.5	22 41 02.203	- 8 19 51.73	8.88	16 08.99	.9903574	12 12 37
28	0734.5	22 44 48.027	- 7 57 13.16	8.88	16 08.76	.9905956	12 12 26

SOL 2025
PARA O^h DE TIEMPO TERRESTRE

Fecha	Día Juliano	Asc. Recta Aparente	Declinación Aparente	P.H.	Semi Diámetro	Distancia Geocent.	Tránsito Efemérides
	245	h m s	° ' "	"	' "	UA	h m s
Mar. 01	0735.5	22 48 33.322	- 7 34 27.64	8.88	16 08.52	.9908350	12 12 15
02	0736.5	22 52 18.105	- 7 11 35.60	8.87	16 08.29	.9910756	12 12 3
03	0737.5	22 56 02.391	- 6 48 37.45	8.87	16 08.05	.9913175	12 11 50
04	0738.5	22 59 46.196	- 6 25 33.61	8.87	16 07.81	.9915606	12 11 37
05	0739.5	23 03 29.539	- 6 02 24.51	8.87	16 07.57	.9918054	12 11 24
06	0740.5	23 07 12.436	- 5 39 10.55	8.86	16 07.33	.9920520	12 11 10
07	0741.5	23 10 54.905	- 5 15 52.14	8.86	16 07.09	.9923006	12 10 55
08	0742.5	23 14 36.963	- 4 52 29.69	8.86	16 06.85	.9925516	12 10 41
09	0743.5	23 18 18.630	- 4 29 03.58	8.86	16 06.60	.9928052	12 10 26
10	0744.5	23 21 59.926	- 4 05 34.18	8.86	16 06.35	.9930615	12 10 10
11	0745.5	23 25 40.873	- 3 42 01.86	8.85	16 06.10	.9933208	12 09 54
12	0746.5	23 29 21.493	- 3 18 26.97	8.85	16 05.84	.9935829	12 09 38
13	0747.5	23 33 01.811	- 2 54 49.87	8.85	16 05.59	.9938481	12 09 22
14	0748.5	23 36 41.849	- 2 31 10.89	8.85	16 05.32	.9941163	12 09 5
15	0749.5	23 40 21.632	- 2 07 30.39	8.84	16 05.06	.9943874	12 08 49
16	0750.5	23 44 01.186	- 1 43 48.68	8.84	16 04.80	.9946614	12 08 31
17	0751.5	23 47 40.533	- 1 20 06.13	8.84	16 04.53	.9949380	12 08 14
18	0752.5	23 51 19.699	- 0 56 23.06	8.84	16 04.26	.9952171	12 07 57
19	0753.5	23 54 58.706	- 0 32 39.83	8.83	16 03.98	.9954985	12 07 39
20	0754.5	23 58 37.577	- 0 08 56.77	8.83	16 03.71	.9957818	12 07 21
21	0755.5	0 02 16.333	+ 0 14 45.76	8.83	16 03.43	.9960670	12 07 3
22	0756.5	0 05 54.997	+ 0 38 27.40	8.83	16 03.16	.9963536	12 06 46
23	0757.5	0 09 33.587	+ 1 02 07.80	8.82	16 02.88	.9966413	12 06 28
24	0758.5	0 13 12.125	+ 1 25 46.59	8.82	16 02.60	.9969298	12 06 10
25	0759.5	0 16 50.628	+ 1 49 23.41	8.82	16 02.32	.9972187	12 05 51
26	0760.5	0 20 29.115	+ 2 12 57.88	8.82	16 02.04	.9975076	12 05 33
27	0761.5	0 24 07.603	+ 2 36 29.62	8.81	16 01.76	.9977962	12 05 15
28	0762.5	0 27 46.110	+ 2 59 58.25	8.81	16 01.49	.9980841	12 04 57
29	0763.5	0 31 24.653	+ 3 23 23.40	8.81	16 01.21	.9983710	12 04 39
30	0764.5	0 35 03.251	+ 3 46 44.67	8.81	16 00.94	.9986566	12 04 21
31	0765.5	0 38 41.920	+ 4 10 01.70	8.80	16 00.66	.9989410	12 04 4
Abr. 01	0766.5	0 42 20.677	+ 4 33 14.10	8.80	16 00.39	.9992241	12 03 46
02	0767.5	0 45 59.536	+ 4 56 21.50	8.80	16 00.12	.9995061	12 03 28
03	0768.5	0 49 38.512	+ 5 19 23.52	8.80	15 59.85	.9997871	12 03 11
04	0769.5	0 53 17.620	+ 5 42 19.78	8.79	15 59.58	1.0000674	12 02 53
05	0770.5	0 56 56.876	+ 6 05 09.92	8.79	15 59.31	1.0003473	12 02 36
06	0771.5	1 00 36.295	+ 6 27 53.60	8.79	15 59.04	1.0006269	12 02 19
07	0772.5	1 04 15.898	+ 6 50 30.48	8.79	15 58.78	1.0009066	12 02 2
08	0773.5	1 07 55.701	+ 7 13 00.21	8.78	15 58.51	1.0011864	12 01 46
09	0774.5	1 11 35.726	+ 7 35 22.48	8.78	15 58.24	1.0014665	12 01 29
10	0775.5	1 15 15.993	+ 7 57 36.97	8.78	15 57.97	1.0017470	12 01 13
11	0776.5	1 18 56.523	+ 8 19 43.36	8.78	15 57.70	1.0020280	12 00 57
12	0777.5	1 22 37.336	+ 8 41 41.35	8.77	15 57.43	1.0023095	12 00 42
13	0778.5	1 26 18.453	+ 9 03 30.63	8.77	15 57.16	1.0025914	12 00 26
14	0779.5	1 29 59.893	+ 9 25 10.88	8.77	15 56.90	1.0028736	12 00 11
15	0780.5	1 33 41.677	+ 9 46 41.81	8.77	15 56.63	1.0031562	11 59 57
16	0781.5	1 37 23.821	+10 08 03.08	8.76	15 56.36	1.0034388	11 59 43
17	0782.5	1 41 06.345	+10 29 14.40	8.76	15 56.09	1.0037215	11 59 29
18	0783.5	1 44 49.263	+10 50 15.44	8.76	15 55.82	1.0040038	11 59 15
19	0784.5	1 48 32.593	+11 11 05.88	8.76	15 55.55	1.0042856	11 59 2
20	0785.5	1 52 16.349	+11 31 45.38	8.75	15 55.28	1.0045667	11 58 50
21	0786.5	1 56 00.544	+11 52 13.62	8.75	15 55.02	1.0048466	11 58 38
22	0787.5	1 59 45.192	+12 12 30.26	8.75	15 54.75	1.0051250	11 58 26
23	0788.5	2 03 30.305	+12 32 34.94	8.75	15 54.49	1.0054016	11 58 15
24	0789.5	2 07 15.894	+12 52 27.34	8.74	15 54.23	1.0056760	11 58 4
25	0790.5	2 11 01.971	+13 12 07.08	8.74	15 53.97	1.0059477	11 57 54
26	0791.5	2 14 48.545	+13 31 33.84	8.74	15 53.72	1.0062164	11 57 44
27	0792.5	2 18 35.626	+13 50 47.25	8.74	15 53.46	1.0064818	11 57 35
28	0793.5	2 22 23.221	+14 09 46.98	8.74	15 53.22	1.0067436	11 57 26
29	0794.5	2 26 11.334	+14 28 32.68	8.73	15 52.97	1.0070017	11 57 18
30	0795.5	2 29 59.969	+14 47 04.01	8.73	15 52.73	1.0072563	11 57 10

SOL 2025
PARA O^h DE TIEMPO TERRESTRE

Fecha	Día Juliano	Asc. Recta Aparente	Declinación Aparente	P.H.	Semi Diámetro	Distancia Geocent.	Tránsito Efemérides
	245	h m s	° ' "	"	' "	UA	h m s
May. 01	0796.5	2 33 49.125	+15 05 20.62	8.73	15 52.49	1.0075072	11 57 3
02	0797.5	2 37 38.805	+15 23 22.16	8.73	15 52.26	1.0077549	11 56 57
03	0798.5	2 41 29.009	+15 41 08.31	8.72	15 52.03	1.0079994	11 56 50
04	0799.5	2 45 19.742	+15 58 38.74	8.72	15 51.80	1.0082411	11 56 45
05	0800.5	2 49 11.008	+16 15 53.13	8.72	15 51.58	1.0084802	11 56 40
06	0801.5	2 53 02.812	+16 32 51.18	8.72	15 51.35	1.0087169	11 56 35
07	0802.5	2 56 55.160	+16 49 32.60	8.72	15 51.13	1.0089514	11 56 31
08	0803.5	3 00 48.058	+17 05 57.11	8.71	15 50.91	1.0091838	11 56 28
09	0804.5	3 04 41.513	+17 22 04.42	8.71	15 50.69	1.0094143	11 56 25
10	0805.5	3 08 35.528	+17 37 54.25	8.71	15 50.48	1.0096429	11 56 23
11	0806.5	3 12 30.108	+17 53 26.34	8.71	15 50.27	1.0098698	11 56 21
12	0807.5	3 16 25.259	+18 08 40.42	8.71	15 50.05	1.0100949	11 56 20
13	0808.5	3 20 20.981	+18 23 36.23	8.70	15 49.84	1.0103183	11 56 20
14	0809.5	3 24 17.278	+18 38 13.49	8.70	15 49.64	1.0105399	11 56 20
15	0810.5	3 28 14.150	+18 52 31.95	8.70	15 49.43	1.0107595	11 56 20
16	0811.5	3 32 11.596	+19 06 31.34	8.70	15 49.22	1.0109772	11 56 21
17	0812.5	3 36 09.615	+19 20 11.39	8.70	15 49.02	1.0111927	11 56 23
18	0813.5	3 40 08.205	+19 33 31.83	8.69	15 48.82	1.0114057	11 56 25
19	0814.5	3 44 07.361	+19 46 32.40	8.69	15 48.63	1.0116161	11 56 28
20	0815.5	3 48 07.080	+19 59 12.83	8.69	15 48.43	1.0118236	11 56 32
21	0816.5	3 52 07.356	+20 11 32.85	8.69	15 48.24	1.0120278	11 56 36
22	0817.5	3 56 08.183	+20 23 32.19	8.69	15 48.05	1.0122283	11 56 40
23	0818.5	4 00 09.555	+20 35 10.58	8.69	15 47.87	1.0124247	11 56 45
24	0819.5	4 04 11.461	+20 46 27.78	8.68	15 47.69	1.0126167	11 56 51
25	0820.5	4 08 13.894	+20 57 23.53	8.68	15 47.51	1.0128040	11 56 57
26	0821.5	4 12 16.837	+21 07 57.61	8.68	15 47.34	1.0129861	11 57 4
27	0822.5	4 16 20.276	+21 18 09.79	8.68	15 47.18	1.0131629	11 57 11
28	0823.5	4 20 24.190	+21 27 59.83	8.68	15 47.02	1.0133343	11 57 18
29	0824.5	4 24 28.557	+21 37 27.52	8.68	15 46.86	1.0135002	11 57 27
30	0825.5	4 28 33.356	+21 46 32.65	8.68	15 46.71	1.0136609	11 57 35
31	0826.5	4 32 38.566	+21 55 15.01	8.67	15 46.57	1.0138165	11 57 44
Jun. 01	0827.5	4 36 44.167	+22 03 34.39	8.67	15 46.43	1.0139672	11 57 53
02	0828.5	4 40 50.142	+22 11 30.62	8.67	15 46.29	1.0141133	11 58 3
03	0829.5	4 44 56.473	+22 19 03.53	8.67	15 46.16	1.0142550	11 58 13
04	0830.5	4 49 03.145	+22 26 12.97	8.67	15 46.03	1.0143926	11 58 23
05	0831.5	4 53 10.140	+22 32 58.79	8.67	15 45.90	1.0145262	11 58 33
06	0832.5	4 57 17.444	+22 39 20.87	8.67	15 45.78	1.0146561	11 58 44
07	0833.5	5 01 25.040	+22 45 19.08	8.67	15 45.67	1.0147825	11 58 56
08	0834.5	5 05 32.909	+22 50 53.32	8.66	15 45.55	1.0149054	11 59 7
09	0835.5	5 09 41.036	+22 56 03.48	8.66	15 45.44	1.0150250	11 59 19
10	0836.5	5 13 49.403	+23 00 49.46	8.66	15 45.33	1.0151414	11 59 31
11	0837.5	5 17 57.990	+23 05 11.18	8.66	15 45.23	1.0152546	11 59 43
12	0838.5	5 22 06.778	+23 09 08.56	8.66	15 45.12	1.0153647	11 59 55
13	0839.5	5 26 15.750	+23 12 41.51	8.66	15 45.02	1.0154717	12 00 8
14	0840.5	5 30 24.883	+23 15 49.96	8.66	15 44.93	1.0155755	12 00 20
15	0841.5	5 34 34.159	+23 18 33.85	8.66	15 44.83	1.0156759	12 00 33
16	0842.5	5 38 43.557	+23 20 53.09	8.66	15 44.74	1.0157729	12 00 46
17	0843.5	5 42 53.057	+23 22 47.64	8.66	15 44.66	1.0158661	12 00 59
18	0844.5	5 47 02.639	+23 24 17.43	8.66	15 44.57	1.0159554	12 01 12
19	0845.5	5 51 12.282	+23 25 22.42	8.66	15 44.49	1.0160403	12 01 25
20	0846.5	5 55 21.966	+23 26 02.57	8.65	15 44.42	1.0161206	12 01 38
21	0847.5	5 59 31.668	+23 26 17.87	8.65	15 44.35	1.0161959	12 01 51
22	0848.5	6 03 41.365	+23 26 08.31	8.65	15 44.29	1.0162658	12 02 4
23	0849.5	6 07 51.032	+23 25 33.90	8.65	15 44.23	1.0163300	12 02 17
24	0850.5	6 12 00.639	+23 24 34.69	8.65	15 44.17	1.0163882	12 02 30
25	0851.5	6 16 10.156	+23 23 10.71	8.65	15 44.12	1.0164402	12 02 43
26	0852.5	6 20 19.552	+23 21 22.01	8.65	15 44.08	1.0164860	12 02 56
27	0853.5	6 24 28.793	+23 19 08.63	8.65	15 44.04	1.0165256	12 03 9
28	0854.5	6 28 37.852	+23 16 30.66	8.65	15 44.01	1.0165590	12 03 21
29	0855.5	6 32 46.700	+23 13 28.14	8.65	15 43.99	1.0165866	12 03 33
30	0856.5	6 36 55.313	+23 10 01.17	8.65	15 43.97	1.0166084	12 03 45

SOL 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha	Día Juliano	Asc. Recta Aparente	Declinación Aparente	P.H.	Semi Diámetro	Distancia Geocent.	Tránsito Efemérides
	245	h m s	° ' "	"	' "	UA	h m s
Jul. 01	0857.5	6 41 03.668	+23 06 09.85	8.65	15 43.95	1.0166248	12 03 57
02	0858.5	6 45 11.743	+23 01 54.28	8.65	15 43.94	1.0166359	12 04 8
03	0859.5	6 49 19.519	+22 57 14.58	8.65	15 43.94	1.0166422	12 04 19
04	0860.5	6 53 26.975	+22 52 10.88	8.65	15 43.93	1.0166437	12 04 30
05	0861.5	6 57 34.094	+22 46 43.33	8.65	15 43.94	1.0166407	12 04 40
06	0862.5	7 01 40.857	+22 40 52.06	8.65	15 43.94	1.0166335	12 04 50
07	0863.5	7 05 47.247	+22 34 37.24	8.65	15 43.95	1.0166222	12 05 0
08	0864.5	7 09 53.247	+22 27 59.03	8.65	15 43.97	1.0166071	12 05 9
09	0865.5	7 13 58.842	+22 20 57.59	8.65	15 43.99	1.0165883	12 05 18
10	0866.5	7 18 04.017	+22 13 33.09	8.65	15 44.01	1.0165659	12 05 27
11	0867.5	7 22 08.756	+22 05 45.71	8.65	15 44.03	1.0165401	12 05 34
12	0868.5	7 26 13.047	+21 57 35.62	8.65	15 44.06	1.0165109	12 05 42
13	0869.5	7 30 16.877	+21 49 02.98	8.65	15 44.09	1.0164784	12 05 49
14	0870.5	7 34 20.234	+21 40 07.98	8.65	15 44.12	1.0164423	12 05 56
15	0871.5	7 38 23.110	+21 30 50.78	8.65	15 44.16	1.0164027	12 06 2
16	0872.5	7 42 25.495	+21 21 11.58	8.65	15 44.20	1.0163593	12 06 7
17	0873.5	7 46 27.382	+21 11 10.55	8.65	15 44.24	1.0163119	12 06 12
18	0874.5	7 50 28.762	+21 00 47.89	8.65	15 44.29	1.0162602	12 06 17
19	0875.5	7 54 29.627	+20 50 03.84	8.65	15 44.34	1.0162038	12 06 21
20	0876.5	7 58 29.969	+20 38 58.60	8.65	15 44.40	1.0161425	12 06 24
21	0877.5	8 02 29.774	+20 27 32.44	8.66	15 44.46	1.0160759	12 06 27
22	0878.5	8 06 29.031	+20 15 45.61	8.66	15 44.53	1.0160036	12 06 30
23	0879.5	8 10 27.726	+20 03 38.39	8.66	15 44.60	1.0159256	12 06 32
24	0880.5	8 14 25.845	+19 51 11.03	8.66	15 44.68	1.0158416	12 06 33
25	0881.5	8 18 23.375	+19 38 23.83	8.66	15 44.76	1.0157517	12 06 34
26	0882.5	8 22 20.305	+19 25 17.05	8.66	15 44.85	1.0156557	12 06 34
27	0883.5	8 26 16.626	+19 11 50.97	8.66	15 44.95	1.0155539	12 06 33
28	0884.5	8 30 12.331	+18 58 05.89	8.66	15 45.05	1.0154464	12 06 32
29	0885.5	8 34 07.417	+18 44 02.08	8.66	15 45.15	1.0153335	12 06 30
30	0886.5	8 38 01.881	+18 29 39.84	8.66	15 45.26	1.0152153	12 06 28
31	0887.5	8 41 55.720	+18 14 59.46	8.66	15 45.38	1.0150921	12 06 25
Ago. 01	0888.5	8 45 48.936	+18 00 01.24	8.66	15 45.50	1.0149643	12 06 21
02	0889.5	8 49 41.528	+17 44 45.49	8.67	15 45.62	1.0148320	12 06 17
03	0890.5	8 53 33.498	+17 29 12.49	8.67	15 45.75	1.0146955	12 06 12
04	0891.5	8 57 24.848	+17 13 22.56	8.67	15 45.88	1.0145551	12 06 6
05	0892.5	9 01 15.583	+16 57 16.00	8.67	15 46.01	1.0144111	12 06 0
06	0893.5	9 05 05.705	+16 40 53.11	8.67	15 46.15	1.0142638	12 05 53
07	0894.5	9 08 55.220	+16 24 14.19	8.67	15 46.29	1.0141133	12 05 46
08	0895.5	9 12 44.134	+16 07 19.53	8.67	15 46.43	1.0139599	12 05 38
09	0896.5	9 16 32.455	+15 50 09.42	8.67	15 46.58	1.0138038	12 05 30
10	0897.5	9 20 20.190	+15 32 44.14	8.68	15 46.73	1.0136451	12 05 21
11	0898.5	9 24 07.352	+15 15 03.96	8.68	15 46.88	1.0134839	12 05 11
12	0899.5	9 27 53.951	+14 57 09.15	8.68	15 47.03	1.0133202	12 05 1
13	0900.5	9 31 40.001	+14 38 59.98	8.68	15 47.19	1.0131538	12 04 50
14	0901.5	9 35 25.517	+14 20 36.72	8.68	15 47.34	1.0129846	12 04 39
15	0902.5	9 39 10.512	+14 01 59.66	8.68	15 47.50	1.0128124	12 04 27
16	0903.5	9 42 54.997	+13 43 09.10	8.68	15 47.67	1.0126369	12 04 14
17	0904.5	9 46 38.985	+13 24 05.33	8.69	15 47.84	1.0124578	12 04 2
18	0905.5	9 50 22.483	+13 04 48.69	8.69	15 48.01	1.0122748	12 03 48
19	0906.5	9 54 05.500	+12 45 19.51	8.69	15 48.18	1.0120876	12 03 35
20	0907.5	9 57 48.043	+12 25 38.13	8.69	15 48.36	1.0118961	12 03 20
21	0908.5	10 01 30.118	+12 05 44.88	8.69	15 48.55	1.0116999	12 03 6
22	0909.5	10 05 11.734	+11 45 40.10	8.69	15 48.74	1.0114990	12 02 50
23	0910.5	10 08 52.899	+11 25 24.14	8.70	15 48.93	1.0112934	12 02 35
24	0911.5	10 12 33.624	+11 04 57.34	8.70	15 49.13	1.0110832	12 02 19
25	0912.5	10 16 13.920	+10 44 20.03	8.70	15 49.33	1.0108683	12 02 2
26	0913.5	10 19 53.799	+10 23 32.54	8.70	15 49.53	1.0106490	12 01 45
27	0914.5	10 23 33.275	+10 02 35.23	8.70	15 49.74	1.0104255	12 01 28
28	0915.5	10 27 12.362	+ 9 41 28.42	8.71	15 49.96	1.0101980	12 01 11
29	0916.5	10 30 51.075	+ 9 20 12.45	8.71	15 50.17	1.0099668	12 00 53
30	0917.5	10 34 29.428	+ 8 58 47.66	8.71	15 50.40	1.0097321	12 00 34
31	0918.5	10 38 07.437	+ 8 37 14.38	8.71	15 50.62	1.0094943	12 00 15

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Fecha	Día Juliano	Asc. Recta Aparente	Declinación Aparente	P.H.	Semi Diámetro	Distancia Geocent.	Tránsito Efemérides
	245	h m s	° ' "	"	' "	UA	h m s
Sept. 01	0919.5	10 41 45.118	+ 8 15 32.95	8.71	15 50.85	1.0092535	11 59 56
02	0920.5	10 45 22.486	+ 7 53 43.69	8.72	15 51.08	1.0090102	11 59 37
03	0921.5	10 48 59.559	+ 7 31 46.93	8.72	15 51.31	1.0087646	11 59 17
04	0922.5	10 52 36.354	+ 7 09 43.01	8.72	15 51.54	1.0085171	11 58 58
05	0923.5	10 56 12.889	+ 6 47 32.22	8.72	15 51.78	1.0082679	11 58 37
06	0924.5	10 59 49.182	+ 6 25 14.89	8.72	15 52.01	1.0080175	11 58 17
07	0925.5	11 03 25.256	+ 6 02 51.31	8.73	15 52.25	1.0077659	11 57 57
08	0926.5	11 07 01.131	+ 5 40 21.77	8.73	15 52.49	1.0075135	11 57 36
09	0927.5	11 10 36.834	+ 5 17 46.55	8.73	15 52.73	1.0072604	11 57 15
10	0928.5	11 14 12.388	+ 4 55 05.92	8.73	15 52.97	1.0070065	11 56 54
11	0929.5	11 17 47.820	+ 4 32 20.17	8.74	15 53.21	1.0067519	11 56 33
12	0930.5	11 21 23.154	+ 4 09 29.59	8.74	15 53.45	1.0064963	11 56 11
13	0931.5	11 24 58.411	+ 3 46 34.48	8.74	15 53.69	1.0062396	11 55 50
14	0932.5	11 28 33.612	+ 3 23 35.16	8.74	15 53.94	1.0059815	11 55 29
15	0933.5	11 32 08.776	+ 3 00 31.97	8.74	15 54.19	1.0057218	11 55 7
16	0934.5	11 35 43.920	+ 2 37 25.25	8.75	15 54.43	1.0054601	11 54 46
17	0935.5	11 39 19.061	+ 2 14 15.35	8.75	15 54.68	1.0051962	11 54 24
18	0936.5	11 42 54.216	+ 1 51 02.64	8.75	15 54.94	1.0049299	11 54 3
19	0937.5	11 46 29.402	+ 1 27 47.46	8.75	15 55.19	1.0046611	11 53 42
20	0938.5	11 50 04.636	+ 1 04 30.18	8.76	15 55.45	1.0043898	11 53 20
21	0939.5	11 53 39.938	+ 0 41 11.15	8.76	15 55.71	1.0041158	11 52 59
22	0940.5	11 57 15.324	+ 0 17 50.73	8.76	15 55.97	1.0038393	11 52 38
23	0941.5	12 00 50.815	- 0 05 30.72	8.76	15 56.24	1.0035602	11 52 17
24	0942.5	12 04 26.428	- 0 28 52.84	8.77	15 56.51	1.0032788	11 51 56
25	0943.5	12 08 02.181	- 0 52 15.26	8.77	15 56.78	1.0029952	11 51 36
26	0944.5	12 11 38.095	- 1 15 37.64	8.77	15 57.05	1.0027096	11 51 15
27	0945.5	12 15 14.186	- 1 38 59.60	8.77	15 57.33	1.0024224	11 50 55
28	0946.5	12 18 50.473	- 2 02 20.79	8.78	15 57.60	1.0021336	11 50 35
29	0947.5	12 22 26.974	- 2 25 40.84	8.78	15 57.88	1.0018436	11 50 15
30	0948.5	12 26 03.709	- 2 48 59.40	8.78	15 58.16	1.0015528	11 49 55
Oct. 01	0949.5	12 29 40.695	- 3 12 16.10	8.78	15 58.44	1.0012614	11 49 35
02	0950.5	12 33 17.952	- 3 35 30.59	8.79	15 58.72	1.0009698	11 49 16
03	0951.5	12 36 55.499	- 3 58 42.52	8.79	15 58.99	1.0006784	11 48 57
04	0952.5	12 40 33.356	- 4 21 51.53	8.79	15 59.27	1.0003875	11 48 39
05	0953.5	12 44 11.547	- 4 44 57.28	8.79	15 59.55	1.0000974	11 48 21
06	0954.5	12 47 50.095	- 5 07 59.46	8.80	15 59.83	.9998086	11 48 3
07	0955.5	12 51 29.025	- 5 30 57.74	8.80	16 00.10	.9995211	11 47 46
08	0956.5	12 55 08.363	- 5 53 51.80	8.80	16 00.38	.9992354	11 47 29
09	0957.5	12 58 48.138	- 6 16 41.34	8.80	16 00.65	.9989513	11 47 12
10	0958.5	13 02 28.372	- 6 39 26.03	8.81	16 00.92	.9986689	11 46 56
11	0959.5	13 06 09.089	- 7 02 05.54	8.81	16 01.19	.9983879	11 46 40
12	0960.5	13 09 50.308	- 7 24 39.50	8.81	16 01.46	.9981083	11 46 25
13	0961.5	13 13 32.049	- 7 47 07.54	8.81	16 01.73	.9978298	11 46 11
14	0962.5	13 17 14.328	- 8 09 29.28	8.82	16 02.00	.9975520	11 45 57
15	0963.5	13 20 57.163	- 8 31 44.30	8.82	16 02.27	.9972748	11 45 43
16	0964.5	13 24 40.571	- 8 53 52.23	8.82	16 02.53	.9969979	11 45 30
17	0965.5	13 28 24.567	- 9 15 52.65	8.82	16 02.80	.9967212	11 45 18
18	0966.5	13 32 09.168	- 9 37 45.17	8.83	16 03.07	.9964446	11 45 6
19	0967.5	13 35 54.390	- 9 59 29.37	8.83	16 03.34	.9961679	11 44 55
20	0968.5	13 39 40.248	-10 21 04.85	8.83	16 03.60	.9958911	11 44 45
21	0969.5	13 43 26.756	-10 42 31.21	8.83	16 03.87	.9956143	11 44 35
22	0970.5	13 47 13.928	-11 03 48.04	8.84	16 04.14	.9953375	11 44 26
23	0971.5	13 51 01.777	-11 24 54.91	8.84	16 04.41	.9950607	11 44 18
24	0972.5	13 54 50.314	-11 45 51.44	8.84	16 04.68	.9947842	11 44 10
25	0973.5	13 58 39.550	-12 06 37.19	8.84	16 04.94	.9945080	11 44 3
26	0974.5	14 02 29.497	-12 27 11.77	8.85	16 05.21	.9942325	11 43 57
27	0975.5	14 06 20.164	-12 47 34.75	8.85	16 05.48	.9939578	11 43 52
28	0976.5	14 10 11.560	-13 07 45.72	8.85	16 05.74	.9936842	11 43 47
29	0977.5	14 14 03.695	-13 27 44.27	8.85	16 06.01	.9934120	11 43 43
30	0978.5	14 17 56.577	-13 47 29.99	8.85	16 06.27	.9931415	11 43 39
31	0979.5	14 21 50.217	-14 07 02.47	8.86	16 06.53	.9928730	11 43 37

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Fecha	Día Juliano	Asc. Recta Aparente	Declinación Aparente	P.H.	Semi Diámetro	Distancia Geocent.	Tránsito Efemérides
	245	h m s	° ' "	"	' "	UA	h m s
Nov. 01	0980.5	14 25 44.624	-14 26 21.31	8.86	16 06.79	.9926070	11 43 35
02	0981.5	14 29 39.808	-14 45 26.12	8.86	16 07.05	.9923438	11 43 34
03	0982.5	14 33 35.782	-15 04 16.50	8.86	16 07.30	.9920838	11 43 34
04	0983.5	14 37 32.559	-15 22 52.10	8.87	16 07.55	.9918273	11 43 35
05	0984.5	14 41 30.152	-15 41 12.53	8.87	16 07.80	.9915747	11 43 36
06	0985.5	14 45 28.575	-15 59 17.46	8.87	16 08.04	.9913262	11 43 38
07	0986.5	14 49 27.839	-16 17 06.52	8.87	16 08.28	.9910818	11 43 41
08	0987.5	14 53 27.953	-16 34 39.33	8.88	16 08.51	.9908416	11 43 45
09	0988.5	14 57 28.921	-16 51 55.51	8.88	16 08.75	.9906053	11 43 50
10	0989.5	15 01 30.750	-17 08 54.65	8.88	16 08.97	.9903728	11 43 56
11	0990.5	15 05 33.441	-17 25 36.34	8.88	16 09.20	.9901439	11 44 2
12	0991.5	15 09 36.996	-17 42 00.17	8.88	16 09.42	.9899182	11 44 10
13	0992.5	15 13 41.418	-17 58 05.72	8.89	16 09.64	.9896955	11 44 18
14	0993.5	15 17 46.704	-18 13 52.58	8.89	16 09.85	.9894757	11 44 27
15	0994.5	15 21 52.854	-18 29 20.35	8.89	16 10.06	.9892586	11 44 37
16	0995.5	15 25 59.864	-18 44 28.61	8.89	16 10.28	.9890439	11 44 48
17	0996.5	15 30 07.730	-18 59 16.98	8.89	16 10.48	.9888316	11 44 60
18	0997.5	15 34 16.443	-19 13 45.06	8.90	16 10.69	.9886217	11 45 12
19	0998.5	15 38 25.997	-19 27 52.47	8.90	16 10.89	.9884140	11 45 26
20	0999.5	15 42 36.381	-19 41 38.81	8.90	16 11.10	.9882087	11 45 40
21	1000.5	15 46 47.582	-19 55 03.71	8.90	16 11.30	.9880056	11 45 55
22	1001.5	15 50 59.588	-20 08 06.80	8.90	16 11.49	.9878049	11 46 11
23	1002.5	15 55 12.383	-20 20 47.72	8.90	16 11.69	.9876068	11 46 28
24	1003.5	15 59 25.951	-20 33 06.10	8.91	16 11.88	.9874112	11 46 45
25	1004.5	16 03 40.275	-20 45 01.59	8.91	16 12.07	.9872186	11 47 3
26	1005.5	16 07 55.337	-20 56 33.85	8.91	16 12.26	.9870289	11 47 22
27	1006.5	16 12 11.117	-21 07 42.53	8.91	16 12.44	.9868426	11 47 42
28	1007.5	16 16 27.598	-21 18 27.32	8.91	16 12.62	.9866599	11 48 2
29	1008.5	16 20 44.761	-21 28 47.91	8.91	16 12.80	.9864811	11 48 23
30	1009.5	16 25 02.587	-21 38 43.98	8.92	16 12.97	.9863066	11 48 44
Dic. 01	1010.5	16 29 21.060	-21 48 15.26	8.92	16 13.14	.9861367	11 49 7
02	1011.5	16 33 40.162	-21 57 21.49	8.92	16 13.30	.9859719	11 49 29
03	1012.5	16 37 59.876	-22 06 02.41	8.92	16 13.46	.9858125	11 49 53
04	1013.5	16 42 20.186	-22 14 17.81	8.92	16 13.61	.9856588	11 50 17
05	1014.5	16 46 41.072	-22 22 07.44	8.92	16 13.75	.9855110	11 50 42
06	1015.5	16 51 02.512	-22 29 31.09	8.92	16 13.89	.9853692	11 51 7
07	1016.5	16 55 24.485	-22 36 28.54	8.93	16 14.03	.9852333	11 51 32
08	1017.5	16 59 46.967	-22 42 59.54	8.93	16 14.16	.9851033	11 51 58
09	1018.5	17 04 09.932	-22 49 03.88	8.93	16 14.28	.9849790	11 52 25
10	1019.5	17 08 33.355	-22 54 41.34	8.93	16 14.40	.9848600	11 52 52
11	1020.5	17 12 57.210	-22 59 51.70	8.93	16 14.51	.9847462	11 53 20
12	1021.5	17 17 21.469	-23 04 34.78	8.93	16 14.62	.9846372	11 53 48
13	1022.5	17 21 46.102	-23 08 50.42	8.93	16 14.72	.9845329	11 54 16
14	1023.5	17 26 11.080	-23 12 38.45	8.93	16 14.82	.9844330	11 54 44
15	1024.5	17 30 36.370	-23 15 58.73	8.93	16 14.91	.9843373	11 55 13
16	1025.5	17 35 01.938	-23 18 51.15	8.93	16 15.01	.9842457	11 55 42
17	1026.5	17 39 27.749	-23 21 15.60	8.94	16 15.09	.9841580	11 56 12
18	1027.5	17 43 53.766	-23 23 11.99	8.94	16 15.18	.9840741	11 56 41
19	1028.5	17 48 19.954	-23 24 40.24	8.94	16 15.25	.9839940	11 57 11
20	1029.5	17 52 46.273	-23 25 40.30	8.94	16 15.33	.9839176	11 57 41
21	1030.5	17 57 12.684	-23 26 12.13	8.94	16 15.40	.9838449	11 58 11
22	1031.5	18 01 39.149	-23 26 15.69	8.94	16 15.47	.9837759	11 58 41
23	1032.5	18 06 05.627	-23 25 50.99	8.94	16 15.54	.9837106	11 59 11
24	1033.5	18 10 32.081	-23 24 58.01	8.94	16 15.60	.9836493	11 59 41
25	1034.5	18 14 58.471	-23 23 36.78	8.94	16 15.65	.9835920	12 00 10
26	1035.5	18 19 24.762	-23 21 47.33	8.94	16 15.71	.9835390	12 00 40
27	1036.5	18 23 50.916	-23 19 29.72	8.94	16 15.75	.9834905	12 01 10
28	1037.5	18 28 16.902	-23 16 44.01	8.94	16 15.80	.9834468	12 01 39
29	1038.5	18 32 42.685	-23 13 30.30	8.94	16 15.84	.9834083	12 02 8
30	1039.5	18 37 08.236	-23 09 48.70	8.94	16 15.87	.9833751	12 02 37
31	1040.5	18 41 33.525	-23 05 39.32	8.94	16 15.90	.9833478	12 03 5

VOLVER AL INDICE

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Enero	01	22 01 34.573	-13 35 12.23	11.11	11.71	15 18 02
	02	22 05 36.227	-13 08 54.66	11.22	11.83	15 18 06
	03	22 09 35.689	-12 42 22.68	11.33	11.95	15 18 07
	04	22 13 32.941	-12 15 37.15	11.45	12.07	15 18 06
	05	22 17 27.966	-11 48 38.96	11.56	12.19	15 18 03
	06	22 21 20.744	-11 21 28.99	11.68	12.32	15 17 58
	07	22 25 11.256	-10 54 08.13	11.81	12.45	15 17 51
	08	22 28 59.485	-10 26 37.27	11.93	12.58	15 17 41
	09	22 32 45.407	- 9 58 57.29	12.06	12.71	15 17 29
	10	22 36 29.003	- 9 31 09.08	12.19	12.85	15 17 14
	11	22 40 10.247	- 9 03 13.55	12.32	12.99	15 16 57
	12	22 43 49.116	- 8 35 11.56	12.46	13.14	15 16 38
	13	22 47 25.582	- 8 07 04.00	12.60	13.28	15 16 17
	14	22 50 59.620	- 7 38 51.72	12.74	13.44	15 15 53
	15	22 54 31.201	- 7 10 35.59	12.89	13.59	15 15 26
	16	22 58 00.296	- 6 42 16.45	13.04	13.75	15 14 57
	17	23 01 26.876	- 6 13 55.13	13.19	13.91	15 14 25
	18	23 04 50.907	- 5 45 32.49	13.35	14.07	15 13 51
	19	23 08 12.355	- 5 17 09.35	13.51	14.24	15 13 14
	20	23 11 31.179	- 4 48 46.59	13.67	14.41	15 12 35
	21	23 14 47.338	- 4 20 25.05	13.84	14.59	15 11 53
	22	23 18 00.784	- 3 52 05.61	14.01	14.77	15 11 08
	23	23 21 11.465	- 3 23 49.16	14.18	14.95	15 10 21
	24	23 24 19.325	- 2 55 36.59	14.36	15.14	15 09 30
	25	23 27 24.302	- 2 27 28.83	14.55	15.34	15 08 37
	26	23 30 26.329	- 1 59 26.80	14.73	15.54	15 07 40
	27	23 33 25.331	- 1 31 31.47	14.93	15.74	15 06 41
	28	23 36 21.229	- 1 03 43.82	15.12	15.95	15 05 38
	29	23 39 13.935	- 0 36 04.87	15.32	16.16	15 04 32
	30	23 42 03.355	- 0 08 35.67	15.53	16.38	15 03 23
	31	23 44 49.386	+ 0 18 42.71	15.74	16.60	15 02 10
Febrero	01	23 47 31.920	+ 0 45 49.14	15.96	16.83	15 00 54
	02	23 50 10.841	+ 1 12 42.47	16.18	17.06	14 59 34
	03	23 52 46.027	+ 1 39 21.53	16.41	17.30	14 58 11
	04	23 55 17.348	+ 2 05 45.07	16.64	17.55	14 56 43
	05	23 57 44.667	+ 2 31 51.86	16.88	17.80	14 55 11
	06	0 00 07.840	+ 2 57 40.58	17.13	18.06	14 53 35
	07	0 02 26.716	+ 3 23 09.90	17.38	18.32	14 51 55
	08	0 04 41.136	+ 3 48 18.44	17.63	18.59	14 50 10
	09	0 06 50.937	+ 4 13 04.80	17.90	18.87	14 48 20
	10	0 08 55.950	+ 4 37 27.52	18.17	19.15	14 46 26
	11	0 10 56.001	+ 5 01 25.13	18.44	19.44	14 44 27
	12	0 12 50.910	+ 5 24 56.08	18.72	19.74	14 42 22
	13	0 14 40.495	+ 5 47 58.82	19.01	20.04	14 40 12
	14	0 16 24.567	+ 6 10 31.71	19.30	20.35	14 37 56
	15	0 18 02.933	+ 6 32 33.07	19.60	20.67	14 35 34
	16	0 19 35.396	+ 6 54 01.13	19.91	20.99	14 33 07
	17	0 21 01.751	+ 7 14 54.06	20.22	21.32	14 30 33
	18	0 22 21.793	+ 7 35 09.96	20.54	21.66	14 27 53
	19	0 23 35.312	+ 7 54 46.82	20.86	22.00	14 25 06
	20	0 24 42.093	+ 8 13 42.55	21.19	22.35	14 22 13
	21	0 25 41.925	+ 8 31 54.96	21.53	22.70	14 19 12
	22	0 26 34.592	+ 8 49 21.78	21.87	23.06	14 16 04
	23	0 27 19.884	+ 9 06 00.62	22.21	23.42	14 12 49
	24	0 27 57.592	+ 9 21 49.01	22.56	23.79	14 09 26
	25	0 28 27.515	+ 9 36 44.38	22.92	24.17	14 05 55
	26	0 28 49.458	+ 9 50 44.04	23.28	24.54	14 02 16
	27	0 29 03.237	+10 03 45.22	23.64	24.92	13 58 29
	28	0 29 08.684	+10 15 45.07	24.00	25.31	13 54 34

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Marzo	01	0 29 05.648	+10 26 40.67	24.36	25.69	13 50 30
	02	0 28 54.001	+10 36 29.02	24.73	26.07	13 46 17
	03	0 28 33.641	+10 45 07.13	25.09	26.46	13 41 56
	04	0 28 04.501	+10 52 32.00	25.45	26.84	13 37 26
	05	0 27 26.554	+10 58 40.68	25.81	27.21	13 32 48
	06	0 26 39.815	+11 03 30.34	26.16	27.59	13 28 00
	07	0 25 44.354	+11 06 58.28	26.51	27.95	13 23 05
	08	0 24 40.298	+11 09 02.04	26.85	28.31	13 18 00
	09	0 23 27.839	+11 09 39.45	27.18	28.66	13 12 48
	10	0 22 07.233	+11 08 48.68	27.50	28.99	13 07 28
	11	0 20 38.810	+11 06 28.32	27.80	29.31	13 01 60
	12	0 19 02.971	+11 02 37.44	28.09	29.62	12 56 25
	13	0 17 20.190	+10 57 15.66	28.36	29.90	12 50 44
	14	0 15 31.014	+10 50 23.22	28.61	30.17	12 44 56
	15	0 13 36.060	+10 42 00.98	28.84	30.41	12 39 04
	16	0 11 36.012	+10 32 10.53	29.05	30.63	12 33 06
	17	0 09 31.612	+10 20 54.18	29.23	30.82	12 27 05
	18	0 07 23.656	+10 08 14.99	29.39	30.99	12 21 01
	19	0 05 12.987	+ 9 54 16.77	29.51	31.12	12 14 54
	20	0 03 00.479	+ 9 39 04.04	29.61	31.22	12 08 46
	21	0 00 47.034	+ 9 22 42.05	29.68	31.30	12 02 38
	22	23 58 33.564	+ 9 05 16.66	29.72	31.33	11 56 30
	23	23 56 20.982	+ 8 46 54.32	29.72	31.34	11 50 23
	24	23 54 10.191	+ 8 27 41.96	29.69	31.31	11 44 18
	25	23 52 02.069	+ 8 07 46.89	29.64	31.25	11 38 17
	26	23 49 57.459	+ 7 47 16.68	29.55	31.16	11 32 19
	27	23 47 57.161	+ 7 26 19.08	29.43	31.03	11 26 26
	28	23 46 01.920	+ 7 05 01.86	29.28	30.88	11 20 39
	29	23 44 12.426	+ 6 43 32.76	29.11	30.69	11 14 57
	30	23 42 29.302	+ 6 21 59.32	28.91	30.48	11 09 22
	31	23 40 53.108	+ 6 00 28.87	28.68	30.24	11 03 54
Abril	01	23 39 24.337	+ 5 39 08.42	28.43	29.98	10 58 33
	02	23 38 03.413	+ 5 18 04.61	28.16	29.70	10 53 21
	03	23 36 50.698	+ 4 57 23.71	27.88	29.39	10 48 16
	04	23 35 46.489	+ 4 37 11.50	27.57	29.07	10 43 20
	05	23 34 51.023	+ 4 17 33.32	27.25	28.74	10 38 33
	06	23 34 04.475	+ 3 58 34.02	26.92	28.39	10 33 55
	07	23 33 26.968	+ 3 40 17.93	26.58	28.02	10 29 26
	08	23 32 58.569	+ 3 22 48.88	26.22	27.65	10 25 06
	09	23 32 39.300	+ 3 06 10.19	25.86	27.27	10 20 55
	10	23 32 29.133	+ 2 50 24.68	25.50	26.89	10 16 52
	11	23 32 28.005	+ 2 35 34.69	25.13	26.49	10 12 59
	12	23 32 35.813	+ 2 21 42.13	24.75	26.10	10 09 15
	13	23 32 52.425	+ 2 08 48.47	24.38	25.71	10 05 39
	14	23 33 17.679	+ 1 56 54.80	24.00	25.31	10 02 12
	15	23 33 51.392	+ 1 46 01.84	23.63	24.91	9 58 53
	16	23 34 33.361	+ 1 36 10.00	23.25	24.52	9 55 42
	17	23 35 23.366	+ 1 27 19.37	22.88	24.13	9 52 39
	18	23 36 21.175	+ 1 19 29.82	22.52	23.74	9 49 44
	19	23 37 26.545	+ 1 12 40.95	22.15	23.36	9 46 56
	20	23 38 39.230	+ 1 06 52.19	21.79	22.98	9 44 15
	21	23 39 58.975	+ 1 02 02.77	21.44	22.61	9 41 41
	22	23 41 25.525	+ 0 58 11.79	21.09	22.24	9 39 14
	23	23 42 58.625	+ 0 55 18.20	20.75	21.88	9 36 54
	24	23 44 38.020	+ 0 53 20.85	20.41	21.52	9 34 39
	25	23 46 23.458	+ 0 52 18.51	20.08	21.17	9 32 30
	26	23 48 14.694	+ 0 52 09.88	19.76	20.83	9 30 27
	27	23 50 11.487	+ 0 52 53.60	19.44	20.50	9 28 30
	28	23 52 13.603	+ 0 54 28.29	19.13	20.17	9 26 38
	29	23 54 20.818	+ 0 56 52.53	18.82	19.85	9 24 50
	30	23 56 32.913	+ 1 00 04.92	18.53	19.54	9 23 08

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Mayo	01	23 58 49.682	+ 1 04 04.06	18.24	19.23	9 21 30
	02	0 01 10.927	+ 1 08 48.58	17.95	18.93	9 19 56
	03	0 03 36.464	+ 1 14 17.12	17.67	18.64	9 18 27
	04	0 06 06.115	+ 1 20 28.34	17.40	18.35	9 17 02
	05	0 08 39.716	+ 1 27 20.95	17.14	18.07	9 15 40
	06	0 11 17.108	+ 1 34 53.64	16.88	17.80	9 14 23
	07	0 13 58.142	+ 1 43 05.15	16.62	17.53	9 13 09
	08	0 16 42.677	+ 1 51 54.19	16.38	17.27	9 11 58
	09	0 19 30.578	+ 2 01 19.53	16.14	17.01	9 10 51
	10	0 22 21.717	+ 2 11 19.90	15.90	16.77	9 09 46
	11	0 25 15.973	+ 2 21 54.07	15.67	16.52	9 08 45
	12	0 28 13.229	+ 2 33 00.82	15.45	16.29	9 07 47
	13	0 31 13.376	+ 2 44 38.93	15.23	16.06	9 06 52
	14	0 34 16.309	+ 2 56 47.18	15.01	15.83	9 05 59
	15	0 37 21.928	+ 3 09 24.37	14.81	15.61	9 05 09
	16	0 40 30.138	+ 3 22 29.30	14.60	15.40	9 04 22
	17	0 43 40.848	+ 3 36 00.78	14.40	15.19	9 03 37
	18	0 46 53.973	+ 3 49 57.63	14.21	14.98	9 02 54
	19	0 50 09.430	+ 4 04 18.66	14.02	14.78	9 02 14
	20	0 53 27.142	+ 4 19 02.72	13.84	14.59	9 01 36
	21	0 56 47.037	+ 4 34 08.64	13.66	14.40	9 01 00
	22	1 00 09.045	+ 4 49 35.27	13.48	14.21	9 00 27
	23	1 03 33.102	+ 5 05 21.48	13.31	14.03	8 59 55
	24	1 06 59.147	+ 5 21 26.14	13.14	13.86	8 59 25
	25	1 10 27.122	+ 5 37 48.15	12.98	13.68	8 58 57
	26	1 13 56.972	+ 5 54 26.42	12.82	13.52	8 58 31
	27	1 17 28.648	+ 6 11 19.88	12.66	13.35	8 58 07
	28	1 21 02.099	+ 6 28 27.48	12.51	13.19	8 57 45
	29	1 24 37.281	+ 6 45 48.18	12.36	13.03	8 57 24
	30	1 28 14.156	+ 7 03 20.97	12.22	12.88	8 57 05
	31	1 31 52.689	+ 7 21 04.89	12.07	12.73	8 56 47
Junio	01	1 35 32.851	+ 7 38 58.97	11.94	12.59	8 56 31
	02	1 39 14.619	+ 7 57 02.29	11.80	12.44	8 56 17
	03	1 42 57.973	+ 8 15 13.93	11.67	12.30	8 56 05
	04	1 46 42.895	+ 8 33 33.00	11.54	12.17	8 55 54
	05	1 50 29.370	+ 8 51 58.61	11.41	12.03	8 55 44
	06	1 54 17.386	+ 9 10 29.88	11.29	11.90	8 55 36
	07	1 58 06.931	+ 9 29 05.93	11.17	11.77	8 55 30
	08	2 01 57.996	+ 9 47 45.89	11.05	11.65	8 55 25
	09	2 05 50.572	+10 06 28.90	10.93	11.53	8 55 21
	10	2 09 44.651	+10 25 14.09	10.82	11.41	8 55 19
	11	2 13 40.227	+10 44 00.60	10.71	11.29	8 55 19
	12	2 17 37.293	+11 02 47.56	10.60	11.17	8 55 20
	13	2 21 35.844	+11 21 34.11	10.49	11.06	8 55 23
	14	2 25 35.872	+11 40 19.37	10.39	10.95	8 55 27
	15	2 29 37.374	+11 59 02.49	10.28	10.84	8 55 32
	16	2 33 40.345	+12 17 42.59	10.18	10.74	8 55 39
	17	2 37 44.779	+12 36 18.80	10.09	10.63	8 55 47
	18	2 41 50.673	+12 54 50.25	9.99	10.53	8 55 57
	19	2 45 58.022	+13 13 16.08	9.90	10.43	8 56 09
	20	2 50 06.824	+13 31 35.43	9.80	10.34	8 56 21
	21	2 54 17.072	+13 49 47.44	9.71	10.24	8 56 36
	22	2 58 28.762	+14 07 51.29	9.62	10.15	8 56 51
	23	3 02 41.886	+14 25 46.12	9.54	10.06	8 57 08
	24	3 06 56.436	+14 43 31.11	9.45	9.97	8 57 27
	25	3 11 12.400	+15 01 05.44	9.37	9.88	8 57 47
	26	3 15 29.770	+15 18 28.29	9.29	9.79	8 58 08
	27	3 19 48.537	+15 35 38.84	9.21	9.71	8 58 31
	28	3 24 08.692	+15 52 36.31	9.13	9.63	8 58 55
	29	3 28 30.233	+16 09 19.91	9.05	9.55	8 59 21
	30	3 32 53.155	+16 25 48.87	8.98	9.47	8 59 48

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Julio	01	3 37 17.455	+16 42 02.44	8.90	9.39	9 00 16
	02	3 41 43.132	+16 57 59.87	8.83	9.31	9 00 45
	03	3 46 10.182	+17 13 40.45	8.76	9.24	9 01 16
	04	3 50 38.601	+17 29 03.43	8.69	9.16	9 01 49
	05	3 55 08.386	+17 44 08.09	8.62	9.09	9 02 23
	06	3 59 39.530	+17 58 53.72	8.55	9.02	9 02 58
	07	4 04 12.026	+18 13 19.61	8.49	8.95	9 03 34
	08	4 08 45.865	+18 27 25.06	8.42	8.88	9 04 12
	09	4 13 21.039	+18 41 09.35	8.36	8.82	9 04 51
	10	4 17 57.535	+18 54 31.81	8.30	8.75	9 05 32
	11	4 22 35.340	+19 07 31.72	8.24	8.68	9 06 13
	12	4 27 14.439	+19 20 08.40	8.18	8.62	9 06 56
	13	4 31 54.817	+19 32 21.17	8.12	8.56	9 07 41
	14	4 36 36.455	+19 44 09.34	8.06	8.50	9 08 26
	15	4 41 19.336	+19 55 32.24	8.00	8.44	9 09 13
	16	4 46 03.438	+20 06 29.21	7.95	8.38	9 10 01
	17	4 50 48.740	+20 16 59.61	7.89	8.32	9 10 50
	18	4 55 35.217	+20 27 02.82	7.84	8.26	9 11 41
	19	5 00 22.841	+20 36 38.23	7.78	8.21	9 12 32
	20	5 05 11.583	+20 45 45.25	7.73	8.15	9 13 25
	21	5 10 01.408	+20 54 23.33	7.68	8.10	9 14 19
	22	5 14 52.279	+21 02 31.91	7.63	8.04	9 15 13
	23	5 19 44.157	+21 10 10.46	7.58	7.99	9 16 09
	24	5 24 37.000	+21 17 18.48	7.53	7.94	9 17 06
	25	5 29 30.768	+21 23 55.45	7.48	7.89	9 18 03
	26	5 34 25.420	+21 30 00.91	7.44	7.84	9 19 02
	27	5 39 20.915	+21 35 34.40	7.39	7.79	9 20 01
	28	5 44 17.216	+21 40 35.49	7.34	7.74	9 21 01
	29	5 49 14.281	+21 45 03.79	7.30	7.70	9 22 02
	30	5 54 12.072	+21 48 58.91	7.26	7.65	9 23 04
	31	5 59 10.549	+21 52 20.50	7.21	7.61	9 24 06
Agosto	01	6 04 09.670	+21 55 08.24	7.17	7.56	9 25 09
	02	6 09 09.393	+21 57 21.82	7.13	7.52	9 26 12
	03	6 14 09.675	+21 59 00.95	7.09	7.47	9 27 16
	04	6 19 10.473	+22 00 05.38	7.05	7.43	9 28 20
	05	6 24 11.743	+22 00 34.87	7.01	7.39	9 29 25
	06	6 29 13.438	+22 00 29.20	6.97	7.35	9 30 31
	07	6 34 15.514	+21 59 48.17	6.93	7.31	9 31 36
	08	6 39 17.925	+21 58 31.61	6.89	7.27	9 32 42
	09	6 44 20.625	+21 56 39.36	6.85	7.23	9 33 49
	10	6 49 23.569	+21 54 11.29	6.82	7.19	9 34 55
	11	6 54 26.711	+21 51 07.27	6.78	7.15	9 36 02
	12	6 59 30.007	+21 47 27.22	6.75	7.11	9 37 09
	13	7 04 33.413	+21 43 11.06	6.71	7.08	9 38 16
	14	7 09 36.885	+21 38 18.78	6.68	7.04	9 39 23
	15	7 14 40.379	+21 32 50.38	6.64	7.01	9 40 30
	16	7 19 43.849	+21 26 45.89	6.61	6.97	9 41 37
	17	7 24 47.247	+21 20 05.40	6.58	6.94	9 42 43
	18	7 29 50.526	+21 12 49.00	6.55	6.90	9 43 50
	19	7 34 53.637	+21 04 56.82	6.51	6.87	9 44 57
	20	7 39 56.531	+20 56 29.03	6.48	6.84	9 46 03
	21	7 44 59.163	+20 47 25.79	6.45	6.80	9 47 09
	22	7 50 01.487	+20 37 47.31	6.42	6.77	9 48 15
	23	7 55 03.462	+20 27 33.81	6.39	6.74	9 49 20
	24	8 00 05.048	+20 16 45.54	6.36	6.71	9 50 25
	25	8 05 06.210	+20 05 22.77	6.33	6.68	9 51 29
	26	8 10 06.913	+19 53 25.78	6.31	6.65	9 52 33
	27	8 15 07.126	+19 40 54.90	6.28	6.62	9 53 37
	28	8 20 06.818	+19 27 50.46	6.25	6.59	9 54 40
	29	8 25 05.962	+19 14 12.82	6.22	6.56	9 55 42
	30	8 30 04.532	+19 00 02.37	6.20	6.54	9 56 44
	31	8 35 02.502	+18 45 19.50	6.17	6.51	9 57 45

VENUS 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Septiembre	01	8 39 59.852	+18 30 04.62	6.15	6.48	9 58 46
	02	8 44 56.559	+18 14 18.16	6.12	6.45	9 59 46
	03	8 49 52.604	+17 58 00.57	6.10	6.43	10 00 45
	04	8 54 47.972	+17 41 12.29	6.07	6.40	10 01 43
	05	8 59 42.647	+17 23 53.80	6.05	6.38	10 02 41
	06	9 04 36.616	+17 06 05.58	6.02	6.35	10 03 39
	07	9 09 29.871	+16 47 48.09	6.00	6.33	10 04 35
	08	9 14 22.405	+16 29 01.83	5.98	6.30	10 05 31
	09	9 19 14.214	+16 09 47.30	5.95	6.28	10 06 26
	10	9 24 05.297	+15 50 05.01	5.93	6.26	10 07 20
	11	9 28 55.655	+15 29 55.49	5.91	6.23	10 08 13
	12	9 33 45.286	+15 09 19.29	5.89	6.21	10 09 06
	13	9 38 34.193	+14 48 17.01	5.87	6.19	10 09 58
	14	9 43 22.375	+14 26 49.23	5.85	6.17	10 10 50
	15	9 48 09.832	+14 04 56.56	5.83	6.14	10 11 40
	16	9 52 56.565	+13 42 39.64	5.81	6.12	10 12 30
	17	9 57 42.577	+13 19 59.09	5.79	6.10	10 13 19
	18	10 02 27.874	+12 56 55.56	5.77	6.08	10 14 08
	19	10 07 12.462	+12 33 29.68	5.75	6.06	10 14 56
	20	10 11 56.351	+12 09 42.12	5.73	6.04	10 15 43
	21	10 16 39.553	+11 45 33.51	5.71	6.02	10 16 29
	22	10 21 22.082	+11 21 04.53	5.69	6.00	10 17 15
	23	10 26 03.954	+10 56 15.83	5.67	5.98	10 17 60
	24	10 30 45.188	+10 31 08.08	5.66	5.96	10 18 44
	25	10 35 25.801	+10 05 41.97	5.64	5.94	10 19 28
	26	10 40 05.815	+ 9 39 58.16	5.62	5.93	10 20 11
	27	10 44 45.249	+ 9 13 57.35	5.60	5.91	10 20 54
	28	10 49 24.128	+ 8 47 40.22	5.59	5.89	10 21 36
	29	10 54 02.475	+ 8 21 07.45	5.57	5.87	10 22 18
	30	10 58 40.313	+ 7 54 19.74	5.55	5.86	10 22 59
Octubre	01	11 03 17.670	+ 7 27 17.78	5.54	5.84	10 23 39
	02	11 07 54.572	+ 7 00 02.25	5.52	5.82	10 24 20
	03	11 12 31.048	+ 6 32 33.85	5.51	5.81	10 24 59
	04	11 17 07.128	+ 6 04 53.26	5.49	5.79	10 25 39
	05	11 21 42.844	+ 5 37 01.17	5.48	5.78	10 26 18
	06	11 26 18.230	+ 5 08 58.24	5.46	5.76	10 26 57
	07	11 30 53.324	+ 4 40 45.15	5.45	5.75	10 27 35
	08	11 35 28.163	+ 4 12 22.57	5.43	5.73	10 28 13
	09	11 40 02.784	+ 3 43 51.18	5.42	5.72	10 28 51
	10	11 44 37.225	+ 3 15 11.66	5.41	5.70	10 29 29
	11	11 49 11.521	+ 2 46 24.72	5.39	5.69	10 30 07
	12	11 53 45.707	+ 2 17 31.10	5.38	5.67	10 30 44
	13	11 58 19.816	+ 1 48 31.52	5.37	5.66	10 31 22
	14	12 02 53.880	+ 1 19 26.72	5.35	5.65	10 31 59
	15	12 07 27.936	+ 0 50 17.45	5.34	5.63	10 32 37
	16	12 12 02.017	+ 0 21 04.44	5.33	5.62	10 33 15
	17	12 16 36.159	- 0 08 11.55	5.32	5.61	10 33 52
	18	12 21 10.401	- 0 37 29.78	5.31	5.59	10 34 30
	19	12 25 44.777	- 1 06 49.50	5.29	5.58	10 35 08
	20	12 30 19.326	- 1 36 09.98	5.28	5.57	10 35 46
	21	12 34 54.086	- 2 05 30.45	5.27	5.56	10 36 24
	22	12 39 29.093	- 2 34 50.17	5.26	5.55	10 37 03
	23	12 44 04.386	- 3 04 08.38	5.25	5.53	10 37 42
	24	12 48 40.000	- 3 33 24.33	5.24	5.52	10 38 21
	25	12 53 15.972	- 4 02 37.26	5.23	5.51	10 39 01
	26	12 57 52.340	- 4 31 46.39	5.22	5.50	10 39 41
	27	13 02 29.139	- 5 00 50.98	5.21	5.49	10 40 21
	28	13 07 06.405	- 5 29 50.24	5.20	5.48	10 41 02
	29	13 11 44.175	- 5 58 43.42	5.19	5.47	10 41 44
	30	13 16 22.483	- 6 27 29.74	5.18	5.46	10 42 26
	31	13 21 01.368	- 6 56 08.43	5.17	5.45	10 43 08

VENUS 2025
PARA Oh DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Noviembre	01	13 25 40.865	- 7 24 38.73	5.16	5.44	10 43 51
	02	13 30 21.012	- 7 52 59.88	5.15	5.43	10 44 35
	03	13 35 01.848	- 8 21 11.10	5.14	5.42	10 45 20
	04	13 39 43.411	- 8 49 11.66	5.13	5.41	10 46 05
	05	13 44 25.741	- 9 17 00.80	5.12	5.40	10 46 52
	06	13 49 08.877	- 9 44 37.77	5.12	5.39	10 47 39
	07	13 53 52.853	-10 12 01.82	5.11	5.39	10 48 26
	08	13 58 37.703	-10 39 12.15	5.10	5.38	10 49 15
	09	14 03 23.457	-11 06 07.98	5.09	5.37	10 50 05
	10	14 08 10.145	-11 32 48.51	5.08	5.36	10 50 55
	11	14 12 57.793	-11 59 12.91	5.08	5.35	10 51 47
	12	14 17 46.431	-12 25 20.38	5.07	5.35	10 52 39
	13	14 22 36.084	-12 51 10.09	5.06	5.34	10 53 33
	14	14 27 26.777	-13 16 41.22	5.06	5.33	10 54 28
	15	14 32 18.535	-13 41 52.97	5.05	5.32	10 55 23
	16	14 37 11.381	-14 06 44.53	5.04	5.32	10 56 20
	17	14 42 05.335	-14 31 15.08	5.03	5.31	10 57 18
	18	14 47 00.415	-14 55 23.81	5.03	5.30	10 58 17
	19	14 51 56.639	-15 19 09.91	5.02	5.30	10 59 18
	20	14 56 54.020	-15 42 32.58	5.02	5.29	11 00 19
	21	15 01 52.571	-16 05 31.02	5.01	5.28	11 01 22
	22	15 06 52.300	-16 28 04.41	5.00	5.28	11 02 25
	23	15 11 53.216	-16 50 11.97	5.00	5.27	11 03 30
	24	15 16 55.324	-17 11 52.89	4.99	5.26	11 04 36
	25	15 21 58.626	-17 33 06.39	4.99	5.26	11 05 44
	26	15 27 03.124	-17 53 51.68	4.98	5.25	11 06 52
	27	15 32 08.818	-18 14 07.97	4.98	5.25	11 08 02
	28	15 37 15.704	-18 33 54.52	4.97	5.24	11 09 13
	29	15 42 23.780	-18 53 10.55	4.97	5.24	11 10 25
	30	15 47 33.040	-19 11 55.32	4.96	5.23	11 11 38
Diciembre	01	15 52 43.479	-19 30 08.11	4.96	5.23	11 12 53
	02	15 57 55.088	-19 47 48.21	4.95	5.22	11 14 09
	03	16 03 07.857	-20 04 54.93	4.95	5.22	11 15 25
	04	16 08 21.774	-20 21 27.60	4.95	5.21	11 16 43
	05	16 13 36.823	-20 37 25.55	4.94	5.21	11 18 02
	06	16 18 52.982	-20 52 48.14	4.94	5.21	11 19 23
	07	16 24 10.227	-21 07 34.70	4.93	5.20	11 20 44
	08	16 29 28.530	-21 21 44.59	4.93	5.20	11 22 06
	09	16 34 47.864	-21 35 17.18	4.93	5.19	11 23 30
	10	16 40 08.197	-21 48 11.84	4.92	5.19	11 24 54
	11	16 45 29.495	-22 00 27.99	4.92	5.19	11 26 19
	12	16 50 51.722	-22 12 05.05	4.92	5.18	11 27 45
	13	16 56 14.840	-22 23 02.50	4.91	5.18	11 29 12
	14	17 01 38.806	-22 33 19.81	4.91	5.18	11 30 40
	15	17 07 03.576	-22 42 56.50	4.91	5.17	11 32 09
	16	17 12 29.102	-22 51 52.11	4.90	5.17	11 33 38
	17	17 17 55.334	-23 00 06.22	4.90	5.17	11 35 08
	18	17 23 22.218	-23 07 38.43	4.90	5.17	11 36 39
	19	17 28 49.698	-23 14 28.37	4.90	5.16	11 38 10
	20	17 34 17.718	-23 20 35.69	4.89	5.16	11 39 42
	21	17 39 46.215	-23 26 00.10	4.89	5.16	11 41 14
	22	17 45 15.131	-23 30 41.31	4.89	5.16	11 42 47
	23	17 50 44.400	-23 34 39.09	4.89	5.16	11 44 20
	24	17 56 13.960	-23 37 53.21	4.89	5.15	11 45 53
	25	18 01 43.747	-23 40 23.50	4.89	5.15	11 47 27
	26	18 07 13.696	-23 42 09.81	4.88	5.15	11 49 00
	27	18 12 43.745	-23 43 12.04	4.88	5.15	11 50 34
	28	18 18 13.830	-23 43 30.11	4.88	5.15	11 52 07
	29	18 23 43.888	-23 43 03.99	4.88	5.15	11 53 41
	30	18 29 13.860	-23 41 53.70	4.88	5.14	11 55 14
	31	18 34 43.682	-23 39 59.27	4.88	5.14	11 56 48

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PARA 0^{h} DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Enero	01	8 20 30.251	+23 32 42.48	7.13	13.39	1 36 33
	02	8 19 07.682	+23 39 18.97	7.15	13.44	1 31 15
	03	8 17 42.525	+23 45 56.42	7.18	13.48	1 25 54
	04	8 16 14.930	+23 52 33.84	7.20	13.52	1 20 31
	05	8 14 45.052	+23 59 10.26	7.22	13.56	1 15 06
	06	8 13 13.057	+24 05 44.71	7.23	13.59	1 09 38
	07	8 11 39.119	+24 12 16.20	7.25	13.62	1 04 09
	08	8 10 03.416	+24 18 43.82	7.26	13.64	0 58 38
	09	8 08 26.132	+24 25 06.65	7.27	13.66	0 53 05
	10	8 06 47.453	+24 31 23.82	7.28	13.68	0 47 31
	11	8 05 07.568	+24 37 34.49	7.28	13.69	0 41 56
	12	8 03 26.668	+24 43 37.87	7.29	13.69	0 36 20
	13	8 01 44.944	+24 49 33.20	7.29	13.69	0 30 43
	14	8 00 02.593	+24 55 19.76	7.28	13.69	0 25 05
	15	7 58 19.813	+25 00 56.86	7.28	13.68	0 19 27
	16	7 56 36.806	+25 06 23.85	7.27	13.66	0 13 49
	17	7 54 53.776	+25 11 40.13	7.26	13.65	0 08 11
	18	7 53 10.931	+25 16 45.14	7.25	13.62	******00
	19	7 51 28.477	+25 21 38.40	7.23	13.59	23 51 18
	20	7 49 46.624	+25 26 19.45	7.22	13.56	23 45 42
	21	7 48 05.577	+25 30 47.90	7.20	13.53	23 40 07
	22	7 46 25.539	+25 35 03.43	7.18	13.48	23 34 32
	23	7 44 46.713	+25 39 05.77	7.15	13.44	23 28 60
	24	7 43 09.293	+25 42 54.69	7.13	13.39	23 23 29
	25	7 41 33.471	+25 46 30.06	7.10	13.34	23 17 59
	26	7 39 59.431	+25 49 51.75	7.07	13.28	23 12 32
	27	7 38 27.352	+25 52 59.72	7.03	13.22	23 07 06
	28	7 36 57.405	+25 55 53.95	7.00	13.15	23 01 43
	29	7 35 29.752	+25 58 34.49	6.96	13.08	22 56 23
	30	7 34 04.549	+26 01 01.41	6.93	13.01	22 51 05
	31	7 32 41.941	+26 03 14.80	6.89	12.94	22 45 49
Febrero	01	7 31 22.065	+26 05 14.83	6.84	12.86	22 40 37
	02	7 30 05.047	+26 07 01.67	6.80	12.78	22 35 27
	03	7 28 51.002	+26 08 35.55	6.76	12.70	22 30 20
	04	7 27 40.032	+26 09 56.73	6.71	12.61	22 25 17
	05	7 26 32.227	+26 11 05.51	6.67	12.53	22 20 17
	06	7 25 27.662	+26 12 02.23	6.62	12.44	22 15 20
	07	7 24 26.399	+26 12 47.23	6.57	12.35	22 10 26
	08	7 23 28.492	+26 13 20.88	6.52	12.25	22 05 35
	09	7 22 33.979	+26 13 43.55	6.47	12.16	22 00 48
	10	7 21 42.892	+26 13 55.59	6.42	12.07	21 56 05
	11	7 20 55.255	+26 13 57.37	6.37	11.97	21 51 25
	12	7 20 11.086	+26 13 49.25	6.32	11.87	21 46 48
	13	7 19 30.396	+26 13 31.56	6.27	11.78	21 42 15
	14	7 18 53.192	+26 13 04.65	6.21	11.68	21 37 45
	15	7 18 19.476	+26 12 28.83	6.16	11.58	21 33 19
	16	7 17 49.245	+26 11 44.43	6.11	11.48	21 28 56
	17	7 17 22.492	+26 10 51.76	6.06	11.38	21 24 37
	18	7 16 59.205	+26 09 51.11	6.00	11.28	21 20 21
	19	7 16 39.369	+26 08 42.76	5.95	11.18	21 16 08
	20	7 16 22.963	+26 07 27.00	5.90	11.08	21 11 59
	21	7 16 09.964	+26 06 04.07	5.84	10.98	21 07 53
	22	7 16 00.344	+26 04 34.22	5.79	10.88	21 03 50
	23	7 15 54.073	+26 02 57.68	5.74	10.78	20 59 51
	24	7 15 51.118	+26 01 14.65	5.69	10.69	20 55 55
	25	7 15 51.442	+25 59 25.32	5.63	10.59	20 52 02
	26	7 15 55.006	+25 57 29.85	5.58	10.49	20 48 13
	27	7 16 01.770	+25 55 28.40	5.53	10.39	20 44 26
	28	7 16 11.693	+25 53 21.09	5.48	10.30	20 40 43

MARTE 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Marzo	01	7 16 24.731	+25 51 08.03	5.43	0.20	20 37 03
	02	7 16 40.838	+25 48 49.33	5.38	0.11	20 33 25
	03	7 16 59.967	+25 46 25.08	5.33	0.01	20 29 51
	04	7 17 22.065	+25 43 55.39	5.28	9.92	20 26 20
	05	7 17 47.077	+25 41 20.38	5.23	9.83	20 22 51
	06	7 18 14.941	+25 38 40.13	5.18	9.73	20 19 25
	07	7 18 45.595	+25 35 54.75	5.13	9.64	20 16 02
	08	7 19 18.976	+25 33 04.30	5.08	9.55	20 12 41
	09	7 19 55.019	+25 30 08.86	5.04	9.47	20 09 24
	10	7 20 33.659	+25 27 08.46	4.99	9.38	20 06 08
	11	7 21 14.835	+25 24 03.15	4.94	9.29	20 02 55
	12	7 21 58.486	+25 20 52.95	4.90	9.21	19 59 45
	13	7 22 44.553	+25 17 37.86	4.85	9.12	19 56 37
	14	7 23 32.980	+25 14 17.91	4.81	9.04	19 53 31
	15	7 24 23.710	+25 10 53.09	4.77	8.96	19 50 27
	16	7 25 16.690	+25 07 23.41	4.72	8.88	19 47 26
	17	7 26 11.869	+25 03 48.84	4.68	8.80	19 44 27
	18	7 27 09.194	+25 00 09.39	4.64	8.72	19 41 30
	19	7 28 08.616	+24 56 25.03	4.60	8.64	19 38 35
	20	7 29 10.086	+24 52 35.74	4.56	8.56	19 35 42
	21	7 30 13.555	+24 48 41.50	4.52	8.49	19 32 50
	22	7 31 18.976	+24 44 42.29	4.48	8.41	19 30 01
	23	7 32 26.303	+24 40 38.05	4.44	8.34	19 27 14
	24	7 33 35.490	+24 36 28.75	4.40	8.27	19 24 28
	25	7 34 46.493	+24 32 14.34	4.36	8.19	19 21 44
	26	7 35 59.267	+24 27 54.76	4.32	8.12	19 19 02
	27	7 37 13.773	+24 23 29.94	4.29	8.05	19 16 22
	28	7 38 29.968	+24 18 59.82	4.25	7.99	19 13 43
	29	7 39 47.814	+24 14 24.30	4.21	7.92	19 11 06
	30	7 41 07.273	+24 09 43.33	4.18	7.85	19 08 30
	31	7 42 28.307	+24 04 56.84	4.14	7.79	19 05 56
Abril	01	7 43 50.875	+24 00 04.80	4.11	7.72	19 03 24
	02	7 45 14.934	+23 55 07.18	4.08	7.66	19 00 53
	03	7 46 40.439	+23 50 03.96	4.04	7.60	18 58 23
	04	7 48 07.344	+23 44 55.10	4.01	7.53	18 55 55
	05	7 49 35.605	+23 39 40.59	3.98	7.47	18 53 28
	06	7 51 05.176	+23 34 20.39	3.95	7.41	18 51 02
	07	7 52 36.017	+23 28 54.46	3.91	7.35	18 48 38
	08	7 54 08.087	+23 23 22.76	3.88	7.30	18 46 14
	09	7 55 41.350	+23 17 45.26	3.85	7.24	18 43 52
	10	7 57 15.768	+23 12 01.91	3.82	7.18	18 41 31
	11	7 58 51.309	+23 06 12.67	3.79	7.13	18 39 11
	12	8 00 27.940	+23 00 17.52	3.76	7.07	18 36 52
	13	8 02 05.630	+22 54 16.42	3.74	7.02	18 34 34
	14	8 03 44.349	+22 48 09.33	3.71	6.97	18 32 18
	15	8 05 24.068	+22 41 56.22	3.68	6.92	18 30 02
	16	8 07 04.759	+22 35 37.07	3.65	6.86	18 27 47
	17	8 08 46.396	+22 29 11.84	3.63	6.81	18 25 33
	18	8 10 28.950	+22 22 40.51	3.60	6.77	18 23 20
	19	8 12 12.398	+22 16 03.06	3.57	6.72	18 21 07
	20	8 13 56.713	+22 09 19.43	3.55	6.67	18 18 56
	21	8 15 41.871	+22 02 29.61	3.52	6.62	18 16 45
	22	8 17 27.850	+21 55 33.56	3.50	6.57	18 14 36
	23	8 19 14.628	+21 48 31.22	3.47	6.53	18 12 27
	24	8 21 02.182	+21 41 22.56	3.45	6.48	18 10 18
	25	8 22 50.496	+21 34 07.53	3.43	6.44	18 08 11
	26	8 24 39.549	+21 26 46.07	3.40	6.39	18 06 04
	27	8 26 29.327	+21 19 18.15	3.38	6.35	18 03 58
	28	8 28 19.809	+21 11 43.75	3.36	6.31	18 01 53
	29	8 30 10.976	+21 04 02.86	3.34	6.27	17 59 48
	30	8 32 02.806	+20 56 15.49	3.31	6.23	17 57 44

MARTE 2025
PARA 0^{h} DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Mayo	01	8 33 55.274	+20 48 21.66	3.29	6.19	17 55 40
	02	8 35 48.355	+20 40 21.38	3.27	6.15	17 53 38
	03	8 37 42.023	+20 32 14.67	3.25	6.11	17 51 35
	04	8 39 36.255	+20 24 01.53	3.23	6.07	17 49 34
	05	8 41 31.029	+20 15 41.99	3.21	6.03	17 47 32
	06	8 43 26.326	+20 07 16.03	3.19	5.99	17 45 32
	07	8 45 22.127	+19 58 43.67	3.17	5.95	17 43 31
	08	8 47 18.415	+19 50 04.92	3.15	5.92	17 41 32
	09	8 49 15.173	+19 41 19.78	3.13	5.88	17 39 32
	10	8 51 12.387	+19 32 28.27	3.11	5.85	17 37 34
	11	8 53 10.042	+19 23 30.41	3.09	5.81	17 35 35
	12	8 55 08.124	+19 14 26.20	3.07	5.78	17 33 37
	13	8 57 06.619	+19 05 15.67	3.06	5.74	17 31 39
	14	8 59 05.515	+18 55 58.84	3.04	5.71	17 29 42
	15	9 01 04.799	+18 46 35.73	3.02	5.68	17 27 45
	16	9 03 04.460	+18 37 06.35	3.00	5.65	17 25 49
	17	9 05 04.484	+18 27 30.72	2.99	5.61	17 23 53
	18	9 07 04.862	+18 17 48.85	2.97	5.58	17 21 57
	19	9 09 05.582	+18 08 00.77	2.95	5.55	17 20 02
	20	9 11 06.636	+17 58 06.46	2.94	5.52	17 18 06
	21	9 13 08.015	+17 48 05.94	2.92	5.49	17 16 12
	22	9 15 09.712	+17 37 59.20	2.91	5.46	17 14 17
	23	9 17 11.720	+17 27 46.25	2.89	5.43	17 12 23
	24	9 19 14.036	+17 17 27.07	2.88	5.40	17 10 29
	25	9 21 16.653	+17 07 01.68	2.86	5.38	17 08 36
	26	9 23 19.566	+16 56 30.10	2.85	5.35	17 06 42
	27	9 25 22.766	+16 45 52.37	2.83	5.32	17 04 49
	28	9 27 26.244	+16 35 08.54	2.82	5.29	17 02 57
	29	9 29 29.987	+16 24 18.66	2.80	5.27	17 01 04
	30	9 31 33.983	+16 13 22.80	2.79	5.24	16 59 12
	31	9 33 38.219	+16 02 21.01	2.77	5.21	16 57 20
Junio	01	9 35 42.683	+15 51 13.34	2.76	5.19	16 55 28
	02	9 37 47.368	+15 39 59.84	2.75	5.16	16 53 36
	03	9 39 52.264	+15 28 40.56	2.73	5.14	16 51 45
	04	9 41 57.365	+15 17 15.54	2.72	5.11	16 49 54
	05	9 44 02.663	+15 05 44.84	2.71	5.09	16 48 03
	06	9 46 08.154	+14 54 08.49	2.70	5.07	16 46 12
	07	9 48 13.831	+14 42 26.56	2.68	5.04	16 44 21
	08	9 50 19.690	+14 30 39.09	2.67	5.02	16 42 31
	09	9 52 25.727	+14 18 46.13	2.66	5.00	16 40 41
	10	9 54 31.936	+14 06 47.74	2.65	4.97	16 38 51
	11	9 56 38.314	+13 54 43.98	2.64	4.95	16 37 01
	12	9 58 44.856	+13 42 34.89	2.62	4.93	16 35 11
	13	10 00 51.558	+13 30 20.53	2.61	4.91	16 33 21
	14	10 02 58.417	+13 18 00.94	2.60	4.89	16 31 32
	15	10 05 05.430	+13 05 36.18	2.59	4.87	16 29 43
	16	10 07 12.594	+12 53 06.28	2.58	4.85	16 27 53
	17	10 09 19.910	+12 40 31.28	2.57	4.83	16 26 04
	18	10 11 27.376	+12 27 51.20	2.56	4.81	16 24 16
	19	10 13 34.993	+12 15 06.09	2.55	4.79	16 22 27
	20	10 15 42.765	+12 02 15.95	2.54	4.77	16 20 38
	21	10 17 50.693	+11 49 20.82	2.53	4.75	16 18 50
	22	10 19 58.778	+11 36 20.75	2.52	4.73	16 17 02
	23	10 22 07.022	+11 23 15.77	2.51	4.71	16 15 14
	24	10 24 15.422	+11 10 05.96	2.50	4.69	16 13 26
	25	10 26 23.977	+10 56 51.38	2.49	4.67	16 11 38
	26	10 28 32.682	+10 43 32.13	2.48	4.65	16 09 50
	27	10 30 41.531	+10 30 08.27	2.47	4.64	16 08 03
	28	10 32 50.520	+10 16 39.89	2.46	4.62	16 06 15
	29	10 34 59.647	+10 03 07.07	2.45	4.60	16 04 28
	30	10 37 08.910	+ 9 49 29.87	2.44	4.58	16 02 41

MARTE 2025
PARA 0^{h} DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Julio	01	10 39 18.307	+ 9 35 48.37	2.43	4.57	16 00 54
	02	10 41 27.838	+ 9 22 02.64	2.42	4.55	15 59 07
	03	10 43 37.503	+ 9 08 12.75	2.41	4.54	15 57 21
	04	10 45 47.303	+ 8 54 18.77	2.41	4.52	15 55 34
	05	10 47 57.236	+ 8 40 20.77	2.40	4.50	15 53 48
	06	10 50 07.305	+ 8 26 18.83	2.39	4.49	15 52 02
	07	10 52 17.510	+ 8 12 13.02	2.38	4.47	15 50 15
	08	10 54 27.850	+ 7 58 03.41	2.37	4.46	15 48 29
	09	10 56 38.328	+ 7 43 50.09	2.36	4.44	15 46 44
	10	10 58 48.942	+ 7 29 33.12	2.36	4.43	15 44 58
	11	11 00 59.695	+ 7 15 12.58	2.35	4.41	15 43 12
	12	11 03 10.587	+ 7 00 48.55	2.34	4.40	15 41 27
	13	11 05 21.621	+ 6 46 21.08	2.33	4.39	15 39 42
	14	11 07 32.799	+ 6 31 50.23	2.33	4.37	15 37 56
	15	11 09 44.126	+ 6 17 16.06	2.32	4.36	15 36 11
	16	11 11 55.607	+ 6 02 38.61	2.31	4.34	15 34 27
	17	11 14 07.249	+ 5 47 57.93	2.30	4.33	15 32 42
	18	11 16 19.058	+ 5 33 14.07	2.30	4.32	15 30 57
	19	11 18 31.039	+ 5 18 27.07	2.29	4.30	15 29 13
	20	11 20 43.199	+ 5 03 37.00	2.28	4.29	15 27 29
	21	11 22 55.542	+ 4 48 43.92	2.28	4.28	15 25 45
	22	11 25 08.070	+ 4 33 47.92	2.27	4.27	15 24 01
	23	11 27 20.784	+ 4 18 49.08	2.26	4.25	15 22 18
	24	11 29 33.685	+ 4 03 47.51	2.26	4.24	15 20 34
	25	11 31 46.773	+ 3 48 43.29	2.25	4.23	15 18 51
	26	11 34 00.049	+ 3 33 36.52	2.25	4.22	15 17 08
	27	11 36 13.516	+ 3 18 27.30	2.24	4.21	15 15 25
	28	11 38 27.176	+ 3 03 15.71	2.23	4.20	15 13 42
	29	11 40 41.032	+ 2 48 01.85	2.23	4.18	15 11 60
	30	11 42 55.088	+ 2 32 45.79	2.22	4.17	15 10 18
	31	11 45 09.348	+ 2 17 27.64	2.22	4.16	15 08 36
Agosto	01	11 47 23.815	+ 2 02 07.47	2.21	4.15	15 06 54
	02	11 49 38.493	+ 1 46 45.39	2.20	4.14	15 05 12
	03	11 51 53.384	+ 1 31 21.47	2.20	4.13	15 03 31
	04	11 54 08.494	+ 1 15 55.83	2.19	4.12	15 01 50
	05	11 56 23.824	+ 1 00 28.54	2.19	4.11	15 00 09
	06	11 58 39.379	+ 0 44 59.71	2.18	4.10	14 58 28
	07	12 00 55.161	+ 0 29 29.42	2.18	4.09	14 56 47
	08	12 03 11.174	+ 0 13 57.78	2.17	4.08	14 55 07
	09	12 05 27.422	- 0 01 35.12	2.17	4.07	14 53 27
	10	12 07 43.910	- 0 17 09.20	2.16	4.06	14 51 47
	11	12 10 00.645	- 0 32 44.38	2.16	4.05	14 50 08
	12	12 12 17.634	- 0 48 20.59	2.15	4.04	14 48 28
	13	12 14 34.886	- 1 03 57.76	2.15	4.03	14 46 49
	14	12 16 52.409	- 1 19 35.82	2.14	4.03	14 45 11
	15	12 19 10.214	- 1 35 14.72	2.14	4.02	14 43 32
	16	12 21 28.308	- 1 50 54.37	2.13	4.01	14 41 54
	17	12 23 46.699	- 2 06 34.69	2.13	4.00	14 40 16
	18	12 26 05.391	- 2 22 15.60	2.12	3.99	14 38 39
	19	12 28 24.390	- 2 37 56.99	2.12	3.98	14 37 01
	20	12 30 43.699	- 2 53 38.75	2.12	3.97	14 35 24
	21	12 33 03.322	- 3 09 20.77	2.11	3.97	14 33 48
	22	12 35 23.263	- 3 25 02.92	2.11	3.96	14 32 11
	23	12 37 43.527	- 3 40 45.10	2.10	3.95	14 30 35
	24	12 40 04.119	- 3 56 27.20	2.10	3.94	14 28 60
	25	12 42 25.043	- 4 12 09.09	2.09	3.94	14 27 24
	26	12 44 46.307	- 4 27 50.68	2.09	3.93	14 25 49
	27	12 47 07.915	- 4 43 31.85	2.09	3.92	14 24 15
	28	12 49 29.873	- 4 59 12.49	2.08	3.91	14 22 41
	29	12 51 52.187	- 5 14 52.49	2.08	3.91	14 21 07
	30	12 54 14.860	- 5 30 31.72	2.08	3.90	14 19 33
	31	12 56 37.899	- 5 46 10.08	2.07	3.89	14 17 60

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PARA 0h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Septiembre	01	12 59 01.307	- 6 01 47.44	2.07	3.89	14 16 27
	02	13 01 25.089	- 6 17 23.69	2.06	3.88	14 14 55
	03	13 03 49.250	- 6 32 58.70	2.06	3.87	14 13 23
	04	13 06 13.794	- 6 48 32.35	2.06	3.87	14 11 51
	05	13 08 38.725	- 7 04 04.52	2.05	3.86	14 10 20
	06	13 11 04.049	- 7 19 35.09	2.05	3.85	14 08 49
	07	13 13 29.772	- 7 35 03.93	2.05	3.85	14 07 18
	08	13 15 55.902	- 7 50 30.95	2.05	3.84	14 05 48
	09	13 18 22.449	- 8 05 56.03	2.04	3.84	14 04 18
	10	13 20 49.423	- 8 21 19.09	2.04	3.83	14 02 49
	11	13 23 16.833	- 8 36 40.03	2.04	3.83	14 01 20
	12	13 25 44.690	- 8 51 58.76	2.03	3.82	13 59 52
	13	13 28 13.002	- 9 07 15.17	2.03	3.81	13 58 24
	14	13 30 41.776	- 9 22 29.15	2.03	3.81	13 56 57
	15	13 33 11.018	- 9 37 40.57	2.02	3.80	13 55 30
	16	13 35 40.732	- 9 52 49.30	2.02	3.80	13 54 03
	17	13 38 10.923	-10 07 55.20	2.02	3.79	13 52 37
	18	13 40 41.598	-10 22 58.12	2.02	3.79	13 51 12
	19	13 43 12.761	-10 37 57.93	2.01	3.78	13 49 47
	20	13 45 44.418	-10 52 54.47	2.01	3.78	13 48 22
	21	13 48 16.575	-11 07 47.61	2.01	3.77	13 46 58
	22	13 50 49.238	-11 22 37.21	2.01	3.77	13 45 35
	23	13 53 22.414	-11 37 23.12	2.00	3.77	13 44 12
	24	13 55 56.107	-11 52 05.20	2.00	3.76	13 42 49
	25	13 58 30.323	-12 06 43.32	2.00	3.76	13 41 27
	26	14 01 05.066	-12 21 17.31	2.00	3.75	13 40 06
	27	14 03 40.341	-12 35 47.05	1.99	3.75	13 38 45
	28	14 06 16.152	-12 50 12.37	1.99	3.74	13 37 25
	29	14 08 52.501	-13 04 33.13	1.99	3.74	13 36 05
	30	14 11 29.392	-13 18 49.17	1.99	3.74	13 34 45
Octubre	01	14 14 06.829	-13 33 00.34	1.99	3.73	13 33 27
	02	14 16 44.815	-13 47 06.48	1.98	3.73	13 32 09
	03	14 19 23.353	-14 01 07.44	1.98	3.72	13 30 51
	04	14 22 02.446	-14 15 03.05	1.98	3.72	13 29 34
	05	14 24 42.102	-14 28 53.16	1.98	3.72	13 28 17
	06	14 27 22.324	-14 42 37.63	1.98	3.71	13 27 01
	07	14 30 03.123	-14 56 16.31	1.97	3.71	13 25 46
	08	14 32 44.506	-15 09 49.07	1.97	3.71	13 24 31
	09	14 35 26.482	-15 23 15.79	1.97	3.70	13 23 17
	10	14 38 09.058	-15 36 36.35	1.97	3.70	13 22 04
	11	14 40 52.239	-15 49 50.59	1.97	3.70	13 20 51
	12	14 43 36.029	-16 02 58.38	1.97	3.70	13 19 38
	13	14 46 20.431	-16 15 59.54	1.97	3.69	13 18 26
	14	14 49 05.448	-16 28 53.92	1.96	3.69	13 17 15
	15	14 51 51.083	-16 41 41.33	1.96	3.69	13 16 05
	16	14 54 37.339	-16 54 21.60	1.96	3.68	13 14 55
	17	14 57 24.219	-17 06 54.56	1.96	3.68	13 13 46
	18	15 00 11.727	-17 19 20.04	1.96	3.68	13 12 37
	19	15 02 59.866	-17 31 37.86	1.96	3.68	13 11 29
	20	15 05 48.638	-17 43 47.87	1.96	3.67	13 10 22
	21	15 08 38.046	-17 55 49.88	1.95	3.67	13 09 15
	22	15 11 28.092	-18 07 43.73	1.95	3.67	13 08 09
	23	15 14 18.775	-18 19 29.26	1.95	3.67	13 07 03
	24	15 17 10.096	-18 31 06.29	1.95	3.67	13 05 58
	25	15 20 02.054	-18 42 34.65	1.95	3.66	13 04 54
	26	15 22 54.648	-18 53 54.17	1.95	3.66	13 03 51
	27	15 25 47.875	-19 05 04.67	1.95	3.66	13 02 48
	28	15 28 41.734	-19 16 05.98	1.95	3.66	13 01 45
	29	15 31 36.223	-19 26 57.92	1.95	3.66	13 00 44
	30	15 34 31.338	-19 37 40.31	1.94	3.65	12 59 43
	31	15 37 27.078	-19 48 12.98	1.94	3.65	12 58 42

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PARA 0^{h} DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Noviembre	01	15 40 23.442	-19 58 35.74	1.94	3.65	12 57 42
	02	15 43 20.427	-20 08 48.43	1.94	3.65	12 56 43
	03	15 46 18.035	-20 18 50.88	1.94	3.65	12 55 45
	04	15 49 16.267	-20 28 42.92	1.94	3.65	12 54 47
	05	15 52 15.124	-20 38 24.42	1.94	3.64	12 53 49
	06	15 55 14.607	-20 47 55.22	1.94	3.64	12 52 53
	07	15 58 14.717	-20 57 15.19	1.94	3.64	12 51 57
	08	16 01 15.450	-21 06 24.19	1.94	3.64	12 51 01
	09	16 04 16.804	-21 15 22.04	1.94	3.64	12 50 06
	10	16 07 18.772	-21 24 08.57	1.94	3.64	12 49 12
	11	16 10 21.351	-21 32 43.63	1.94	3.64	12 48 18
	12	16 13 24.537	-21 41 07.01	1.94	3.64	12 47 25
	13	16 16 28.326	-21 49 18.56	1.93	3.64	12 46 33
	14	16 19 32.713	-21 57 18.11	1.93	3.63	12 45 41
	15	16 22 37.695	-22 05 05.48	1.93	3.63	12 44 50
	16	16 25 43.266	-22 12 40.51	1.93	3.63	12 43 59
	17	16 28 49.421	-22 20 03.06	1.93	3.63	12 43 09
	18	16 31 56.152	-22 27 12.96	1.93	3.63	12 42 20
	19	16 35 03.452	-22 34 10.07	1.93	3.63	12 41 31
	20	16 38 11.312	-22 40 54.23	1.93	3.63	12 40 42
	21	16 41 19.723	-22 47 25.30	1.93	3.63	12 39 55
	22	16 44 28.675	-22 53 43.13	1.93	3.63	12 39 07
	23	16 47 38.155	-22 59 47.58	1.93	3.63	12 38 20
	24	16 50 48.152	-23 05 38.51	1.93	3.63	12 37 34
	25	16 53 58.655	-23 11 15.76	1.93	3.63	12 36 48
	26	16 57 09.650	-23 16 39.21	1.93	3.63	12 36 03
	27	17 00 21.126	-23 21 48.70	1.93	3.63	12 35 18
	28	17 03 33.070	-23 26 44.10	1.93	3.63	12 34 34
	29	17 06 45.472	-23 31 25.28	1.93	3.63	12 33 50
	30	17 09 58.321	-23 35 52.11	1.93	3.63	12 33 07
Diciembre	01	17 13 11.607	-23 40 04.47	1.93	3.63	12 32 24
	02	17 16 25.320	-23 44 02.25	1.93	3.63	12 31 41
	03	17 19 39.453	-23 47 45.35	1.93	3.63	12 30 59
	04	17 22 53.995	-23 51 13.68	1.93	3.63	12 30 17
	05	17 26 08.935	-23 54 27.16	1.93	3.63	12 29 36
	06	17 29 24.260	-23 57 25.70	1.93	3.63	12 28 55
	07	17 32 39.957	-24 00 09.20	1.93	3.63	12 28 14
	08	17 35 56.011	-24 02 37.55	1.93	3.63	12 27 34
	09	17 39 12.410	-24 04 50.66	1.93	3.63	12 26 54
	10	17 42 29.141	-24 06 48.41	1.93	3.63	12 26 14
	11	17 45 46.191	-24 08 30.71	1.93	3.63	12 25 35
	12	17 49 03.549	-24 09 57.48	1.93	3.63	12 24 56
	13	17 52 21.201	-24 11 08.62	1.93	3.63	12 24 17
	14	17 55 39.133	-24 12 04.08	1.93	3.63	12 23 38
	15	17 58 57.332	-24 12 43.79	1.93	3.63	12 23 00
	16	18 02 15.781	-24 13 07.68	1.93	3.63	12 22 22
	17	18 05 34.466	-24 13 15.72	1.93	3.63	12 21 45
	18	18 08 53.369	-24 13 07.85	1.93	3.63	12 21 07
	19	18 12 12.473	-24 12 44.03	1.93	3.64	12 20 30
	20	18 15 31.759	-24 12 04.22	1.93	3.64	12 19 52
	21	18 18 51.210	-24 11 08.41	1.94	3.64	12 19 15
	22	18 22 10.807	-24 09 56.54	1.94	3.64	12 18 39
	23	18 25 30.531	-24 08 28.61	1.94	3.64	12 18 02
	24	18 28 50.363	-24 06 44.59	1.94	3.64	12 17 25
	25	18 32 10.285	-24 04 44.46	1.94	3.64	12 16 49
	26	18 35 30.282	-24 02 28.20	1.94	3.64	12 16 12
	27	18 38 50.335	-23 59 55.81	1.94	3.64	12 15 36
	28	18 42 10.430	-23 57 07.29	1.94	3.64	12 14 59
	29	18 45 30.554	-23 54 02.64	1.94	3.64	12 14 23
	30	18 48 50.691	-23 50 41.89	1.94	3.65	12 13 46
	31	18 52 10.830	-23 47 05.07	1.94	3.65	12 13 10

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PARA 0^{h} DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Enero	01	4 47 31.770	+21 47 14.63	21.97	2.10	21 59 54
	02	4 47 04.661	+21 46 39.47	21.93	2.09	21 55 32
	03	4 46 38.169	+21 46 05.23	21.88	2.09	21 51 10
	04	4 46 12.311	+21 45 31.92	21.84	2.09	21 46 49
	05	4 45 47.105	+21 44 59.59	21.79	2.08	21 42 29
	06	4 45 22.571	+21 44 28.27	21.75	2.08	21 38 09
	07	4 44 58.725	+21 43 58.00	21.70	2.07	21 33 50
	08	4 44 35.585	+21 43 28.83	21.65	2.07	21 29 32
	09	4 44 13.164	+21 43 00.81	21.60	2.06	21 25 14
	10	4 43 51.477	+21 42 33.99	21.55	2.06	21 20 57
	11	4 43 30.533	+21 42 08.42	21.50	2.05	21 16 41
	12	4 43 10.342	+21 41 44.13	21.45	2.05	21 12 26
	13	4 42 50.912	+21 41 21.16	21.40	2.04	21 08 12
	14	4 42 32.251	+21 40 59.53	21.34	2.04	21 03 58
	15	4 42 14.366	+21 40 39.26	21.29	2.03	20 59 45
	16	4 41 57.268	+21 40 20.37	21.23	2.03	20 55 32
	17	4 41 40.964	+21 40 02.88	21.18	2.02	20 51 21
	18	4 41 25.465	+21 39 46.81	21.12	2.02	20 47 10
	19	4 41 10.779	+21 39 32.20	21.06	2.01	20 43 01
	20	4 40 56.916	+21 39 19.06	21.00	2.01	20 38 52
	21	4 40 43.884	+21 39 07.42	20.94	2.00	20 34 44
	22	4 40 31.691	+21 38 57.32	20.88	2.00	20 30 36
	23	4 40 20.344	+21 38 48.78	20.82	1.99	20 26 30
	24	4 40 09.850	+21 38 41.83	20.76	1.98	20 22 24
	25	4 40 00.213	+21 38 36.50	20.70	1.98	20 18 19
	26	4 39 51.437	+21 38 32.80	20.64	1.97	20 14 15
	27	4 39 43.528	+21 38 30.76	20.58	1.97	20 10 12
	28	4 39 36.485	+21 38 30.39	20.52	1.96	20 06 10
	29	4 39 30.313	+21 38 31.69	20.45	1.95	20 02 09
	30	4 39 25.011	+21 38 34.66	20.39	1.95	19 58 08
	31	4 39 20.581	+21 38 39.29	20.33	1.94	19 54 09
Febrero	01	4 39 17.025	+21 38 45.57	20.27	1.94	19 50 10
	02	4 39 14.345	+21 38 53.49	20.20	1.93	19 46 12
	03	4 39 12.544	+21 39 03.05	20.14	1.92	19 42 15
	04	4 39 11.623	+21 39 14.25	20.07	1.92	19 38 19
	05	4 39 11.581	+21 39 27.09	20.01	1.91	19 34 24
	06	4 39 12.417	+21 39 41.60	19.95	1.91	19 30 30
	07	4 39 14.127	+21 39 57.76	19.88	1.90	19 26 36
	08	4 39 16.706	+21 40 15.57	19.82	1.89	19 22 43
	09	4 39 20.148	+21 40 35.02	19.75	1.89	19 18 52
	10	4 39 24.449	+21 40 56.09	19.69	1.88	19 15 01
	11	4 39 29.601	+21 41 18.76	19.62	1.87	19 11 11
	12	4 39 35.601	+21 41 43.00	19.56	1.87	19 07 21
	13	4 39 42.445	+21 42 08.79	19.50	1.86	19 03 33
	14	4 39 50.129	+21 42 36.10	19.43	1.86	18 59 45
	15	4 39 58.650	+21 43 04.92	19.37	1.85	18 55 58
	16	4 40 08.005	+21 43 35.23	19.30	1.84	18 52 12
	17	4 40 18.191	+21 44 07.02	19.24	1.84	18 48 27
	18	4 40 29.206	+21 44 40.27	19.18	1.83	18 44 43
	19	4 40 41.044	+21 45 14.97	19.11	1.83	18 40 60
	20	4 40 53.702	+21 45 51.10	19.05	1.82	18 37 17
	21	4 41 07.175	+21 46 28.65	18.99	1.81	18 33 35
	22	4 41 21.458	+21 47 07.61	18.93	1.81	18 29 54
	23	4 41 36.545	+21 47 47.95	18.86	1.80	18 26 14
	24	4 41 52.429	+21 48 29.66	18.80	1.80	18 22 34
	25	4 42 09.104	+21 49 12.69	18.74	1.79	18 18 55
	26	4 42 26.561	+21 49 57.03	18.68	1.78	18 15 17
	27	4 42 44.795	+21 50 42.61	18.62	1.78	18 11 40
	28	4 43 03.799	+21 51 29.41	18.56	1.77	18 08 04

JÚPITER 2025
PARA 0^{h} DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Marzo	01	4 43 23.567	+21 52 17.38	18.50	1.77	18 04 28
	02	4 43 44.096	+21 53 06.47	18.44	1.76	18 00 53
	03	4 44 05.379	+21 53 56.66	18.38	1.76	17 57 19
	04	4 44 27.411	+21 54 47.92	18.32	1.75	17 53 46
	05	4 44 50.185	+21 55 40.25	18.26	1.74	17 50 13
	06	4 45 13.692	+21 56 33.60	18.20	1.74	17 46 41
	07	4 45 37.921	+21 57 27.96	18.14	1.73	17 43 10
	08	4 46 02.861	+21 58 23.29	18.08	1.73	17 39 39
	09	4 46 28.502	+21 59 19.55	18.03	1.72	17 36 09
	10	4 46 54.833	+22 00 16.69	17.97	1.72	17 32 40
	11	4 47 21.847	+22 01 14.67	17.91	1.71	17 29 11
	12	4 47 49.533	+22 02 13.44	17.86	1.71	17 25 43
	13	4 48 17.886	+22 03 12.97	17.80	1.70	17 22 16
	14	4 48 46.897	+22 04 13.20	17.75	1.70	17 18 50
	15	4 49 16.561	+22 05 14.10	17.69	1.69	17 15 24
	16	4 49 46.871	+22 06 15.65	17.64	1.69	17 11 58
	17	4 50 17.821	+22 07 17.81	17.59	1.68	17 08 34
	18	4 50 49.404	+22 08 20.56	17.53	1.68	17 05 10
	19	4 51 21.614	+22 09 23.86	17.48	1.67	17 01 46
	20	4 51 54.444	+22 10 27.69	17.43	1.67	16 58 24
	21	4 52 27.885	+22 11 32.02	17.38	1.66	16 55 01
	22	4 53 01.930	+22 12 36.82	17.33	1.66	16 51 40
	23	4 53 36.572	+22 13 42.06	17.28	1.65	16 48 19
	24	4 54 11.801	+22 14 47.70	17.23	1.65	16 44 58
	25	4 54 47.609	+22 15 53.70	17.18	1.64	16 41 38
	26	4 55 23.987	+22 17 00.01	17.13	1.64	16 38 19
	27	4 56 00.928	+22 18 06.59	17.08	1.63	16 35 00
	28	4 56 38.425	+22 19 13.38	17.03	1.63	16 31 42
	29	4 57 16.472	+22 20 20.34	16.99	1.62	16 28 24
	30	4 57 55.063	+22 21 27.43	16.94	1.62	16 25 07
	31	4 58 34.194	+22 22 34.61	16.90	1.61	16 21 51
Abril	01	4 59 13.856	+22 23 41.87	16.85	1.61	16 18 35
	02	4 59 54.042	+22 24 49.19	16.80	1.61	16 15 19
	03	5 00 34.740	+22 25 56.53	16.76	1.60	16 12 04
	04	5 01 15.940	+22 27 03.88	16.72	1.60	16 08 49
	05	5 01 57.631	+22 28 11.18	16.67	1.59	16 05 35
	06	5 02 39.801	+22 29 18.39	16.63	1.59	16 02 22
	07	5 03 22.443	+22 30 25.48	16.59	1.58	15 59 08
	08	5 04 05.548	+22 31 32.39	16.55	1.58	15 55 56
	09	5 04 49.108	+22 32 39.08	16.51	1.58	15 52 43
	10	5 05 33.116	+22 33 45.52	16.47	1.57	15 49 32
	11	5 06 17.568	+22 34 51.68	16.43	1.57	15 46 20
	12	5 07 02.455	+22 35 57.52	16.39	1.57	15 43 09
	13	5 07 47.774	+22 37 03.01	16.35	1.56	15 39 59
	14	5 08 33.517	+22 38 08.14	16.31	1.56	15 36 49
	15	5 09 19.679	+22 39 12.88	16.27	1.55	15 33 39
	16	5 10 06.253	+22 40 17.20	16.23	1.55	15 30 30
	17	5 10 53.233	+22 41 21.09	16.20	1.55	15 27 21
	18	5 11 40.611	+22 42 24.52	16.16	1.54	15 24 12
	19	5 12 28.379	+22 43 27.46	16.13	1.54	15 21 04
	20	5 13 16.532	+22 44 29.89	16.09	1.54	15 17 56
	21	5 14 05.060	+22 45 31.78	16.06	1.53	15 14 49
	22	5 14 53.956	+22 46 33.08	16.02	1.53	15 11 42
	23	5 15 43.214	+22 47 33.77	15.99	1.53	15 08 35
	24	5 16 32.826	+22 48 33.79	15.96	1.52	15 05 29
	25	5 17 22.788	+22 49 33.12	15.92	1.52	15 02 23
	26	5 18 13.095	+22 50 31.70	15.89	1.52	14 59 17
	27	5 19 03.743	+22 51 29.53	15.86	1.52	14 56 12
	28	5 19 54.727	+22 52 26.58	15.83	1.51	14 53 07
	29	5 20 46.040	+22 53 22.84	15.80	1.51	14 50 02
	30	5 21 37.675	+22 54 18.30	15.77	1.51	14 46 58

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Mayo	01	5 22 29.620	+22 55 12.95	15.74	1.50	14 43 54
	02	5 23 21.866	+22 56 06.76	15.71	1.50	14 40 50
	03	5 24 14.402	+22 56 59.70	15.69	1.50	14 37 47
	04	5 25 07.220	+22 57 51.74	15.66	1.50	14 34 44
	05	5 26 00.313	+22 58 42.85	15.63	1.49	14 31 41
	06	5 26 53.674	+22 59 32.98	15.61	1.49	14 28 38
	07	5 27 47.297	+23 00 22.12	15.58	1.49	14 25 36
	08	5 28 41.177	+23 01 10.24	15.56	1.49	14 22 33
	09	5 29 35.310	+23 01 57.32	15.53	1.48	14 19 32
	10	5 30 29.690	+23 02 43.35	15.51	1.48	14 16 30
	11	5 31 24.312	+23 03 28.31	15.48	1.48	14 13 29
	12	5 32 19.173	+23 04 12.19	15.46	1.48	14 10 27
	13	5 33 14.265	+23 04 54.97	15.44	1.47	14 07 26
	14	5 34 09.584	+23 05 36.66	15.42	1.47	14 04 26
	15	5 35 05.124	+23 06 17.23	15.39	1.47	14 01 25
	16	5 36 00.878	+23 06 56.68	15.37	1.47	13 58 25
	17	5 36 56.840	+23 07 35.00	15.35	1.47	13 55 25
	18	5 37 53.003	+23 08 12.15	15.33	1.46	13 52 25
	19	5 38 49.360	+23 08 48.13	15.31	1.46	13 49 25
	20	5 39 45.907	+23 09 22.90	15.29	1.46	13 46 26
	21	5 40 42.637	+23 09 56.44	15.28	1.46	13 43 26
	22	5 41 39.545	+23 10 28.73	15.26	1.46	13 40 27
	23	5 42 36.628	+23 10 59.73	15.24	1.46	13 37 28
	24	5 43 33.882	+23 11 29.44	15.22	1.45	13 34 29
	25	5 44 31.304	+23 11 57.84	15.21	1.45	13 31 31
	26	5 45 28.890	+23 12 24.93	15.19	1.45	13 28 32
	27	5 46 26.632	+23 12 50.71	15.18	1.45	13 25 34
	28	5 47 24.524	+23 13 15.20	15.16	1.45	13 22 35
	29	5 48 22.555	+23 13 38.38	15.15	1.45	13 19 37
	30	5 49 20.716	+23 14 00.25	15.13	1.45	13 16 39
	31	5 50 18.998	+23 14 20.79	15.12	1.44	13 13 42
Junio	01	5 51 17.395	+23 14 39.96	15.11	1.44	13 10 44
	02	5 52 15.899	+23 14 57.77	15.09	1.44	13 07 46
	03	5 53 14.505	+23 15 14.18	15.08	1.44	13 04 49
	04	5 54 13.211	+23 15 29.19	15.07	1.44	13 01 51
	05	5 55 12.010	+23 15 42.79	15.06	1.44	12 58 54
	06	5 56 10.900	+23 15 54.97	15.05	1.44	12 55 57
	07	5 57 09.876	+23 16 05.74	15.04	1.44	12 52 59
	08	5 58 08.934	+23 16 15.09	15.03	1.44	12 50 02
	09	5 59 08.069	+23 16 23.03	15.02	1.43	12 47 05
	10	6 00 07.276	+23 16 29.56	15.01	1.43	12 44 08
	11	6 01 06.550	+23 16 34.69	15.01	1.43	12 41 11
	12	6 02 05.886	+23 16 38.41	15.00	1.43	12 38 15
	13	6 03 05.278	+23 16 40.72	14.99	1.43	12 35 18
	14	6 04 04.719	+23 16 41.63	14.98	1.43	12 32 21
	15	6 05 04.204	+23 16 41.12	14.98	1.43	12 29 24
	16	6 06 03.727	+23 16 39.19	14.97	1.43	12 26 28
	17	6 07 03.284	+23 16 35.82	14.97	1.43	12 23 31
	18	6 08 02.869	+23 16 31.00	14.96	1.43	12 20 35
	19	6 09 02.481	+23 16 24.71	14.96	1.43	12 17 38
	20	6 10 02.115	+23 16 16.96	14.96	1.43	12 14 41
	21	6 11 01.769	+23 16 07.73	14.95	1.43	12 11 45
	22	6 12 01.441	+23 15 57.05	14.95	1.43	12 08 48
	23	6 13 01.129	+23 15 44.89	14.95	1.43	12 05 52
	24	6 14 00.844	+23 15 31.14	14.95	1.43	12 02 55
	25	6 15 00.385	+23 15 15.85	14.95	1.43	11 59 59
	26	6 16 00.108	+23 15 00.02	14.95	1.43	11 57 02
	27	6 16 59.764	+23 14 42.28	14.95	1.43	11 54 06
	28	6 17 59.384	+23 14 23.11	14.95	1.43	11 51 09
	29	6 18 58.966	+23 14 02.52	14.95	1.43	11 48 12
	30	6 19 58.506	+23 13 40.52	14.95	1.43	11 45 16

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Julio	01	6 20 57.999	+23 13 17.09	14.95	1.43	11 42 19
	02	6 21 57.443	+23 12 52.24	14.95	1.43	11 39 22
	03	6 22 56.833	+23 12 25.99	14.96	1.43	11 36 25
	04	6 23 56.166	+23 11 58.34	14.96	1.43	11 33 29
	05	6 24 55.437	+23 11 29.30	14.96	1.43	11 30 32
	06	6 25 54.643	+23 10 58.90	14.97	1.43	11 27 35
	07	6 26 53.778	+23 10 27.14	14.97	1.43	11 24 37
	08	6 27 52.838	+23 09 54.05	14.98	1.43	11 21 40
	09	6 28 51.818	+23 09 19.64	14.98	1.43	11 18 43
	10	6 29 50.711	+23 08 43.92	14.99	1.43	11 15 46
	11	6 30 49.512	+23 08 06.91	15.00	1.43	11 12 48
	12	6 31 48.215	+23 07 28.61	15.00	1.43	11 09 51
	13	6 32 46.814	+23 06 49.03	15.01	1.43	11 06 53
	14	6 33 45.304	+23 06 08.17	15.02	1.43	11 03 55
	15	6 34 43.680	+23 05 26.02	15.03	1.44	11 00 57
	16	6 35 41.940	+23 04 42.60	15.04	1.44	10 57 59
	17	6 36 40.081	+23 03 57.89	15.05	1.44	10 55 01
	18	6 37 38.098	+23 03 11.92	15.06	1.44	10 52 03
	19	6 38 35.989	+23 02 24.71	15.07	1.44	10 49 05
	20	6 39 33.750	+23 01 36.27	15.08	1.44	10 46 06
	21	6 40 31.373	+23 00 46.64	15.09	1.44	10 43 08
	22	6 41 28.852	+22 59 55.85	15.10	1.44	10 40 09
	23	6 42 26.178	+22 59 03.93	15.11	1.44	10 37 10
	24	6 43 23.342	+22 58 10.89	15.13	1.45	10 34 11
	25	6 44 20.336	+22 57 16.74	15.14	1.45	10 31 12
	26	6 45 17.152	+22 56 21.50	15.15	1.45	10 28 12
	27	6 46 13.784	+22 55 25.18	15.17	1.45	10 25 12
	28	6 47 10.227	+22 54 27.78	15.18	1.45	10 22 13
	29	6 48 06.477	+22 53 29.31	15.20	1.45	10 19 13
	30	6 49 02.529	+22 52 29.80	15.22	1.45	10 16 12
	31	6 49 58.380	+22 51 29.28	15.23	1.46	10 13 12
Agosto	01	6 50 54.024	+22 50 27.75	15.25	1.46	10 10 11
	02	6 51 49.458	+22 49 25.26	15.27	1.46	10 07 11
	03	6 52 44.676	+22 48 21.84	15.28	1.46	10 04 10
	04	6 53 39.673	+22 47 17.50	15.30	1.46	10 01 08
	05	6 54 34.443	+22 46 12.28	15.32	1.46	9 58 07
	06	6 55 28.981	+22 45 06.21	15.34	1.47	9 55 05
	07	6 56 23.280	+22 43 59.31	15.36	1.47	9 52 03
	08	6 57 17.333	+22 42 51.61	15.38	1.47	9 49 01
	09	6 58 11.135	+22 41 43.13	15.40	1.47	9 45 58
	10	6 59 04.679	+22 40 33.88	15.43	1.47	9 42 56
	11	6 59 57.961	+22 39 23.87	15.45	1.48	9 39 53
	12	7 00 50.976	+22 38 13.11	15.47	1.48	9 36 49
	13	7 01 43.720	+22 37 01.62	15.49	1.48	9 33 46
	14	7 02 36.191	+22 35 49.41	15.52	1.48	9 30 42
	15	7 03 28.385	+22 34 36.52	15.54	1.48	9 27 38
	16	7 04 20.296	+22 33 22.99	15.56	1.49	9 24 34
	17	7 05 11.919	+22 32 08.85	15.59	1.49	9 21 29
	18	7 06 03.245	+22 30 54.15	15.62	1.49	9 18 24
	19	7 06 54.265	+22 29 38.93	15.64	1.49	9 15 19
	20	7 07 44.971	+22 28 23.23	15.67	1.50	9 12 13
	21	7 08 35.353	+22 27 07.07	15.70	1.50	9 09 07
	22	7 09 25.403	+22 25 50.47	15.72	1.50	9 06 01
	23	7 10 15.113	+22 24 33.47	15.75	1.50	9 02 54
	24	7 11 04.477	+22 23 16.08	15.78	1.51	8 59 48
	25	7 11 53.489	+22 21 58.32	15.81	1.51	8 56 40
	26	7 12 42.144	+22 20 40.23	15.84	1.51	8 53 33
	27	7 13 30.438	+22 19 21.84	15.87	1.52	8 50 25
	28	7 14 18.365	+22 18 03.18	15.90	1.52	8 47 16
	29	7 15 05.919	+22 16 44.30	15.93	1.52	8 44 08
	30	7 15 53.095	+22 15 25.23	15.96	1.52	8 40 58
	31	7 16 39.886	+22 14 06.02	16.00	1.53	8 37 49

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PARA 0^{h} DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Septiembre	01	7 17 26.286	+22 12 46.70	16.03	1.53	8 34 39
	02	7 18 12.289	+22 11 27.32	16.06	1.53	8 31 29
	03	7 18 57.886	+22 10 07.91	16.10	1.54	8 28 18
	04	7 19 43.072	+22 08 48.51	16.13	1.54	8 25 07
	05	7 20 27.839	+22 07 29.16	16.17	1.54	8 21 56
	06	7 21 12.179	+22 06 09.87	16.20	1.55	8 18 44
	07	7 21 56.086	+22 04 50.68	16.24	1.55	8 15 31
	08	7 22 39.556	+22 03 31.60	16.27	1.55	8 12 18
	09	7 23 22.582	+22 02 12.66	16.31	1.56	8 09 05
	10	7 24 05.162	+22 00 53.88	16.35	1.56	8 05 51
	11	7 24 47.291	+21 59 35.29	16.39	1.57	8 02 37
	12	7 25 28.964	+21 58 16.95	16.42	1.57	7 59 23
	13	7 26 10.174	+21 56 58.90	16.46	1.57	7 56 08
	14	7 26 50.912	+21 55 41.20	16.50	1.58	7 52 52
	15	7 27 31.168	+21 54 23.90	16.54	1.58	7 49 36
	16	7 28 10.932	+21 53 07.05	16.58	1.58	7 46 20
	17	7 28 50.195	+21 51 50.69	16.63	1.59	7 43 03
	18	7 29 28.945	+21 50 34.85	16.67	1.59	7 39 45
	19	7 30 07.176	+21 49 19.56	16.71	1.60	7 36 27
	20	7 30 44.879	+21 48 04.87	16.75	1.60	7 33 09
	21	7 31 22.047	+21 46 50.80	16.80	1.60	7 29 49
	22	7 31 58.674	+21 45 37.38	16.84	1.61	7 26 30
	23	7 32 34.754	+21 44 24.66	16.88	1.61	7 23 10
	24	7 33 10.281	+21 43 12.68	16.93	1.62	7 19 49
	25	7 33 45.247	+21 42 01.48	16.97	1.62	7 16 28
	26	7 34 19.648	+21 40 51.11	17.02	1.63	7 13 06
	27	7 34 53.476	+21 39 41.61	17.06	1.63	7 09 43
	28	7 35 26.723	+21 38 33.04	17.11	1.63	7 06 20
	29	7 35 59.382	+21 37 25.43	17.16	1.64	7 02 57
	30	7 36 31.445	+21 36 18.84	17.21	1.64	6 59 33
Octubre	01	7 37 02.905	+21 35 13.31	17.25	1.65	6 56 08
	02	7 37 33.754	+21 34 08.86	17.30	1.65	6 52 42
	03	7 38 03.984	+21 33 05.55	17.35	1.66	6 49 16
	04	7 38 33.588	+21 32 03.39	17.40	1.66	6 45 50
	05	7 39 02.559	+21 31 02.41	17.45	1.67	6 42 22
	06	7 39 30.893	+21 30 02.63	17.50	1.67	6 38 55
	07	7 39 58.584	+21 29 04.08	17.55	1.68	6 35 26
	08	7 40 25.628	+21 28 06.79	17.60	1.68	6 31 57
	09	7 40 52.022	+21 27 10.80	17.66	1.69	6 28 27
	10	7 41 17.757	+21 26 16.15	17.71	1.69	6 24 57
	11	7 41 42.827	+21 25 22.91	17.76	1.70	6 21 25
	12	7 42 07.221	+21 24 31.13	17.81	1.70	6 17 54
	13	7 42 30.928	+21 23 40.86	17.87	1.71	6 14 21
	14	7 42 53.939	+21 22 52.14	17.92	1.71	6 10 48
	15	7 43 16.243	+21 22 05.00	17.97	1.72	6 07 14
	16	7 43 37.831	+21 21 19.48	18.03	1.72	6 03 39
	17	7 43 58.697	+21 20 35.60	18.08	1.73	6 00 04
	18	7 44 18.834	+21 19 53.39	18.14	1.73	5 56 28
	19	7 44 38.236	+21 19 12.88	18.19	1.74	5 52 51
	20	7 44 56.897	+21 18 34.10	18.25	1.74	5 49 14
	21	7 45 14.811	+21 17 57.09	18.30	1.75	5 45 35
	22	7 45 31.974	+21 17 21.87	18.36	1.75	5 41 56
	23	7 45 48.379	+21 16 48.50	18.42	1.76	5 38 17
	24	7 46 04.022	+21 16 16.99	18.47	1.76	5 34 36
	25	7 46 18.896	+21 15 47.40	18.53	1.77	5 30 55
	26	7 46 32.995	+21 15 19.75	18.59	1.78	5 27 13
	27	7 46 46.314	+21 14 54.07	18.65	1.78	5 23 30
	28	7 46 58.846	+21 14 30.40	18.70	1.79	5 19 46
	29	7 47 10.587	+21 14 08.75	18.76	1.79	5 16 02
	30	7 47 21.530	+21 13 49.15	18.82	1.80	5 12 17
	31	7 47 31.671	+21 13 31.61	18.88	1.80	5 08 31

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Noviembre	01	7 47 41.005	+21 13 16.14	18.94	1.81	5 04 44
	02	7 47 49.530	+21 13 02.75	18.99	1.81	5 00 56
	03	7 47 57.244	+21 12 51.43	19.05	1.82	4 57 08
	04	7 48 04.145	+21 12 42.18	19.11	1.83	4 53 19
	05	7 48 10.233	+21 12 35.03	19.17	1.83	4 49 29
	06	7 48 15.507	+21 12 29.99	19.23	1.84	4 45 38
	07	7 48 19.963	+21 12 27.10	19.29	1.84	4 41 46
	08	7 48 23.596	+21 12 26.37	19.35	1.85	4 37 54
	09	7 48 26.399	+21 12 27.85	19.41	1.85	4 34 00
	10	7 48 28.366	+21 12 31.55	19.46	1.86	4 30 06
	11	7 48 29.491	+21 12 37.47	19.52	1.86	4 26 11
	12	7 48 29.770	+21 12 45.62	19.58	1.87	4 22 16
	13	7 48 29.201	+21 12 55.99	19.64	1.88	4 18 19
	14	7 48 27.784	+21 13 08.57	19.70	1.88	4 14 21
	15	7 48 25.517	+21 13 23.36	19.76	1.89	4 10 23
	16	7 48 22.402	+21 13 40.36	19.81	1.89	4 06 24
	17	7 48 18.440	+21 13 59.56	19.87	1.90	4 02 24
	18	7 48 13.632	+21 14 20.96	19.93	1.90	3 58 23
	19	7 48 07.980	+21 14 44.55	19.99	1.91	3 54 22
	20	7 48 01.486	+21 15 10.32	20.04	1.91	3 50 19
	21	7 47 54.152	+21 15 38.29	20.10	1.92	3 46 16
	22	7 47 45.981	+21 16 08.42	20.15	1.93	3 42 12
	23	7 47 36.975	+21 16 40.72	20.21	1.93	3 38 07
	24	7 47 27.138	+21 17 15.17	20.26	1.94	3 34 01
	25	7 47 16.473	+21 17 51.73	20.32	1.94	3 29 54
	26	7 47 04.985	+21 18 30.40	20.37	1.95	3 25 47
	27	7 46 52.677	+21 19 11.12	20.43	1.95	3 21 38
	28	7 46 39.558	+21 19 53.87	20.48	1.96	3 17 29
	29	7 46 25.634	+21 20 38.61	20.53	1.96	3 13 19
	30	7 46 10.913	+21 21 25.27	20.58	1.97	3 09 09
Diciembre	01	7 45 55.406	+21 22 13.83	20.63	1.97	3 04 57
	02	7 45 39.122	+21 23 04.22	20.68	1.98	3 00 45
	03	7 45 22.075	+21 23 56.42	20.73	1.98	2 56 32
	04	7 45 04.272	+21 24 50.39	20.78	1.99	2 52 18
	05	7 44 45.723	+21 25 46.12	20.83	1.99	2 48 04
	06	7 44 26.434	+21 26 43.58	20.88	1.99	2 43 49
	07	7 44 06.413	+21 27 42.74	20.92	2.00	2 39 33
	08	7 43 45.666	+21 28 43.55	20.97	2.00	2 35 16
	09	7 43 24.201	+21 29 45.97	21.01	2.01	2 30 59
	10	7 43 02.030	+21 30 49.94	21.06	2.01	2 26 41
	11	7 42 39.165	+21 31 55.39	21.10	2.02	2 22 22
	12	7 42 15.621	+21 33 02.26	21.14	2.02	2 18 03
	13	7 41 51.414	+21 34 10.50	21.18	2.02	2 13 43
	14	7 41 26.559	+21 35 20.04	21.22	2.03	2 09 22
	15	7 41 01.074	+21 36 30.83	21.26	2.03	2 05 01
	16	7 40 34.975	+21 37 42.82	21.29	2.03	2 00 39
	17	7 40 08.281	+21 38 55.95	21.33	2.04	1 56 16
	18	7 39 41.008	+21 40 10.15	21.36	2.04	1 51 53
	19	7 39 13.177	+21 41 25.38	21.40	2.04	1 47 30
	20	7 38 44.804	+21 42 41.58	21.43	2.05	1 43 06
	21	7 38 15.911	+21 43 58.67	21.46	2.05	1 38 41
	22	7 37 46.515	+21 45 16.60	21.49	2.05	1 34 16
	23	7 37 16.637	+21 46 35.29	21.52	2.06	1 29 50
	24	7 36 46.300	+21 47 54.66	21.54	2.06	1 25 24
	25	7 36 15.524	+21 49 14.64	21.57	2.06	1 20 57
	26	7 35 44.333	+21 50 35.15	21.59	2.06	1 16 30
	27	7 35 12.751	+21 51 56.09	21.61	2.06	1 12 03
	28	7 34 40.803	+21 53 17.40	21.63	2.07	1 07 35
	29	7 34 08.517	+21 54 38.99	21.65	2.07	1 03 07
	30	7 33 35.916	+21 56 00.80	21.67	2.07	0 58 39
	31	7 33 03.028	+21 57 22.76	21.68	2.07	0 54 11

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Enero	01	23 06 03.928	- 7 55 00.33	7.36	0.88	16 19 58
	02	23 06 20.754	- 7 53 06.74	7.35	0.88	16 16 20
	03	23 06 37.874	- 7 51 11.39	7.34	0.87	16 12 41
	04	23 06 55.285	- 7 49 14.29	7.33	0.87	16 09 02
	05	23 07 12.982	- 7 47 15.48	7.32	0.87	16 05 24
	06	23 07 30.962	- 7 45 14.97	7.31	0.87	16 01 46
	07	23 07 49.223	- 7 43 12.78	7.30	0.87	15 58 09
	08	23 08 07.762	- 7 41 08.91	7.29	0.87	15 54 32
	09	23 08 26.576	- 7 39 03.41	7.28	0.87	15 50 55
	10	23 08 45.661	- 7 36 56.29	7.27	0.87	15 47 18
	11	23 09 05.012	- 7 34 47.59	7.26	0.86	15 43 41
	12	23 09 24.625	- 7 32 37.34	7.25	0.86	15 40 05
	13	23 09 44.492	- 7 30 25.59	7.24	0.86	15 36 29
	14	23 10 04.608	- 7 28 12.36	7.23	0.86	15 32 53
	15	23 10 24.968	- 7 25 57.69	7.22	0.86	15 29 18
	16	23 10 45.567	- 7 23 41.61	7.21	0.86	15 25 43
	17	23 11 06.401	- 7 21 24.12	7.21	0.86	15 22 08
	18	23 11 27.469	- 7 19 05.26	7.20	0.86	15 18 33
	19	23 11 48.766	- 7 16 45.02	7.19	0.86	15 14 58
	20	23 12 10.290	- 7 14 23.44	7.18	0.86	15 11 24
	21	23 12 32.038	- 7 12 00.52	7.17	0.85	15 07 50
	22	23 12 54.008	- 7 09 36.28	7.16	0.85	15 04 16
	23	23 13 16.195	- 7 07 10.76	7.16	0.85	15 00 42
	24	23 13 38.596	- 7 04 43.97	7.15	0.85	14 57 09
	25	23 14 01.207	- 7 02 15.94	7.14	0.85	14 53 35
	26	23 14 24.023	- 6 59 46.70	7.13	0.85	14 50 02
	27	23 14 47.039	- 6 57 16.29	7.13	0.85	14 46 29
	28	23 15 10.249	- 6 54 44.74	7.12	0.85	14 42 57
	29	23 15 33.648	- 6 52 12.09	7.11	0.85	14 39 24
	30	23 15 57.228	- 6 49 38.38	7.10	0.85	14 35 52
	31	23 16 20.985	- 6 47 03.64	7.10	0.85	14 32 20
Febrero	01	23 16 44.913	- 6 44 27.90	7.09	0.84	14 28 48
	02	23 17 09.010	- 6 41 51.17	7.08	0.84	14 25 16
	03	23 17 33.272	- 6 39 13.48	7.08	0.84	14 21 44
	04	23 17 57.696	- 6 36 34.84	7.07	0.84	14 18 13
	05	23 18 22.280	- 6 33 55.29	7.07	0.84	14 14 41
	06	23 18 47.019	- 6 31 14.84	7.06	0.84	14 11 10
	07	23 19 11.908	- 6 28 33.53	7.05	0.84	14 07 39
	08	23 19 36.942	- 6 25 51.41	7.05	0.84	14 04 08
	09	23 20 02.114	- 6 23 08.50	7.04	0.84	14 00 37
	10	23 20 27.419	- 6 20 24.86	7.04	0.84	13 57 06
	11	23 20 52.851	- 6 17 40.51	7.03	0.84	13 53 36
	12	23 21 18.404	- 6 14 55.47	7.03	0.84	13 50 06
	13	23 21 44.076	- 6 12 09.78	7.02	0.84	13 46 35
	14	23 22 09.863	- 6 09 23.45	7.02	0.84	13 43 05
	15	23 22 35.760	- 6 06 36.50	7.02	0.84	13 39 35
	16	23 23 01.767	- 6 03 48.95	7.01	0.84	13 36 05
	17	23 23 27.879	- 6 01 00.82	7.01	0.83	13 32 35
	18	23 23 54.095	- 5 58 12.12	7.00	0.83	13 29 05
	19	23 24 20.410	- 5 55 22.88	7.00	0.83	13 25 36
	20	23 24 46.821	- 5 52 33.12	7.00	0.83	13 22 06
	21	23 25 13.324	- 5 49 42.87	6.99	0.83	13 18 37
	22	23 25 39.914	- 5 46 52.16	6.99	0.83	13 15 07
	23	23 26 06.587	- 5 44 01.02	6.99	0.83	13 11 38
	24	23 26 33.337	- 5 41 09.49	6.98	0.83	13 08 09
	25	23 27 00.159	- 5 38 17.61	6.98	0.83	13 04 39
	26	23 27 27.047	- 5 35 25.41	6.98	0.83	13 01 10
	27	23 27 53.994	- 5 32 32.93	6.98	0.83	12 57 41
	28	23 28 20.996	- 5 29 40.21	6.98	0.83	12 54 12

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PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Marzo	01	23 28 48.049	- 5 26 47.25	6.97	0.83	12 50 43
	02	23 29 15.150	- 5 23 54.09	6.97	0.83	12 47 14
	03	23 29 42.297	- 5 21 00.74	6.97	0.83	12 43 45
	04	23 30 09.487	- 5 18 07.23	6.97	0.83	12 40 17
	05	23 30 36.716	- 5 15 13.57	6.97	0.83	12 36 48
	06	23 31 03.981	- 5 12 19.80	6.97	0.83	12 33 19
	07	23 31 31.274	- 5 09 25.97	6.97	0.83	12 29 50
	08	23 31 58.590	- 5 06 32.12	6.96	0.83	12 26 22
	09	23 32 25.924	- 5 03 38.28	6.96	0.83	12 22 53
	10	23 32 53.270	- 5 00 44.49	6.96	0.83	12 19 24
	11	23 33 20.623	- 4 57 50.81	6.96	0.83	12 15 55
	12	23 33 47.976	- 4 54 57.24	6.96	0.83	12 12 27
	13	23 34 15.325	- 4 52 03.75	6.96	0.83	12 08 58
	14	23 34 42.672	- 4 49 10.32	6.96	0.83	12 05 29
	15	23 35 10.016	- 4 46 17.04	6.96	0.83	12 02 01
	16	23 35 37.353	- 4 43 23.93	6.96	0.83	11 58 32
	17	23 36 04.679	- 4 40 31.03	6.96	0.83	11 55 03
	18	23 36 31.991	- 4 37 38.35	6.97	0.83	11 51 34
	19	23 36 59.286	- 4 34 45.90	6.97	0.83	11 48 06
	20	23 37 26.560	- 4 31 53.71	6.97	0.83	11 44 37
	21	23 37 53.809	- 4 29 01.80	6.97	0.83	11 41 08
	22	23 38 21.028	- 4 26 10.22	6.97	0.83	11 37 39
	23	23 38 48.213	- 4 23 18.98	6.97	0.83	11 34 10
	24	23 39 15.357	- 4 20 28.13	6.97	0.83	11 30 41
	25	23 39 42.457	- 4 17 37.71	6.98	0.83	11 27 12
	26	23 40 09.506	- 4 14 47.73	6.98	0.83	11 23 43
	27	23 40 36.500	- 4 11 58.25	6.98	0.83	11 20 14
	28	23 41 03.433	- 4 09 09.28	6.98	0.83	11 16 45
	29	23 41 30.304	- 4 06 20.85	6.99	0.83	11 13 16
	30	23 41 57.109	- 4 03 32.97	6.99	0.83	11 09 47
	31	23 42 23.848	- 4 00 45.66	6.99	0.83	11 06 17
Abril	01	23 42 50.516	- 3 57 58.94	6.99	0.83	11 02 48
	02	23 43 17.111	- 3 55 12.84	7.00	0.83	10 59 18
	03	23 43 43.626	- 3 52 27.40	7.00	0.83	10 55 49
	04	23 44 10.055	- 3 49 42.65	7.01	0.83	10 52 19
	05	23 44 36.393	- 3 46 58.64	7.01	0.83	10 48 49
	06	23 45 02.635	- 3 44 15.41	7.01	0.84	10 45 20
	07	23 45 28.775	- 3 41 32.97	7.02	0.84	10 41 50
	08	23 45 54.810	- 3 38 51.36	7.02	0.84	10 38 20
	09	23 46 20.737	- 3 36 10.59	7.03	0.84	10 34 49
	10	23 46 46.554	- 3 33 30.68	7.03	0.84	10 31 19
	11	23 47 12.256	- 3 30 51.64	7.04	0.84	10 27 49
	12	23 47 37.843	- 3 28 13.51	7.04	0.84	10 24 18
	13	23 48 03.312	- 3 25 36.28	7.05	0.84	10 20 48
	14	23 48 28.660	- 3 22 59.97	7.05	0.84	10 17 17
	15	23 48 53.883	- 3 20 24.62	7.06	0.84	10 13 46
	16	23 49 18.980	- 3 17 50.23	7.06	0.84	10 10 15
	17	23 49 43.946	- 3 15 16.84	7.07	0.84	10 06 44
	18	23 50 08.777	- 3 12 44.48	7.07	0.84	10 03 13
	19	23 50 33.467	- 3 10 13.17	7.08	0.84	9 59 41
	20	23 50 58.014	- 3 07 42.94	7.09	0.84	9 56 10
	21	23 51 22.411	- 3 05 13.83	7.09	0.84	9 52 38
	22	23 51 46.653	- 3 02 45.87	7.10	0.85	9 49 06
	23	23 52 10.736	- 3 00 19.10	7.10	0.85	9 45 34
	24	23 52 34.656	- 2 57 53.54	7.11	0.85	9 42 02
	25	23 52 58.409	- 2 55 29.21	7.12	0.85	9 38 30
	26	23 53 21.992	- 2 53 06.13	7.13	0.85	9 34 57
	27	23 53 45.404	- 2 50 44.32	7.13	0.85	9 31 24
	28	23 54 08.643	- 2 48 23.79	7.14	0.85	9 27 52
	29	23 54 31.705	- 2 46 04.56	7.15	0.85	9 24 19
	30	23 54 54.586	- 2 43 46.66	7.16	0.85	9 20 45

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Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Mayo	01	23 55 17.281	- 2 41 30.13	7.16	0.85	9 17 12
	02	23 55 39.782	- 2 39 15.01	7.17	0.85	9 13 38
	03	23 56 02.085	- 2 37 01.34	7.18	0.86	9 10 04
	04	23 56 24.185	- 2 34 49.15	7.19	0.86	9 06 30
	05	23 56 46.077	- 2 32 38.45	7.20	0.86	9 02 56
	06	23 57 07.760	- 2 30 29.27	7.20	0.86	8 59 22
	07	23 57 29.230	- 2 28 21.62	7.21	0.86	8 55 47
	08	23 57 50.486	- 2 26 15.52	7.22	0.86	8 52 12
	09	23 58 11.524	- 2 24 10.97	7.23	0.86	8 48 37
	10	23 58 32.344	- 2 22 07.99	7.24	0.86	8 45 02
	11	23 58 52.943	- 2 20 06.60	7.25	0.86	8 41 27
	12	23 59 13.318	- 2 18 06.80	7.26	0.86	8 37 51
	13	23 59 33.467	- 2 16 08.63	7.27	0.87	8 34 15
	14	23 59 53.385	- 2 14 12.09	7.28	0.87	8 30 39
	15	0 00 13.070	- 2 12 17.22	7.29	0.87	8 27 02
	16	0 00 32.517	- 2 10 24.04	7.30	0.87	8 23 26
	17	0 00 51.721	- 2 08 32.57	7.31	0.87	8 19 49
	18	0 01 10.678	- 2 06 42.86	7.32	0.87	8 16 12
	19	0 01 29.384	- 2 04 54.91	7.33	0.87	8 12 34
	20	0 01 47.834	- 2 03 08.78	7.34	0.87	8 08 57
	21	0 02 06.023	- 2 01 24.47	7.35	0.88	8 05 19
	22	0 02 23.950	- 1 59 42.01	7.36	0.88	8 01 40
	23	0 02 41.611	- 1 58 01.42	7.37	0.88	7 58 02
	24	0 02 59.005	- 1 56 22.70	7.38	0.88	7 54 23
	25	0 03 16.130	- 1 54 45.87	7.39	0.88	7 50 44
	26	0 03 32.983	- 1 53 10.95	7.40	0.88	7 47 05
	27	0 03 49.562	- 1 51 37.94	7.41	0.88	7 43 26
	28	0 04 05.861	- 1 50 06.89	7.43	0.88	7 39 46
	29	0 04 21.875	- 1 48 37.82	7.44	0.89	7 36 06
	30	0 04 37.599	- 1 47 10.77	7.45	0.89	7 32 25
	31	0 04 53.027	- 1 45 45.77	7.46	0.89	7 28 45
Junio	01	0 05 08.155	- 1 44 22.85	7.47	0.89	7 25 04
	02	0 05 22.983	- 1 43 02.00	7.48	0.89	7 21 23
	03	0 05 37.506	- 1 41 43.25	7.50	0.89	7 17 41
	04	0 05 51.724	- 1 40 26.60	7.51	0.89	7 13 59
	05	0 06 05.636	- 1 39 12.06	7.52	0.90	7 10 17
	06	0 06 19.240	- 1 37 59.63	7.53	0.90	7 06 34
	07	0 06 32.535	- 1 36 49.32	7.55	0.90	7 02 52
	08	0 06 45.518	- 1 35 41.14	7.56	0.90	6 59 09
	09	0 06 58.188	- 1 34 35.10	7.57	0.90	6 55 25
	10	0 07 10.542	- 1 33 31.20	7.58	0.90	6 51 42
	11	0 07 22.578	- 1 32 29.48	7.60	0.90	6 47 57
	12	0 07 34.292	- 1 31 29.94	7.61	0.91	6 44 13
	13	0 07 45.681	- 1 30 32.61	7.62	0.91	6 40 28
	14	0 07 56.741	- 1 29 37.50	7.63	0.91	6 36 43
	15	0 08 07.468	- 1 28 44.64	7.65	0.91	6 32 58
	16	0 08 17.859	- 1 27 54.05	7.66	0.91	6 29 12
	17	0 08 27.911	- 1 27 05.75	7.67	0.91	6 25 26
	18	0 08 37.621	- 1 26 19.75	7.69	0.92	6 21 40
	19	0 08 46.988	- 1 25 36.05	7.70	0.92	6 17 53
	20	0 08 56.012	- 1 24 54.67	7.71	0.92	6 14 06
	21	0 09 04.691	- 1 24 15.59	7.73	0.92	6 10 19
	22	0 09 13.024	- 1 23 38.84	7.74	0.92	6 06 31
	23	0 09 21.010	- 1 23 04.41	7.75	0.92	6 02 43
	24	0 09 28.646	- 1 22 32.31	7.77	0.93	5 58 55
	25	0 09 35.928	- 1 22 02.58	7.78	0.93	5 55 06
	26	0 09 42.852	- 1 21 35.22	7.80	0.93	5 51 17
	27	0 09 49.413	- 1 21 10.27	7.81	0.93	5 47 27
	28	0 09 55.610	- 1 20 47.74	7.82	0.93	5 43 38
	29	0 10 01.441	- 1 20 27.63	7.84	0.93	5 39 47
	30	0 10 06.904	- 1 20 09.94	7.85	0.94	5 35 57

SATURNO 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Julio	01	0 10 12.001	- 1 19 54.66	7.86	0.94	5 32 06
	02	0 10 16.731	- 1 19 41.80	7.88	0.94	5 28 15
	03	0 10 21.096	- 1 19 31.33	7.89	0.94	5 24 23
	04	0 10 25.094	- 1 19 23.25	7.91	0.94	5 20 31
	05	0 10 28.728	- 1 19 17.56	7.92	0.94	5 16 39
	06	0 10 31.996	- 1 19 14.25	7.93	0.95	5 12 46
	07	0 10 34.898	- 1 19 13.32	7.95	0.95	5 08 53
	08	0 10 37.434	- 1 19 14.77	7.96	0.95	5 04 59
	09	0 10 39.603	- 1 19 18.59	7.97	0.95	5 01 05
	10	0 10 41.402	- 1 19 24.79	7.99	0.95	4 57 11
	11	0 10 42.832	- 1 19 33.39	8.00	0.95	4 53 17
	12	0 10 43.890	- 1 19 44.37	8.02	0.95	4 49 22
	13	0 10 44.575	- 1 19 57.76	8.03	0.96	4 45 26
	14	0 10 44.886	- 1 20 13.54	8.04	0.96	4 41 31
	15	0 10 44.823	- 1 20 31.72	8.06	0.96	4 37 35
	16	0 10 44.387	- 1 20 52.28	8.07	0.96	4 33 38
	17	0 10 43.580	- 1 21 15.22	8.08	0.96	4 29 42
	18	0 10 42.403	- 1 21 40.51	8.10	0.96	4 25 44
	19	0 10 40.858	- 1 22 08.14	8.11	0.97	4 21 47
	20	0 10 38.947	- 1 22 38.10	8.12	0.97	4 17 49
	21	0 10 36.669	- 1 23 10.38	8.14	0.97	4 13 51
	22	0 10 34.024	- 1 23 44.97	8.15	0.97	4 09 52
	23	0 10 31.011	- 1 24 21.88	8.16	0.97	4 05 53
	24	0 10 27.629	- 1 25 01.11	8.18	0.97	4 01 54
	25	0 10 23.879	- 1 25 42.65	8.19	0.98	3 57 54
	26	0 10 19.760	- 1 26 26.49	8.20	0.98	3 53 54
	27	0 10 15.276	- 1 27 12.60	8.22	0.98	3 49 54
	28	0 10 10.430	- 1 28 00.97	8.23	0.98	3 45 53
	29	0 10 05.224	- 1 28 51.55	8.24	0.98	3 41 52
	30	0 09 59.665	- 1 29 44.32	8.25	0.98	3 37 50
	31	0 09 53.754	- 1 30 39.25	8.27	0.98	3 33 48
Agosto	01	0 09 47.497	- 1 31 36.29	8.28	0.99	3 29 46
	02	0 09 40.896	- 1 32 35.43	8.29	0.99	3 25 44
	03	0 09 33.955	- 1 33 36.63	8.30	0.99	3 21 41
	04	0 09 26.678	- 1 34 39.87	8.32	0.99	3 17 38
	05	0 09 19.067	- 1 35 45.13	8.33	0.99	3 13 34
	06	0 09 11.125	- 1 36 52.37	8.34	0.99	3 09 30
	07	0 09 02.855	- 1 38 01.57	8.35	0.99	3 05 26
	08	0 08 54.258	- 1 39 12.73	8.36	1.00	3 01 22
	09	0 08 45.337	- 1 40 25.81	8.37	1.00	2 57 17
	10	0 08 36.096	- 1 41 40.79	8.38	1.00	2 53 12
	11	0 08 26.538	- 1 42 57.64	8.40	1.00	2 49 06
	12	0 08 16.667	- 1 44 16.33	8.41	1.00	2 45 00
	13	0 08 06.489	- 1 45 36.82	8.42	1.00	2 40 54
	14	0 07 56.011	- 1 46 59.07	8.43	1.00	2 36 48
	15	0 07 45.237	- 1 48 23.02	8.44	1.01	2 32 41
	16	0 07 34.175	- 1 49 48.64	8.45	1.01	2 28 34
	17	0 07 22.827	- 1 51 15.89	8.46	1.01	2 24 27
	18	0 07 11.199	- 1 52 44.74	8.47	1.01	2 20 20
	19	0 06 59.294	- 1 54 15.16	8.48	1.01	2 16 12
	20	0 06 47.115	- 1 55 47.13	8.48	1.01	2 12 04
	21	0 06 34.667	- 1 57 20.60	8.49	1.01	2 07 56
	22	0 06 21.954	- 1 58 55.54	8.50	1.01	2 03 47
	23	0 06 08.984	- 2 00 31.91	8.51	1.01	1 59 38
	24	0 05 55.763	- 2 02 09.64	8.52	1.01	1 55 29
	25	0 05 42.299	- 2 03 48.68	8.53	1.02	1 51 20
	26	0 05 28.600	- 2 05 28.98	8.53	1.02	1 47 10
	27	0 05 14.675	- 2 07 10.46	8.54	1.02	1 43 00
	28	0 05 00.533	- 2 08 53.07	8.55	1.02	1 38 50
	29	0 04 46.182	- 2 10 36.76	8.56	1.02	1 34 40
	30	0 04 31.628	- 2 12 21.45	8.56	1.02	1 30 30
	31	0 04 16.880	- 2 14 07.11	8.57	1.02	1 26 19

SATURNO 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Septiembre	01	0 04 01.946	- 2 15 53.68	8.57	1.02	1 22 08
	02	0 03 46.831	- 2 17 41.11	8.58	1.02	1 17 58
	03	0 03 31.544	- 2 19 29.35	8.59	1.02	1 13 46
	04	0 03 16.090	- 2 21 18.35	8.59	1.02	1 09 35
	05	0 03 00.477	- 2 23 08.07	8.60	1.02	1 05 24
	06	0 02 44.711	- 2 24 58.46	8.60	1.02	1 01 12
	07	0 02 28.799	- 2 26 49.48	8.61	1.03	0 57 00
	08	0 02 12.749	- 2 28 41.05	8.61	1.03	0 52 49
	09	0 01 56.572	- 2 30 33.13	8.61	1.03	0 48 37
	10	0 01 40.276	- 2 32 25.65	8.62	1.03	0 44 24
	11	0 01 23.872	- 2 34 18.53	8.62	1.03	0 40 12
	12	0 01 07.368	- 2 36 11.72	8.62	1.03	0 35 60
	13	0 00 50.775	- 2 38 05.16	8.63	1.03	0 31 47
	14	0 00 34.098	- 2 39 58.80	8.63	1.03	0 27 35
	15	0 00 17.345	- 2 41 52.59	8.63	1.03	0 23 22
	16	0 00 00.523	- 2 43 46.49	8.63	1.03	0 19 10
	17	23 59 43.639	- 2 45 40.43	8.63	1.03	0 14 57
	18	23 59 26.701	- 2 47 34.38	8.64	1.03	0 10 44
	19	23 59 09.719	- 2 49 28.26	8.64	1.03	0 06 31
	20	23 58 52.701	- 2 51 22.00	8.64	1.03	******00
	21	23 58 35.660	- 2 53 15.55	8.64	1.03	23 53 53
	22	23 58 18.605	- 2 55 08.82	8.64	1.03	23 49 40
	23	23 58 01.547	- 2 57 01.75	8.64	1.03	23 45 27
	24	23 57 44.498	- 2 58 54.25	8.64	1.03	23 41 14
	25	23 57 27.467	- 3 00 46.27	8.64	1.03	23 37 02
	26	23 57 10.465	- 3 02 37.74	8.63	1.03	23 32 49
	27	23 56 53.502	- 3 04 28.59	8.63	1.03	23 28 36
	28	23 56 36.585	- 3 06 18.77	8.63	1.03	23 24 23
	29	23 56 19.726	- 3 08 08.23	8.63	1.03	23 20 11
	30	23 56 02.930	- 3 09 56.90	8.63	1.03	23 15 58
Octubre	01	23 55 46.208	- 3 11 44.73	8.62	1.03	23 11 46
	02	23 55 29.566	- 3 13 31.69	8.62	1.03	23 07 33
	03	23 55 13.013	- 3 15 17.71	8.62	1.03	23 03 21
	04	23 54 56.556	- 3 17 02.75	8.61	1.03	22 59 09
	05	23 54 40.205	- 3 18 46.76	8.61	1.03	22 54 57
	06	23 54 23.967	- 3 20 29.67	8.60	1.03	22 50 45
	07	23 54 07.854	- 3 22 11.44	8.60	1.02	22 46 33
	08	23 53 51.876	- 3 23 51.98	8.59	1.02	22 42 22
	09	23 53 36.043	- 3 25 31.25	8.59	1.02	22 38 10
	10	23 53 20.363	- 3 27 09.19	8.58	1.02	22 33 59
	11	23 53 04.844	- 3 28 45.75	8.58	1.02	22 29 47
	12	23 52 49.493	- 3 30 20.89	8.57	1.02	22 25 36
	13	23 52 34.315	- 3 31 54.59	8.57	1.02	22 21 26
	14	23 52 19.316	- 3 33 26.81	8.56	1.02	22 17 15
	15	23 52 04.505	- 3 34 57.49	8.55	1.02	22 13 04
	16	23 51 49.889	- 3 36 26.59	8.55	1.02	22 08 54
	17	23 51 35.476	- 3 37 54.06	8.54	1.02	22 04 44
	18	23 51 21.275	- 3 39 19.84	8.53	1.02	22 00 34
	19	23 51 07.295	- 3 40 43.88	8.52	1.02	21 56 25
	20	23 50 53.547	- 3 42 06.12	8.51	1.01	21 52 15
	21	23 50 40.038	- 3 43 26.50	8.51	1.01	21 48 06
	22	23 50 26.778	- 3 44 44.98	8.50	1.01	21 43 57
	23	23 50 13.773	- 3 46 01.51	8.49	1.01	21 39 49
	24	23 50 01.032	- 3 47 16.05	8.48	1.01	21 35 41
	25	23 49 48.562	- 3 48 28.55	8.47	1.01	21 31 32
	26	23 49 36.368	- 3 49 39.00	8.46	1.01	21 27 25
	27	23 49 24.456	- 3 50 47.34	8.45	1.01	21 23 17
	28	23 49 12.832	- 3 51 53.57	8.44	1.01	21 19 10
	29	23 49 01.501	- 3 52 57.64	8.43	1.00	21 15 03
	30	23 48 50.467	- 3 53 59.54	8.42	1.00	21 10 56
	31	23 48 39.735	- 3 54 59.25	8.41	1.00	21 06 50

SATURNO 2025
PARA 0^h DE TIEMPO TERRESTRE

Fecha		Asc. Recta Aparente	Declinación Aparente	Semi Diámetro	Paralaje Horiz.	Paso Mer. Efemérides
		h m s	° ' "	"	"	h m s
Noviembre	01	23 48 29.311	- 3 55 56.72	8.40	1.00	21 02 44
	02	23 48 19.199	- 3 56 51.94	8.39	1.00	20 58 38
	03	23 48 09.407	- 3 57 44.88	8.38	1.00	20 54 33
	04	23 47 59.939	- 3 58 35.49	8.37	1.00	20 50 28
	05	23 47 50.804	- 3 59 23.75	8.36	1.00	20 46 23
	06	23 47 42.005	- 4 00 09.63	8.34	0.99	20 42 19
	07	23 47 33.549	- 4 00 53.10	8.33	0.99	20 38 15
	08	23 47 25.437	- 4 01 34.15	8.32	0.99	20 34 11
	09	23 47 17.672	- 4 02 12.79	8.31	0.99	20 30 08
	10	23 47 10.254	- 4 02 49.00	8.30	0.99	20 26 05
	11	23 47 03.187	- 4 03 22.79	8.28	0.99	20 22 02
	12	23 46 56.472	- 4 03 54.12	8.27	0.99	20 17 60
	13	23 46 50.116	- 4 04 22.98	8.26	0.98	20 13 58
	14	23 46 44.121	- 4 04 49.34	8.25	0.98	20 09 56
	15	23 46 38.494	- 4 05 13.18	8.23	0.98	20 05 55
	16	23 46 33.238	- 4 05 34.47	8.22	0.98	20 01 54
	17	23 46 28.358	- 4 05 53.20	8.21	0.98	19 57 54
	18	23 46 23.858	- 4 06 09.33	8.19	0.98	19 53 54
	19	23 46 19.742	- 4 06 22.86	8.18	0.97	19 49 54
	20	23 46 16.011	- 4 06 33.78	8.17	0.97	19 45 55
	21	23 46 12.669	- 4 06 42.07	8.15	0.97	19 41 56
	22	23 46 09.717	- 4 06 47.73	8.14	0.97	19 37 58
	23	23 46 07.156	- 4 06 50.78	8.13	0.97	19 33 59
	24	23 46 04.987	- 4 06 51.19	8.11	0.97	19 30 02
	25	23 46 03.210	- 4 06 48.99	8.10	0.96	19 26 04
	26	23 46 01.825	- 4 06 44.18	8.09	0.96	19 22 07
	27	23 46 00.832	- 4 06 36.76	8.07	0.96	19 18 11
	28	23 46 00.232	- 4 06 26.73	8.06	0.96	19 14 15
	29	23 46 00.025	- 4 06 14.10	8.05	0.96	19 10 19
	30	23 46 00.213	- 4 05 58.87	8.03	0.96	19 06 23
Diciembre	01	23 46 00.796	- 4 05 41.03	8.02	0.96	19 02 28
	02	23 46 01.777	- 4 05 20.58	8.00	0.95	18 58 34
	03	23 46 03.157	- 4 04 57.52	7.99	0.95	18 54 39
	04	23 46 04.936	- 4 04 31.84	7.98	0.95	18 50 46
	05	23 46 07.115	- 4 04 03.57	7.96	0.95	18 46 52
	06	23 46 09.689	- 4 03 32.72	7.95	0.95	18 42 59
	07	23 46 12.657	- 4 02 59.33	7.93	0.95	18 39 06
	08	23 46 16.015	- 4 02 23.41	7.92	0.94	18 35 14
	09	23 46 19.761	- 4 01 44.97	7.91	0.94	18 31 22
	10	23 46 23.894	- 4 01 04.03	7.89	0.94	18 27 31
	11	23 46 28.416	- 4 00 20.58	7.88	0.94	18 23 40
	12	23 46 33.327	- 3 59 34.63	7.86	0.94	18 19 49
	13	23 46 38.627	- 3 58 46.16	7.85	0.94	18 15 59
	14	23 46 44.317	- 3 57 55.20	7.84	0.93	18 12 09
	15	23 46 50.396	- 3 57 01.73	7.82	0.93	18 08 19
	16	23 46 56.865	- 3 56 05.77	7.81	0.93	18 04 30
	17	23 47 03.721	- 3 55 07.33	7.80	0.93	18 00 41
	18	23 47 10.965	- 3 54 06.42	7.78	0.93	17 56 53
	19	23 47 18.593	- 3 53 03.06	7.77	0.93	17 53 05
	20	23 47 26.602	- 3 51 57.28	7.76	0.92	17 49 17
	21	23 47 34.991	- 3 50 49.09	7.74	0.92	17 45 30
	22	23 47 43.755	- 3 49 38.52	7.73	0.92	17 41 43
	23	23 47 52.892	- 3 48 25.60	7.71	0.92	17 37 56
	24	23 48 02.398	- 3 47 10.36	7.70	0.92	17 34 10
	25	23 48 12.269	- 3 45 52.81	7.69	0.92	17 30 24
	26	23 48 22.503	- 3 44 32.99	7.68	0.91	17 26 39
	27	23 48 33.099	- 3 43 10.89	7.66	0.91	17 22 54
	28	23 48 44.053	- 3 41 46.55	7.65	0.91	17 19 09
	29	23 48 55.365	- 3 40 19.98	7.64	0.91	17 15 24
	30	23 49 07.033	- 3 38 51.19	7.62	0.91	17 11 40
	31	23 49 19.055	- 3 37 20.19	7.61	0.91	17 07 57

VOLVER AL INDICE

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La estrella subrayada permite el acceso a la página correspondiente.

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1	α Andromedae	00	09
3	ε Phoenicis	00	10
7	γ Pegasi	00	14
9	ι Ceti	00	20
11	β Hydri	00	26
12	α Phoenicis	00	27
20	δ Andromedae	00	40
22	β Ceti	00	44
33	μ Andromedae	00	57
40	η Ceti	01	09
42	β Andromedae	01	10
47	ϑ Ceti	01	25
49	γ Phoenicis	01	29
50	η Piscium	01	32
54	α Eridani (Achernar)	01	38
59	τ Ceti	01	45
62	ζ Ceti	01	52
64	α Trianguli	01	54
66	β Arietis	01	55
68	χ Eridani	01	56
72	α Hydri	01	59
73	γ Andromedae**p.*	02	05
74	α Arietis	02	08
75	β Trianguli	02	10
82	φ Eridani	02	17
79	γ Trianguli	02	18
1065	δ Hydri	02	21
86	χ Eridani	02	27
1075	ι Eridani	02	41
101	β Fornacis	02	49
100	41 Arietis	02	51
104	η Eridani	02	57
106	ϑ Eridani**p*	02	59
107	α Ceti	03	03
111	β Persei (Algol)	03	09
119	82 G.Eridani	03	20
120	α Persei	03	25
121	ο Tauri	03	25
123	ξ Tauri	03	28
127	ε Eridani	03	33
1099	τ^5 Eridani	03	34
135	δ Eridani	03	44
141	β Reticuli	03	44
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146	γ Hydri	03	46
139	η Tauri	03	48
142	27 Tauri	03	50
144	ζ Persei	03	55

149	γ Eridani	03 59
147	ε Persei*	03 59
148	ξ Persei	04 00
150	λ Tauri	04 01
151	ν Tauri	04 04
154	o^1 Eridani	04 12
156	α Reticuli	04 14
155	α Horologii	04 14
157	γ Doradus	04 16
159	γ Tauri	04 21
162	δ Tauri	04 24
1121	43 Eridani	04 24
164	ε Tauri	04 29
171	α Doradus	04 34
168	α Tauri (Aldebaran)	04 37
172	53 Eridani*	04 39
176	μ Eridani	04 46
179	π^4 Orionis	04 52
181	ι Aurigae	04 58
186	ε Leporis	05 06
185	η Aurigae	05 08
188	β Eridani	05 08
1144	μ Leporis	05 13
194	β Orionis (Rigel)	05 15
193	α Aurigae (Capella)	05 18
195	τ Orionis	05 18
201	γ Orionis (Bellatrix)	05 26
202	β Tauri	05 27
204	β Leporis*	05 29
206	δ Orionis	05 33
207	α Leporis	05 33
209	ι Orionis*	05 36
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215	α Columbae	05 40
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224	α Orionis (Betelgeuse)	05 56
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225	δ Aurigae	06 01
240	ζ Canis Majoris	06 21
243	β Canis Majoris	06 23
241	μ Geminorum	06 23
245	α Carinae (Canopus)	06 24
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261	ϑ Geminorum	06 54
268	ε Canis Majoris	06 59
270	o^2 Canis Majoris	07 03
273	δ Canis Majoris	07 09
278	π Puppis	07 17
279	δ Geminorum*	07 21
283	η Canis Majoris	07 24
297	ζ Volantis	07 41
295	β Geminorum (Pollux)	07 46

1204	ξ Puppis	07 50
303	χ Carinae	07 57
306	ζ Puppis	08 04
308	ρ Puppis	08 08
309	γ Velorum*	08 10
312	β Cancri	08 17
315	ε Carinae	08 22
319	β Volantis	08 25
1223	δ Hydrae	08 38
1227	ο Velorum	08 40
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326	δ Cancri	08 45
332	γ Pyxidis	08 51
336	108 G. Carinae	08 55
334	ζ Hydrae	08 56
342	97 G. Velorum	09 04
345	λ Velorum	09 08
348	β Carinae	09 13
351	ι Carinae	09 17
352	α Lyncis	09 22
353	χ Velorum	09 22
354	α Hydrae	09 28
361	N.Velorum	09 31
1250	ι Hydrae	09 40
365	ο Leonis	09 42
371	μ Leonis	09 54
375	φ Velorum	09 57
380	α Leonis (Regulus)	10 09
381	λ Hydrae	10 11
385	ω Carinae	10 14
384	ζ Leonis	10 17
1264	187 G. Carinae	10 17
389	μ Hydrae	10 27
397	203 G. Carinae	10 32
396	ρ Leonis	10 33
401	γ Chamaeleontis	10 35
406	ϑ Carinae	10 43
410	ν Hydrae	10 50
1283	α Crateris	11 00
1289	260 G. Carinae	11 09
422	δ Leonis	11 15
426	δ Crateris	11 20
427	σ Leonis	11 22
431	γ Crateri*	11 25
434	ξ Hydrae	11 34
436	λ Centauri	11 36
437	υ Leonis	11 38
442	λ Muscae	11 46
444	β Leonis (Denebola)	11 50
445	β Virginis	11 51
450	ο Virginis	12 06
452	δ Centauri	12 09
453	ε Corvi	12 10
455	δ Crucis	12 15
457	γ Corvi	12 16

462	α Crucis A*	12 27
465	δ Corvi	12 30
468	γ Crucis	12 32
471	β Corvi	12 35
474	α Muscae	12 38
481	β Crucis	12 48
484	δ Virginis	12 56
485	α Canum Venat*f.	12 56
488	ε Virginis	13 02
487	δ Muscae	13 02
495	γ Hydrae	13 19
496	ι Centauri	13 20
498	α Virginis (Spica)	13 25
501	ζ Virginis	13 35
504	ε Centauri	13 40
509	η Ursae Majoris	13 48
508	μ Centauri	13 50
513	η Bootis	13 55
512	ζ Centauri	13 56
518	β Centauri*	14 04
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520	ϑ Centauri	14 07
535	γ Bootis	14 32
547	109 Virginis	14 46
542	α Apodis	14 49
548	α^2 Librae	14 51
552	β Lupi	14 59
553	χ Centauri	15 00
555	β Bootis	15 02
556	σ Librae	15 04
558	ζ Lupi	15 13
563	δ Bootis	15 16
564	β Librae	15 17
560	γ Trianguli Australis	15 20
1402	δ Lupi	15 22
566	φ1 Lupi	15 22
572	β Coronae Borealis	15 28
578	α Coronae Borealis	15 35
577	γ Librae	15 36
579	υ Librae	15 37
574	ε Trianguli Australis	15 38
582	α Serpentis	15 44
583	β Serpentis	15 46
589	β Trianguli Australis	15 56
591	γ Serpentis	15 57
592	π Scorpii	15 59
594	δ Scorpii	16 01
618	β Herculis	16 30
611	γ Apodis	16 35
620	τ Scorpii	16 36
622	ζ Ophiuchi	16 37
626	η Herculis	16 43
625	α Trianguli Australis	16 50
628	ε Scorpii	16 51
633	χ Ophiuchi	16 58
631	ζ Arae	16 59
634	ε Herculis	17 00

638	η Scorpii	17 13
643	π Herculis	17 15
641	δ Herculis*	17 15
644	ϑ Ophiuchi	17 22
645	β Arae	17 26
649	υ Scorpii	17 31
648	δ Arae	17 32
651	α Arae	17 32
652	λ Scorpii	17 34
656	α Ophiuchi	17 35
654	ϑ Scorpii	17 38
660	χ Scorpii	17 43
665	β Ophiuchi	17 44
667	μ Herculis	17 47
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666	ι^1 Scorpii	17 48
668	γ Ophiuchi	17 48
669	G Scorpii	17 50
673	ν Ophiuchi	17 59
679	γ Sagittarii	18 06
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1471	ϑ Arae	18 07
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689	ε Sagittarii	18 25
691	α Telescopii	18 28
692	λ Sagittarii	18 28
699	α Lyrae (Vega)	18 37
1487	φ Sagittarii	18 46
705	β Lyrae	18 50
706	σ Sagittarii	18 56
1495	114 G.Sagittarii	18 56
710	ξ^2 Sagittarii	18 58
713	γ Lyrae	18 59
716	ζ Aquilae	19 06
717	λ Aquilae	19 07
1496	τ Sagittarii	19 07
720	π Sagittarii*	19 10
1502	β^1 Sagittarii*	19 23
728	α Sagittarii	19 24
730	δ Aquilae	19 26
732	β Cygni*p.	19 31
1513	β Sagittae	19 41
741	γ Aquilae	19 46
743	δ Sagittae	19 48
745	α Aquilae (Altair)	19 51
746	η Aquilae	19 53
749	β Aquilae	19 56
752	γ Sagittae	19 59
748	ε Pavonis	20 02
754	δ Pavonis	20 10
756	ϑ Aquilae	20 12
761	α^2 Capricorni	20 18
762	β Capricorni	20 21
765	γ Cygni	20 22
764	α Pavonis	20 26

768	ε Delphini	20 33
769	α Indi	20 38
774	α Delphini	20 40
777	α Cygni (Deneb)	20 41
775	β Pavonis	20 46
780	ε Cygni	20 46
781	ε Aquarii	20 48
785	β Indi	20 55
792	ξ Cygni	21 05
1552	ϑ Capricorni	21 06
797	ζ Cygni	21 13
800	α Equulei	21 16
804	1 Pegasi	21 22
1561	ι Capricorni	21 23
806	ζ Capricorni	21 27
808	β Aquarii	21 32
1568	ρ Cygni	21 34
812	γ Capricorni	21 40
810	ν Octantis	21 42
815	ε Pegasi	21 44
819	δ Capricorni	21 47
822	γ Gruis	21 54
827	α Aquarii	22 06
829	α Gruis	22 09
834	ϑ Pegasi	22 10
841	α Tucanae	22 19
842	γ Aquarii	22 22
846	δ^1 Gruis	22 30
850	η Aquarii	22 36
855	ζ Pegasi	22 42
856	β Gruis	22 43
857	η Pegasi	22 43
860	ε Gruis	22 49
862	μ Pegasi	22 50
864	λ Aquarii	22 53
866	δ Aquarii	22 55
867	α Piscis Austrini(Fomalhaut)	22 58
869	ο Andromedae	23 02
871	α Pegasi	23 05
1605	ι Gruis	23 11
878	γ Piscium	23 17
879	γ Sculptoris	23 19
1612	98 Aquarii	23 23
1614	ϑ Piscium	23 28
886	β Sculptoris	23 33
892	ι Piscium	23 40
1619	χ Andromedae	23 41
923	σ Octantis	21 13

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	902		903		904		1	
EST.	ω Piscium		ε Tucanae		ϑ Octantis		α Andromedae	
MAG.	4.01		4.50		4.78		2.06	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	0 0	+ 7 0	0 1	-65 25	0 2	-76 55	0 9	+29 13
mes d	s	"	s	"	s	"	s	"
1 -7.3	35.617	7.56	12.897	96.94	52.851	60.83	40.724	51.73
1 2.7	35.517	6.87	12.495	96.33	52.007	59.94	40.592	51.11
1 12.7	35.422	6.14	12.121	95.13	51.218	58.44	40.462	50.20
1 22.7	35.334	5.39	11.784	93.42	50.502	56.41	40.338	49.06
2 1.6	35.257	4.65	11.489	91.22	49.873	53.86	40.226	47.69
2 11.6	35.200	3.97	11.254	88.58	49.361	50.89	40.135	46.19
2 21.6	35.163	3.38	11.080	85.61	48.967	47.59	40.069	44.62
3 3.6	35.153	2.93	10.973	82.32	48.703	43.99	40.034	43.04
3 13.5	35.177	2.69	10.944	78.82	48.586	40.22	40.040	41.56
3 23.5	35.232	2.67	10.990	75.20	48.606	36.37	40.087	40.22
4 2.5	35.329	2.82	11.118	71.49	48.775	32.47	40.180	39.11
4 12.4	35.470	3.29	11.329	67.82	49.092	28.67	40.322	38.30
4 22.4	35.648	4.05	11.616	64.23	49.543	25.00	40.510	37.81
5 2.4	35.866	5.11	11.982	60.80	50.133	21.54	40.743	37.70
5 12.4	36.118	6.43	12.418	57.63	50.843	18.40	41.016	37.99
5 22.3	36.398	8.00	12.912	54.76	51.657	15.61	41.321	38.67
6 1.3	36.704	9.78	13.462	52.25	52.567	13.23	41.654	39.73
6 11.3	37.023	11.73	14.048	50.19	53.540	11.36	42.003	41.16
6 21.3	37.350	13.80	14.657	48.59	54.557	9.98	42.360	42.89
7 1.2	37.677	15.94	15.277	47.51	55.597	9.16	42.718	44.91
7 11.2	37.994	18.08	15.886	46.99	56.619	8.92	43.063	47.15
7 21.2	38.294	20.18	16.471	46.99	57.606	9.22	43.391	49.55
7 31.1	38.572	22.20	17.017	47.55	58.528	10.11	43.695	52.07
8 10.1	38.818	24.07	17.503	48.64	59.347	11.52	43.965	54.64
8 20.1	39.031	25.78	17.922	50.18	60.053	13.38	44.200	57.20
8 30.1	39.207	27.28	18.259	52.18	60.614	15.69	44.395	59.72
9 9.0	39.344	28.56	18.504	54.51	61.011	18.31	44.549	62.13
9 19.0	39.444	29.62	18.658	57.10	61.244	21.17	44.663	64.41
9 29.0	39.506	30.44	18.712	59.87	61.292	24.16	44.736	66.51
10 9.0	39.534	31.03	18.670	62.67	61.162	27.13	44.772	68.40
10 18.9	39.532	31.42	18.542	65.41	60.868	30.01	44.775	70.06
10 28.9	39.502	31.59	18.328	67.98	60.408	32.65	44.745	71.46
11 7.9	39.451	31.58	18.047	70.23	59.815	34.93	44.690	72.58
11 17.8	39.383	31.42	17.710	72.13	59.111	36.79	44.613	73.42
11 27.8	39.300	31.09	17.328	73.56	58.315	38.12	44.515	73.94
12 7.8	39.209	30.65	16.923	74.44	57.470	38.85	44.404	74.14
12 17.8	39.111	30.10	16.506	74.79	56.599	38.99	44.282	74.04
12 27.7	39.011	29.45	16.091	74.53	55.730	38.48	44.153	73.60
12 37.7	38.913	28.75	15.697	73.70	54.902	37.36	44.023	72.87
Pos. Med.	37.381	15.96	13.400	67.27	52.164	30.02	42.698	52.09
Secδ tanδ	1.008	.123	2.405	-2.188	4.420	-4.306	1.146	.560
Dob.Tran.	Sep 21		Sep 21		Sep 21		Sep 23	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	3		7		9		11	
EST.	ε Phoenicis		γ Pegasi		ι Ceti		β Hydri	
MAG.	3.88		2.83		3.56		2.80	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	0 10	-45 36	0 14	+15 19	0 20	- 8 40	0 26	-77 6
mes d	s	"	s	"	s	"	s	"
1 -7.3	40.829	50.13	31.369	25.69	42.140	71.28	64.522	69.54
1 2.7	40.635	50.11	31.261	25.03	42.037	71.87	63.650	68.96
1 12.7	40.454	49.60	31.155	24.25	41.936	72.33	62.816	67.73
1 22.7	40.287	48.66	31.054	23.36	41.841	72.64	62.040	65.96
2 1.6	40.141	47.28	30.961	22.39	41.754	72.79	61.337	63.64
2 11.6	40.023	45.49	30.886	21.40	41.683	72.74	60.741	60.85
2 21.6	39.937	43.37	30.832	20.45	41.631	72.51	60.255	57.70
3 3.6	39.888	40.91	30.805	19.57	41.604	72.07	59.893	54.21
3 13.5	39.883	38.19	30.812	18.84	41.608	71.39	59.676	50.50
3 23.5	39.923	35.28	30.855	18.31	41.643	70.51	59.597	46.66
4 2.5	40.013	32.19	30.938	17.99	41.717	69.33	59.669	42.73
4 12.4	40.156	29.03	31.066	17.96	41.834	67.93	59.894	38.85
4 22.4	40.349	25.84	31.236	18.22	41.990	66.32	60.260	35.07
5 2.4	40.593	22.66	31.448	18.81	42.187	64.50	60.774	31.45
5 12.4	40.884	19.62	31.697	19.73	42.420	62.53	61.421	28.12
5 22.3	41.214	16.73	31.976	20.94	42.686	60.43	62.182	25.10
6 1.3	41.582	14.07	32.283	22.44	42.979	58.25	63.055	22.46
6 11.3	41.973	11.74	32.606	24.18	43.291	56.05	64.007	20.31
6 21.3	42.380	9.73	32.939	26.11	43.614	53.87	65.017	18.64
7 1.2	42.795	8.14	33.273	28.21	43.943	51.77	66.068	17.51
7 11.2	43.203	7.00	33.599	30.39	44.265	49.82	67.119	16.97
7 21.2	43.596	6.31	33.909	32.61	44.574	48.05	68.150	16.98
7 31.1	43.964	6.11	34.198	34.84	44.865	46.50	69.132	17.59
8 10.1	44.294	6.40	34.457	36.98	45.127	45.22	70.026	18.74
8 20.1	44.584	7.13	34.684	39.03	45.358	44.21	70.818	20.40
8 30.1	44.822	8.32	34.874	40.94	45.554	43.51	71.476	22.53
9 9.0	45.006	9.87	35.026	42.66	45.711	43.10	71.976	25.02
9 19.0	45.135	11.72	35.141	44.20	45.832	42.96	72.316	27.80
9 29.0	45.206	13.82	35.218	45.52	45.913	43.10	72.473	30.77
10 9.0	45.222	16.05	35.261	46.61	45.959	43.46	72.448	33.79
10 18.9	45.189	18.33	35.273	47.49	45.973	44.00	72.252	36.76
10 28.9	45.109	20.56	35.255	48.14	45.957	44.70	71.881	39.55
11 7.9	44.991	22.63	35.214	48.56	45.917	45.48	71.362	42.03
11 17.8	44.842	24.47	35.154	48.78	45.858	46.32	70.718	44.13
11 27.8	44.668	26.00	35.075	48.78	45.780	47.17	69.963	45.73
12 7.8	44.480	27.13	34.985	48.58	45.692	47.99	69.141	46.76
12 17.8	44.284	27.86	34.886	48.21	45.596	48.74	68.273	47.21
12 27.7	44.086	28.13	34.780	47.64	45.493	49.41	67.387	47.00
12 37.7	43.896	27.92	34.673	46.94	45.391	49.95	66.525	46.18
Pos. Med.	41.849	24.83	33.139	30.63	43.609	57.95	63.229	39.47
Secδ tanδ	1.429	-1.021	1.037	.274	1.012	-.153	4.483	-4.370
Dob.Tran.	Sep 23		Sep 24		Sep 26		Sep 27	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	12		20		22		33	
EST.	α Phoenicis		δ Andromedae		β Ceti		μ Andromedae	
MAG.	2.39		3.27		2.04		3.87	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	0 27	-42 9	0 40	+30 59	0 44	-17 50	0 58	+38 38
mes d	s	"	s	"	s	"	s	"
1 -7.2	31.380	87.91	40.098	61.77	50.897	64.89	8.853	17.75
1 2.7	31.200	88.14	39.964	61.39	50.783	65.52	8.700	17.65
1 12.7	31.026	87.89	39.826	60.71	50.669	65.90	8.537	17.17
1 22.7	30.862	87.22	39.688	59.78	50.556	66.03	8.371	16.36
2 1.7	30.712	86.12	39.555	58.59	50.449	65.91	8.207	15.22
2 11.6	30.587	84.60	39.438	57.23	50.355	65.51	8.057	13.82
2 21.6	30.488	82.73	39.342	55.75	50.279	64.86	7.929	12.23
3 3.6	30.421	80.52	39.275	54.21	50.225	63.93	7.830	10.49
3 13.5	30.396	78.01	39.246	52.71	50.202	62.74	7.773	8.72
3 23.5	30.412	75.28	39.258	51.32	50.211	61.31	7.760	6.99
4 2.5	30.476	72.34	39.318	50.09	50.259	59.62	7.799	5.37
4 12.5	30.591	69.29	39.428	49.12	50.350	57.70	7.894	3.96
4 22.4	30.754	66.17	39.586	48.44	50.482	55.61	8.044	2.82
5 2.4	30.969	63.02	39.795	48.09	50.658	53.34	8.248	1.99
5 12.4	31.230	59.96	40.048	48.13	50.875	50.98	8.504	1.55
5 22.4	31.532	57.01	40.338	48.53	51.126	48.55	8.802	1.49
6 1.3	31.872	54.25	40.661	49.32	51.411	46.09	9.139	1.85
6 11.3	32.238	51.77	41.007	50.48	51.718	43.70	9.502	2.61
6 21.3	32.623	49.59	41.366	51.95	52.042	41.40	9.883	3.73
7 1.2	33.018	47.78	41.731	53.73	52.376	39.26	10.275	5.23
7 11.2	33.410	46.41	42.090	55.76	52.708	37.36	10.663	7.04
7 21.2	33.791	45.46	42.437	57.97	53.031	35.70	11.040	9.11
7 31.2	34.152	45.01	42.764	60.34	53.340	34.35	11.400	11.41
8 10.1	34.481	45.03	43.062	62.79	53.623	33.35	11.731	13.87
8 20.1	34.772	45.51	43.329	65.28	53.878	32.68	12.032	16.44
8 30.1	35.019	46.45	43.559	67.76	54.099	32.39	12.296	19.07
9 9.1	35.215	47.78	43.749	70.16	54.282	32.44	12.519	21.70
9 19.0	35.362	49.44	43.902	72.47	54.427	32.81	12.703	24.30
9 29.0	35.455	51.39	44.014	74.64	54.534	33.48	12.845	26.81
10 9.0	35.495	53.51	44.088	76.62	54.602	34.39	12.945	29.17
10 18.9	35.490	55.73	44.128	78.41	54.636	35.49	13.009	31.38
10 28.9	35.439	57.95	44.134	79.96	54.637	36.72	13.033	33.38
11 7.9	35.350	60.05	44.110	81.26	54.609	38.01	13.023	35.13
11 17.9	35.230	61.98	44.060	82.30	54.558	39.29	12.982	36.62
11 27.8	35.083	63.65	43.984	83.04	54.486	40.53	12.909	37.79
12 7.8	34.920	64.95	43.890	83.48	54.398	41.63	12.811	38.63
12 17.8	34.744	65.89	43.777	83.61	54.297	42.60	12.689	39.12
12 27.8	34.562	66.39	43.650	83.41	54.187	43.36	12.547	39.24
12 37.7	34.383	66.43	43.517	82.92	54.073	43.89	12.392	38.99
Pos. Med.	32.290	64.35	41.931	60.40	52.094	49.41	10.705	13.52
Secδ tanδ	1.349	-.906	1.167	.601	1.051	-.322	1.280	.799
Dob.Tran.	Sep 27		Oct 1		Oct 2		Oct 5	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	40		42		47		49	
EST.	η Ceti		β Andromedae		ϑ Ceti		γ Phoenicis	
MAG.	3.45		2.06		3.60		3.41	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	1 9	-10 2	1 11	+35 45	1 25	- 8 2	1 29	-43 10
mes d	s	"	s	"	s	"	s	"
1 -8.2	51.247	63.10	8.401	22.10	16.875	79.03	27.982	97.94
1 1.8	51.146	63.85	8.264	22.07	16.778	79.81	27.794	98.84
1 11.7	51.036	64.43	8.114	21.69	16.669	80.45	27.595	99.26
1 21.7	50.923	64.84	7.957	21.02	16.554	80.92	27.392	99.20
1 31.7	50.810	65.06	7.797	20.03	16.435	81.23	27.188	98.68
2 10.7	50.704	65.06	7.648	18.80	16.322	81.33	26.996	97.66
2 20.6	50.611	64.85	7.516	17.38	16.219	81.23	26.820	96.23
3 2.6	50.537	64.41	7.409	15.81	16.132	80.91	26.668	94.37
3 12.6	50.490	63.72	7.339	14.21	16.071	80.36	26.550	92.14
3 22.5	50.473	62.80	7.310	12.63	16.039	79.58	26.469	89.60
4 1.5	50.492	61.64	7.329	11.15	16.043	78.56	26.434	86.77
4 11.5	50.553	60.22	7.403	9.86	16.088	77.28	26.451	83.73
4 21.5	50.656	58.59	7.529	8.80	16.175	75.78	26.519	80.54
5 1.4	50.803	56.73	7.709	8.04	16.307	74.05	26.643	77.24
5 11.4	50.993	54.72	7.941	7.63	16.483	72.15	26.821	73.93
5 21.4	51.220	52.57	8.216	7.58	16.696	70.10	27.049	70.67
5 31.4	51.482	50.33	8.532	7.91	16.947	67.93	27.325	67.51
6 10.3	51.771	48.06	8.878	8.62	17.226	65.71	27.641	64.57
6 20.3	52.079	45.80	9.243	9.69	17.527	63.49	27.988	61.88
6 30.3	52.401	43.61	9.623	11.10	17.844	61.31	28.361	59.52
7 10.2	52.726	41.57	10.003	12.80	18.166	59.24	28.746	57.58
7 20.2	53.047	39.70	10.375	14.75	18.487	57.34	29.134	56.05
7 30.2	53.358	38.06	10.734	16.92	18.799	55.63	29.517	55.02
8 9.2	53.648	36.70	11.069	19.23	19.094	54.19	29.882	54.51
8 19.1	53.915	35.63	11.375	21.64	19.367	53.03	30.222	54.49
8 29.1	54.153	34.88	11.649	24.11	19.614	52.17	30.530	55.01
9 8.1	54.356	34.46	11.885	26.57	19.829	51.65	30.797	56.02
9 18.1	54.527	34.35	12.084	28.99	20.011	51.42	31.020	57.45
9 28.0	54.661	34.54	12.243	31.33	20.160	51.50	31.195	59.29
10 8.0	54.759	35.00	12.363	33.54	20.273	51.85	31.318	61.43
10 18.0	54.825	35.67	12.446	35.60	20.355	52.42	31.395	63.78
10 27.9	54.858	36.53	12.492	37.46	20.404	53.20	31.421	66.27
11 6.9	54.863	37.51	12.504	39.09	20.424	54.11	31.401	68.75
11 16.9	54.843	38.55	12.485	40.49	20.418	55.10	31.342	71.16
11 26.9	54.798	39.61	12.434	41.61	20.387	56.13	31.243	73.38
12 6.8	54.735	40.63	12.356	42.42	20.334	57.14	31.112	75.31
12 16.8	54.655	41.58	12.254	42.93	20.262	58.09	30.955	76.91
12 26.8	54.559	42.42	12.129	43.09	20.172	58.96	30.775	78.10
12 36.8	54.454	43.11	11.988	42.92	20.070	59.69	30.582	78.82
Pos. Med.	52.381	51.77	10.125	18.17	17.933	69.27	28.199	77.89
Secδ tanδ	1.016	-.177	1.232	.720	1.010	-.141	1.372	-.939
Dob.Tran.	Oct 8		Oct 8		Oct 12		Oct 13	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	50	54	59	62
EST.	η Piscium	α Eridani (Achernar)	τ Ceti	ζ Ceti
MAG.	3.62	0.46	3.50	3.73

UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	1 32	+15 28	1 38	-57 6	1 45	-15 47	1 52	-10 12
mes d	s	"	s	"	s	"	s	"
1 -8.2	49.819	33.41	40.240	50.56	14.442	86.11	42.363	44.99
1 1.8	49.725	33.03	39.942	51.45	14.336	87.02	42.270	45.89
1 11.8	49.616	32.53	39.629	51.76	14.216	87.69	42.162	46.61
1 21.7	49.498	31.94	39.311	51.52	14.087	88.11	42.042	47.15
1 31.7	49.373	31.26	38.995	50.73	13.952	88.29	41.914	47.49
2 10.7	49.252	30.54	38.694	49.38	13.820	88.16	41.787	47.59
2 20.6	49.140	29.81	38.417	47.56	13.696	87.78	41.666	47.47
3 2.6	49.044	29.10	38.172	45.28	13.586	87.11	41.557	47.11
3 12.6	48.975	28.47	37.973	42.60	13.501	86.16	41.471	46.50
3 22.6	48.938	27.96	37.823	39.60	13.445	84.95	41.413	45.64
4 1.5	48.939	27.61	37.731	36.31	13.424	83.47	41.389	44.54
4 11.5	48.985	27.51	37.707	32.83	13.444	81.74	41.405	43.18
4 21.5	49.068	27.56	37.748	29.23	13.507	79.79	41.463	41.60
5 1.5	49.207	27.87	37.860	25.56	13.616	77.63	41.567	39.79
5 11.4	49.390	28.49	38.044	21.93	13.770	75.33	41.716	37.80
5 21.4	49.613	29.36	38.291	18.41	13.964	72.92	41.906	35.67
5 31.4	49.873	30.50	38.602	15.05	14.198	70.43	42.135	33.43
6 10.3	50.164	31.88	38.968	11.99	14.465	67.95	42.398	31.14
6 20.3	50.475	33.45	39.378	9.24	14.756	65.52	42.685	28.85
6 30.3	50.804	35.20	39.825	6.89	15.067	63.19	42.993	26.61
7 10.3	51.137	37.06	40.293	5.03	15.387	61.05	43.311	24.50
7 20.2	51.468	38.98	40.771	3.65	15.708	59.13	43.631	22.56
7 30.2	51.792	40.94	41.249	2.84	16.025	57.48	43.949	20.84
8 9.2	52.098	42.85	41.708	2.61	16.328	56.17	44.253	19.40
8 19.2	52.382	44.70	42.141	2.92	16.611	55.20	44.540	18.24
8 29.1	52.641	46.44	42.535	3.82	16.869	54.60	44.804	17.43
9 8.1	52.868	48.03	42.877	5.24	17.097	54.38	45.039	16.96
9 18.1	53.064	49.45	43.164	7.12	17.294	54.52	45.245	16.81
9 28.0	53.228	50.69	43.387	9.42	17.456	55.00	45.419	17.00
10 8.0	53.358	51.73	43.540	12.02	17.582	55.79	45.559	17.49
10 18.0	53.457	52.58	43.628	14.82	17.676	56.82	45.668	18.21
10 28.0	53.525	53.23	43.644	17.74	17.736	58.06	45.744	19.16
11 6.9	53.562	53.69	43.594	20.61	17.764	59.41	45.789	20.25
11 16.9	53.574	53.99	43.485	23.35	17.763	60.83	45.807	21.42
11 26.9	53.558	54.11	43.317	25.85	17.734	62.24	45.796	22.64
12 6.9	53.519	54.07	43.103	27.98	17.681	63.57	45.760	23.83
12 16.8	53.457	53.90	42.850	29.71	17.606	64.79	45.701	24.94
12 26.8	53.374	53.58	42.563	30.93	17.509	65.84	45.620	25.95
12 36.8	53.275	53.14	42.258	31.60	17.398	66.66	45.521	26.79
Pos. Med.	51.156	34.97	39.628	28.19	15.201	74.32	43.227	36.04
Secδ tanδ	1.038	.277	1.841	-1.546	1.039	-.283	1.016	-.180
Dob.Tran.	Oct 14		Oct 15		Oct 17		Oct 19	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	64		66		68		72	
EST.	α Trianguli		β Arietis		χ Eridani		α Hydri	
MAG.	3.41		2.64		3.70		2.86	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	1 54	+29 42	1 56	+20 55	1 56	-51 28	1 59	-61 26
mes d	s	"	s	"	s	"	s	"
1 -8.2	31.180	10.93	1.969	54.86	57.305	77.99	35.647	68.49
1 1.8	31.077	11.01	1.879	54.68	57.068	79.14	35.297	69.61
1 11.8	30.953	10.83	1.769	54.34	56.813	79.75	34.923	70.13
1 21.7	30.813	10.42	1.645	53.86	56.547	79.84	34.537	70.08
1 31.7	30.662	9.77	1.510	53.23	56.275	79.40	34.147	69.47
2 10.7	30.510	8.92	1.374	52.51	56.012	78.40	33.769	68.27
2 20.7	30.366	7.91	1.245	51.71	55.763	76.94	33.413	66.57
3 2.6	30.237	6.78	1.128	50.87	55.538	75.01	33.089	64.38
3 12.6	30.136	5.60	1.037	50.05	55.349	72.65	32.813	61.76
3 22.6	30.070	4.42	.977	49.29	55.201	69.95	32.590	58.79
4 1.6	30.044	3.31	.955	48.65	55.103	66.92	32.429	55.51
4 11.5	30.069	2.34	.978	48.19	55.063	63.66	32.343	52.00
4 21.5	30.143	1.55	1.046	47.93	55.082	60.24	32.330	48.36
5 1.5	30.268	.99	1.162	47.86	55.164	56.68	32.397	44.61
5 11.4	30.447	.70	1.331	48.07	55.310	53.12	32.545	40.89
5 21.4	30.672	.71	1.541	48.56	55.516	49.61	32.767	37.26
5 31.4	30.940	1.03	1.793	49.33	55.781	46.21	33.065	33.78
6 10.4	31.244	1.68	2.079	50.36	56.097	43.04	33.429	30.57
6 20.3	31.574	2.61	2.390	51.62	56.454	40.14	33.847	27.67
6 30.3	31.925	3.82	2.720	53.10	56.848	37.59	34.315	25.16
7 10.3	32.285	5.28	3.060	54.74	57.264	35.48	34.814	23.14
7 20.3	32.646	6.93	3.401	56.49	57.692	33.82	35.332	21.61
7 30.2	33.001	8.76	3.738	58.34	58.124	32.69	35.859	20.65
8 9.2	33.341	10.70	4.060	60.21	58.544	32.13	36.374	20.28
8 19.2	33.662	12.70	4.363	62.07	58.943	32.11	36.866	20.49
8 29.1	33.957	14.74	4.644	63.88	59.312	32.67	37.323	21.30
9 8.1	34.222	16.74	4.895	65.58	59.639	33.76	37.728	22.66
9 18.1	34.457	18.70	5.118	67.18	59.922	35.34	38.077	24.51
9 28.1	34.659	20.58	5.309	68.63	60.151	37.37	38.356	26.83
10 8.0	34.824	22.34	5.467	69.91	60.322	39.75	38.559	29.47
10 18.0	34.958	23.97	5.594	71.03	60.438	42.38	38.688	32.36
10 28.0	35.057	25.44	5.689	71.97	60.493	45.18	38.734	35.41
11 7.0	35.122	26.73	5.753	72.73	60.490	47.99	38.702	38.44
11 16.9	35.156	27.84	5.789	73.33	60.436	50.75	38.599	41.37
11 26.9	35.157	28.75	5.793	73.75	60.329	53.32	38.424	44.08
12 6.9	35.127	29.43	5.771	73.99	60.179	55.59	38.188	46.44
12 16.8	35.069	29.89	5.722	74.07	59.991	57.50	37.902	48.39
12 26.8	34.982	30.10	5.646	73.98	59.768	58.96	37.570	49.85
12 36.8	34.872	30.07	5.550	73.73	59.523	59.91	37.208	50.74
Pos. Med.	32.581	7.16	3.258	53.68	56.893	58.05	34.369	47.23
Secδ tanδ	1.151	.570	1.071	.382	1.606	-1.256	2.092	-1.838
Dob.Tran.	Oct 19		Oct 20		Oct 20		Oct 21	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	73		74		75		82	
EST.	γ Andromedae*p		α Arietis		β Trianguli		φ Eridani	
MAG.	2.26		2.00		3.00		3.56	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	2 5	+42 26	2 8	+23 34	2 11	+35 6	2 17	-51 23
mes d	s	"	s	"	s	"	s	"
1 -8.2	27.086	70.28	35.767	56.89	2.840	29.54	25.869	60.08
1 1.8	26.956	70.86	35.681	56.84	2.736	29.89	25.640	61.49
1 11.8	26.798	71.06	35.572	56.60	2.605	29.95	25.386	62.37
1 21.8	26.620	70.93	35.445	56.20	2.455	29.74	25.116	62.74
1 31.7	26.425	70.42	35.305	55.64	2.288	29.23	24.834	62.56
2 10.7	26.228	69.58	35.162	54.94	2.118	28.46	24.554	61.84
2 20.7	26.040	68.45	35.023	54.14	1.952	27.48	24.285	60.62
3 2.6	25.868	67.07	34.895	53.26	1.800	26.30	24.034	58.91
3 12.6	25.729	65.51	34.791	52.37	1.676	25.01	23.815	56.75
3 22.6	25.630	63.86	34.718	51.52	1.586	23.67	23.635	54.23
4 1.6	25.579	62.17	34.683	50.74	1.539	22.33	23.501	51.35
4 11.5	25.586	60.55	34.694	50.13	1.544	21.08	23.425	48.20
4 21.5	25.652	59.06	34.751	49.69	1.602	19.98	23.406	44.86
5 1.5	25.778	57.76	34.856	49.46	1.714	19.08	23.451	41.35
5 11.4	25.966	56.73	35.014	49.46	1.884	18.43	23.561	37.79
5 21.4	26.209	56.00	35.217	49.74	2.103	18.06	23.732	34.25
5 31.4	26.502	55.61	35.464	50.31	2.370	18.00	23.964	30.78
6 10.4	26.839	55.60	35.746	51.14	2.677	18.29	24.251	27.52
6 20.3	27.206	55.93	36.055	52.22	3.014	18.87	24.582	24.49
6 30.3	27.600	56.63	36.387	53.54	3.376	19.78	24.955	21.78
7 10.3	28.006	57.68	36.729	55.04	3.750	20.97	25.355	19.49
7 20.3	28.416	59.02	37.075	56.68	4.128	22.39	25.772	17.64
7 30.2	28.823	60.65	37.419	58.44	4.505	24.05	26.199	16.31
8 9.2	29.214	62.51	37.751	60.25	4.868	25.86	26.618	15.54
8 19.2	29.586	64.55	38.065	62.07	5.214	27.80	27.023	15.31
8 29.1	29.932	66.75	38.358	63.88	5.537	29.84	27.404	15.68
9 8.1	30.245	69.05	38.624	65.62	5.830	31.90	27.747	16.62
9 18.1	30.526	71.40	38.862	67.26	6.094	33.97	28.050	18.05
9 28.1	30.770	73.77	39.069	68.79	6.325	36.01	28.304	19.98
10 8.0	30.973	76.10	39.243	70.18	6.519	37.97	28.502	22.29
10 18.0	31.140	78.37	39.388	71.42	6.681	39.85	28.646	24.90
10 28.0	31.266	80.55	39.499	72.49	6.806	41.60	28.731	27.73
11 7.0	31.351	82.56	39.578	73.40	6.895	43.20	28.758	30.62
11 16.9	31.398	84.42	39.628	74.15	6.950	44.63	28.731	33.49
11 26.9	31.403	86.05	39.646	74.72	6.967	45.87	28.649	36.23
12 6.9	31.369	87.42	39.634	75.11	6.950	46.88	28.520	38.69
12 16.8	31.299	88.52	39.593	75.34	6.900	47.66	28.348	40.82
12 26.8	31.190	89.28	39.523	75.38	6.815	48.17	28.137	42.54
12 36.8	31.052	89.71	39.429	75.24	6.702	48.40	27.897	43.76
Pos. Med.	28.582	62.95	37.026	54.41	4.221	23.87	25.220	42.24
Secδ tanδ	1.355	.915	1.091	.437	1.222	.703	1.603	-1.252
Dob.Tran.	Oct 22		Oct 23		Oct 24		Oct 25	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	79		1065		86		1075	
EST.	γ Trianguli		δ Hydri		χ Eridani		ι Eridani	
MAG.	4.01		4.09		4.25		4.11	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	2 18	+33 57	2 22	-68 32	2 27	-47 34	2 41	-39 44
mes d	s	"	s	"	s	"	s	"
1 -8.2	49.038	55.39	15.362	57.63	55.708	101.48	40.627	63.71
1 1.8	48.941	55.75	14.876	58.96	55.512	103.02	40.481	65.35
1 11.8	48.816	55.82	14.349	59.69	55.289	104.06	40.307	66.55
1 21.8	48.670	55.64	13.799	59.83	55.048	104.60	40.113	67.31
1 31.7	48.507	55.19	13.236	59.38	54.792	104.62	39.902	67.60
2 10.7	48.338	54.48	12.682	58.33	54.535	104.10	39.684	67.39
2 20.7	48.172	53.57	12.153	56.75	54.284	103.10	39.468	66.73
3 2.7	48.018	52.47	11.658	54.65	54.048	101.62	39.261	65.61
3 12.6	47.890	51.26	11.221	52.09	53.839	99.68	39.076	64.05
3 22.6	47.795	49.99	10.849	49.17	53.664	97.37	38.918	62.11
4 1.6	47.742	48.72	10.553	45.90	53.532	94.69	38.797	59.80
4 11.5	47.739	47.55	10.350	42.39	53.452	91.71	38.722	57.18
4 21.5	47.787	46.51	10.239	38.72	53.426	88.52	38.694	54.32
5 1.5	47.890	45.65	10.228	34.93	53.459	85.14	38.720	51.24
5 11.5	48.049	45.04	10.324	31.14	53.554	81.68	38.802	48.03
5 21.4	48.259	44.70	10.516	27.43	53.706	78.21	38.936	44.76
5 31.4	48.517	44.65	10.808	23.85	53.917	74.78	39.123	41.48
6 10.4	48.815	44.93	11.191	20.53	54.179	71.50	39.357	38.29
6 20.3	49.144	45.51	11.652	17.52	54.485	68.44	39.632	35.26
6 30.3	49.498	46.39	12.185	14.89	54.831	65.66	39.943	32.45
7 10.3	49.867	47.54	12.769	12.74	55.204	63.26	40.279	29.97
7 20.3	50.240	48.92	13.390	11.08	55.594	61.28	40.632	27.85
7 30.2	50.614	50.52	14.035	10.00	55.995	59.80	40.996	26.16
8 9.2	50.975	52.27	14.677	9.52	56.391	58.85	41.357	24.98
8 19.2	51.321	54.14	15.302	9.63	56.776	58.44	41.710	24.29
8 29.2	51.646	56.09	15.895	10.37	57.140	58.61	42.046	24.15
9 8.1	51.942	58.07	16.431	11.68	57.471	59.35	42.356	24.56
9 18.1	52.210	60.04	16.901	13.52	57.767	60.59	42.636	25.46
9 28.1	52.446	61.99	17.288	15.85	58.019	62.34	42.881	26.87
10 8.0	52.647	63.86	17.579	18.55	58.222	64.49	43.085	28.70
10 18.0	52.816	65.64	17.774	21.52	58.377	66.96	43.249	30.86
10 28.0	52.949	67.31	17.861	24.69	58.477	69.68	43.368	33.31
11 7.0	53.047	68.82	17.840	27.87	58.525	72.49	43.441	35.91
11 16.9	53.111	70.19	17.719	30.98	58.524	75.32	43.473	38.56
11 26.9	53.137	71.36	17.496	33.89	58.471	78.05	43.460	41.17
12 6.9	53.129	72.33	17.185	36.46	58.373	80.55	43.407	43.61
12 16.9	53.087	73.08	16.797	38.64	58.234	82.76	43.316	45.83
12 26.8	53.010	73.57	16.340	40.32	58.056	84.58	43.188	47.72
12 36.8	52.904	73.81	15.835	41.43	57.848	85.94	43.030	49.20
Pos. Med.	50.360	49.78	12.649	37.70	55.192	85.37	40.402	50.53
Secδ tanδ	1.206	.674	2.734	-2.544	1.483	-1.095	1.301	-.832
Dob.Tran.	Oct 26		Oct 26		Oct 28		Oct 31	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	101		100		104		106	
EST.	β Fornacis		41 Arietis		η Eridani		ϑ Eridani*p	
MAG.	4.46		3.63		3.89		3.25	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	2 50	-32 17	2 51	+27 21	2 57	- 8 47	2 59	-40 11
mes d	s	"	s	"	s	"	s	"
1 -8.1	9.471	70.90	28.418	55.48	39.950	57.16	14.095	84.71
1 1.8	9.358	72.53	28.355	55.72	39.888	58.29	13.957	86.53
1 11.8	9.217	73.77	28.259	55.77	39.798	59.25	13.787	87.92
1 21.8	9.054	74.63	28.138	55.65	39.687	60.03	13.592	88.86
1 31.8	8.873	75.08	27.993	55.34	39.554	60.61	13.377	89.34
2 10.7	8.682	75.08	27.836	54.85	39.411	60.95	13.151	89.31
2 20.7	8.491	74.67	27.675	54.22	39.263	61.07	12.924	88.82
3 2.7	8.306	73.84	27.518	53.46	39.117	60.95	12.701	87.86
3 12.6	8.138	72.59	27.379	52.62	38.986	60.57	12.498	86.44
3 22.6	7.995	70.98	27.267	51.74	38.875	59.96	12.321	84.63
4 1.6	7.884	69.02	27.188	50.87	38.792	59.09	12.177	82.43
4 11.6	7.816	66.74	27.155	50.08	38.747	57.97	12.079	79.90
4 21.5	7.791	64.21	27.169	49.40	38.742	56.63	12.027	77.11
5 1.5	7.816	61.44	27.233	48.88	38.781	55.05	12.028	74.07
5 11.5	7.893	58.52	27.349	48.57	38.867	53.27	12.086	70.89
5 21.5	8.019	55.50	27.516	48.44	38.998	51.33	12.196	67.62
5 31.4	8.194	52.42	27.732	48.57	39.172	49.23	12.361	64.31
6 10.4	8.414	49.39	27.990	48.97	39.385	47.06	12.576	61.08
6 20.4	8.671	46.47	28.280	49.61	39.631	44.86	12.833	57.98
6 30.3	8.962	43.71	28.600	50.49	39.906	42.65	13.129	55.08
7 10.3	9.277	41.22	28.939	51.58	40.200	40.55	13.454	52.50
7 20.3	9.607	39.04	29.288	52.83	40.506	38.57	13.799	50.25
7 30.3	9.948	37.24	29.642	54.24	40.820	36.77	14.158	48.44
8 9.2	10.286	35.90	29.991	55.74	41.131	35.24	14.519	47.12
8 19.2	10.618	35.00	30.330	57.31	41.434	33.97	14.875	46.30
8 29.2	10.936	34.61	30.655	58.90	41.726	33.04	15.218	46.03
9 8.2	11.230	34.74	30.957	60.48	41.998	32.45	15.539	46.32
9 18.1	11.499	35.34	31.237	62.02	42.249	32.20	15.833	47.13
9 28.1	11.738	36.42	31.491	63.50	42.476	32.31	16.095	48.46
10 8.1	11.940	37.93	31.715	64.87	42.674	32.75	16.317	50.24
10 18.0	12.108	39.77	31.911	66.16	42.846	33.46	16.501	52.38
10 28.0	12.237	41.91	32.075	67.33	42.987	34.44	16.641	54.84
11 7.0	12.326	44.23	32.207	68.37	43.098	35.60	16.735	57.47
11 17.0	12.378	46.63	32.307	69.29	43.179	36.90	16.787	60.20
11 26.9	12.390	49.04	32.371	70.07	43.228	38.27	16.793	62.92
12 6.9	12.365	51.32	32.401	70.70	43.246	39.64	16.755	65.49
12 16.9	12.305	53.42	32.396	71.19	43.233	40.96	16.678	67.85
12 26.9	12.210	55.27	32.353	71.51	43.189	42.20	16.560	69.91
12 36.8	12.085	56.76	32.279	71.66	43.116	43.28	16.409	71.58
Pos. Med.	9.473	60.08	29.502	50.50	40.503	53.00	13.727	73.12
Secδ tanδ	1.183	-.632	1.126	.518	1.012	-.155	1.309	-.845
Dob.Tran.	Nov 3		Nov 3		Nov 4		Nov 5	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	107		111		119		120	
EST.	α Ceti		β Persei (Algol)		82 G.Eridani		α Persei	
MAG.	2.53		2.1 a 3.4		4.27		1.79	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	3 3	+ 4 11	3 9	+41 3	3 20	-42 57	3 26	+49 56
mes d	s	"	s	"	s	"	s	"
1 -8.1	36.202	17.20	49.190	15.69	57.241	95.48	8.352	69.31
1 1.8	36.153	16.51	49.119	16.61	57.112	97.51	8.275	70.71
1 11.8	36.075	15.86	49.007	17.24	56.944	99.11	8.145	71.80
1 21.8	35.973	15.28	48.860	17.59	56.747	100.26	7.970	72.55
1 31.8	35.848	14.75	48.682	17.63	56.524	100.93	7.756	72.93
2 10.7	35.710	14.33	48.485	17.35	56.287	101.07	7.516	72.91
2 20.7	35.567	14.00	48.281	16.79	56.044	100.73	7.264	72.53
3 2.7	35.424	13.78	48.079	15.95	55.802	99.90	7.011	71.77
3 12.7	35.295	13.71	47.895	14.88	55.576	98.58	6.776	70.68
3 22.6	35.185	13.77	47.740	13.64	55.375	96.85	6.572	69.33
4 1.6	35.104	14.01	47.624	12.27	55.205	94.71	6.409	67.76
4 11.6	35.061	14.44	47.559	10.87	55.080	92.20	6.305	66.06
4 21.5	35.058	15.05	47.547	9.49	55.003	89.42	6.262	64.31
5 1.5	35.100	15.86	47.595	8.19	54.978	86.36	6.286	62.57
5 11.5	35.187	16.89	47.705	7.05	55.012	83.13	6.382	60.93
5 21.5	35.320	18.12	47.872	6.10	55.101	79.80	6.545	59.45
5 31.4	35.497	19.53	48.097	5.38	55.247	76.40	6.775	58.17
6 10.4	35.714	21.08	48.372	4.95	55.447	73.07	7.065	57.17
6 20.4	35.963	22.74	48.688	4.80	55.693	69.85	7.405	56.46
6 30.4	36.240	24.48	49.041	4.94	55.983	66.82	7.791	56.06
7 10.3	36.537	26.24	49.419	5.39	56.307	64.09	8.210	55.99
7 20.3	36.845	27.98	49.813	6.10	56.655	61.70	8.650	56.24
7 30.3	37.161	29.66	50.216	7.07	57.024	59.74	9.106	56.81
8 9.2	37.475	31.20	50.618	8.27	57.399	58.27	9.566	57.68
8 19.2	37.781	32.58	51.012	9.66	57.773	57.31	10.021	58.80
8 29.2	38.077	33.77	51.394	11.22	58.140	56.92	10.467	60.19
9 8.2	38.353	34.72	51.754	12.89	58.488	57.11	10.893	61.78
9 18.1	38.611	35.43	52.093	14.66	58.813	57.84	11.296	63.54
9 28.1	38.845	35.88	52.404	16.50	59.107	59.13	11.672	65.47
10 8.1	39.053	36.08	52.683	18.35	59.364	60.89	12.013	67.50
10 18.1	39.236	36.06	52.931	20.21	59.582	63.06	12.321	69.61
10 28.0	39.390	35.82	53.143	22.04	59.756	65.58	12.587	71.77
11 7.0	39.515	35.41	53.317	23.81	59.882	68.32	12.808	73.93
11 17.0	39.612	34.87	53.453	25.51	59.964	71.17	12.985	76.07
11 26.9	39.677	34.22	53.545	27.09	59.995	74.05	13.109	78.13
12 6.9	39.710	33.52	53.593	28.52	59.979	76.81	13.179	80.06
12 16.9	39.713	32.79	53.598	29.78	59.919	79.37	13.195	81.83
12 26.9	39.683	32.06	53.555	30.82	59.812	81.65	13.152	83.37
12 36.8	39.624	31.37	53.469	31.60	59.667	83.52	13.057	84.63
Pos. Med.	36.940	17.65	50.309	7.32	56.764	85.14	9.433	59.19
Secδ tanδ	1.003	.073	1.326	.871	1.367	-.932	1.554	1.190
Dob.Tran.	Nov 6		Nov 8		Nov 10		Nov 12	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	121		123		127		1099	
EST.	o Tauri		ξ Tauri		ε Eridani		τ^5 Eridani	
MAG.	3.60		3.74		3.73		4.27	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	3 26	+ 9 6	3 28	+ 9 49	3 34	- 9 22	3 34	-21 32
mes d	s	"	s	"	s	"	s	"
1 -8.1	10.642	62.83	32.586	13.82	7.688	26.33	54.827	60.07
1 1.9	10.610	62.32	32.556	13.33	7.644	27.62	54.769	61.79
1 11.8	10.544	61.81	32.492	12.85	7.567	28.73	54.677	63.23
1 21.8	10.450	61.33	32.399	12.39	7.462	29.65	54.556	64.39
1 31.8	10.329	60.87	32.279	11.95	7.332	30.35	54.409	65.22
2 10.8	10.191	60.46	32.141	11.54	7.183	30.80	54.243	65.69
2 20.7	10.043	60.10	31.992	11.17	7.025	31.01	54.067	65.82
3 2.7	9.891	59.79	31.840	10.86	6.864	30.98	53.888	65.60
3 12.7	9.750	59.58	31.698	10.63	6.712	30.67	53.718	65.00
3 22.6	9.626	59.46	31.573	10.49	6.576	30.13	53.565	64.08
4 1.6	9.529	59.46	31.474	10.46	6.465	29.32	53.436	62.83
4 11.6	9.467	59.62	31.411	10.58	6.388	28.26	53.342	61.25
4 21.6	9.446	59.93	31.388	10.85	6.350	26.97	53.288	59.41
5 1.5	9.470	60.41	31.410	11.30	6.354	25.45	53.277	57.30
5 11.5	9.540	61.07	31.478	11.90	6.405	23.72	53.314	54.98
5 21.5	9.653	61.95	31.590	12.74	6.501	21.82	53.398	52.50
5 31.5	9.815	63.02	31.750	13.76	6.642	19.76	53.529	49.88
6 10.4	10.018	64.25	31.952	14.94	6.825	17.62	53.705	47.22
6 20.4	10.255	65.60	32.188	16.25	7.043	15.44	53.917	44.57
6 30.4	10.523	67.06	32.455	17.67	7.294	13.26	54.166	41.97
7 10.3	10.813	68.58	32.746	19.15	7.568	11.15	54.441	39.53
7 20.3	11.118	70.12	33.051	20.66	7.859	9.17	54.735	37.29
7 30.3	11.434	71.64	33.367	22.16	8.163	7.37	55.045	35.32
8 9.3	11.751	73.08	33.684	23.59	8.470	5.82	55.359	33.71
8 19.2	12.063	74.41	33.998	24.92	8.774	4.54	55.673	32.46
8 29.2	12.368	75.60	34.305	26.10	9.072	3.59	55.982	31.64
9 8.2	12.658	76.59	34.596	27.10	9.355	3.01	56.277	31.27
9 18.2	12.931	77.40	34.872	27.92	9.622	2.77	56.556	31.35
9 28.1	13.185	77.99	35.128	28.53	9.870	2.91	56.813	31.89
10 8.1	13.414	78.36	35.360	28.92	10.092	3.39	57.045	32.85
10 18.1	13.621	78.53	35.569	29.13	10.291	4.18	57.250	34.17
10 28.0	13.800	78.51	35.752	29.14	10.462	5.25	57.425	35.82
11 7.0	13.951	78.33	35.906	29.00	10.603	6.53	57.567	37.71
11 17.0	14.074	78.03	36.033	28.73	10.715	7.96	57.677	39.76
11 27.0	14.165	77.62	36.126	28.36	10.794	9.48	57.750	41.90
12 6.9	14.222	77.14	36.187	27.92	10.839	11.01	57.787	44.01
12 16.9	14.247	76.63	36.215	27.45	10.851	12.50	57.788	46.05
12 26.9	14.236	76.09	36.206	26.94	10.827	13.90	57.751	47.92
12 36.9	14.191	75.56	36.163	26.44	10.771	15.14	57.680	49.55
Pos. Med.	11.355	60.90	33.303	11.63	8.051	24.33	54.935	55.70
Secδ tanδ	1.013	.160	1.015	.173	1.014	-.165	1.075	-.395
Dob.Tran.	Nov 12		Nov 12		Nov 14		Nov 14	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	135		141		136		146	
EST.	δ Eridani		β Reticuli		17 Tauri		γ Hydri	
MAG.	3.54		3.85		3.70		3.24	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	3 44	- 9 40	3 44	-64 43	3 46	+24 11	3 46	-74 9
mes d	s	"	s	"	s	"	s	"
1 -8.1	27.983	44.82	34.551	48.02	22.905	35.50	58.052	47.57
1 1.9	27.949	46.16	34.242	50.43	22.888	35.71	57.495	49.93
1 11.8	27.881	47.31	33.864	52.34	22.831	35.82	56.833	51.78
1 21.8	27.783	48.27	33.435	53.74	22.739	35.83	56.094	53.12
1 31.8	27.656	49.01	32.961	54.59	22.615	35.73	55.287	53.89
2 10.8	27.510	49.50	32.459	54.83	22.467	35.50	54.444	54.05
2 20.7	27.353	49.75	31.949	54.53	22.304	35.18	53.590	53.66
3 2.7	27.189	49.75	31.437	53.65	22.135	34.74	52.738	52.70
3 12.7	27.033	49.47	30.949	52.23	21.974	34.23	51.925	51.19
3 22.7	26.891	48.95	30.496	50.34	21.829	33.68	51.166	49.22
4 1.6	26.772	48.16	30.089	47.99	21.710	33.10	50.477	46.80
4 11.6	26.687	47.12	29.748	45.24	21.629	32.56	49.888	43.99
4 21.6	26.639	45.84	29.478	42.18	21.590	32.07	49.403	40.89
5 1.5	26.633	44.33	29.288	38.84	21.598	31.70	49.038	37.51
5 11.5	26.674	42.61	29.189	35.32	21.660	31.47	48.810	33.97
5 21.5	26.759	40.71	29.177	31.69	21.763	31.46	48.712	30.34
5 31.5	26.889	38.65	29.257	28.01	21.921	31.47	48.755	26.67
6 10.4	27.063	36.50	29.429	24.42	22.127	31.75	48.938	23.09
6 20.4	27.272	34.30	29.682	20.96	22.369	32.22	49.247	19.67
6 30.4	27.515	32.09	30.017	17.72	22.647	32.88	49.685	16.48
7 10.4	27.783	29.96	30.420	14.83	22.951	33.69	50.233	13.65
7 20.3	28.070	27.95	30.877	12.31	23.273	34.64	50.871	11.20
7 30.3	28.371	26.10	31.385	10.27	23.609	35.69	51.593	9.24
8 9.3	28.676	24.51	31.920	8.79	23.949	36.81	52.366	7.84
8 19.2	28.982	23.19	32.471	7.86	24.288	37.97	53.171	7.00
8 29.2	29.283	22.20	33.027	7.57	24.622	39.13	53.989	6.80
9 8.2	29.571	21.58	33.564	7.92	24.943	40.26	54.784	7.23
9 18.2	29.846	21.30	34.073	8.86	25.250	41.34	55.539	8.26
9 28.1	30.102	21.41	34.539	10.43	25.540	42.34	56.230	9.91
10 8.1	30.336	21.87	34.945	12.53	25.806	43.26	56.826	12.08
10 18.1	30.546	22.65	35.286	15.08	26.051	44.09	57.318	14.70
10 28.1	30.730	23.72	35.548	18.03	26.269	44.82	57.683	17.70
11 7.0	30.885	25.00	35.723	21.22	26.457	45.46	57.905	20.93
11 17.0	31.011	26.44	35.813	24.55	26.617	46.03	57.989	24.29
11 27.0	31.103	27.99	35.808	27.92	26.741	46.50	57.918	27.66
12 6.9	31.161	29.55	35.712	31.14	26.828	46.90	57.699	30.88
12 16.9	31.186	31.08	35.531	34.15	26.878	47.23	57.346	33.87
12 26.9	31.173	32.52	35.266	36.83	26.885	47.46	56.856	36.52
12 36.9	31.126	33.80	34.929	39.07	26.854	47.61	56.256	38.70
Pos. Med.	28.326	43.21	31.647	38.04	23.713	29.59	52.323	37.25
Secδ tanδ	1.014	-.171	2.342	-2.118	1.096	.449	3.664	-3.525
Dob.Tran.	Nov 16		Nov 16		Nov 17		Nov 17	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	139		142		144		149	
EST.	η Tauri		27 Tauri		ζ Persei		γ Eridani	
MAG.	2.87		3.63		2.85		2.95	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	3 48	+24 10	3 50	+24 7	3 55	+31 57	3 59	−13 25
mes d	s	"	s	"	s	"	s	"
1 −8.1	59.545	61.08	40.246	51.82	43.661	33.52	13.025	76.11
1 1.9	59.531	61.30	40.233	52.03	43.649	34.15	12.999	77.69
1 11.8	59.476	61.41	40.180	52.15	43.592	34.62	12.935	79.06
1 21.8	59.386	61.43	40.091	52.17	43.496	34.95	12.839	80.21
1 31.8	59.263	61.33	39.968	52.08	43.363	35.09	12.713	81.11
2 10.8	59.115	61.12	39.821	51.87	43.203	35.04	12.564	81.72
2 20.7	58.953	60.81	39.659	51.56	43.026	34.80	12.401	82.05
3 2.7	58.783	60.39	39.489	51.15	42.840	34.37	12.230	82.10
3 12.7	58.621	59.89	39.326	50.66	42.660	33.78	12.063	81.84
3 22.7	58.474	59.34	39.179	50.12	42.498	33.07	11.909	81.30
4 1.6	58.353	58.78	39.056	49.56	42.362	32.25	11.775	80.47
4 11.6	58.270	58.24	38.972	49.03	42.265	31.40	11.674	79.35
4 21.6	58.229	57.76	38.929	48.56	42.213	30.55	11.608	77.99
5 1.5	58.235	57.38	38.933	48.18	42.211	29.75	11.584	76.37
5 11.5	58.293	57.15	38.990	47.95	42.264	29.07	11.606	74.54
5 21.5	58.394	57.14	39.090	47.95	42.368	28.52	11.673	72.52
5 31.5	58.549	57.13	39.242	47.93	42.525	28.11	11.786	70.34
6 10.4	58.752	57.40	39.443	48.19	42.733	27.90	11.942	68.07
6 20.4	58.992	57.86	39.682	48.65	42.982	27.89	12.136	65.76
6 30.4	59.267	58.50	39.956	49.28	43.270	28.10	12.366	63.44
7 10.4	59.570	59.30	40.257	50.07	43.588	28.51	12.623	61.22
7 20.3	59.890	60.22	40.577	50.98	43.926	29.09	12.901	59.13
7 30.3	60.225	61.26	40.911	52.01	44.280	29.85	13.196	57.23
8 9.3	60.565	62.36	41.250	53.10	44.641	30.74	13.500	55.61
8 19.2	60.903	63.49	41.589	54.22	45.002	31.74	13.805	54.29
8 29.2	61.238	64.64	41.924	55.35	45.361	32.82	14.109	53.32
9 8.2	61.560	65.74	42.247	56.44	45.707	33.95	14.403	52.75
9 18.2	61.869	66.80	42.556	57.49	46.041	35.10	14.685	52.56
9 28.1	62.160	67.79	42.848	58.47	46.357	36.27	14.952	52.79
10 8.1	62.429	68.69	43.118	59.35	46.650	37.41	15.196	53.40
10 18.1	62.676	69.51	43.366	60.15	46.921	38.53	15.420	54.36
10 28.1	62.897	70.23	43.589	60.86	47.165	39.62	15.618	55.64
11 7.0	63.088	70.85	43.782	61.48	47.377	40.66	15.786	57.16
11 17.0	63.250	71.41	43.946	62.02	47.558	41.65	15.925	58.86
11 27.0	63.377	71.88	44.075	62.48	47.701	42.58	16.031	60.67
12 6.9	63.468	72.27	44.166	62.87	47.804	43.44	16.101	62.50
12 16.9	63.520	72.59	44.221	63.19	47.866	44.23	16.136	64.30
12 26.9	63.531	72.83	44.233	63.42	47.881	44.90	16.131	65.99
12 36.9	63.502	72.98	44.205	63.58	47.853	45.45	16.090	67.51
Pos. Med.	60.342	55.10	41.036	45.79	44.493	26.00	13.243	75.37
Secδ tanδ	1.096	.449	1.096	.448	1.179	.624	1.028	−.239
Dob.Tran.	Nov 17		Nov 18		Nov 19		Nov 20	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	147		148		150		151	
EST.	ε Persei*		ξ Persei		λ Tauri		ν Tauri	
MAG.	2.89		4.04		3.47 Var		3.91	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	3 59	+40 4	4 0	+35 51	4 2	+12 33	4 4	+ 6 3
mes d	s	"	s	"	s	"	s	"
1 -8.1	33.541	62.95	36.777	51.75	5.177	42.03	30.409	32.65
1 1.9	33.525	64.01	36.767	52.59	5.173	41.64	30.405	31.93
1 11.9	33.459	64.87	36.709	53.26	5.131	41.26	30.362	31.27
1 21.8	33.349	65.52	36.609	53.76	5.054	40.90	30.286	30.68
1 31.8	33.197	65.91	36.470	54.04	4.945	40.54	30.178	30.16
2 10.8	33.015	66.03	36.301	54.09	4.810	40.20	30.044	29.74
2 20.7	32.814	65.89	36.114	53.92	4.659	39.89	29.895	29.40
3 2.7	32.602	65.47	35.917	53.51	4.499	39.59	29.736	29.15
3 12.7	32.398	64.80	35.726	52.90	4.342	39.35	29.581	29.03
3 22.7	32.212	63.92	35.551	52.12	4.199	39.16	29.437	29.02
4 1.6	32.054	62.87	35.404	51.21	4.077	39.04	29.314	29.14
4 11.6	31.941	61.71	35.297	50.21	3.988	39.04	29.223	29.42
4 21.6	31.875	60.49	35.237	49.20	3.937	39.14	29.169	29.84
5 1.6	31.865	59.28	35.228	48.20	3.928	39.39	29.156	30.44
5 11.5	31.915	58.14	35.277	47.29	3.968	39.79	29.189	31.21
5 21.5	32.023	57.11	35.379	46.50	4.052	40.32	29.266	32.14
5 31.5	32.188	56.23	35.536	45.86	4.180	41.09	29.389	33.26
6 10.4	32.408	55.55	35.746	45.40	4.356	42.00	29.556	34.52
6 20.4	32.675	55.08	36.000	45.15	4.569	43.03	29.760	35.89
6 30.4	32.984	54.85	36.295	45.13	4.816	44.18	29.998	37.35
7 10.4	33.327	54.86	36.621	45.32	5.090	45.40	30.263	38.84
7 20.3	33.693	55.10	36.970	45.72	5.383	46.67	30.547	40.33
7 30.3	34.079	55.58	37.337	46.31	5.692	47.95	30.848	41.78
8 9.3	34.472	56.25	37.711	47.07	6.007	49.19	31.155	43.12
8 19.3	34.867	57.10	38.087	47.97	6.323	50.35	31.464	44.33
8 29.2	35.261	58.12	38.461	48.99	6.638	51.40	31.771	45.37
9 8.2	35.642	59.26	38.824	50.10	6.943	52.31	32.070	46.19
9 18.2	36.010	60.50	39.174	51.27	7.236	53.05	32.357	46.80
9 28.1	36.360	61.84	39.507	52.49	7.515	53.61	32.630	47.16
10 8.1	36.686	63.22	39.817	53.73	7.774	53.99	32.884	47.27
10 18.1	36.987	64.65	40.104	54.98	8.014	54.20	33.119	47.18
10 28.1	37.258	66.11	40.363	56.23	8.230	54.24	33.330	46.86
11 7.0	37.495	67.57	40.590	57.45	8.419	54.14	33.515	46.38
11 17.0	37.697	69.02	40.784	58.66	8.582	53.93	33.674	45.77
11 27.0	37.856	70.43	40.938	59.81	8.712	53.62	33.800	45.06
12 7.0	37.969	71.77	41.049	60.90	8.807	53.27	33.892	44.30
12 16.9	38.037	73.03	41.118	61.91	8.868	52.88	33.950	43.53
12 26.9	38.052	74.16	41.137	62.81	8.888	52.47	33.969	42.76
12 36.9	38.018	75.12	41.109	63.56	8.870	52.07	33.950	42.05
Pos. Med.	34.403	54.08	37.613	43.52	5.804	37.77	30.947	29.49
Secδ tanδ	1.307	.842	1.234	.723	1.025	.223	1.006	.106
Dob.Tran.	Nov 20		Nov 20		Nov 21		Nov 21	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	154		156		155		157	
EST.	o[1] Eridani		α Reticuli		αHorologii		γ Doradus	
MAG.	4.04		3.35		3.86		4.25	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	4 13	- 6 46	4 14	-62 24	4 14	-42 13	4 16	-51 24
mes d	s	"	s	"	s	"	s	"
1 -8.1	6.436	20.83	48.275	43.72	51.734	61.86	43.282	88.76
1 1.9	6.428	22.19	48.044	46.47	51.649	64.41	43.151	91.45
1 11.9	6.381	23.38	47.740	48.77	51.516	66.59	42.965	93.74
1 21.8	6.301	24.40	47.379	50.61	51.343	68.37	42.733	95.59
1 31.8	6.188	25.24	46.964	51.93	51.131	69.72	42.457	96.96
2 10.8	6.050	25.84	46.513	52.66	50.892	70.55	42.152	97.78
2 20.8	5.895	26.23	46.042	52.85	50.636	70.90	41.827	98.08
3 2.7	5.729	26.39	45.560	52.48	50.370	70.76	41.492	97.84
3 12.7	5.565	26.30	45.088	51.53	50.108	70.10	41.163	97.05
3 22.7	5.412	25.99	44.640	50.10	49.860	68.99	40.851	95.79
4 1.6	5.278	25.43	44.227	48.17	49.635	67.43	40.565	94.05
4 11.6	5.174	24.64	43.868	45.81	49.446	65.46	40.320	91.87
4 21.6	5.104	23.62	43.569	43.08	49.298	63.14	40.123	89.33
5 1.6	5.074	22.37	43.340	40.01	49.198	60.48	39.979	86.45
5 11.5	5.090	20.92	43.194	36.70	49.154	57.56	39.900	83.31
5 21.5	5.150	19.29	43.126	33.23	49.163	54.47	39.882	79.99
5 31.5	5.255	17.48	43.145	29.63	49.229	51.21	39.929	76.53
6 10.5	5.404	15.57	43.249	26.04	49.352	47.93	40.043	73.05
6 20.4	5.589	13.58	43.432	22.53	49.524	44.68	40.215	69.63
6 30.4	5.811	11.56	43.694	19.16	49.745	41.52	40.445	66.32
7 10.4	6.061	9.58	44.025	16.07	50.007	38.58	40.726	63.26
7 20.3	6.332	7.68	44.413	13.31	50.303	35.91	41.048	60.50
7 30.3	6.621	5.92	44.855	10.97	50.628	33.59	41.408	58.12
8 9.3	6.920	4.38	45.332	9.15	50.971	31.73	41.791	56.24
8 19.3	7.221	3.07	45.833	7.86	51.325	30.33	42.190	54.86
8 29.2	7.524	2.06	46.348	7.18	51.684	29.49	42.597	54.07
9 8.2	7.818	1.39	46.858	7.15	52.037	29.23	42.998	53.89
9 18.2	8.103	1.05	47.352	7.73	52.378	29.53	43.387	54.31
9 28.2	8.375	1.07	47.818	8.95	52.702	30.43	43.756	55.36
10 8.1	8.628	1.44	48.237	10.76	52.998	31.87	44.091	56.98
10 18.1	8.862	2.12	48.606	13.07	53.265	33.80	44.391	59.10
10 28.1	9.073	3.09	48.909	15.84	53.495	36.17	44.645	61.68
11 7.0	9.256	4.29	49.137	18.93	53.682	38.86	44.846	64.59
11 17.0	9.413	5.66	49.290	22.24	53.828	41.78	44.994	67.73
11 27.0	9.537	7.15	49.356	25.67	53.924	44.84	45.082	71.01
12 7.0	9.627	8.67	49.337	29.04	53.969	47.87	45.107	74.25
12 16.9	9.681	10.18	49.236	32.27	53.966	50.82	45.074	77.39
12 26.9	9.696	11.63	49.051	35.25	53.910	53.57	44.978	80.29
12 36.9	9.674	12.94	48.790	37.84	53.806	56.00	44.825	82.85
Pos. Med.	6.745	22.17	45.566	37.85	50.914	58.13	41.842	83.98
Secδ tanδ	1.007	-.119	2.159	-1.914	1.351	-.908	1.604	-1.254
Dob.Tran.	Nov 24		Nov 24		Nov 24		Nov 24	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	159	162	1121	164
EST.	γ Tauri	δ Tauri	43 Eridani	ε Tauri
MAG.	3.65	3.76	3.96	3.54
UT	AR. DEC.	AR. DEC.	AR. DEC.	AR. DEC.
	h m ° ′	h m ° ′	h m ° ′	h m ° ′
	4 21 +15 41	4 24 +17 36	4 24 -33 57	4 30 +19 14
mes d	s "	s "	s "	s "
1 -8.1	14.284 19.25	23.934 6.71	60.226 34.37	5.948 11.75
1 1.9	14.298 19.01	23.951 6.57	60.179 36.80	5.971 11.70
1 11.9	14.270 18.77	23.926 6.42	60.087 38.92	5.950 11.63
1 21.8	14.205 18.53	23.862 6.26	59.956 40.68	5.890 11.55
1 31.8	14.103 18.28	23.760 6.08	59.787 42.06	5.791 11.43
2 10.8	13.972 18.03	23.629 5.87	59.591 42.99	5.660 11.27
2 20.8	13.821 17.77	23.478 5.64	59.375 43.48	5.508 11.08
3 2.7	13.658 17.50	23.312 5.38	59.147 43.52	5.341 10.84
3 12.7	13.495 17.25	23.147 5.12	58.921 43.09	5.173 10.57
3 22.7	13.342 17.02	22.992 4.85	58.705 42.25	5.015 10.29
4 1.7	13.208 16.82	22.855 4.60	58.507 40.98	4.874 10.00
4 11.6	13.105 16.70	22.750 4.40	58.342 39.31	4.764 9.76
4 21.6	13.038 16.65	22.680 4.28	58.214 37.31	4.690 9.56
5 1.6	13.014 16.72	22.654 4.24	58.129 34.97	4.658 9.44
5 11.5	13.038 16.92	22.675 4.33	58.094 32.37	4.675 9.43
5 21.5	13.108 17.23	22.745 4.53	58.108 29.58	4.740 9.54
5 31.5	13.219 17.70	22.853 4.84	58.173 26.61	4.843 9.66
6 10.5	13.381 18.38	23.015 5.43	58.290 23.57	5.002 10.19
6 20.4	13.581 19.16	23.215 6.09	58.451 20.53	5.200 10.73
6 30.4	13.818 20.06	23.452 6.87	58.656 17.54	5.435 11.40
7 10.4	14.084 21.05	23.719 7.75	58.900 14.72	5.700 12.17
7 20.4	14.371 22.10	24.008 8.71	59.172 12.12	5.989 13.02
7 30.3	14.677 23.18	24.316 9.71	59.472 9.82	6.297 13.93
8 9.3	14.992 24.25	24.633 10.71	59.788 7.92	6.615 14.85
8 19.3	15.311 25.27	24.955 11.68	60.114 6.45	6.939 15.76
8 29.2	15.632 26.22	25.278 12.60	60.445 5.47	7.266 16.63
9 8.2	15.945 27.05	25.595 13.41	60.772 5.04	7.586 17.41
9 18.2	16.250 27.75	25.904 14.12	61.091 5.12	7.900 18.11
9 28.2	16.543 28.30	26.202 14.70	61.396 5.78	8.203 18.69
10 8.1	16.818 28.70	26.482 15.15	61.678 6.95	8.490 19.15
10 18.1	17.077 28.95	26.746 15.46	61.937 8.59	8.760 19.50
10 28.1	17.314 29.06	26.989 15.65	62.166 10.67	9.010 19.74
11 7.1	17.525 29.05	27.205 15.74	62.360 13.07	9.234 19.89
11 17.0	17.710 28.96	27.396 15.74	62.518 15.71	9.433 19.96
11 27.0	17.863 28.78	27.554 15.67	62.634 18.51	9.598 19.97
12 7.0	17.981 28.57	27.676 15.56	62.706 21.32	9.728 19.95
12 16.9	18.062 28.32	27.761 15.43	62.734 24.07	9.820 19.90
12 26.9	18.101 28.06	27.804 15.27	62.714 26.67	9.869 19.83
12 36.9	18.100 27.80	27.805 15.11	62.649 29.00	9.876 19.75
Pos. Med.	14.888 13.70	24.548 .76	59.766 32.65	6.561 5.39
Secδ tanδ	1.039 .281	1.049 .317	1.206 -.673	1.059 .349
Dob.Tran.	Nov 26	Nov 26	Nov 27	Nov 28

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	171		168		172		176	
EST.	α Doradus		α Tauri (Aldebaran)		53 Eridani*		μ Eridani	
MAG.	3.27		0.85		3.87		4.02	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	4 34	-54 59	4 37	+16 33	4 39	-14 14	4 46	- 3 12
mes d	s	"	s	"	s	"	s	"
1 -8.1	34.850	38.32	22.653	36.65	20.869	78.48	46.476	31.13
1 1.9	34.718	41.22	22.682	36.43	20.873	80.29	46.500	32.44
1 11.9	34.522	43.74	22.666	36.22	20.836	81.90	46.482	33.62
1 21.9	34.273	45.82	22.611	36.03	20.761	83.29	46.425	34.64
1 31.8	33.974	47.44	22.517	35.82	20.649	84.43	46.331	35.51
2 10.8	33.637	48.50	22.391	35.62	20.508	85.26	46.206	36.17
2 20.8	33.277	49.04	22.242	35.40	20.346	85.81	46.059	36.64
3 2.7	32.901	49.03	22.078	35.18	20.169	86.07	45.895	36.92
3 12.7	32.526	48.46	21.911	34.95	19.990	86.00	45.727	36.98
3 22.7	32.166	47.39	21.752	34.73	19.818	85.64	45.565	36.84
4 1.7	31.830	45.83	21.609	34.54	19.660	84.98	45.416	36.50
4 11.6	31.535	43.80	21.496	34.40	19.530	84.02	45.293	35.94
4 21.6	31.287	41.39	21.417	34.32	19.432	82.81	45.202	35.19
5 1.6	31.094	38.60	21.379	34.34	19.372	81.32	45.147	34.22
5 11.6	30.968	35.54	21.389	34.47	19.356	79.60	45.137	33.06
5 21.5	30.906	32.26	21.445	34.71	19.384	77.69	45.169	31.74
5 31.5	30.914	28.81	21.545	35.03	19.457	75.60	45.245	30.24
6 10.5	30.994	25.32	21.690	35.62	19.576	73.40	45.365	28.62
6 20.4	31.138	21.85	21.878	36.28	19.733	71.14	45.524	26.90
6 30.4	31.347	18.47	22.103	37.06	19.929	68.85	45.720	25.13
7 10.4	31.614	15.32	22.360	37.92	20.156	66.63	45.947	23.37
7 20.4	31.929	12.44	22.639	38.84	20.409	64.52	46.198	21.66
7 30.3	32.290	9.94	22.938	39.79	20.684	62.58	46.471	20.05
8 9.3	32.682	7.91	23.250	40.74	20.972	60.91	46.758	18.62
8 19.3	33.096	6.37	23.567	41.65	21.269	59.52	47.053	17.38
8 29.3	33.526	5.43	23.888	42.48	21.572	58.49	47.353	16.40
9 8.2	33.956	5.11	24.204	43.22	21.871	57.86	47.651	15.72
9 18.2	34.378	5.39	24.515	43.83	22.164	57.62	47.944	15.35
9 28.2	34.783	6.33	24.816	44.31	22.448	57.81	48.230	15.30
10 8.1	35.156	7.86	25.102	44.63	22.716	58.41	48.502	15.59
10 18.1	35.494	9.91	25.372	44.83	22.968	59.39	48.759	16.17
10 28.1	35.786	12.47	25.623	44.90	23.198	60.72	48.998	17.03
11 7.1	36.021	15.40	25.850	44.86	23.402	62.32	49.213	18.12
11 17.0	36.201	18.59	26.051	44.73	23.579	64.14	49.404	19.38
11 27.0	36.313	21.96	26.221	44.55	23.723	66.11	49.564	20.78
12 7.0	36.358	25.33	26.355	44.33	23.831	68.12	49.690	22.21
12 17.0	36.336	28.63	26.452	44.09	23.902	70.12	49.780	23.65
12 26.9	36.243	31.73	26.506	43.85	23.931	72.05	49.829	25.05
12 36.9	36.086	34.49	26.518	43.61	23.919	73.80	49.837	26.33
Pos. Med.	33.024	35.56	23.219	30.34	20.961	80.71	46.765	35.22
Secδ tanδ	1.743	-1.428	1.043	.297	1.032	-.254	1.002	-.056
Dob.Tran.	Nov 29		Nov 30		Nov 30		Dic 2	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	179	181	186	185
EST.	π^4 Orionis	ι Aurigae	ε Leporis	η Aurigae
MAG.	3.69	2.69	3.19	3.17
UT	AR. DEC.	AR. DEC.	AR. DEC.	AR. DEC.
	h m ° ′	h m ° ′	h m ° ′	h m ° ′
	4 52 + 5 38	4 58 +33 12	5 6 -22 19	5 8 +41 16
mes d	s "	s "	s "	s "
1 -8.1	33.581 53.45	38.903 22.95	32.645 74.80	17.886 7.89
1 1.9	33.618 52.59	38.956 23.69	32.662 77.09	17.951 9.10
1 11.9	33.611 51.82	38.957 24.38	32.633 79.16	17.957 10.24
1 21.9	33.565 51.15	38.910 24.98	32.563 80.97	17.908 11.26
1 31.8	33.479 50.57	38.813 25.47	32.451 82.49	17.803 12.11
2 10.8	33.361 50.10	38.677 25.81	32.305 83.65	17.653 12.76
2 20.8	33.219 49.75	38.511 25.98	32.133 84.46	17.468 13.17
3 2.8	33.059 49.49	38.323 25.97	31.942 84.90	17.256 13.32
3 12.7	32.894 49.37	38.127 25.78	31.744 84.96	17.035 13.21
3 22.7	32.733 49.35	37.937 25.42	31.548 84.66	16.817 12.84
4 1.7	32.586 49.46	37.762 24.91	31.364 83.99	16.615 12.24
4 11.6	32.464 49.71	37.617 24.28	31.203 82.96	16.444 11.43
4 21.6	32.374 50.10	37.509 23.57	31.073 81.63	16.313 10.47
5 1.6	32.321 50.64	37.446 22.81	30.977 79.98	16.228 9.39
5 11.6	32.312 51.33	37.434 22.06	30.926 78.05	16.201 8.26
5 21.5	32.345 52.16	37.474 21.36	30.917 75.91	16.229 7.13
5 31.5	32.423 53.14	37.566 20.74	30.954 73.56	16.315 6.03
6 10.5	32.545 54.26	37.708 20.22	31.038 71.08	16.459 5.01
6 20.5	32.707 55.48	37.898 19.80	31.164 68.53	16.653 4.10
6 30.4	32.906 56.78	38.133 19.52	31.330 65.95	16.898 3.32
7 10.4	33.136 58.12	38.406 19.41	31.533 63.45	17.185 2.72
7 20.4	33.391 59.44	38.706 19.43	31.765 61.08	17.506 2.28
7 30.3	33.667 60.73	39.033 19.58	32.024 58.90	17.858 2.02
8 9.3	33.957 61.92	39.377 19.86	32.303 57.02	18.230 1.93
8 19.3	34.256 62.97	39.731 20.24	32.595 55.46	18.615 1.99
8 29.3	34.560 63.86	40.094 20.70	32.898 54.31	19.013 2.21
9 8.2	34.863 64.52	40.456 21.22	33.204 53.61	19.411 2.57
9 18.2	35.162 64.97	40.815 21.79	33.508 53.35	19.809 3.05
9 28.2	35.455 65.17	41.167 22.40	33.807 53.60	20.202 3.65
10 8.2	35.735 65.12	41.506 23.02	34.094 54.34	20.581 4.36
10 18.1	36.002 64.84	41.832 23.67	34.367 55.50	20.947 5.16
10 28.1	36.251 64.35	42.138 24.34	34.621 57.10	21.293 6.06
11 7.1	36.477 63.68	42.418 25.03	34.849 59.03	21.611 7.05
11 17.0	36.681 62.88	42.672 25.74	35.050 61.23	21.900 8.12
11 27.0	36.854 61.98	42.890 26.47	35.217 63.63	22.149 9.26
12 7.0	36.993 61.04	43.068 27.22	35.346 66.11	22.354 10.44
12 17.0	37.097 60.10	43.203 27.97	35.436 68.59	22.512 11.66
12 26.9	37.159 59.18	43.288 28.71	35.480 71.01	22.612 12.87
12 36.9	37.179 58.34	43.322 29.41	35.479 73.23	22.655 14.02
Pos. Med.	33.986 47.99	39.509 14.43	32.501 78.38	18.466 -1.34
Secδ tanδ	1.005 .099	1.195 .654	1.081 -.411	1.330 .877
Dob.Tran.	Dic 4	Dic 5	Dic 7	Dic 8

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	188		1144		194		193	
EST.	β Eridani		μ Leporis		β Orionis (Rigel)		α Aurigae (Capella)	
MAG.	2.79		3.31 Var		0.12		0.08	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	5 9	- 5 2	5 14	-16 10	5 15	- 8 10	5 18	+46 1
mes d	s	"	s	"	s	"	s	"
1 -8.0	6.062	74.08	4.687	32.99	45.718	21.22	34.119	25.66
1 1.9	6.104	75.57	4.720	35.05	45.763	22.90	34.198	27.14
1 11.9	6.101	76.92	4.708	36.92	45.763	24.42	34.212	28.53
1 21.9	6.058	78.10	4.654	38.56	45.722	25.75	34.164	29.80
1 31.8	5.974	79.10	4.559	39.95	45.639	26.89	34.057	30.90
2 10.8	5.856	79.87	4.429	41.02	45.522	27.78	33.897	31.75
2 20.8	5.712	80.44	4.272	41.80	45.377	28.43	33.698	32.34
3 2.8	5.549	80.79	4.095	42.26	45.212	28.83	33.468	32.64
3 12.7	5.377	80.91	3.909	42.38	45.037	28.97	33.226	32.62
3 22.7	5.208	80.81	3.725	42.19	44.864	28.87	32.986	32.30
4 1.7	5.050	80.49	3.551	41.68	44.700	28.51	32.759	31.69
4 11.7	4.914	79.94	3.398	40.86	44.558	27.90	32.564	30.82
4 21.6	4.806	79.18	3.274	39.76	44.444	27.06	32.410	29.75
5 1.6	4.734	78.21	3.185	38.36	44.363	25.98	32.305	28.52
5 11.6	4.703	77.03	3.137	36.72	44.324	24.69	32.260	27.18
5 21.5	4.714	75.69	3.131	34.87	44.326	23.22	32.275	25.81
5 31.5	4.769	74.17	3.169	32.82	44.371	21.56	32.350	24.43
6 10.5	4.867	72.52	3.252	30.64	44.460	19.77	32.489	23.11
6 20.5	5.005	70.79	3.376	28.38	44.589	17.90	32.682	21.89
6 30.4	5.180	68.99	3.539	26.07	44.756	15.96	32.930	20.79
7 10.4	5.389	67.21	3.737	23.81	44.956	14.05	33.225	19.86
7 20.4	5.623	65.47	3.964	21.65	45.184	12.20	33.557	19.10
7 30.4	5.882	63.85	4.217	19.65	45.437	10.47	33.925	18.53
8 9.3	6.157	62.40	4.489	17.90	45.708	8.93	34.317	18.16
8 19.3	6.444	61.16	4.774	16.43	45.991	7.63	34.726	17.97
8 29.3	6.739	60.19	5.070	15.32	46.284	6.61	35.150	17.97
9 8.2	7.036	59.53	5.369	14.61	46.580	5.93	35.577	18.15
9 18.2	7.331	59.19	5.668	14.30	46.876	5.60	36.006	18.50
9 28.2	7.622	59.20	5.963	14.45	47.169	5.64	36.431	19.01
10 8.2	7.903	59.56	6.248	15.04	47.452	6.07	36.844	19.68
10 18.1	8.172	60.23	6.521	16.03	47.724	6.83	37.244	20.49
10 28.1	8.425	61.21	6.777	17.41	47.981	7.93	37.624	21.46
11 7.1	8.657	62.44	7.010	19.11	48.217	9.30	37.975	22.55
11 17.1	8.865	63.85	7.219	21.05	48.430	10.87	38.295	23.76
11 27.0	9.044	65.41	7.396	23.18	48.614	12.61	38.574	25.08
12 7.0	9.189	67.03	7.537	25.39	48.763	14.42	38.804	26.48
12 17.0	9.298	68.65	7.641	27.61	48.877	16.23	38.983	27.93
12 26.9	9.365	70.23	7.701	29.78	48.947	18.00	39.099	29.40
12 36.9	9.390	71.69	7.717	31.78	48.975	19.64	39.154	30.81
Pos. Med.	6.281	79.36	4.689	37.66	45.877	26.64	34.647	16.01
Secδ tanδ	1.004	-.088	1.041	-.290	1.010	-.144	1.440	1.036
Dob.Tran.	Dic 8		Dic 9		Dic 9		Dic 10	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	195		201		202		204	
EST.	τ Orionis		γ Orionis (Bellatrix)		β Tauri		β Leporis*	
MAG.	3.60		1.64		1.65		2.84	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	5 18	- 6 48	5 26	+ 6 22	5 27	+28 37	5 29	-20 44
mes d	s	"	s	"	s	"	s	"
1 -8.0	50.586	61.71	29.659	21.36	53.854	43.82	20.458	21.34
1 1.9	50.636	63.33	29.727	20.45	53.939	44.26	20.500	23.68
1 11.9	50.640	64.80	29.749	19.64	53.971	44.70	20.494	25.82
1 21.9	50.602	66.09	29.728	18.93	53.953	45.13	20.444	27.72
1 31.9	50.523	67.19	29.664	18.33	53.886	45.51	20.350	29.35
2 10.8	50.409	68.05	29.562	17.86	53.775	45.82	20.219	30.64
2 20.8	50.267	68.69	29.430	17.50	53.630	46.04	20.059	31.59
3 2.8	50.103	69.09	29.275	17.24	53.458	46.13	19.875	32.20
3 12.7	49.930	69.24	29.110	17.11	53.274	46.11	19.680	32.42
3 22.7	49.758	69.16	28.943	17.08	53.089	45.95	19.485	32.31
4 1.7	49.594	68.84	28.785	17.16	52.912	45.68	19.296	31.83
4 11.7	49.452	68.27	28.647	17.37	52.759	45.31	19.128	31.00
4 21.6	49.338	67.50	28.536	17.69	52.637	44.88	18.987	29.86
5 1.6	49.256	66.48	28.459	18.15	52.554	44.40	18.878	28.41
5 11.6	49.216	65.26	28.423	18.75	52.517	43.91	18.811	26.67
5 21.6	49.217	63.87	28.429	19.46	52.528	43.45	18.785	24.71
5 31.5	49.260	62.29	28.477	20.31	52.588	43.04	18.802	22.53
6 10.5	49.348	60.58	28.570	21.26	52.698	42.75	18.866	20.21
6 20.5	49.475	58.79	28.701	22.32	52.846	42.46	18.970	17.80
6 30.4	49.640	56.93	28.871	23.47	53.045	42.27	19.116	15.33
7 10.4	49.839	55.09	29.075	24.63	53.280	42.21	19.299	12.91
7 20.4	50.065	53.30	29.306	25.80	53.546	42.24	19.512	10.59
7 30.4	50.316	51.62	29.562	26.93	53.839	42.36	19.754	8.44
8 9.3	50.586	50.13	29.836	27.96	54.153	42.55	20.018	6.56
8 19.3	50.868	48.85	30.123	28.88	54.480	42.78	20.298	4.97
8 29.3	51.160	47.86	30.421	29.63	54.820	43.05	20.593	3.77
9 8.3	51.455	47.19	30.722	30.17	55.163	43.34	20.893	2.99
9 18.2	51.751	46.85	31.024	30.51	55.509	43.62	21.195	2.66
9 28.2	52.045	46.88	31.325	30.60	55.853	43.89	21.498	2.81
10 8.2	52.329	47.27	31.618	30.44	56.190	44.15	21.791	3.44
10 18.1	52.603	48.00	31.904	30.07	56.517	44.39	22.075	4.51
10 28.1	52.863	49.05	32.176	29.48	56.831	44.63	22.343	6.01
11 7.1	53.101	50.37	32.429	28.72	57.124	44.87	22.589	7.87
11 17.1	53.318	51.89	32.662	27.83	57.395	45.14	22.811	10.01
11 27.0	53.505	53.57	32.867	26.85	57.635	45.42	23.001	12.37
12 7.0	53.658	55.31	33.039	25.83	57.838	45.75	23.154	14.83
12 17.0	53.776	57.06	33.176	24.81	58.001	46.11	23.269	17.32
12 27.0	53.851	58.77	33.271	23.83	58.115	46.51	23.338	19.76
12 36.9	53.883	60.35	33.321	22.94	58.180	46.92	23.361	22.05
Pos. Med.	50.766	67.43	30.015	14.33	54.369	35.32	20.340	26.97
Secδ tanδ	1.007	-.120	1.006	.112	1.139	.546	1.069	-.379
Dob.Tran.	Dic 10		Dic 12		Dic 13		Dic 13	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	206		207		209		211	
EST.	δ Orionis		α Leporis		ι Orionis*		ζ Tauri	
MAG.	2.23		2.58		2.77		3.00	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	5 33	- 0 16	5 33	-17 47	5 36	- 5 53	5 39	+21 9
mes d	s	"	s	"	s	"	s	"
1 -8.0	18.380	49.15	51.395	74.69	40.707	35.43	9.760	28.80
1 1.9	18.449	50.47	51.446	76.91	40.774	37.07	9.852	28.75
1 11.9	18.472	51.66	51.449	78.95	40.795	38.56	9.894	28.76
1 21.9	18.453	52.70	51.408	80.77	40.772	39.88	9.888	28.81
1 31.9	18.389	53.60	51.323	82.33	40.706	41.02	9.834	28.87
2 10.8	18.288	54.31	51.200	83.57	40.601	41.92	9.737	28.93
2 20.8	18.157	54.85	51.048	84.50	40.467	42.60	9.607	28.98
3 2.8	18.002	55.21	50.871	85.10	40.308	43.06	9.449	29.00
3 12.8	17.834	55.38	50.683	85.35	40.137	43.27	9.277	28.97
3 22.7	17.666	55.38	50.493	85.28	39.964	43.25	9.102	28.90
4 1.7	17.503	55.21	50.310	84.87	39.797	43.01	8.933	28.79
4 11.7	17.360	54.84	50.146	84.13	39.648	42.53	8.785	28.65
4 21.6	17.243	54.32	50.008	83.10	39.525	41.84	8.664	28.50
5 1.6	17.158	53.60	49.901	81.76	39.433	40.93	8.577	28.35
5 11.6	17.112	52.72	49.835	80.16	39.380	39.81	8.534	28.24
5 21.6	17.107	51.69	49.809	78.34	39.368	38.52	8.534	28.17
5 31.5	17.144	50.50	49.827	76.30	39.397	37.06	8.580	28.16
6 10.5	17.225	49.20	49.890	74.12	39.469	35.46	8.676	28.21
6 20.5	17.344	47.79	49.993	71.85	39.581	33.77	8.798	28.34
6 30.5	17.501	46.31	50.136	69.52	39.731	32.01	8.977	28.62
7 10.4	17.693	44.83	50.316	67.22	39.916	30.26	9.190	28.92
7 20.4	17.913	43.37	50.525	65.01	40.129	28.55	9.431	29.28
7 30.4	18.158	41.98	50.764	62.95	40.368	26.94	9.699	29.68
8 9.3	18.422	40.73	51.024	61.14	40.628	25.50	9.988	30.08
8 19.3	18.700	39.64	51.300	59.61	40.902	24.27	10.291	30.47
8 29.3	18.991	38.78	51.590	58.43	41.189	23.30	10.607	30.83
9 8.3	19.286	38.18	51.887	57.66	41.482	22.65	10.929	31.12
9 18.2	19.583	37.85	52.187	57.31	41.777	22.31	11.254	31.34
9 28.2	19.880	37.84	52.487	57.42	42.073	22.34	11.580	31.47
10 8.2	20.171	38.13	52.779	57.99	42.363	22.73	11.900	31.52
10 18.2	20.454	38.70	53.063	58.98	42.646	23.44	12.214	31.48
10 28.1	20.725	39.54	53.333	60.39	42.916	24.48	12.516	31.36
11 7.1	20.978	40.61	53.581	62.13	43.168	25.79	12.801	31.19
11 17.1	21.211	41.85	53.807	64.15	43.399	27.30	13.065	31.00
11 27.0	21.416	43.23	54.003	66.39	43.603	28.98	13.302	30.80
12 7.0	21.588	44.65	54.162	68.72	43.774	30.72	13.505	30.62
12 17.0	21.726	46.09	54.285	71.09	43.909	32.48	13.671	30.47
12 27.0	21.821	47.48	54.362	73.41	44.002	34.21	13.791	30.37
12 36.9	21.873	48.77	54.395	75.58	44.051	35.81	13.864	30.32
Pos. Med.	18.646	56.11	51.347	80.79	40.888	42.29	10.221	20.60
Secδ tanδ	1.000	-.005	1.050	-.321	1.005	-.103	1.072	.387
Dob.Tran.	Dic 14		Dic 14		Dic 15		Dic 15	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	215		217		220		223	
EST.	α Columbae		γ Leporis		χ Orionis		β Columbae	
MAG.	2.64		3.60		2.06		3.12	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	5 40	-34 3	5 45	-22 26	5 48	- 9 39	5 51	-35 45
mes d	s	"	s	"	s	"	s	"
1 -8.0	34.959	37.31	31.789	23.31	57.899	37.39	52.201	29.89
1 2.0	34.990	40.22	31.842	25.81	57.973	39.27	52.241	32.90
1 11.9	34.967	42.91	31.846	28.11	58.001	41.00	52.226	35.70
1 21.9	34.895	45.32	31.805	30.18	57.984	42.55	52.160	38.23
1 31.9	34.775	47.41	31.718	31.97	57.923	43.89	52.043	40.44
2 10.8	34.612	49.08	31.591	33.41	57.821	44.97	51.882	42.24
2 20.8	34.417	50.35	31.433	34.51	57.688	45.80	51.686	43.63
3 2.8	34.196	51.18	31.248	35.26	57.529	46.37	51.461	44.58
3 12.8	33.961	51.53	31.050	35.60	57.355	46.65	51.221	45.05
3 22.7	33.724	51.46	30.850	35.60	57.178	46.68	50.976	45.08
4 1.7	33.492	50.94	30.653	35.22	57.004	46.44	50.735	44.65
4 11.7	33.280	49.98	30.475	34.47	56.847	45.94	50.512	43.77
4 21.7	33.095	48.64	30.321	33.40	56.714	45.20	50.315	42.49
5 1.6	32.944	46.90	30.199	32.00	56.610	44.21	50.149	40.81
5 11.6	32.835	44.83	30.116	30.30	56.544	42.99	50.026	38.78
5 21.6	32.770	42.48	30.073	28.37	56.517	41.58	49.946	36.45
5 31.5	32.752	39.87	30.074	26.20	56.532	39.98	49.913	33.85
6 10.5	32.784	37.10	30.121	23.88	56.589	38.24	49.930	31.07
6 20.5	32.862	34.22	30.208	21.46	56.686	36.41	49.993	28.17
6 30.5	32.986	31.29	30.338	18.97	56.822	34.49	50.104	25.19
7 10.4	33.154	28.42	30.505	16.52	56.993	32.59	50.259	22.28
7 20.4	33.357	25.67	30.705	14.16	57.193	30.74	50.452	19.47
7 30.4	33.597	23.13	30.935	11.96	57.422	29.00	50.683	16.84
8 9.4	33.864	20.90	31.189	10.03	57.672	27.44	50.944	14.54
8 19.3	34.154	19.03	31.462	8.39	57.939	26.11	51.229	12.57
8 29.3	34.463	17.60	31.751	7.13	58.221	25.07	51.536	11.05
9 8.3	34.782	16.68	32.049	6.31	58.511	24.37	51.857	10.04
9 18.2	35.107	16.28	32.352	5.93	58.805	24.01	52.185	9.55
9 28.2	35.434	16.46	32.657	6.05	59.103	24.06	52.518	9.65
10 8.2	35.753	17.20	32.956	6.67	59.396	24.50	52.845	10.32
10 18.2	36.062	18.46	33.248	7.74	59.683	25.30	53.163	11.54
10 28.1	36.354	20.26	33.526	9.28	59.960	26.46	53.466	13.30
11 7.1	36.620	22.48	33.783	11.18	60.219	27.92	53.743	15.50
11 17.1	36.858	25.05	34.018	13.39	60.459	29.61	53.994	18.08
11 27.1	37.058	27.90	34.221	15.85	60.671	31.50	54.208	20.97
12 7.0	37.217	30.90	34.388	18.42	60.851	33.47	54.378	24.02
12 17.0	37.331	33.95	34.516	21.05	60.995	35.48	54.503	27.14
12 27.0	37.393	36.97	34.598	23.64	61.097	37.45	54.576	30.25
12 36.9	37.403	39.82	34.633	26.08	61.153	39.30	54.595	33.20
Pos. Med.	34.424	43.38	31.617	30.29	58.012	44.87	51.612	36.81
Secδ tanδ	1.207	-.676	1.082	-.413	1.014	-.170	1.232	-.720
Dob.Tran.	Dic 16		Dic 17		Dic 18		Dic 19	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	222		224		227		225	
EST.	δ Leporis		α Orionis (Betel geuse)		βAurigae		δ Aurigae	
MAG.	3.81		0.4 A 1.3		1.90		3.72	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	5 52	-20 52	5 56	+ 7 24	6 1	+44 56	6 1	+54 16
mes d	s	"	s	"	s	"	s	"
1 -8.0	25.238	35.52	32.858	43.02	23.619	58.52	37.414	69.37
1 2.0	25.303	37.99	32.957	42.08	23.757	59.89	37.566	71.26
1 11.9	25.319	40.27	33.007	41.25	23.828	61.28	37.637	73.15
1 21.9	25.288	42.33	33.012	40.54	23.835	62.63	37.631	74.97
1 31.9	25.212	44.13	32.970	39.93	23.776	63.89	37.548	76.66
2 10.9	25.094	45.60	32.887	39.47	23.658	64.99	37.393	78.11
2 20.8	24.944	46.73	32.769	39.11	23.493	65.89	37.183	79.30
3 2.8	24.767	47.52	32.624	38.87	23.288	66.54	36.925	80.15
3 12.8	24.575	47.93	32.462	38.74	23.059	66.91	36.639	80.64
3 22.7	24.379	48.00	32.294	38.71	22.821	67.00	36.342	80.75
4 1.7	24.186	47.70	32.130	38.78	22.586	66.79	36.049	80.48
4 11.7	24.009	47.05	31.981	38.95	22.373	66.30	35.780	79.84
4 21.7	23.856	46.08	31.856	39.22	22.191	65.58	35.549	78.88
5 1.6	23.733	44.78	31.760	39.61	22.048	64.63	35.365	77.64
5 11.6	23.648	43.20	31.702	40.11	21.959	63.53	35.244	76.17
5 21.6	23.603	41.38	31.684	40.71	21.923	62.31	35.187	74.54
5 31.6	23.600	39.32	31.707	41.43	21.945	61.02	35.198	72.78
6 10.5	23.642	37.11	31.773	42.23	22.027	59.71	35.282	70.99
6 20.5	23.725	34.78	31.878	43.12	22.162	58.43	35.431	69.21
6 30.5	23.848	32.38	32.021	44.10	22.352	57.19	35.645	67.47
7 10.4	24.010	30.01	32.200	45.10	22.592	56.04	35.921	65.83
7 20.4	24.204	27.72	32.408	46.11	22.873	55.00	36.246	64.34
7 30.4	24.428	25.57	32.644	47.07	23.194	54.09	36.621	63.00
8 9.4	24.677	23.68	32.901	47.95	23.545	53.33	37.034	61.86
8 19.3	24.945	22.06	33.174	48.72	23.919	52.70	37.476	60.92
8 29.3	25.230	20.80	33.461	49.33	24.316	52.23	37.947	60.19
9 8.3	25.525	19.97	33.757	49.75	24.725	51.90	38.433	59.70
9 18.3	25.827	19.57	34.058	49.97	25.143	51.73	38.931	59.43
9 28.2	26.132	19.66	34.363	49.95	25.567	51.70	39.437	59.40
10 8.2	26.432	20.23	34.665	49.71	25.988	51.83	39.938	59.61
10 18.2	26.727	21.25	34.963	49.25	26.404	52.12	40.434	60.06
10 28.1	27.009	22.73	35.253	48.58	26.809	52.57	40.915	60.76
11 7.1	27.273	24.57	35.528	47.75	27.193	53.18	41.370	61.70
11 17.1	27.514	26.72	35.786	46.79	27.554	53.95	41.795	62.86
11 27.1	27.727	29.12	36.019	45.74	27.880	54.89	42.177	64.25
12 7.0	27.903	31.65	36.220	44.67	28.162	55.97	42.505	65.82
12 17.0	28.042	34.23	36.388	43.61	28.397	57.18	42.774	67.55
12 27.0	28.135	36.79	36.513	42.59	28.572	58.49	42.971	69.38
12 37.0	28.181	39.20	36.593	41.67	28.684	59.84	43.092	71.25
Pos. Med.	25.128	43.32	33.198	34.80	24.008	49.75	37.672	60.46
Secδ tanδ	1.070	-.381	1.008	.130	1.413	.998	1.713	1.391
Dob.Tran.	Dic 19		Dic 20		Dic 21		Dic 21	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	240		243		241		245	
EST.	ζ Canis Majoris		β Canis Majoris		μ Geminorum		αCarinae (Canopus)	
MAG.	3.02		1.98		2.88		-0.72	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m s	° ′ "	h m s	° ′ "	h m s	° ′ "	h m s	° ′ "
	6 21	-30 4	6 23	-17 57	6 24	+22 29	6 24	-52 42
mes d								
1 -8.0	17.921	24.60	49.409	63.33	29.763	61.96	32.611	27.19
1 2.0	18.004	27.54	49.510	65.76	29.903	61.87	32.656	30.76
1 12.0	18.034	30.33	49.560	68.05	29.991	61.88	32.627	34.17
1 21.9	18.012	32.89	49.563	70.14	30.029	61.97	32.529	37.34
1 31.9	17.939	35.19	49.517	72.00	30.013	62.12	32.363	40.20
2 10.9	17.819	37.12	49.426	73.55	29.948	62.32	32.136	42.65
2 20.8	17.662	38.69	49.299	74.80	29.843	62.53	31.860	44.65
3 2.8	17.472	39.86	49.141	75.74	29.703	62.72	31.543	46.18
3 12.8	17.261	40.59	48.962	76.31	29.540	62.88	31.199	47.18
3 22.8	17.041	40.92	48.774	76.57	29.367	62.98	30.844	47.67
4 1.7	16.819	40.82	48.584	76.48	29.190	63.03	30.484	47.63
4 11.7	16.610	40.29	48.405	76.06	29.027	63.02	30.139	47.07
4 21.7	16.420	39.39	48.246	75.34	28.884	62.96	29.818	46.03
5 1.7	16.256	38.09	48.111	74.30	28.769	62.86	29.528	44.50
5 11.6	16.130	36.45	48.010	72.99	28.692	62.74	29.285	42.54
5 21.6	16.041	34.51	47.946	71.43	28.655	62.61	29.090	40.22
5 31.6	15.994	32.29	47.920	69.64	28.660	62.50	28.950	37.54
6 10.5	15.992	29.86	47.937	67.67	28.711	62.41	28.871	34.61
6 20.5	16.033	27.28	47.993	65.58	28.806	62.34	28.851	31.49
6 30.5	16.118	24.59	48.089	63.39	28.924	62.31	28.893	28.25
7 10.5	16.245	21.91	48.223	61.19	29.102	62.35	28.996	25.00
7 20.4	16.408	19.29	48.388	59.04	29.306	62.40	29.154	21.83
7 30.4	16.607	16.80	48.586	57.00	29.541	62.46	29.369	18.81
8 9.4	16.837	14.57	48.810	55.16	29.801	62.51	29.633	16.08
8 19.4	17.093	12.63	49.056	53.57	30.080	62.54	29.938	13.70
8 29.3	17.372	11.07	49.324	52.30	30.378	62.53	30.285	11.76
9 8.3	17.668	9.97	49.605	51.41	30.689	62.47	30.660	10.37
9 18.3	17.977	9.35	49.897	50.93	31.010	62.34	31.056	9.53
9 28.2	18.295	9.27	50.198	50.90	31.339	62.12	31.468	9.33
10 8.2	18.614	9.75	50.500	51.34	31.670	61.84	31.881	9.79
10 18.2	18.931	10.74	50.802	52.22	32.001	61.48	32.289	10.86
10 28.2	19.239	12.27	51.097	53.54	32.328	61.08	32.682	12.57
11 7.1	19.530	14.24	51.379	55.24	32.644	60.65	33.044	14.83
11 17.1	19.801	16.60	51.644	57.25	32.945	60.21	33.372	17.56
11 27.1	20.041	19.29	51.884	59.53	33.224	59.81	33.651	20.71
12 7.1	20.245	22.17	52.091	61.96	33.471	59.46	33.872	24.11
12 17.0	20.408	25.17	52.263	64.46	33.684	59.19	34.033	27.68
12 27.0	20.522	28.19	52.392	66.97	33.853	59.02	34.122	31.31
12 37.0	20.585	31.09	52.473	69.37	33.973	58.94	34.139	34.84
Pos. Med.	17.583	34.52	49.386	73.15	30.179	53.13	31.119	37.92
Secδ tanδ	1.156	-.579	1.051	-.324	1.082	.414	1.651	-1.313
Dob.Tran.	Dic 26		Dic 27		Dic 27		Dic 27	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	252		251		263		261	
EST.	ν Puppis		γ Geminorum		τ Puppis		ϑ Geminorum	
MAG.	3.17		1.93		2.93		3.60	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	6 38	-43 12	6 39	+16 22	6 50	-50 38	6 54	+33 55
mes d	s	"	s	"	s	"	s	"
1 -8.0	33.349	58.36	10.706	40.20	35.359	32.08	27.677	48.93
1 2.0	33.435	61.78	10.854	39.67	35.451	35.70	27.864	49.46
1 12.0	33.457	65.07	10.952	39.26	35.470	39.22	27.994	50.11
1 21.9	33.420	68.15	11.001	38.97	35.421	42.54	28.067	50.85
1 31.9	33.322	70.96	10.998	38.79	35.304	45.60	28.079	51.66
2 10.9	33.169	73.38	10.947	38.70	35.123	48.29	28.034	52.47
2 20.9	32.971	75.40	10.854	38.69	34.891	50.58	27.939	53.24
3 2.8	32.734	76.98	10.726	38.72	34.613	52.42	27.801	53.92
3 12.8	32.471	78.07	10.574	38.80	34.304	53.74	27.632	54.48
3 22.8	32.195	78.69	10.409	38.88	33.977	54.58	27.444	54.88
4 1.7	31.912	78.81	10.239	38.98	33.641	54.91	27.247	55.11
4 11.7	31.640	78.43	10.078	39.08	33.313	54.70	27.058	55.15
4 21.7	31.386	77.61	9.935	39.18	33.002	54.01	26.887	55.01
5 1.7	31.158	76.32	9.817	39.30	32.716	52.83	26.740	54.72
5 11.6	30.967	74.61	9.734	39.43	32.469	51.20	26.630	54.27
5 21.6	30.817	72.55	9.686	39.58	32.265	49.18	26.561	53.71
5 31.6	30.712	70.14	9.678	39.78	32.108	46.76	26.535	53.06
6 10.6	30.658	67.46	9.713	40.00	32.008	44.06	26.558	52.35
6 20.5	30.651	64.60	9.788	40.26	31.961	41.14	26.625	51.61
6 30.5	30.696	61.59	9.899	40.52	31.971	38.04	26.736	50.86
7 10.5	30.791	58.56	10.047	40.88	32.040	34.89	26.889	50.08
7 20.4	30.931	55.57	10.229	41.22	32.161	31.75	27.081	49.32
7 30.4	31.118	52.70	10.441	41.54	32.337	28.72	27.309	48.58
8 9.4	31.344	50.09	10.679	41.81	32.563	25.93	27.569	47.87
8 19.4	31.605	47.78	10.937	42.02	32.831	23.44	27.854	47.19
8 29.3	31.901	45.88	11.215	42.14	33.143	21.34	28.164	46.54
9 8.3	32.221	44.48	11.508	42.14	33.486	19.75	28.492	45.91
9 18.3	32.561	43.60	11.812	42.02	33.857	18.69	28.836	45.30
9 28.3	32.916	43.32	12.126	41.75	34.249	18.24	29.194	44.73
10 8.2	33.277	43.66	12.444	41.34	34.649	18.44	29.560	44.20
10 18.2	33.637	44.59	12.765	40.81	35.052	19.26	29.931	43.71
10 28.2	33.990	46.13	13.085	40.16	35.448	20.72	30.303	43.30
11 7.1	34.322	48.21	13.395	39.43	35.821	22.77	30.667	42.98
11 17.1	34.631	50.76	13.694	38.64	36.168	25.31	31.020	42.77
11 27.1	34.904	53.71	13.972	37.85	36.475	28.31	31.351	42.70
12 7.1	35.132	56.93	14.222	37.08	36.730	31.62	31.653	42.78
12 17.0	35.313	60.32	14.440	36.37	36.930	35.15	31.918	43.02
12 27.0	35.435	63.79	14.616	35.75	37.064	38.79	32.137	43.43
12 37.0	35.497	67.18	14.745	35.25	37.128	42.39	32.302	43.97
Pos. Med.	32.534	70.34	11.096	31.03	34.158	45.68	28.059	40.71
Secδ tanδ	1.372	-.940	1.042	.294	1.577	-1.219	1.205	.673
Dob.Tran.	Dic 30		Dic 31		Ene 2		Ene 3	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	268		270		273		278	
EST.	ε Canis Majoris		o^2 CanisMajoris		δ Canis Majoris		π Puppis	
MAG.	1.50		3.02		1.86		2.70	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m 6 59	° ′ -29 0	h m 7 4	° ′ -23 51	h m 7 9	° ′ -26 25	h m 7 18	° ′ -37 8
mes d	s	"	s	"	s	"	s	"
1 -8.0	37.923	16.75	5.445	66.81	25.831	53.21	3.010	25.49
1 2.0	38.051	19.78	5.582	69.63	25.972	56.15	3.153	28.83
1 12.0	38.125	22.70	5.666	72.36	26.060	59.00	3.237	32.11
1 22.0	38.146	25.43	5.701	74.90	26.096	61.68	3.264	35.23
1 31.9	38.113	27.95	5.682	77.23	26.078	64.15	3.232	38.14
2 10.9	38.030	30.13	5.614	79.26	26.010	66.30	3.144	40.73
2 20.9	37.904	31.98	5.504	80.96	25.899	68.14	3.010	42.97
3 2.8	37.740	33.46	5.357	82.33	25.749	69.62	2.832	44.83
3 12.8	37.549	34.52	5.182	83.31	25.571	70.71	2.623	46.24
3 22.8	37.343	35.19	4.992	83.93	25.376	71.42	2.394	47.22
4 1.8	37.128	35.45	4.793	84.18	25.171	71.73	2.153	47.75
4 11.7	36.919	35.28	4.598	84.03	24.969	71.64	1.914	47.80
4 21.7	36.723	34.73	4.416	83.55	24.780	71.19	1.685	47.43
5 1.7	36.547	33.79	4.253	82.70	24.609	70.36	1.474	46.61
5 11.7	36.401	32.49	4.119	81.52	24.466	69.18	1.291	45.37
5 21.6	36.289	30.87	4.017	80.05	24.355	67.69	1.141	43.77
5 31.6	36.214	28.94	3.950	78.29	24.278	65.90	1.027	41.81
6 10.6	36.180	26.78	3.924	76.32	24.242	63.88	.956	39.56
6 20.5	36.186	24.44	3.935	74.18	24.244	61.67	.926	37.09
6 30.5	36.233	21.94	3.985	71.89	24.286	59.31	.940	34.42
7 10.5	36.321	19.40	4.074	69.57	24.367	56.91	.998	31.68
7 20.5	36.446	16.87	4.198	67.25	24.483	54.50	1.097	28.92
7 30.4	36.608	14.42	4.357	65.01	24.636	52.16	1.237	26.21
8 9.4	36.803	12.18	4.547	62.95	24.822	50.00	1.417	23.68
8 19.4	37.026	10.18	4.764	61.11	25.035	48.07	1.630	21.40
8 29.4	37.278	8.51	5.009	59.59	25.278	46.45	1.879	19.44
9 8.3	37.552	7.27	5.274	58.46	25.543	45.24	2.155	17.92
9 18.3	37.845	6.46	5.558	57.74	25.827	44.44	2.456	16.86
9 28.3	38.154	6.18	5.857	57.52	26.129	44.15	2.778	16.35
10 8.2	38.472	6.44	6.166	57.79	26.441	44.38	3.114	16.42
10 18.2	38.794	7.22	6.481	58.55	26.759	45.11	3.458	17.05
10 28.2	39.116	8.54	6.796	59.82	27.080	46.37	3.805	18.29
11 7.2	39.428	10.35	7.103	61.54	27.392	48.10	4.143	20.06
11 17.1	39.726	12.56	7.398	63.64	27.693	50.23	4.467	22.31
11 27.1	40.000	15.14	7.672	66.08	27.973	52.73	4.767	25.00
12 7.1	40.241	17.97	7.916	68.74	28.222	55.47	5.032	28.00
12 17.1	40.445	20.95	8.125	71.54	28.437	58.37	5.258	31.22
12 27.0	40.603	24.02	8.291	74.41	28.607	61.35	5.433	34.57
12 37.0	40.711	27.02	8.408	77.22	28.727	64.28	5.554	37.91
Pos. Med. Secδ tanδ	37.720 1.143	29.82 -.554	5.382 1.094	79.80 -.443	25.727 1.117	66.80 -.497	2.628 1.255	40.72 -.758
Dob.Tran.	Ene 5		Ene 6		Ene 7		Ene 9	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	279		283		297		295	
EST.	δ Geminorum*		η Canis Majoris		ζ Volantis		β Geminorum (Pollux)	
MAG.	3.53		2.45		3.95		1.14	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	7 21	+21 55	7 25	-29 20	7 41	-72 39	7 46	+27 57
mes d	s	"	s	"	s	"	s	"
1 -7.9	38.214	68.32	6.372	60.48	33.307	40.53	51.968	52.98
1 2.0	38.411	67.97	6.528	63.57	33.504	44.30	52.198	52.87
1 12.0	38.557	67.79	6.630	66.59	33.551	48.12	52.376	52.97
1 22.0	38.652	67.75	6.679	69.46	33.459	51.88	52.501	53.25
1 31.9	38.691	67.85	6.673	72.13	33.226	55.52	52.567	53.68
2 10.9	38.676	68.06	6.613	74.50	32.859	58.90	52.575	54.23
2 20.9	38.614	68.34	6.509	76.54	32.381	61.97	52.532	54.85
3 2.9	38.510	68.67	6.363	78.24	31.800	64.66	52.441	55.50
3 12.8	38.373	69.01	6.186	79.52	31.137	66.89	52.312	56.13
3 22.8	38.216	69.32	5.990	80.42	30.420	68.66	52.157	56.70
4 1.8	38.047	69.59	5.781	80.92	29.658	69.92	51.985	57.17
4 11.8	37.879	69.81	5.572	80.98	28.882	70.63	51.809	57.53
4 21.7	37.722	69.96	5.373	80.67	28.112	70.84	51.641	57.76
5 1.7	37.584	70.05	5.189	79.95	27.360	70.49	51.486	57.86
5 11.7	37.475	70.08	5.032	78.86	26.655	69.62	51.358	57.82
5 21.6	37.398	70.06	4.905	77.44	26.008	68.28	51.261	57.66
5 31.6	37.357	70.01	4.810	75.70	25.431	66.45	51.197	57.40
6 10.6	37.357	69.92	4.755	73.70	24.949	64.21	51.173	57.04
6 20.6	37.395	69.81	4.738	71.49	24.560	61.64	51.187	56.61
6 30.5	37.473	69.68	4.759	69.10	24.281	58.75	51.241	56.11
7 10.5	37.651	68.94	4.822	66.64	24.121	55.67	51.334	55.59
7 20.5	37.728	69.39	4.920	64.16	24.076	52.49	51.456	55.00
7 30.5	37.910	69.19	5.056	61.72	24.158	49.26	51.617	54.32
8 9.4	38.120	68.95	5.226	59.46	24.364	46.15	51.811	53.61
8 19.4	38.354	68.67	5.427	57.40	24.682	43.21	52.032	52.87
8 29.4	38.613	68.31	5.659	55.65	25.118	40.56	52.282	52.07
9 8.3	38.892	67.86	5.917	54.30	25.653	38.34	52.554	51.23
9 18.3	39.188	67.33	6.198	53.37	26.273	36.57	52.848	50.33
9 28.3	39.502	66.71	6.499	52.95	26.969	35.37	53.164	49.38
10 8.3	39.826	65.99	6.814	53.07	27.710	34.82	53.495	48.40
10 18.2	40.159	65.21	7.139	53.70	28.480	34.89	53.839	47.40
10 28.2	40.499	64.36	7.468	54.89	29.256	35.65	54.195	46.41
11 7.2	40.836	63.49	7.792	56.57	30.003	37.07	54.551	45.46
11 17.1	41.167	62.63	8.105	58.69	30.706	39.08	54.907	44.58
11 27.1	41.484	61.82	8.400	61.21	31.335	41.68	55.251	43.81
12 7.1	41.777	61.09	8.665	64.00	31.861	44.73	55.574	43.20
12 17.1	42.042	60.48	8.895	66.99	32.279	48.14	55.870	42.75
12 27.0	42.266	60.01	9.081	70.10	32.562	51.83	56.127	42.50
12 37.0	42.443	59.70	9.217	73.18	32.703	55.64	56.337	42.45
Pos. Med.	38.626	59.33	6.256	75.49	29.401	60.71	52.361	44.88
Secδ tanδ	1.078	.403	1.147	-.562	3.357	-3.204	1.132	.531
Dob.Tran.	Ene 10		Ene 11		Ene 15		Ene 17	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	1204		303		306		308	
EST.	ξ Puppis		χ Carinae		ζ Puppis		ρ Puppis	
MAG.	3.34		3.47		2.25		2.81	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	7 50	-24 55	7 57	-53 2	8 4	-40 4	8 8	-24 22
mes d	s	"	s	"	s	"	s	"
1 -7.9	21.944	14.91	26.441	45.59	29.077	15.42	37.652	28.21
1 2.0	22.130	17.86	26.640	49.28	29.277	18.86	37.856	31.16
1 12.0	22.264	20.77	26.763	53.03	29.419	22.33	38.010	34.08
1 22.0	22.347	23.54	26.813	56.71	29.501	25.72	38.113	36.88
2 1.0	22.376	26.14	26.788	60.27	29.522	28.97	38.163	39.53
2 10.9	22.351	28.48	26.688	63.57	29.481	31.97	38.157	41.92
2 20.9	22.280	30.52	26.526	66.56	29.387	34.66	38.105	44.03
3 2.9	22.166	32.24	26.305	69.19	29.243	37.02	38.008	45.84
3 12.9	22.018	33.58	26.037	71.36	29.060	38.95	37.874	47.29
3 22.8	21.847	34.58	25.736	73.09	28.848	40.47	37.716	48.39
4 1.8	21.660	35.20	25.410	74.33	28.616	41.55	37.539	49.13
4 11.8	21.470	35.43	25.074	75.05	28.375	42.14	37.355	49.49
4 21.7	21.285	35.31	24.742	75.27	28.137	42.30	37.174	49.50
5 1.7	21.110	34.82	24.418	74.98	27.906	42.00	37.000	49.14
5 11.7	20.958	33.98	24.120	74.18	27.697	41.24	36.846	48.44
5 21.7	20.831	32.83	23.852	72.93	27.512	40.09	36.714	47.43
5 31.6	20.733	31.37	23.619	71.21	27.356	38.52	36.608	46.11
6 10.6	20.670	29.66	23.433	69.11	27.238	36.61	36.534	44.53
6 20.6	20.640	27.74	23.294	66.68	27.156	34.41	36.492	42.73
6 30.6	20.647	25.63	23.206	63.95	27.115	31.95	36.484	40.75
7 10.5	20.691	23.44	23.175	61.05	27.117	29.34	36.512	38.66
7 20.5	20.768	21.21	23.196	58.03	27.159	26.64	36.573	36.51
7 30.5	20.881	19.00	23.276	54.97	27.244	23.90	36.668	34.36
8 9.4	21.027	16.92	23.413	52.02	27.372	21.28	36.797	32.33
8 19.4	21.203	15.02	23.602	49.24	27.538	18.81	36.956	30.45
8 29.4	21.412	13.38	23.845	46.73	27.746	16.61	37.148	28.81
9 8.4	21.647	12.09	24.136	44.62	27.990	14.79	37.369	27.50
9 18.3	21.906	11.18	24.470	42.96	28.266	13.38	37.615	26.56
9 28.3	22.190	10.74	24.843	41.85	28.574	12.48	37.889	26.06
10 8.3	22.491	10.80	25.245	41.35	28.906	12.16	38.183	26.05
10 18.3	22.805	11.34	25.667	41.47	29.257	12.39	38.493	26.52
10 28.2	23.130	12.41	26.101	42.25	29.620	13.25	38.818	27.51
11 7.2	23.455	13.95	26.532	43.67	29.985	14.69	39.145	28.97
11 17.2	23.776	15.92	26.950	45.67	30.345	16.65	39.472	30.86
11 27.1	24.082	18.27	27.343	48.24	30.688	19.13	39.789	33.15
12 7.1	24.365	20.90	27.693	51.24	31.003	21.99	40.084	35.73
12 17.1	24.618	23.74	27.996	54.60	31.283	25.16	40.352	38.53
12 27.1	24.831	26.70	28.236	58.22	31.516	28.55	40.583	41.47
12 37.0	24.997	29.65	28.406	61.95	31.695	32.02	40.768	44.42
Pos. Med.	22.038	31.01	25.580	65.81	28.871	34.61	37.840	45.18
Secδ tanδ	1.103	-.465	1.664	-1.330	1.307	-.841	1.098	-.453
Dob.Tran.	Ene 17		Ene 19		Ene 21		Ene 22	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	309		312		315		319	
EST.	γ Velorum*		β Cancri		ε Carinae		β Volantis	
MAG.	1.78		3.52		1.86		3.77	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	8 10	-47 24	8 17	+ 9 6	8 22	-59 35	8 25	-66 12
mes d	s	"	s	"	s	"	s	"
1 -7.9	19.585	25.59	53.300	29.71	63.143	9.25	62.120	56.71
1 2.1	19.797	29.18	53.533	28.34	63.399	12.94	62.410	60.40
1 12.0	19.944	32.83	53.721	27.15	63.569	16.77	62.593	64.26
1 22.0	20.025	36.43	53.862	26.14	63.654	20.60	62.673	68.15
2 1.0	20.038	39.93	53.950	25.33	63.652	24.38	62.645	72.00
2 10.9	19.982	43.18	53.986	24.73	63.562	27.97	62.510	75.69
2 20.9	19.869	46.13	53.974	24.31	63.397	31.29	62.284	79.12
3 2.9	19.699	48.75	53.917	24.07	63.160	34.30	61.969	82.26
3 12.9	19.485	50.94	53.822	23.99	62.863	36.88	61.580	84.99
3 22.8	19.240	52.70	53.702	24.02	62.523	39.04	61.138	87.29
4 1.8	18.969	54.00	53.561	24.17	62.146	40.73	60.649	89.13
4 11.8	18.688	54.78	53.413	24.40	61.751	41.89	60.135	90.44
4 21.8	18.407	55.11	53.266	24.68	61.350	42.56	59.611	91.24
5 1.7	18.132	54.93	53.126	25.03	60.951	42.69	59.087	91.51
5 11.7	17.878	54.26	53.005	25.41	60.572	42.28	58.583	91.22
5 21.7	17.650	53.16	52.906	25.83	60.219	41.40	58.110	90.44
5 31.6	17.451	51.61	52.832	26.28	59.900	40.01	57.675	89.15
6 10.6	17.293	49.67	52.790	26.75	59.628	38.18	57.298	87.39
6 20.6	17.174	47.42	52.777	27.23	59.405	35.98	56.979	85.23
6 30.6	17.099	44.86	52.797	27.71	59.238	33.41	56.729	82.69
7 10.5	17.074	42.12	52.849	28.16	59.134	30.60	56.559	79.89
7 20.5	17.093	39.26	52.930	28.57	59.091	27.62	56.467	76.89
7 30.5	17.163	36.35	53.040	28.93	59.117	24.52	56.462	73.75
8 9.5	17.282	33.52	53.180	29.23	59.212	21.47	56.547	70.64
8 19.4	17.446	30.84	53.347	29.40	59.372	18.52	56.715	67.62
8 29.4	17.659	28.41	53.542	29.40	59.602	15.79	56.974	64.79
9 8.4	17.916	26.36	53.761	29.23	59.894	13.41	57.315	62.30
9 18.3	18.210	24.73	54.003	28.87	60.243	11.43	57.728	60.20
9 28.3	18.543	23.62	54.269	28.28	60.648	9.96	58.213	58.60
10 8.3	18.903	23.10	54.553	27.48	61.093	9.09	58.749	57.61
10 18.3	19.286	23.17	54.856	26.47	61.570	8.83	59.326	57.21
10 28.2	19.684	23.89	55.173	25.25	62.070	9.24	59.929	57.50
11 7.2	20.083	25.23	55.497	23.87	62.571	10.33	60.535	58.47
11 17.2	20.476	27.14	55.825	22.37	63.066	12.02	61.128	60.07
11 27.2	20.851	29.60	56.149	20.79	63.535	14.33	61.689	62.29
12 7.1	21.192	32.49	56.457	19.21	63.960	17.15	62.193	65.05
12 17.1	21.495	35.74	56.745	17.65	64.333	20.38	62.630	68.24
12 27.1	21.744	39.26	57.001	16.19	64.637	23.95	62.981	71.80
12 37.0	21.932	42.89	57.216	14.87	64.861	27.71	63.232	75.58
Pos. Med.	19.145	46.21	53.801	18.64	62.090	32.33	60.395	80.73
Secδ tanδ	1.478	-1.088	1.013	.160	1.976	-1.704	2.480	-2.270
Dob.Tran.	Ene 23		Ene 24		Ene 26		Ene 26	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	1223		1227		327		326	
EST.	δ Hydrae		o Velorum		α Pyxidis		δ Cancri	
MAG.	4.16		3.62		3.68		3.94	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	8 38	+ 5 36	8 40	-53 0	8 44	-33 16	8 46	+18 3
mes d	s	"	s	"	s	"	s	"
1 -7.9	59.720	59.48	61.838	24.64	36.848	25.74	7.276	41.18
1 2.1	59.967	57.85	62.105	28.22	37.092	28.95	7.544	40.18
1 12.0	60.170	56.38	62.302	31.96	37.284	32.23	7.768	39.39
1 22.0	60.328	55.10	62.427	35.72	37.423	35.47	7.945	38.84
2 1.0	60.434	54.01	62.478	39.45	37.505	38.61	8.069	38.51
2 11.0	60.488	53.16	62.452	43.00	37.529	41.55	8.137	38.40
2 20.9	60.494	52.51	62.360	46.31	37.500	44.24	8.154	38.47
3 2.9	60.454	52.06	62.203	49.34	37.421	46.63	8.123	38.70
3 12.9	60.375	51.81	61.992	51.96	37.300	48.66	8.049	39.05
3 22.9	60.268	51.72	61.740	54.18	37.148	50.32	7.944	39.47
4 1.8	60.138	51.76	61.454	55.96	36.970	51.60	7.814	39.93
4 11.8	59.998	51.93	61.149	57.23	36.777	52.45	7.671	40.39
4 21.8	59.855	52.19	60.836	58.03	36.581	52.90	7.524	40.82
5 1.7	59.717	52.55	60.522	58.31	36.386	52.94	7.380	41.23
5 11.7	59.593	52.97	60.221	58.07	36.203	52.56	7.251	41.57
5 21.7	59.488	53.45	59.940	57.37	36.036	51.81	7.140	41.84
5 31.7	59.404	53.99	59.684	56.18	35.891	50.68	7.051	42.06
6 10.6	59.349	54.56	59.466	54.55	35.774	49.21	6.991	42.20
6 20.6	59.321	55.16	59.285	52.54	35.686	47.46	6.960	42.28
6 30.6	59.322	55.78	59.148	50.17	35.629	45.44	6.959	42.28
7 10.6	59.355	56.37	59.061	47.55	35.608	43.24	6.990	42.21
7 20.5	59.414	56.94	59.023	44.74	35.620	40.92	7.051	42.06
7 30.5	59.503	57.44	59.039	41.80	35.669	38.53	7.160	41.76
8 9.5	59.620	57.86	59.112	38.88	35.756	36.19	7.256	41.49
8 19.4	59.764	58.17	59.238	36.04	35.877	33.95	7.406	41.03
8 29.4	59.938	58.31	59.422	33.38	36.037	31.92	7.584	40.44
9 8.4	60.137	58.24	59.660	31.04	36.233	30.18	7.789	39.71
9 18.4	60.360	57.97	59.947	29.07	36.462	28.80	8.020	38.84
9 28.3	60.610	57.44	60.283	27.59	36.727	27.86	8.278	37.80
10 8.3	60.882	56.67	60.658	26.67	37.020	27.43	8.560	36.63
10 18.3	61.174	55.66	61.066	26.34	37.337	27.51	8.863	35.32
10 28.3	61.485	54.40	61.500	26.66	37.677	28.15	9.187	33.90
11 7.2	61.806	52.94	61.942	27.63	38.026	29.35	9.522	32.41
11 17.2	62.134	51.32	62.385	29.21	38.381	31.05	9.867	30.89
11 27.2	62.460	49.58	62.815	31.39	38.730	33.25	10.212	29.38
12 7.1	62.775	47.80	63.213	34.08	39.062	35.84	10.546	27.95
12 17.1	63.072	46.01	63.574	37.18	39.369	38.74	10.864	26.63
12 27.1	63.340	44.30	63.880	40.64	39.640	41.89	11.153	25.48
12 37.1	63.570	42.71	64.121	44.30	39.864	45.14	11.404	24.54
Pos. Med.	60.277	47.62	61.438	48.24	37.099	46.21	7.845	31.98
Secδ tanδ	1.005	.098	1.662	-1.328	1.196	-.656	1.052	.326
Dob.Tran.	Ene 30		Ene 30		Ene 31		Feb 1	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	332		336		334		342	
EST.	γ Pyxidis		108 G. Carinae		ζ Hydrae		97 G. Velorum	
MAG.	4.01		3.84		3.11		3.75	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	8 51	-27 48	8 55	-60 44	8 56	+ 5 50	9 5	-47 11
mes d	s	"	s	"	s	"	s	"
1 -7.9	36.556	.79	38.071	8.12	43.789	60.97	2.060	36.74
1 2.1	36.804	3.84	38.393	11.68	44.050	59.29	2.347	40.18
1 12.1	37.003	6.92	38.631	15.46	44.269	57.78	2.573	43.78
1 22.0	37.152	9.96	38.784	19.32	44.444	56.45	2.737	47.43
2 1.0	37.247	12.89	38.849	23.20	44.568	55.33	2.835	51.07
2 11.0	37.285	15.61	38.821	26.96	44.640	54.45	2.864	54.57
2 20.9	37.273	18.09	38.714	30.52	44.663	53.78	2.831	57.85
3 2.9	37.213	20.28	38.528	33.83	44.639	53.33	2.738	60.88
3 12.9	37.111	22.13	38.275	36.77	44.575	53.08	2.592	63.55
3 22.9	36.978	23.64	37.971	39.32	44.480	52.98	2.407	65.84
4 1.8	36.820	24.79	37.620	41.44	44.361	53.04	2.188	67.72
4 11.8	36.647	25.54	37.242	43.05	44.228	53.22	1.946	69.13
4 21.8	36.470	25.94	36.848	44.18	44.090	53.49	1.694	70.09
5 1.8	36.293	25.95	36.446	44.78	43.954	53.85	1.437	70.57
5 11.7	36.127	25.59	36.054	44.84	43.829	54.27	1.187	70.56
5 21.7	35.977	24.90	35.679	44.41	43.720	54.75	.951	70.10
5 31.7	35.846	23.86	35.329	43.46	43.630	55.27	.733	69.16
6 10.6	35.742	22.51	35.018	42.02	43.566	55.82	.544	67.80
6 20.6	35.664	20.92	34.748	40.18	43.527	56.39	.384	66.07
6 30.6	35.615	19.08	34.529	37.91	43.515	56.97	.259	63.97
7 10.6	35.600	17.08	34.368	35.35	43.532	57.51	.174	61.60
7 20.5	35.615	14.98	34.267	32.54	43.576	58.03	.129	59.03
7 30.5	35.663	12.82	34.232	29.55	43.649	58.47	.130	56.31
8 9.5	35.747	10.72	34.268	26.53	43.749	58.82	.178	53.58
8 19.5	35.862	8.71	34.372	23.54	43.876	59.08	.271	50.89
8 29.4	36.014	6.90	34.550	20.69	44.033	59.16	.416	48.34
9 8.4	36.199	5.37	34.798	18.12	44.217	59.04	.608	46.07
9 18.4	36.416	4.17	35.111	15.88	44.427	58.71	.847	44.13
9 28.3	36.666	3.39	35.489	14.11	44.665	58.13	1.132	42.63
10 8.3	36.945	3.09	35.919	12.89	44.927	57.30	1.457	41.66
10 18.3	37.248	3.27	36.393	12.24	45.212	56.24	1.817	41.23
10 28.3	37.573	3.97	36.902	12.26	45.518	54.93	2.206	41.43
11 7.2	37.910	5.19	37.424	12.94	45.837	53.43	2.610	42.25
11 17.2	38.253	6.88	37.951	14.26	46.167	51.76	3.023	43.65
11 27.2	38.595	9.02	38.463	16.22	46.498	49.96	3.432	45.66
12 7.2	38.921	11.52	38.940	18.74	46.821	48.13	3.821	48.17
12 17.1	39.226	14.30	39.372	21.72	47.128	46.30	4.182	51.10
12 27.1	39.498	17.30	39.740	25.13	47.409	44.53	4.500	54.39
12 37.1	39.728	20.37	40.031	28.79	47.654	42.89	4.765	57.91
Pos. Med.	36.939	20.40	37.392	33.71	44.407	49.12	2.153	60.88
Secδ tanδ	1.131	-.527	2.046	-1.785	1.005	.102	1.472	-1.080
Dob.Tran.	Feb 2		Feb 3		Feb 3		Feb 5	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	345		348		351		352	
EST.	λ Velorum		β Carinae		ι Carinae		α Lyncis	
MAG.	2.21		1.68		2.25		3.13	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	9 8	-43 31	9 13	-69 48	9 17	-59 22	9 22	+34 16
mes d	s	"	s	"	s	"	s	"
1 -7.9	55.926	47.89	29.396	53.30	46.585	31.87	35.549	64.17
1 2.1	56.209	51.26	29.838	56.73	46.939	35.31	35.881	63.77
1 12.1	56.436	54.78	30.167	60.44	47.215	39.01	36.169	63.71
1 22.0	56.605	58.34	30.383	64.31	47.413	42.83	36.406	63.97
2 1.0	56.712	61.88	30.478	68.27	47.527	46.72	36.587	64.53
2 11.0	56.752	65.28	30.448	72.18	47.553	50.53	36.705	65.36
2 21.0	56.734	68.47	30.307	75.95	47.500	54.18	36.765	66.37
3 2.9	56.659	71.39	30.059	79.52	47.369	57.62	36.766	67.53
3 12.9	56.533	73.97	29.713	82.77	47.171	60.72	36.715	68.75
3 22.9	56.370	76.17	29.292	85.67	46.919	63.46	36.622	69.96
4 1.9	56.173	77.98	28.802	88.17	46.618	65.80	36.493	71.12
4 11.8	55.956	79.33	28.263	90.18	46.285	67.66	36.342	72.15
4 21.8	55.728	80.25	27.694	91.72	45.932	69.05	36.179	73.01
5 1.8	55.495	80.70	27.102	92.73	45.565	69.93	36.011	73.67
5 11.7	55.269	80.68	26.513	93.19	45.201	70.27	35.851	74.11
5 21.7	55.056	80.23	25.936	93.13	44.848	70.12	35.706	74.31
5 31.7	54.859	79.32	25.382	92.53	44.512	69.45	35.578	74.28
6 10.7	54.689	78.00	24.874	91.41	44.207	68.28	35.479	74.01
6 20.6	54.546	76.33	24.416	89.83	43.936	66.68	35.407	73.54
6 30.6	54.436	74.31	24.021	87.79	43.708	64.64	35.365	72.85
7 10.6	54.363	72.03	23.705	85.38	43.531	62.27	35.358	71.96
7 20.6	54.326	69.56	23.470	82.69	43.407	59.63	35.382	70.91
7 30.5	54.331	66.95	23.329	79.74	43.343	56.77	35.439	69.70
8 9.5	54.379	64.32	23.290	76.69	43.345	53.83	35.531	68.33
8 19.5	54.470	61.75	23.350	73.61	43.410	50.87	35.653	66.84
8 29.4	54.607	59.31	23.520	70.60	43.547	48.00	35.812	65.21
9 8.4	54.789	57.15	23.795	67.81	43.753	45.37	36.004	63.49
9 18.4	55.014	55.30	24.168	65.31	44.024	43.04	36.228	61.69
9 28.4	55.284	53.89	24.640	63.22	44.362	41.12	36.487	59.81
10 8.3	55.591	53.00	25.192	61.66	44.755	39.72	36.776	57.92
10 18.3	55.931	52.63	25.811	60.64	45.197	38.87	37.095	56.02
10 28.3	56.300	52.87	26.486	60.27	45.680	38.66	37.443	54.16
11 7.3	56.686	53.72	27.186	60.58	46.185	39.11	37.811	52.39
11 17.2	57.081	55.14	27.895	61.53	46.702	40.19	38.196	50.75
11 27.2	57.475	57.14	28.589	63.15	47.214	41.93	38.589	49.29
12 7.2	57.851	59.62	29.238	65.38	47.700	44.24	38.977	48.08
12 17.1	58.202	62.51	29.827	68.13	48.150	47.05	39.353	47.14
12 27.1	58.515	65.75	30.332	71.36	48.545	50.30	39.705	46.52
12 37.1	58.777	69.18	30.734	74.91	48.871	53.86	40.019	46.23
Pos. Med.	56.159	71.54	28.119	80.98	46.336	58.64	36.083	59.56
Secδ tanδ	1.379	-.950	2.899	-2.721	1.963	-1.690	1.210	.682
Dob.Tran.	Feb 6		Feb 8		Feb 9		Feb 10	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	353		354		361		1250	
EST.	χ Velorum		α Hydrae		N.Velorum		ι Hydrae	
MAG.	2.50		1.98		3.13		3.91	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	9 22	-55 6	9 28	- 8 45	9 31	-57 8	9 41	- 1 15
mes d	s	"	s	"	s	"	s	"
1 -7.9	54.247	47.06	49.682	57.51	59.810	24.24	8.638	21.54
1 2.1	54.586	50.46	49.959	59.90	60.172	27.60	8.926	23.66
1 12.1	54.856	54.11	50.196	62.23	60.465	31.23	9.177	25.67
1 22.1	55.057	57.88	50.391	64.44	60.686	35.00	9.387	27.52
2 1.0	55.182	61.70	50.538	66.49	60.829	38.85	9.551	29.18
2 11.0	55.227	65.45	50.633	68.33	60.888	42.65	9.663	30.60
2 21.0	55.201	69.03	50.680	69.93	60.872	46.31	9.727	31.79
3 2.9	55.104	72.39	50.680	71.29	60.783	49.78	9.743	32.73
3 12.9	54.945	75.43	50.638	72.37	60.627	52.94	9.717	33.42
3 22.9	54.737	78.11	50.563	73.20	60.419	55.75	9.657	33.90
4 1.9	54.485	80.40	50.461	73.78	60.162	58.18	9.567	34.17
4 11.8	54.203	82.21	50.340	74.12	59.872	60.14	9.458	34.25
4 21.8	53.903	83.56	50.210	74.23	59.560	61.65	9.339	34.17
5 1.8	53.590	84.42	50.076	74.12	59.232	62.66	9.213	33.93
5 11.8	53.280	84.75	49.948	73.81	58.904	63.15	9.091	33.56
5 21.7	52.979	84.61	49.830	73.32	58.583	63.15	8.978	33.09
5 31.7	52.692	83.95	49.724	72.65	58.273	62.63	8.876	32.51
6 10.7	52.434	82.82	49.639	71.83	57.990	61.62	8.793	31.85
6 20.6	52.205	81.26	49.574	70.88	57.736	60.17	8.728	31.13
6 30.6	52.012	79.28	49.531	69.81	57.517	58.28	8.684	30.36
7 10.6	51.864	76.98	49.514	68.69	57.344	56.05	8.664	29.57
7 20.6	51.761	74.41	49.520	67.52	57.217	53.53	8.667	28.80
7 30.5	51.711	71.63	49.554	66.36	57.144	50.77	8.695	28.06
8 9.5	51.718	68.77	49.615	65.27	57.131	47.91	8.750	27.41
8 19.5	51.780	65.91	49.703	64.27	57.177	45.02	8.830	26.87
8 29.5	51.905	63.13	49.822	63.43	57.288	42.19	8.940	26.47
9 8.4	52.090	60.58	49.971	62.81	57.465	39.57	9.079	26.28
9 18.4	52.333	58.32	50.149	62.44	57.703	37.22	9.248	26.32
9 28.4	52.636	56.47	50.359	62.39	58.007	35.25	9.449	26.64
10 8.3	52.990	55.14	50.598	62.69	58.366	33.79	9.680	27.25
10 18.3	53.389	54.34	50.865	63.33	58.775	32.85	9.939	28.16
10 28.3	53.827	54.17	51.158	64.34	59.227	32.54	10.226	29.38
11 7.3	54.287	54.65	51.470	65.71	59.705	32.87	10.533	30.87
11 17.2	54.760	55.74	51.796	67.38	60.199	33.83	10.858	32.61
11 27.2	55.232	57.48	52.129	69.35	60.694	35.45	11.192	34.55
12 7.2	55.684	59.78	52.458	71.52	61.170	37.64	11.524	36.63
12 17.2	56.105	62.57	52.775	73.83	61.617	40.34	11.848	38.78
12 27.1	56.480	65.79	53.070	76.23	62.017	43.49	12.153	40.95
12 37.1	56.794	69.31	53.331	78.60	62.355	46.97	12.426	43.04
Pos. Med.	54.278	73.45	50.429	73.34	59.884	51.39	9.456	35.30
Secδ tanδ	1.749	-1.435	1.012	-.154	1.843	-1.549	1.000	-.022
Dob.Tran.	Feb 10		Feb 11		Feb 12		Feb 15	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	365		371		375		380	
EST.	ο Leonis		μ Leonis		φ Velorum		α Leonis (Regulus)	
MAG.	3.52		3.88		3.54		1.35	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	9 42	+ 9 46	9 54	+25 52	9 57	-54 40	10 9	+11 50
mes d	s	"	s	"	s	"	s	"
1 -7.9	29.767	40.91	11.792	74.08	45.126	55.92	42.746	39.13
1 2.1	30.064	39.24	12.122	73.05	45.510	59.09	43.061	37.43
1 12.1	30.325	37.76	12.415	72.34	45.835	62.57	43.343	35.95
1 22.1	30.544	36.51	12.666	71.94	46.095	66.24	43.587	34.71
2 1.0	30.716	35.50	12.867	71.86	46.284	70.02	43.786	33.74
2 11.0	30.836	34.75	13.012	72.08	46.396	73.80	43.934	33.05
2 21.0	30.907	34.25	13.103	72.56	46.437	77.47	44.033	32.63
3 3.0	30.929	33.97	13.140	73.25	46.408	80.99	44.083	32.45
3 12.9	30.906	33.91	13.126	74.09	46.313	84.24	44.086	32.50
3 22.9	30.848	34.00	13.072	75.02	46.165	87.19	44.052	32.72
4 1.9	30.759	34.24	12.983	75.99	45.968	89.78	43.985	33.09
4 11.8	30.650	34.58	12.868	76.94	45.734	91.94	43.893	33.55
4 21.8	30.530	34.99	12.737	77.81	45.476	93.67	43.786	34.07
5 1.8	30.404	35.45	12.598	78.58	45.196	94.94	43.668	34.63
5 11.8	30.281	35.92	12.459	79.21	44.910	95.69	43.550	35.18
5 21.7	30.167	36.40	12.329	79.68	44.624	95.98	43.437	35.71
5 31.7	30.065	36.87	12.210	79.98	44.343	95.75	43.331	36.21
6 10.7	29.983	37.32	12.110	80.09	44.080	95.03	43.239	36.65
6 20.7	29.919	37.73	12.031	80.04	43.838	93.88	43.164	37.03
6 30.6	29.878	38.11	11.974	79.80	43.622	92.27	43.106	37.34
7 10.6	29.861	38.41	11.945	79.38	43.444	90.29	43.070	37.55
7 20.6	29.868	38.65	11.941	78.80	43.303	88.00	43.055	37.67
7 30.5	29.901	38.79	11.964	78.05	43.209	85.44	43.064	37.68
8 9.5	29.961	38.79	12.017	77.15	43.167	82.73	43.099	37.54
8 19.5	30.038	38.65	12.096	76.08	43.177	79.95	43.165	37.25
8 29.5	30.156	38.46	12.208	74.82	43.247	77.18	43.239	36.87
9 8.4	30.301	38.01	12.352	73.41	43.379	74.57	43.359	36.22
9 18.4	30.473	37.36	12.527	71.86	43.571	72.18	43.507	35.40
9 28.4	30.678	36.49	12.738	70.17	43.827	70.12	43.689	34.35
10 8.4	30.912	35.39	12.980	68.37	44.141	68.52	43.902	33.10
10 18.3	31.174	34.09	13.255	66.48	44.506	67.41	44.147	31.64
10 28.3	31.465	32.57	13.561	64.52	44.920	66.89	44.424	29.99
11 7.3	31.777	30.89	13.892	62.56	45.367	67.00	44.727	28.19
11 17.2	32.106	29.08	14.243	60.63	45.838	67.71	45.052	26.27
11 27.2	32.447	27.18	14.609	58.78	46.320	69.08	45.392	24.27
12 7.2	32.786	25.27	14.977	57.10	46.792	71.03	45.737	22.29
12 17.2	33.118	23.39	15.340	55.62	47.244	73.50	46.079	20.36
12 27.1	33.431	21.61	15.685	54.39	47.660	76.45	46.407	18.54
12 37.1	33.713	20.00	16.000	53.47	48.024	79.76	46.709	16.92
Pos. Med.	30.559	30.38	12.522	68.34	45.660	83.65	43.644	29.71
Secδ tanδ	1.015	.172	1.112	.485	1.730	-1.412	1.022	.210
Dob.Tran.	Feb 15		Feb 18		Feb 19		Feb 22	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	381		385		1264		384	
EST.	λ Hydrae		ω Carinae		187 G. Carinae		ζ Leonis	
MAG.	3.61		3.32		3.40		3.44	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	10 11	-12 28	10 14	-70 9	10 17	-61 27	10 18	+23 17
mes d	s	"	s	"	s	"	s	"
1 -7.8	48.932	34.44	20.202	23.28	55.605	7.64	5.369	27.12
1 2.1	49.237	36.94	20.796	26.21	56.072	10.63	5.707	25.82
1 12.1	49.508	39.45	21.297	29.56	56.472	14.00	6.013	24.83
1 22.1	49.740	41.88	21.697	33.19	56.799	17.62	6.280	24.16
2 1.1	49.928	44.19	21.987	37.05	57.046	21.43	6.500	23.82
2 11.0	50.066	46.31	22.155	41.01	57.204	25.31	6.668	23.81
2 21.0	50.155	48.22	22.211	44.96	57.279	29.15	6.783	24.08
3 3.0	50.198	49.89	22.154	48.85	57.271	32.90	6.846	24.60
3 13.0	50.195	51.28	21.989	52.53	57.184	36.43	6.858	25.32
3 22.9	50.157	52.41	21.735	55.97	57.032	39.70	6.830	26.16
4 1.9	50.087	53.29	21.395	59.11	56.818	42.66	6.764	27.09
4 11.9	49.994	53.89	20.984	61.84	56.555	45.20	6.670	28.03
4 21.8	49.885	54.26	20.522	64.16	56.255	47.33	6.558	28.94
5 1.8	49.766	54.38	20.012	66.01	55.923	49.01	6.433	29.79
5 11.8	49.645	54.27	19.477	67.33	55.575	50.17	6.305	30.52
5 21.8	49.527	53.96	18.929	68.16	55.219	50.84	6.181	31.11
5 31.7	49.415	53.44	18.375	68.43	54.860	50.98	6.063	31.57
6 10.7	49.315	52.74	17.838	68.15	54.515	50.60	5.960	31.84
6 20.7	49.230	51.89	17.326	67.37	54.187	49.75	5.873	31.95
6 30.6	49.160	50.89	16.851	66.06	53.885	48.40	5.804	31.89
7 10.6	49.111	49.79	16.433	64.30	53.622	46.62	5.758	31.64
7 20.6	49.081	48.63	16.076	62.14	53.400	44.48	5.734	31.22
7 30.6	49.074	47.42	15.797	59.62	53.230	42.00	5.735	30.63
8 9.5	49.094	46.26	15.609	56.85	53.123	39.30	5.763	29.86
8 19.5	49.139	45.16	15.514	53.92	53.078	36.47	5.816	28.93
8 29.5	49.213	44.18	15.528	50.90	53.107	33.58	5.898	27.79
9 8.5	49.320	43.40	15.652	47.95	53.212	30.78	6.014	26.46
9 18.4	49.458	42.84	15.884	45.15	53.392	28.15	6.160	24.98
9 28.4	49.632	42.58	16.231	42.62	53.653	25.79	6.343	23.32
10 8.4	49.840	42.66	16.680	40.49	53.988	23.85	6.560	21.52
10 18.3	50.082	43.09	17.222	38.82	54.390	22.36	6.811	19.60
10 28.3	50.356	43.91	17.848	37.71	54.856	21.44	7.096	17.57
11 7.3	50.656	45.11	18.533	37.23	55.366	21.15	7.410	15.50
11 17.3	50.978	46.65	19.259	37.39	55.911	21.47	7.748	13.43
11 27.2	51.315	48.53	20.004	38.22	56.473	22.46	8.105	11.41
12 7.2	51.655	50.67	20.735	39.71	57.031	24.08	8.469	9.52
12 17.2	51.990	53.01	21.437	41.79	57.570	26.26	8.832	7.80
12 27.2	52.309	55.48	22.081	44.45	58.071	28.99	9.182	6.31
12 37.1	52.601	58.00	22.644	47.55	58.514	32.13	9.507	5.12
Pos. Med.	49.919	51.54	20.437	53.80	56.287	37.07	6.228	21.37
Secδ tanδ	1.024	-.221	2.947	-2.772	2.093	-1.839	1.089	.430
Dob.Tran.	Feb 22		Feb 23		Feb 24		Feb 24	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	389		397		396		401	
EST.	μ Hydrae		203 G. Carinae		ρ Leonis		γ Chamaeleontis	
MAG.	3.81		3.32		3.85		4.11	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	10 27	-16 57	10 32	-61 48	10 34	+ 9 10	10 35	-78 43
mes d	s	"	s	"	s	"	s	"
1 -7.8	18.426	43.74	55.204	31.58	8.080	38.25	44.644	52.63
1 2.2	18.741	46.33	55.697	34.42	8.404	36.36	45.658	55.20
1 12.1	19.025	48.97	56.126	37.67	8.700	34.67	46.527	58.26
1 22.1	19.272	51.58	56.486	41.20	8.961	33.21	47.237	61.67
2 1.1	19.474	54.12	56.768	44.96	9.180	32.00	47.774	65.40
2 11.0	19.627	56.49	56.961	48.81	9.350	31.09	48.112	69.30
2 21.0	19.732	58.66	57.072	52.66	9.473	30.45	48.267	73.28
3 3.0	19.789	60.61	57.099	56.45	9.548	30.08	48.234	77.28
3 13.0	19.801	62.29	57.046	60.05	9.576	29.95	48.016	81.15
3 22.9	19.776	63.71	56.925	63.41	9.566	30.02	47.639	84.84
4 1.9	19.717	64.85	56.739	66.49	9.521	30.27	47.107	88.30
4 11.9	19.632	65.71	56.501	69.18	9.450	30.65	46.440	91.41
4 21.9	19.531	66.30	56.222	71.48	9.360	31.12	45.666	94.14
5 1.8	19.416	66.63	55.907	73.33	9.257	31.65	44.791	96.45
5 11.8	19.296	66.68	55.570	74.68	9.148	32.21	43.850	98.24
5 21.8	19.177	66.51	55.221	75.56	9.041	32.77	42.863	99.55
5 31.7	19.061	66.08	54.864	75.90	8.936	33.32	41.843	100.30
6 10.7	18.954	65.44	54.515	75.73	8.842	33.83	40.831	100.49
6 20.7	18.859	64.60	54.179	75.06	8.759	34.29	39.842	100.16
6 30.7	18.777	63.58	53.863	73.90	8.690	34.70	38.898	99.26
7 10.6	18.714	62.42	53.582	72.28	8.640	35.03	38.039	97.86
7 20.6	18.668	61.16	53.340	70.29	8.607	35.26	37.276	96.01
7 30.6	18.645	59.83	53.145	67.93	8.594	35.40	36.639	93.72
8 9.6	18.647	58.50	53.011	65.33	8.606	35.39	36.157	91.12
8 19.5	18.674	57.20	52.938	62.56	8.641	35.24	35.834	88.28
8 29.5	18.732	56.01	52.938	59.69	8.786	35.01	35.701	85.26
9 8.5	18.822	54.99	53.015	56.88	8.788	34.45	35.765	82.23
9 18.4	18.945	54.18	53.168	54.20	8.911	33.74	36.021	79.27
9 28.4	19.106	53.67	53.405	51.76	9.068	32.79	36.484	76.49
10 8.4	19.304	53.50	53.719	49.70	9.259	31.62	37.135	74.05
10 18.4	19.537	53.69	54.105	48.07	9.484	30.22	37.955	72.00
10 28.3	19.806	54.29	54.559	46.98	9.743	28.60	38.933	70.46
11 7.3	20.104	55.30	55.065	46.51	10.032	26.80	40.023	69.52
11 17.3	20.427	56.70	55.610	46.63	10.347	24.85	41.196	69.19
11 27.3	20.767	58.47	56.179	47.43	10.681	22.79	42.416	69.54
12 7.2	21.112	60.55	56.749	48.86	11.025	20.70	43.627	70.56
12 17.2	21.455	62.89	57.306	50.86	11.370	18.63	44.799	72.19
12 27.2	21.785	65.42	57.830	53.42	11.705	16.64	45.891	74.45
12 37.1	22.089	68.04	58.301	56.43	12.018	14.82	46.857	77.22
Pos. Med.	19.522	62.20	56.160	61.35	9.121	28.51	44.891	84.42
Secδ tanδ	1.046	-.305	2.117	-1.866	1.013	.162	5.121	-5.023
Dob.Tran.	Feb 26		Feb 28		Feb 28		Feb 28	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	406		410		1283		1289	
EST.	ϑ Carinae		ν Hydrae		α Crateris		260 G. Carinae	
MAG.	2.76		3.11		4.08		3.91	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	10 43	-64 31	10 50	-16 19	11 0	-18 25	11 9	-59 6
mes d	s	"	s	"	s	"	s	"
1 -7.8	51.179	12.30	51.835	21.86	59.827	47.75	39.631	19.34
1 2.2	51.722	15.00	52.163	24.38	60.161	50.27	40.137	21.83
1 12.1	52.202	18.15	52.464	26.96	60.468	52.88	40.596	24.76
1 22.1	52.607	21.61	52.730	29.51	60.742	55.49	40.999	28.03
2 1.1	52.931	25.33	52.955	32.00	60.976	58.06	41.338	31.56
2 11.1	53.160	29.18	53.132	34.34	61.163	60.50	41.600	35.25
2 21.0	53.301	33.06	53.263	36.49	61.304	62.76	41.789	39.00
3 3.0	53.351	36.91	53.347	38.42	61.397	64.83	41.902	42.74
3 13.0	53.314	40.61	53.385	40.10	61.445	66.63	41.940	46.35
3 22.9	53.201	44.10	53.386	41.52	61.454	68.20	41.913	49.79
4 1.9	53.017	47.32	53.351	42.68	61.427	69.50	41.823	53.00
4 11.9	52.771	50.18	53.288	43.56	61.371	70.51	41.678	55.87
4 21.9	52.479	52.66	53.206	44.19	61.295	71.27	41.490	58.40
5 1.8	52.142	54.71	53.107	44.57	61.200	71.76	41.261	60.54
5 11.8	51.778	56.26	53.000	44.69	61.095	71.99	41.003	62.21
5 21.8	51.395	57.33	52.890	44.59	60.986	71.98	40.724	63.45
5 31.8	50.999	57.88	52.779	44.25	60.873	71.72	40.429	64.18
6 10.7	50.607	57.89	52.673	43.70	60.764	71.24	40.129	64.41
6 20.7	50.225	57.41	52.575	42.98	60.661	70.56	39.831	64.16
6 30.7	49.860	56.41	52.487	42.07	60.566	69.68	39.539	63.41
7 10.6	49.531	54.93	52.413	41.03	60.484	68.64	39.269	62.19
7 20.6	49.240	53.06	52.354	39.88	60.416	67.48	39.023	60.57
7 30.6	48.999	50.78	52.314	38.65	60.365	66.22	38.811	58.56
8 9.6	48.823	48.24	52.297	37.42	60.336	64.94	38.646	56.25
8 19.5	48.712	45.49	52.304	36.21	60.331	63.66	38.530	53.71
8 29.5	48.681	42.60	52.339	35.09	60.354	62.45	38.476	51.02
9 8.5	48.736	39.74	52.407	34.13	60.410	61.38	38.490	48.31
9 18.5	48.874	36.98	52.507	33.35	60.499	60.49	38.573	45.65
9 28.4	49.106	34.42	52.646	32.83	60.627	59.86	38.735	43.16
10 8.4	49.425	32.22	52.823	32.65	60.795	59.54	38.973	40.97
10 18.4	49.825	30.42	53.038	32.80	61.002	59.56	39.284	39.15
10 28.3	50.303	29.14	53.292	33.35	61.250	59.98	39.668	37.80
11 7.3	50.840	28.46	53.578	34.29	61.532	60.80	40.110	37.00
11 17.3	51.423	28.38	53.892	35.60	61.843	62.01	40.602	36.78
11 27.3	52.037	28.97	54.228	37.29	62.179	63.62	41.130	37.19
12 7.2	52.656	30.20	54.575	39.29	62.527	65.55	41.673	38.23
12 17.2	53.264	32.03	54.923	41.53	62.878	67.76	42.217	39.85
12 27.2	53.841	34.44	55.263	43.98	63.223	70.19	42.745	42.04
12 37.2	54.363	37.32	55.581	46.53	63.547	72.75	43.236	44.71
Pos. Med.	52.308	42.62	53.101	39.74	61.154	66.21	41.265	48.78
Secδ tanδ	2.325	-2.099	1.042	-.293	1.054	-.333	1.948	-1.672
Dob.Tran.	Mar 2		Mar 4		Mar 7		Mar 9	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	422		426		427		431	
EST.	δ Leonis		δ Crateris		σ Leonis		γ Crateris*	
MAG.	2.56		3.56		4.05		4.08	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	11 15	+20 22	11 20	-14 54	11 22	+ 5 53	11 26	-17 49
mes d	s	"	s	"	s	"	s	"
1 -7.8	26.507	65.68	35.626	44.00	25.727	30.81	8.010	9.85
1 2.2	26.861	63.93	35.966	46.42	26.065	28.70	8.354	12.29
1 12.2	27.193	62.49	36.283	48.90	26.384	26.74	8.677	14.82
1 22.1	27.495	61.37	36.570	51.37	26.674	25.00	8.970	17.36
2 1.1	27.760	60.61	36.821	53.77	26.929	23.50	9.226	19.87
2 11.1	27.978	60.21	37.027	56.03	27.141	22.29	9.438	22.26
2 21.0	28.149	60.15	37.189	58.11	27.309	21.36	9.606	24.49
3 3.0	28.271	60.41	37.305	59.98	27.432	20.72	9.728	26.53
3 13.0	28.344	60.95	37.376	61.60	27.508	20.36	9.805	28.33
3 23.0	28.374	61.68	37.408	62.98	27.546	20.23	9.843	29.89
4 1.9	28.364	62.58	37.405	64.11	27.547	20.32	9.844	31.20
4 11.9	28.321	63.57	37.370	64.97	27.517	20.58	9.814	32.24
4 21.9	28.253	64.59	37.314	65.61	27.464	20.97	9.761	33.04
5 1.9	28.165	65.61	37.238	66.00	27.391	21.47	9.687	33.58
5 11.8	28.064	66.55	37.149	66.16	27.307	22.02	9.599	33.87
5 21.8	27.957	67.40	37.052	66.13	27.215	22.60	9.503	33.95
5 31.8	27.847	68.12	36.950	65.88	27.119	23.21	9.400	33.78
6 10.7	27.741	68.68	36.849	65.44	27.025	23.79	9.296	33.41
6 20.7	27.641	69.07	36.750	64.84	26.934	24.35	9.194	32.85
6 30.7	27.548	69.29	36.656	64.07	26.849	24.86	9.095	32.09
7 10.7	27.470	69.30	36.571	63.19	26.775	25.30	9.005	31.19
7 20.6	27.405	69.13	36.498	62.20	26.711	25.67	8.926	30.17
7 30.6	27.357	68.76	36.439	61.14	26.662	25.94	8.860	29.04
8 9.6	27.331	68.17	36.399	60.06	26.632	26.07	8.813	27.87
8 19.6	27.326	67.40	36.380	59.00	26.620	26.08	8.787	26.70
8 29.5	27.348	66.40	36.388	58.01	26.635	25.92	8.788	25.58
9 8.5	27.398	65.19	36.426	57.16	26.683	25.58	8.819	24.59
9 18.5	27.479	63.77	36.495	56.48	26.742	25.05	8.883	23.75
9 28.4	27.598	62.11	36.604	56.03	26.851	24.22	8.987	23.13
10 8.4	27.755	60.28	36.753	55.87	26.995	23.17	9.131	22.80
10 18.4	27.950	58.27	36.941	56.02	27.177	21.89	9.316	22.79
10 28.4	28.186	56.11	37.171	56.55	27.399	20.34	9.545	23.16
11 7.3	28.458	53.85	37.438	57.44	27.657	18.59	9.811	23.92
11 17.3	28.762	51.53	37.737	58.69	27.947	16.64	10.111	25.04
11 27.3	29.096	49.21	38.064	60.30	28.265	14.53	10.439	26.55
12 7.3	29.446	46.97	38.406	62.20	28.600	12.34	10.784	28.38
12 17.2	29.807	44.85	38.757	64.35	28.945	10.13	11.138	30.49
12 27.2	30.166	42.94	39.104	66.70	29.289	7.95	11.490	32.84
12 37.2	30.510	41.30	39.435	69.14	29.619	5.90	11.827	35.31
Pos. Med.	27.661	60.83	37.086	60.84	27.045	21.25	9.531	27.66
Secδ tanδ	1.067	.372	1.035	-.266	1.005	.103	1.050	-.322
Dob.Tran.	Mar 10		Mar 12		Mar 12		Mar 13	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	434		436		437		442	
EST.	ξ Hydrae		λ Centauri		υ Leonis		λ Muscae	
MAG.	3.54		3.13		4.30		3.64	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	11 34	-31 59	11 36	-63 9	11 38	- 0 57	11 46	-66 51
mes d	s	"	s	"	s	"	s	"
1 -7.8	13.998	33.95	55.994	10.03	13.837	41.72	47.037	42.58
1 2.2	14.370	36.39	56.580	12.15	14.177	43.96	47.702	44.51
1 12.2	14.718	39.07	57.124	14.78	14.499	46.12	48.323	46.98
1 22.1	15.035	41.91	57.613	17.79	14.796	48.14	48.886	49.87
2 1.1	15.313	44.84	58.038	21.14	15.060	49.97	49.379	53.13
2 11.1	15.543	47.77	58.383	24.73	15.282	51.56	49.785	56.67
2 21.1	15.727	50.63	58.649	28.43	15.463	52.90	50.104	60.37
3 3.0	15.861	53.39	58.835	32.21	15.599	53.97	50.333	64.17
3 13.0	15.947	55.95	58.936	35.94	15.691	54.76	50.466	67.96
3 23.0	15.990	58.30	58.963	39.54	15.744	55.31	50.516	71.67
4 2.0	15.993	60.41	58.918	42.98	15.761	55.62	50.482	75.24
4 11.9	15.961	62.22	58.806	46.13	15.746	55.72	50.370	78.55
4 21.9	15.901	63.75	58.640	48.99	15.708	55.66	50.192	81.58
5 1.9	15.817	64.98	58.420	51.49	15.649	55.45	49.950	84.28
5 11.8	15.716	65.87	58.158	53.56	15.576	55.11	49.655	86.55
5 21.8	15.602	66.45	57.864	55.20	15.493	54.69	49.320	88.41
5 31.8	15.477	66.69	57.541	56.36	15.403	54.19	48.945	89.78
6 10.8	15.348	66.60	57.202	57.00	15.312	53.64	48.547	90.64
6 20.7	15.218	66.21	56.854	57.17	15.222	53.06	48.136	91.00
6 30.7	15.090	65.49	56.504	56.80	15.134	52.46	47.717	90.83
7 10.7	14.969	64.50	56.168	55.95	15.054	51.87	47.310	90.14
7 20.7	14.858	63.28	55.852	54.64	14.982	51.30	46.922	88.98
7 30.6	14.762	61.82	55.566	52.89	14.921	50.77	46.566	87.34
8 9.6	14.687	60.22	55.326	50.78	14.878	50.33	46.261	85.31
8 19.6	14.635	58.51	55.138	48.38	14.852	49.99	46.013	82.96
8 29.5	14.614	56.76	55.014	45.75	14.849	49.78	45.839	80.33
9 8.5	14.629	55.07	54.967	43.02	14.876	49.76	45.752	77.57
9 18.5	14.682	53.49	54.998	40.27	14.923	50.01	45.754	74.75
9 28.5	14.780	52.09	55.119	37.60	15.016	50.26	45.860	71.97
10 8.4	14.926	50.99	55.330	35.17	15.147	50.91	46.071	69.39
10 18.4	15.117	50.20	55.627	33.03	15.314	51.82	46.382	67.08
10 28.4	15.358	49.83	56.012	31.31	15.524	53.03	46.796	65.16
11 7.4	15.642	49.90	56.472	30.11	15.771	54.50	47.297	63.73
11 17.3	15.964	50.43	56.995	29.44	16.052	56.22	47.872	62.84
11 27.3	16.318	51.45	57.569	29.40	16.363	58.17	48.510	62.55
12 7.3	16.691	52.92	58.170	29.99	16.694	60.27	49.182	62.91
12 17.2	17.073	54.79	58.783	31.17	17.037	62.48	49.870	63.87
12 27.2	17.454	57.05	59.389	32.97	17.382	64.73	50.555	65.46
12 37.2	17.817	59.58	59.962	35.29	17.715	66.94	51.206	67.60
Pos. Med.	15.695	56.21	58.200	39.80	15.308	53.20	49.583	72.67
Secδ tanδ	1.179	-.625	2.215	-1.976	1.000	-.017	2.546	-2.341
Dob.Tran.	Mar 15		Mar 16		Mar 16		Mar 18	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	444		445		450		452	
EST.	β Leonis (Dene-bola)		β Virginis		o Virginis		δ Centauri	
MAG.	2.14		3.61		4.12		2.60	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	11 50	+14 25	11 51	+ 1 36	12 6	+ 8 35	12 9	-50 51
mes d	s	"	s	"	s	"	s	"
1 -7.8	20.149	51.49	59.890	85.44	28.909	35.86	39.092	25.35
1 2.2	20.499	49.45	60.234	83.21	29.256	33.69	39.565	27.28
1 12.2	20.835	47.65	60.563	81.09	29.592	31.70	40.017	29.67
1 22.2	21.146	46.14	60.869	79.14	29.906	29.94	40.436	32.39
2 1.1	21.427	44.95	61.144	77.39	30.192	28.45	40.814	35.41
2 11.1	21.666	44.11	61.379	75.91	30.440	27.29	41.138	38.63
2 21.1	21.863	43.62	61.573	74.70	30.648	26.44	41.408	41.94
3 3.0	22.016	43.45	61.724	73.77	30.814	25.91	41.620	45.31
3 13.0	22.121	43.60	61.831	73.13	30.935	25.69	41.771	48.62
3 23.0	22.186	43.99	61.898	72.74	31.017	25.72	41.869	51.82
4 2.0	22.211	44.60	61.930	72.58	31.061	26.00	41.913	54.88
4 11.9	22.202	45.36	61.928	72.63	31.071	26.46	41.907	57.69
4 21.9	22.167	46.21	61.902	72.83	31.054	27.05	41.861	60.24
5 1.9	22.109	47.13	61.854	73.17	31.013	27.75	41.774	62.48
5 11.9	22.033	48.03	61.789	73.61	30.954	28.50	41.653	64.36
5 21.8	21.947	48.90	61.714	74.11	30.882	29.25	41.507	65.88
5 31.8	21.852	49.70	61.630	74.67	30.798	30.00	41.334	66.98
6 10.8	21.754	50.39	61.542	75.24	30.709	30.69	41.144	67.66
6 20.7	21.656	50.97	61.454	75.82	30.617	31.31	40.942	67.92
6 30.7	21.560	51.41	61.365	76.39	30.523	31.86	40.730	67.73
7 10.7	21.470	51.69	61.283	76.91	30.433	32.29	40.519	67.11
7 20.7	21.389	51.81	61.207	77.39	30.349	32.61	40.313	66.10
7 30.6	21.319	51.76	61.141	77.80	30.272	32.80	40.119	64.70
8 9.6	21.265	51.50	61.090	78.11	30.208	32.83	39.949	62.98
8 19.6	21.229	51.07	61.056	78.31	30.160	32.70	39.806	61.00
8 29.6	21.215	50.43	61.043	78.35	30.132	32.39	39.702	58.80
9 8.5	21.229	49.57	61.059	78.21	30.131	31.87	39.646	56.50
9 18.5	21.270	48.50	61.117	77.90	30.158	31.18	39.642	54.16
9 28.5	21.348	47.16	61.176	77.37	30.217	30.20	39.700	51.89
10 8.4	21.465	45.60	61.295	76.54	30.317	28.97	39.823	49.81
10 18.4	21.622	43.83	61.452	75.47	30.456	27.52	40.012	47.98
10 28.4	21.821	41.85	61.651	74.13	30.640	25.83	40.269	46.50
11 7.4	22.060	39.72	61.890	72.53	30.864	23.93	40.589	45.49
11 17.3	22.335	37.45	62.164	70.72	31.126	21.86	40.963	44.94
11 27.3	22.644	35.11	62.470	68.69	31.423	19.64	41.386	44.95
12 7.3	22.975	32.77	62.798	66.54	31.745	17.36	41.841	45.52
12 17.3	23.322	30.48	63.141	64.31	32.085	15.06	42.315	46.62
12 27.2	23.674	28.32	63.488	62.05	32.432	12.82	42.796	48.26
12 37.2	24.018	26.37	63.826	59.87	32.774	10.73	43.263	50.37
Pos. Med.	21.521	45.89	61.441	75.24	30.443	28.86	41.486	51.63
Secδ tanδ	1.033	.257	1.000	.028	1.011	.151	1.584	-1.229
Dob.Tran.	Mar 19		Mar 20		Mar 23		Mar 24	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	453		455		457		462	
EST.	ε Corvi		δ Crucis		γ Corvi		α Crucis A*	
MAG.	3.00		2.80		2.59		1.33	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	12 11	-22 45	12 16	-58 52	12 17	-17 40	12 27	-63 13
mes d	s	"	s	"	s	"	s	"
1 -7.7	24.527	23.30	28.084	58.45	5.381	44.09	58.962	56.38
1 2.2	24.891	25.53	28.639	60.16	5.737	46.32	59.586	57.85
1 12.2	25.240	27.94	29.170	62.39	6.082	48.66	60.188	59.87
1 22.2	25.567	30.43	29.663	65.01	6.405	51.05	60.753	62.33
2 1.1	25.864	32.97	30.111	68.00	6.700	53.43	61.269	65.20
2 11.1	26.121	35.45	30.496	71.26	6.958	55.72	61.719	68.38
2 21.1	26.337	37.84	30.819	74.68	7.176	57.88	62.101	71.77
3 3.1	26.511	40.09	31.074	78.21	7.353	59.87	62.409	75.32
3 13.0	26.639	42.15	31.258	81.75	7.486	61.64	62.638	78.92
3 23.0	26.728	44.00	31.377	85.22	7.581	63.19	62.794	82.49
4 2.0	26.780	45.62	31.432	88.58	7.638	64.52	62.877	85.99
4 12.0	26.796	47.00	31.425	91.73	7.662	65.61	62.888	89.31
4 21.9	26.785	48.14	31.367	94.63	7.658	66.47	62.838	92.41
5 1.9	26.748	49.03	31.257	97.24	7.629	67.11	62.726	95.24
5 11.9	26.690	49.67	31.103	99.48	7.580	67.52	62.559	97.72
5 21.8	26.617	50.07	30.913	101.34	7.515	67.73	62.348	99.83
5 31.8	26.529	50.23	30.687	102.78	7.436	67.74	62.091	101.53
6 10.8	26.433	50.14	30.438	103.75	7.347	67.55	61.802	102.75
6 20.8	26.329	49.85	30.170	104.28	7.252	67.20	61.487	103.51
6 30.7	26.221	49.32	29.887	104.31	7.150	66.66	61.151	103.77
7 10.7	26.114	48.60	29.604	103.87	7.050	65.99	60.810	103.53
7 20.7	26.010	47.72	29.325	102.98	6.951	65.19	60.470	102.82
7 30.7	25.912	46.67	29.059	101.64	6.858	64.27	60.143	101.62
8 9.6	25.829	45.53	28.823	99.92	6.777	63.30	59.845	100.01
8 19.6	25.761	44.32	28.620	97.88	6.710	62.30	59.585	98.04
8 29.6	25.716	43.09	28.465	95.56	6.665	61.31	59.376	95.74
9 8.5	25.701	41.92	28.369	93.08	6.648	60.41	59.236	93.23
9 18.5	25.718	40.85	28.337	90.52	6.661	59.62	59.167	90.60
9 28.5	25.776	39.95	28.382	87.96	6.712	59.01	59.186	87.92
10 8.5	25.876	39.28	28.507	85.56	6.804	58.63	59.297	85.36
10 18.4	26.022	38.88	28.711	83.38	6.940	58.51	59.500	82.97
10 28.4	26.216	38.83	29.000	81.53	7.124	58.72	59.800	80.89
11 7.4	26.455	39.16	29.364	80.12	7.352	59.28	60.188	79.22
11 17.4	26.735	39.86	29.795	79.19	7.621	60.20	60.655	78.01
11 27.3	27.052	40.96	30.284	78.83	7.926	61.47	61.191	77.36
12 7.3	27.394	42.43	30.813	79.05	8.258	63.07	61.775	77.30
12 17.3	27.753	44.23	31.366	79.84	8.608	64.94	62.392	77.81
12 27.2	28.120	46.32	31.928	81.23	8.966	67.06	63.022	78.93
12 37.2	28.478	48.62	32.476	83.13	9.318	69.33	63.641	80.61
Pos. Med.	26.442	41.31	30.851	86.16	7.273	60.13	62.165	84.33
Secδ tanδ	1.084	-.420	1.935	-1.657	1.050	-.319	2.221	-1.983
Dob.Tran.	Mar 25		Mar 26		Mar 26		Mar 29	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	465		468		471		474	
EST.	δ Corvi		γ Crucis		β Corvi		α Muscae	
MAG.	2.95		1.63 Var		2.65		2.69	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	12 31	-16 39	12 32	-57 14	12 35	-23 31	12 38	-69 16
mes d	s	"	s	"	s	"	s	"
1 -7.7	9.271	10.49	32.793	53.57	41.797	57.56	39.974	4.06
1 2.2	9.627	12.67	33.335	55.12	42.166	59.65	40.741	5.25
1 12.2	9.974	14.96	33.860	57.18	42.525	61.92	41.487	7.02
1 22.2	10.303	17.28	34.354	59.65	42.865	64.31	42.191	9.28
2 1.2	10.606	19.60	34.807	62.48	43.180	66.76	42.840	11.99
2 11.1	10.874	21.82	35.206	65.59	43.459	69.19	43.413	15.07
2 21.1	11.104	23.90	35.546	68.88	43.699	71.53	43.903	18.41
3 3.1	11.294	25.82	35.825	72.30	43.899	73.77	44.306	21.98
3 13.0	11.442	27.52	36.036	75.74	44.056	75.82	44.611	25.64
3 23.0	11.551	29.01	36.186	79.13	44.173	77.69	44.826	29.32
4 2.0	11.624	30.28	36.275	82.44	44.253	79.36	44.948	32.98
4 12.0	11.663	31.30	36.305	85.55	44.297	80.79	44.978	36.50
4 21.9	11.673	32.12	36.284	88.45	44.312	81.99	44.928	39.83
5 1.9	11.658	32.72	36.212	91.08	44.299	82.97	44.795	42.92
5 11.9	11.620	33.10	36.095	93.36	44.262	83.70	44.588	45.68
5 21.9	11.566	33.30	35.942	95.30	44.207	84.21	44.318	48.08
5 31.8	11.495	33.31	35.751	96.83	44.133	84.49	43.985	50.07
6 10.8	11.413	33.14	35.533	97.92	44.047	84.53	43.604	51.58
6 20.8	11.322	32.82	35.294	98.58	43.950	84.36	43.186	52.63
6 30.7	11.224	32.33	35.035	98.77	43.843	83.97	42.734	53.16
7 10.7	11.123	31.72	34.771	98.49	43.733	83.38	42.272	53.16
7 20.7	11.022	30.99	34.506	97.78	43.622	82.62	41.807	52.66
7 30.7	10.924	30.16	34.249	96.62	43.513	81.69	41.355	51.64
8 9.6	10.836	29.28	34.015	95.07	43.414	80.64	40.938	50.15
8 19.6	10.761	28.36	33.808	93.19	43.329	79.51	40.566	48.26
8 29.6	10.705	27.46	33.643	91.02	43.263	78.34	40.259	45.99
9 8.6	10.676	26.64	33.531	88.67	43.225	77.19	40.037	43.46
9 18.5	10.675	25.93	33.479	86.21	43.218	76.12	39.906	40.74
9 28.5	10.712	25.39	33.497	83.73	43.250	75.18	39.886	37.94
10 8.5	10.790	25.07	33.593	81.37	43.326	74.46	39.983	35.19
10 18.4	10.911	24.98	33.765	79.20	43.447	73.96	40.197	32.57
10 28.4	11.081	25.22	34.020	77.32	43.619	73.79	40.534	30.22
11 7.4	11.297	25.80	34.350	75.87	43.839	73.97	40.984	28.25
11 17.4	11.554	26.71	34.748	74.85	44.102	74.51	41.534	26.72
11 27.3	11.850	27.96	35.208	74.38	44.407	75.45	42.176	25.73
12 7.3	12.175	29.53	35.710	74.47	44.742	76.75	42.881	25.33
12 17.3	12.520	31.37	36.241	75.12	45.098	78.37	43.630	25.52
12 27.3	12.876	33.44	36.787	76.34	45.466	80.31	44.402	26.34
12 37.2	13.229	35.65	37.324	78.09	45.831	82.46	45.165	27.75
Pos. Med.	11.248	25.63	35.746	80.32	43.914	74.79	43.938	32.36
Secδ tanδ	1.044	-.299	1.849	-1.555	1.091	-.436	2.826	-2.643
Dob.Tran.	Mar 30		Mar 30		Mar 31		Abr 1	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	481		484		485		488	
EST.	β Crucis		δ Virginis		αCanumVenat*ƒ		ε Virginis	
MAG.	1.25		3.38		2.90		2.83	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	12 49	-59 49	12 56	+ 3 15	12 57	+38 10	13 3	+10 49
mes d	s	"	s	"	s	"	s	"
1 -7.7	10.411	13.31	51.474	40.44	11.573	47.49	24.947	25.22
1 2.3	10.990	14.58	51.818	38.19	11.969	45.33	25.292	22.93
1 12.2	11.557	16.39	52.159	36.05	12.367	43.64	25.636	20.84
1 22.2	12.096	18.62	52.487	34.08	12.754	42.44	25.970	18.99
2 1.2	12.598	21.27	52.796	32.32	13.121	41.76	26.285	17.43
2 11.1	13.046	24.23	53.075	30.85	13.453	41.64	26.571	16.23
2 21.1	13.436	27.41	53.321	29.66	13.745	42.02	26.825	15.37
3 3.1	13.763	30.76	53.530	28.78	13.992	42.90	27.042	14.87
3 13.1	14.020	34.18	53.698	28.22	14.187	44.20	27.218	14.73
3 23.0	14.213	37.59	53.830	27.92	14.333	45.82	27.357	14.88
4 2.0	14.342	40.96	53.926	27.90	14.429	47.73	27.458	15.32
4 12.0	14.405	44.17	53.987	28.10	14.478	49.79	27.523	15.98
4 22.0	14.413	47.20	54.019	28.46	14.485	51.91	27.559	16.79
5 1.9	14.363	49.99	54.024	28.98	14.454	54.04	27.566	17.72
5 11.9	14.262	52.46	54.005	29.59	14.389	56.04	27.548	18.71
5 21.9	14.118	54.61	53.968	30.26	14.299	57.87	27.510	19.71
5 31.8	13.928	56.37	53.913	30.96	14.185	59.48	27.453	20.69
6 10.8	13.705	57.69	53.844	31.66	14.053	60.78	27.382	21.59
6 20.8	13.452	58.59	53.764	32.33	13.910	61.76	27.299	22.40
6 30.8	13.174	59.01	53.673	32.96	13.755	62.40	27.205	23.11
7 10.7	12.885	58.96	53.578	33.52	13.598	62.64	27.105	23.65
7 20.7	12.589	58.45	53.480	34.00	13.442	62.53	27.002	24.05
7 30.7	12.297	57.48	53.381	34.38	13.288	62.03	26.897	24.29
8 9.6	12.024	56.09	53.288	34.64	13.145	61.14	26.799	24.32
8 19.6	11.778	54.33	53.204	34.77	13.017	59.90	26.708	24.18
8 29.6	11.571	52.24	53.134	34.75	12.908	58.30	26.631	23.82
9 8.6	11.421	49.93	53.086	34.53	12.827	56.36	26.576	23.23
9 18.5	11.331	47.46	53.064	34.14	12.777	54.13	26.546	22.43
9 28.5	11.316	44.92	53.075	33.53	12.766	51.60	26.548	21.37
10 8.5	11.384	42.45	53.121	32.69	12.800	48.84	26.587	20.07
10 18.5	11.535	40.13	53.209	31.56	12.881	45.89	26.667	18.52
10 28.4	11.776	38.06	53.344	30.18	13.016	42.77	26.793	16.72
11 7.4	12.100	36.36	53.524	28.57	13.203	39.60	26.966	14.71
11 17.4	12.501	35.09	53.746	26.74	13.442	36.40	27.182	12.53
11 27.3	12.971	34.33	54.010	24.71	13.730	33.28	27.440	10.20
12 7.3	13.493	34.13	54.307	22.56	14.060	30.33	27.733	7.81
12 17.3	14.051	34.47	54.628	20.31	14.422	27.60	28.053	5.40
12 27.3	14.630	35.41	54.967	18.05	14.809	25.21	28.392	3.05
12 37.2	15.207	36.88	55.309	15.85	15.205	23.24	28.736	.85
Pos. Med.	13.763	39.49	53.351	33.62	13.007	52.10	26.773	21.39
Secδ tanδ	1.990	-1.720	1.002	.057	1.272	.786	1.018	.191
Dob.Tran.	Abr	3	Abr	5	Abr	5	Abr	7

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	487		495		496		498	
EST.	δ Muscae		γ Hydrae		ι Centauri		α Virginia (Spica)	
MAG.	3.62		3.00		2.75		0.98	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	°
	13 3	-71 40	13 20	-23 18	13 21	-36 50	13 26	-11 17
mes d	s	"	s	"	s	"	s	"
1 -7.7	58.935	41.18	16.364	4.67	59.605	27.09	30.137	26.72
1 2.3	59.796	41.95	16.731	6.47	60.011	28.56	30.484	28.73
1 12.2	60.648	43.32	17.098	8.48	60.416	30.38	30.833	30.82
1 22.2	61.467	45.21	17.454	10.61	60.810	32.46	31.173	32.89
2 1.2	62.239	47.59	17.793	12.82	61.185	34.76	31.499	34.92
2 11.2	62.936	50.38	18.104	15.03	61.529	37.20	31.799	36.82
2 21.1	63.551	53.49	18.382	17.18	61.837	39.71	32.069	38.56
3 3.1	64.077	56.87	18.626	19.25	62.107	42.25	32.306	40.11
3 13.1	64.499	60.42	18.830	21.17	62.333	44.75	32.506	41.43
3 23.0	64.823	64.04	18.997	22.93	62.519	47.16	32.671	42.53
4 2.0	65.045	67.70	19.129	24.51	62.664	49.47	32.802	43.40
4 12.0	65.162	71.28	19.224	25.89	62.769	51.60	32.898	44.05
4 22.0	65.185	74.73	19.289	27.08	62.838	53.56	32.966	44.51
5 1.9	65.111	77.99	19.324	28.07	62.873	55.31	33.005	44.79
5 11.9	64.946	80.97	19.331	28.85	62.875	56.82	33.017	44.90
5 21.9	64.702	83.63	19.315	29.44	62.848	58.10	33.008	44.89
5 31.9	64.377	85.92	19.274	29.83	62.793	59.11	32.977	44.73
6 10.8	63.987	87.76	19.214	30.02	62.713	59.84	32.926	44.48
6 20.8	63.542	89.16	19.137	30.03	62.612	60.29	32.860	44.14
6 30.8	63.048	90.05	19.042	29.83	62.490	60.43	32.777	43.71
7 10.7	62.528	90.40	18.936	29.46	62.354	60.28	32.683	43.21
7 20.7	61.993	90.26	18.821	28.93	62.208	59.85	32.580	42.67
7 30.7	61.459	89.57	18.701	28.22	62.054	59.12	32.471	42.08
8 9.7	60.953	88.39	18.582	27.40	61.904	58.14	32.363	41.49
8 19.6	60.487	86.76	18.470	26.48	61.762	56.95	32.260	40.90
8 29.6	60.083	84.70	18.372	25.48	61.636	55.56	32.168	40.34
9 8.6	59.768	82.32	18.296	24.48	61.537	54.07	32.095	39.86
9 18.6	59.549	79.69	18.247	23.50	61.470	52.51	32.047	39.49
9 28.5	59.450	76.90	18.234	22.62	61.446	50.95	32.031	39.27
10 8.5	59.482	74.09	18.263	21.90	61.471	49.49	32.055	39.25
10 18.5	59.645	71.35	18.337	21.36	61.549	48.18	32.106	39.52
10 28.4	59.950	68.79	18.463	21.07	61.685	47.11	32.226	39.83
11 7.4	60.388	66.56	18.641	21.08	61.880	46.35	32.388	40.55
11 17.4	60.946	64.70	18.868	21.42	62.130	45.94	32.596	41.55
11 27.4	61.617	63.34	19.141	22.11	62.433	45.93	32.848	42.83
12 7.3	62.371	62.55	19.452	23.15	62.778	46.34	33.137	44.36
12 17.3	63.188	62.32	19.793	24.50	63.155	47.17	33.456	46.11
12 27.3	64.045	62.72	20.154	26.14	63.555	48.40	33.796	48.04
12 37.3	64.907	63.71	20.521	28.01	63.961	50.00	34.143	50.07
Pos. Med.	63.919	68.19	18.811	19.34	62.365	45.74	32.409	37.05
Secδ tanδ	3.182	-3.021	1.089	-.431	1.250	-.749	1.020	-.200
Dob.Tran.	Abr 7		Abr 11		Abr 12		Abr 13	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	501		504		509		508	
EST.	ζ Virginis		ε Centauri		η Ursae Majoris		μ Centauri	
MAG.	3.37		2.30		1.86		3.04 Var.	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	13 35	- 0 43	13 41	-53 35	13 48	+49 10	13 51	-42 35
mes d	s	"	s	"	s	"	s	"
1 -7.7	57.518	25.61	27.513	20.74	31.002	63.50	6.611	41.02
1 2.3	57.855	27.79	28.021	21.51	31.421	60.98	7.038	42.03
1 12.3	58.196	29.91	28.535	22.77	31.859	58.97	7.473	43.43
1 22.2	58.532	31.92	29.039	24.44	32.301	57.51	7.903	45.15
2 1.2	58.855	33.77	29.526	26.50	32.736	56.65	8.318	47.16
2 11.2	59.154	35.38	29.979	28.88	33.146	56.43	8.708	49.40
2 21.1	59.425	36.73	30.392	31.49	33.523	56.80	9.065	51.78
3 3.1	59.665	37.80	30.761	34.30	33.857	57.76	9.386	54.26
3 13.1	59.869	38.56	31.077	37.21	34.139	59.25	9.664	56.78
3 23.1	60.038	39.06	31.343	40.16	34.367	61.15	9.902	59.29
4 2.0	60.174	39.29	31.558	43.12	34.539	63.42	10.099	61.75
4 12.0	60.276	39.28	31.718	46.00	34.652	65.92	10.252	64.10
4 22.0	60.348	39.09	31.830	48.76	34.713	68.53	10.368	66.32
5 2.0	60.392	38.73	31.892	51.38	34.721	71.21	10.443	68.38
5 11.9	60.409	38.25	31.905	53.76	34.680	73.79	10.480	70.24
5 21.9	60.404	37.69	31.876	55.91	34.598	76.20	10.483	71.88
5 31.9	60.376	37.06	31.801	57.77	34.477	78.39	10.450	73.27
6 10.8	60.329	36.42	31.687	59.28	34.323	80.24	10.385	74.39
6 20.8	60.266	35.77	31.538	60.45	34.143	81.73	10.292	75.22
6 30.8	60.186	35.14	31.354	61.23	33.938	82.83	10.169	75.73
7 10.8	60.094	34.55	31.145	61.60	33.719	83.46	10.024	75.92
7 20.7	59.993	34.01	30.917	61.57	33.490	83.67	9.862	75.80
7 30.7	59.884	33.54	30.676	61.12	33.254	83.40	9.685	75.34
8 9.7	59.776	33.16	30.436	60.27	33.022	82.66	9.506	74.57
8 19.7	59.670	32.88	30.204	59.06	32.799	81.49	9.330	73.52
8 29.6	59.574	32.72	29.991	57.50	32.590	79.87	9.166	72.21
9 8.6	59.496	32.72	29.814	55.67	32.409	77.84	9.028	70.71
9 18.6	59.440	32.88	29.678	53.65	32.258	75.45	8.920	69.07
9 28.5	59.414	33.24	29.598	51.48	32.149	72.69	8.855	67.35
10 8.5	59.426	33.81	29.585	49.29	32.089	69.64	8.843	65.65
10 18.5	59.475	34.59	29.642	47.15	32.082	66.36	8.886	64.02
10 28.5	59.571	35.70	29.777	45.17	32.137	62.87	8.994	62.57
11 7.4	59.716	37.03	29.991	43.45	32.257	59.30	9.166	61.37
11 17.4	59.907	38.59	30.277	42.04	32.440	55.69	9.400	60.47
11 27.4	60.143	40.37	30.636	41.05	32.689	52.13	9.695	59.94
12 7.4	60.417	42.32	31.053	40.53	32.995	48.76	10.041	59.84
12 17.3	60.722	44.41	31.515	40.47	33.351	45.63	10.427	60.14
12 27.3	61.050	46.57	32.013	40.93	33.750	42.86	10.844	60.88
12 37.3	61.388	48.71	32.524	41.88	34.174	40.55	11.275	62.03
Pos. Med.	59.677	31.80	31.192	41.93	32.575	72.34	9.839	58.96
Secδ tanδ	1.000	-.013	1.685	-1.356	1.530	1.158	1.359	-.920
Dob.Tran.	Abr 15		Abr 17		Abr 18		Abr 19	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	513		512		518		519	
EST.	η Bootis		ζ Centauri		β Centauri*		π Hydrae	
MAG.	2.68		2.55		0.61		3.27	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	13 55	+18 15	13 57	-47 24	14 5	-60 29	14 7	-26 48
mes d	s	"	s	"	s	"	s	"
1 -7.7	51.920	74.07	5.147	27.25	34.280	20.20	46.992	2.06
1 2.3	52.254	71.59	5.601	28.03	34.861	20.44	47.355	3.44
1 12.3	52.599	69.36	6.065	29.25	35.460	21.21	47.729	5.05
1 22.2	52.943	67.44	6.525	30.84	36.056	22.44	48.101	6.83
2 1.2	53.280	65.87	6.972	32.75	36.641	24.12	48.465	8.74
2 11.2	53.596	64.73	7.392	34.95	37.195	26.19	48.808	10.71
2 21.2	53.887	64.01	7.780	37.33	37.709	28.57	49.126	12.69
3 3.1	54.148	63.73	8.130	39.87	38.178	31.23	49.416	14.63
3 13.1	54.372	63.88	8.436	42.49	38.590	34.08	49.671	16.49
3 23.1	54.561	64.38	8.698	45.13	38.946	37.04	49.892	18.24
4 2.1	54.715	65.23	8.917	47.77	39.244	40.10	50.080	19.86
4 12.0	54.831	66.34	9.088	50.33	39.477	43.14	50.232	21.32
4 22.0	54.915	67.64	9.218	52.77	39.652	46.14	50.354	22.64
5 2.0	54.966	69.08	9.305	55.08	39.765	49.04	50.443	23.79
5 11.9	54.987	70.58	9.348	57.19	39.816	51.76	50.500	24.77
5 21.9	54.983	72.07	9.354	59.09	39.811	54.28	50.530	25.59
5 31.9	54.952	73.51	9.319	60.73	39.746	56.55	50.529	26.22
6 10.9	54.899	74.83	9.247	62.08	39.626	58.49	50.502	26.68
6 20.8	54.827	76.00	9.143	63.14	39.459	60.09	50.450	26.97
6 30.8	54.736	76.99	9.005	63.85	39.241	61.31	50.372	27.06
7 10.8	54.630	77.76	8.843	64.21	38.987	62.09	50.274	26.97
7 20.8	54.513	78.30	8.659	64.22	38.703	62.45	50.158	26.71
7 30.7	54.386	78.59	8.460	63.86	38.396	62.34	50.028	26.26
8 9.7	54.258	78.61	8.256	63.15	38.082	61.79	49.892	25.65
8 19.7	54.131	78.38	8.055	62.12	37.772	60.82	49.754	24.90
8 29.6	54.011	77.86	7.867	60.78	37.479	59.42	49.622	24.02
9 8.6	53.908	77.05	7.705	59.21	37.223	57.69	49.507	23.07
9 18.6	53.824	75.98	7.576	57.45	37.013	55.66	49.413	22.09
9 28.6	53.770	74.61	7.494	55.56	36.866	53.41	49.353	21.12
10 8.5	53.752	72.97	7.468	53.66	36.797	51.05	49.334	20.23
10 18.5	53.773	71.08	7.503	51.81	36.809	48.65	49.359	19.47
10 28.5	53.842	68.92	7.607	50.09	36.915	46.32	49.437	18.90
11 7.5	53.960	66.57	7.782	48.62	37.115	44.19	49.569	18.55
11 17.4	54.125	64.04	8.023	47.43	37.405	42.32	49.756	18.47
11 27.4	54.340	61.39	8.331	46.61	37.784	40.81	49.996	18.72
12 7.4	54.597	58.71	8.694	46.22	38.238	39.74	50.281	19.29
12 17.3	54.890	56.04	9.101	46.26	38.753	39.13	50.604	20.18
12 27.3	55.212	53.47	9.544	46.76	39.317	39.05	50.956	21.37
12 37.3	55.549	51.10	10.003	47.70	39.907	39.48	51.324	22.82
Pos. Med.	53.936	74.83	8.644	45.83	38.814	40.51	49.842	14.53
Secδ tanδ	1.053	.330	1.478	-1.088	2.030	-1.767	1.120	-.505
Dob.Tran.	Abr 20		Abr 20		Abr 23		Abr 23	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	520		535		547		542	
EST.	ϑ Centauri		γ Bootis		109 Virginis		α Apodis	
MAG.	2.06		3.03		3.72		3.83	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	14 8	-36 29	14 33	+38 11	14 47	+ 1 46	14 50	-79 8
mes d	s	"	s	"	s	"	s	"
1 -7.7	8.434	24.09	4.273	44.11	29.935	73.48	58.027	41.60
1 2.3	8.827	25.15	4.616	41.27	30.241	71.36	59.294	40.61
1 12.3	9.232	26.54	4.983	38.83	30.565	69.29	60.653	40.19
1 22.3	9.634	28.19	5.360	36.83	30.896	67.33	62.058	40.30
2 1.2	10.028	30.08	5.741	35.35	31.227	65.56	63.486	40.97
2 11.2	10.399	32.13	6.110	34.46	31.548	64.03	64.889	42.18
2 21.2	10.744	34.28	6.458	34.12	31.851	62.79	66.238	43.85
3 3.1	11.058	36.50	6.780	34.38	32.135	61.84	67.516	45.97
3 13.1	11.334	38.71	7.065	35.18	32.392	61.24	68.683	48.47
3 23.1	11.574	40.88	7.312	36.46	32.621	60.93	69.732	51.26
4 2.1	11.778	42.99	7.518	38.17	32.822	60.92	70.649	54.33
4 12.0	11.942	44.98	7.679	40.21	32.991	61.17	71.406	57.56
4 22.0	12.072	46.85	7.799	42.47	33.133	61.64	72.010	60.90
5 2.0	12.165	48.57	7.876	44.90	33.246	62.29	72.445	64.32
5 12.0	12.223	50.11	7.912	47.35	33.328	63.06	72.700	67.68
5 21.9	12.250	51.47	7.912	49.76	33.385	63.92	72.788	70.95
5 31.9	12.242	52.62	7.874	52.06	33.412	64.82	72.693	74.07
6 10.9	12.204	53.53	7.803	54.13	33.413	65.73	72.425	76.93
6 20.8	12.137	54.22	7.703	55.96	33.389	66.60	72.002	79.50
6 30.8	12.041	54.65	7.574	57.48	33.338	67.43	71.418	81.71
7 10.8	11.923	54.82	7.423	58.63	33.264	68.17	70.705	83.47
7 20.8	11.784	54.73	7.253	59.41	33.171	68.82	69.885	84.78
7 30.7	11.630	54.36	7.067	59.79	33.059	69.37	68.972	85.56
8 9.7	11.469	53.74	6.873	59.74	32.936	69.78	68.015	85.80
8 19.7	11.307	52.89	6.677	59.29	32.805	70.07	67.040	85.51
8 29.6	11.152	51.83	6.485	58.42	32.672	70.20	66.080	84.66
9 8.6	11.017	50.61	6.307	57.13	32.548	70.17	65.191	83.30
9 18.6	10.907	49.28	6.148	55.47	32.437	69.96	64.396	81.48
9 28.6	10.834	47.88	6.018	53.41	32.349	69.55	63.740	79.22
10 8.5	10.807	46.52	5.927	51.02	32.293	68.93	63.266	76.66
10 18.5	10.831	45.23	5.879	48.33	32.274	68.09	62.983	73.87
10 28.5	10.913	44.10	5.883	45.35	32.298	67.01	62.928	70.94
11 7.5	11.055	43.20	5.943	42.19	32.370	65.70	63.111	68.04
11 17.4	11.255	42.57	6.060	38.88	32.491	64.16	63.522	65.23
11 27.4	11.515	42.28	6.236	35.49	32.662	62.40	64.170	62.65
12 7.4	11.823	42.36	6.466	32.16	32.879	60.49	65.028	60.42
12 17.3	12.173	42.80	6.744	28.93	33.135	58.45	66.066	58.59
12 27.3	12.554	43.63	7.066	25.93	33.426	56.35	67.266	57.26
12 37.3	12.953	44.80	7.417	23.26	33.739	54.26	68.574	56.46
Pos. Med.	11.548	39.35	6.252	51.73	32.431	72.04	69.173	59.09
Secδ tanδ	1.244	-.740	1.272	.787	1.000	.031	5.312	-5.217
Dob.Tran.	Abr 23		Abr 30		May 3		May 4	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	548		552		553		555	
EST.	α^2 Librae		β Lupi		χ Centauri		β Bootis	
MAG.	2.75		2.68		3.13		3.50	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	14 52	-16 8	15 0	-43 13	15 0	-42 12	15 2	+40 16
mes d	s	"	s	"	s	"	s	"
1 -7.6	14.791	40.47	9.026	54.05	46.133	5.94	52.283	79.23
1 2.3	15.113	41.93	9.425	54.31	46.527	6.23	52.606	76.20
1 12.3	15.453	43.52	9.849	54.93	46.945	6.88	52.960	73.55
1 22.3	15.800	45.17	10.283	55.87	47.373	7.84	53.332	71.33
2 1.3	16.147	46.84	10.720	57.10	47.804	9.08	53.715	69.63
2 11.2	16.483	48.46	11.146	58.59	48.225	10.57	54.093	68.52
2 21.2	16.803	49.99	11.554	60.26	48.628	12.23	54.458	67.99
3 3.2	17.102	51.40	11.940	62.10	49.008	14.05	54.802	68.06
3 13.1	17.374	52.64	12.294	64.04	49.358	15.97	55.114	68.73
3 23.1	17.620	53.71	12.617	66.04	49.677	17.93	55.392	69.91
4 2.1	17.837	54.61	12.905	68.09	49.962	19.93	55.633	71.57
4 12.1	18.024	55.32	13.155	70.11	50.209	21.90	55.829	73.62
4 22.0	18.183	55.88	13.368	72.09	50.420	23.83	55.984	75.93
5 2.0	18.312	56.29	13.543	74.03	50.594	25.71	56.096	78.46
5 12.0	18.411	56.56	13.676	75.85	50.726	27.47	56.164	81.06
5 22.0	18.482	56.72	13.771	77.56	50.822	29.13	56.192	83.66
5 31.9	18.524	56.77	13.824	79.13	50.876	30.64	56.179	86.18
6 10.9	18.536	56.74	13.836	80.50	50.889	31.96	56.128	88.51
6 20.9	18.521	56.63	13.808	81.69	50.864	33.10	56.042	90.61
6 30.8	18.476	56.44	13.740	82.64	50.799	34.01	55.922	92.41
7 10.8	18.407	56.18	13.635	83.33	50.698	34.67	55.773	93.85
7 20.8	18.315	55.87	13.499	83.75	50.566	35.07	55.600	94.92
7 30.8	18.202	55.49	13.334	83.88	50.404	35.17	55.404	95.59
8 9.7	18.076	55.07	13.149	83.70	50.224	34.99	55.195	95.81
8 19.7	17.941	54.61	12.953	83.24	50.032	34.53	54.978	95.61
8 29.7	17.804	54.12	12.753	82.48	49.836	33.78	54.760	94.97
9 8.7	17.674	53.64	12.564	81.47	49.652	32.79	54.551	93.89
9 18.6	17.559	53.18	12.395	80.24	49.485	31.59	54.357	92.41
9 28.6	17.468	52.79	12.257	78.82	49.350	30.21	54.189	90.50
10 8.6	17.411	52.49	12.165	77.31	49.259	28.74	54.057	88.22
10 18.5	17.392	52.33	12.123	75.76	49.218	27.24	53.966	85.61
10 28.5	17.422	52.34	12.143	74.23	49.237	25.77	53.927	82.68
11 7.5	17.555	51.46	12.229	72.83	49.322	24.42	53.944	79.53
11 17.5	17.626	52.96	12.380	71.60	49.471	23.24	54.019	76.19
11 27.4	17.811	53.65	12.599	70.61	49.687	22.31	54.156	72.74
12 7.4	18.042	54.57	12.880	69.93	49.964	21.68	54.352	69.31
12 17.4	18.313	55.71	13.213	69.58	50.292	21.38	54.600	65.94
12 27.4	18.619	57.06	13.593	69.59	50.666	21.43	54.897	62.77
12 37.3	18.948	58.55	14.002	69.97	51.070	21.85	55.231	59.91
Pos. Med.	17.635	46.53	12.815	65.77	49.876	17.38	54.407	87.85
Secδ tanδ	1.041	-.290	1.373	-.940	1.350	-.907	1.311	.848
Dob.Tran.	May 4		May 6		May 7		May 7	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	556		558		563		564	
EST.	σ Librae		ζ Lupi		δ Bootis		β Librae	
MAG.	3.29		3.41		3.47		2.61	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	15 5	-25 22	15 14	-52 11	15 16	+33 12	15 18	- 9 28
mes d	s	"	s	"	s	"	s	"
1 -7.6	31.001	42.62	3.502	27.36	29.632	67.73	20.144	29.02
1 2.3	31.334	43.62	3.948	27.08	29.930	64.74	20.442	30.64
1 12.3	31.688	44.82	4.428	27.22	30.258	62.07	20.761	32.30
1 22.3	32.051	46.17	4.924	27.74	30.604	59.78	21.092	33.97
2 1.3	32.417	47.65	5.428	28.62	30.961	57.93	21.428	35.59
2 11.2	32.774	49.18	5.925	29.85	31.317	56.63	21.758	37.08
2 21.2	33.116	50.72	6.405	31.36	31.661	55.86	22.077	38.42
3 3.2	33.439	52.24	6.863	33.12	31.989	55.66	22.380	39.57
3 13.2	33.736	53.69	7.288	35.08	32.290	56.03	22.660	40.50
3 23.1	34.007	55.05	7.678	37.18	32.562	56.90	22.918	41.21
4 2.1	34.250	56.32	8.031	39.41	32.802	58.25	23.150	41.69
4 12.1	34.462	57.46	8.339	41.69	33.004	59.99	23.355	41.96
4 22.0	34.645	58.48	8.604	44.00	33.171	62.02	23.533	42.06
5 2.0	34.798	59.40	8.824	46.31	33.300	64.29	23.684	41.99
5 12.0	34.918	60.18	8.994	48.56	33.389	66.67	23.804	41.79
5 22.0	35.008	60.86	9.116	50.71	33.444	69.08	23.898	41.51
5 31.9	35.065	61.43	9.187	52.75	33.460	71.46	23.960	41.14
6 10.9	35.090	61.87	9.205	54.60	33.440	73.69	23.993	40.72
6 20.9	35.084	62.21	9.175	56.24	33.388	75.74	23.997	40.28
6 30.9	35.045	62.41	9.094	57.64	33.301	77.55	23.970	39.82
7 10.8	34.976	62.49	8.966	58.74	33.186	79.04	23.916	39.36
7 20.8	34.882	62.44	8.799	59.53	33.046	80.22	23.836	38.91
7 30.8	34.762	62.25	8.593	59.97	32.881	81.03	23.731	38.47
8 9.7	34.626	61.92	8.363	60.04	32.701	81.44	23.610	38.06
8 19.7	34.479	61.48	8.117	59.75	32.510	81.48	23.475	37.67
8 29.7	34.326	60.91	7.863	59.09	32.314	81.11	23.334	37.33
9 8.7	34.181	60.26	7.620	58.09	32.125	80.32	23.197	37.06
9 18.6	34.049	59.54	7.398	56.78	31.946	79.17	23.069	36.86
9 28.6	33.941	58.79	7.211	55.20	31.790	77.60	22.961	36.77
10 8.6	33.869	58.07	7.076	53.44	31.665	75.67	22.882	36.80
10 18.6	33.836	57.41	6.999	51.55	31.577	73.42	22.839	36.98
10 28.5	33.854	56.87	6.993	49.61	31.537	70.83	22.840	37.34
11 7.5	33.925	56.52	7.064	47.74	31.549	67.99	22.890	37.88
11 17.5	34.046	56.33	7.212	45.98	31.614	64.94	22.985	38.64
11 27.4	34.228	56.36	7.440	44.44	31.737	61.74	23.136	39.67
12 7.4	34.461	56.68	7.741	43.19	31.916	58.51	23.335	40.87
12 17.4	34.738	57.25	8.106	42.26	32.144	55.29	23.576	42.24
12 27.4	35.054	58.08	8.527	41.72	32.418	52.20	23.856	43.77
12 37.3	35.395	59.13	8.988	41.59	32.726	49.37	24.162	45.37
Pos. Med.	34.139	49.92	7.948	39.21	31.892	75.18	22.971	31.46
Secδ tanδ	1.107	-.474	1.631	-1.289	1.195	.655	1.014	-.167
Dob.Tran.	May 8		May 10		May 11		May 11	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	560		1402		566		572	
EST.	γ Trianguli Australis		δ Lupi		φ^1 Lupi		β Coronae Borealis	
MAG.	2.89		3.22		3.56		3.68	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	15 21	-68 46	15 22	-40 44	15 23	-36 20	15 28	+29 0
mes d	s	"	s	"	s	"	s	"
1 -7.6	12.853	2.42	59.539	7.89	22.363	59.16	50.525	61.75
1 2.4	13.528	1.38	59.910	8.04	22.716	59.51	50.807	58.82
1 12.3	14.263	.83	60.310	8.51	23.097	60.15	51.120	56.17
1 22.3	15.033	.76	60.725	9.26	23.491	61.03	51.451	53.84
2 1.3	15.826	1.17	61.147	10.28	23.892	62.14	51.795	51.92
2 11.2	16.615	2.06	61.564	11.52	24.288	63.43	52.138	50.51
2 21.2	17.384	3.35	61.968	12.94	24.672	64.85	52.473	49.61
3 3.2	18.125	5.05	62.355	14.51	25.039	66.37	52.795	49.24
3 13.2	18.817	7.09	62.716	16.17	25.381	67.95	53.093	49.44
3 23.1	19.455	9.40	63.049	17.88	25.697	69.54	53.365	50.12
4 2.1	20.032	11.97	63.353	19.64	25.985	71.13	53.609	51.27
4 12.1	20.535	14.70	63.622	21.39	26.240	72.69	53.818	52.82
4 22.1	20.964	17.56	63.857	23.12	26.464	74.21	53.995	54.67
5 2.0	21.312	20.50	64.057	24.82	26.655	75.67	54.137	56.78
5 12.0	21.571	23.43	64.218	26.43	26.808	77.04	54.242	59.02
5 22.0	21.745	26.32	64.341	27.97	26.928	78.32	54.314	61.31
5 31.9	21.826	29.11	64.424	29.39	27.009	79.51	54.348	63.61
6 10.9	21.814	31.71	64.465	30.67	27.051	80.55	54.348	65.78
6 20.9	21.716	34.09	64.466	31.80	27.057	81.46	54.315	67.81
6 30.9	21.527	36.18	64.425	32.74	27.022	82.21	54.248	69.63
7 10.8	21.259	37.91	64.345	33.46	26.952	82.76	54.151	71.16
7 20.8	20.923	39.26	64.232	33.96	26.849	83.12	54.027	72.40
7 30.8	20.522	40.17	64.084	34.20	26.715	83.26	53.878	73.32
8 9.8	20.081	40.60	63.914	34.17	26.558	83.17	53.711	73.86
8 19.7	19.613	40.57	63.728	33.88	26.386	82.86	53.531	74.06
8 29.7	19.135	40.03	63.532	33.32	26.205	82.32	53.344	73.88
9 8.7	18.676	39.02	63.342	32.52	26.029	81.58	53.160	73.30
9 18.6	18.252	37.58	63.166	31.51	25.865	80.66	52.986	72.37
9 28.6	17.886	35.73	63.016	30.31	25.726	79.61	52.830	71.04
10 8.6	17.605	33.56	62.906	29.00	25.624	78.47	52.704	69.36
10 18.6	17.419	31.16	62.842	27.63	25.565	77.30	52.612	67.35
10 28.5	17.348	28.59	62.835	26.26	25.560	76.16	52.565	65.00
11 7.5	17.404	26.01	62.892	24.97	25.615	75.12	52.569	62.40
11 17.5	17.582	23.47	63.011	23.82	25.729	74.23	52.623	59.57
11 27.5	17.892	21.10	63.197	22.87	25.906	73.54	52.735	56.56
12 7.4	18.322	19.01	63.445	22.19	26.143	73.10	52.899	53.49
12 17.4	18.857	17.25	63.746	21.79	26.430	72.94	53.112	50.40
12 27.4	19.489	15.91	64.096	21.71	26.762	73.09	53.371	47.39
12 37.3	20.189	15.04	64.479	21.96	27.127	73.52	53.664	44.60
Pos. Med.	19.692	15.48	63.339	16.77	25.966	67.20	52.869	68.76
Secδ tanδ	2.762	-2.574	1.320	-.861	1.242	-.736	1.144	.555
Dob.Tran.	May 12		May 12		May 12		May 14	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	578		577		579		574	
EST.	α Coronae Borealis		γ Librae		υ Librae		ε Trianguli Australis	
MAG.	2.23		3.91		3.58		4.11	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	15 35	+26 37	15 36	-14 52	15 38	-28 12	15 38	-66 23
mes d	s	"	s	"	s	"	s	"
1 -7.6	43.705	42.26	54.398	19.86	31.335	58.31	58.602	49.14
1 2.4	43.980	39.37	54.691	21.14	31.653	58.93	59.200	47.98
1 12.3	44.286	36.73	55.009	22.52	31.999	59.76	59.859	47.28
1 22.3	44.611	34.40	55.341	23.95	32.360	60.76	60.555	47.02
2 1.3	44.949	32.45	55.681	25.39	32.730	61.90	61.278	47.22
2 11.3	45.288	30.98	56.019	26.77	33.097	63.14	62.005	47.87
2 21.2	45.619	30.00	56.348	28.05	33.456	64.42	62.719	48.92
3 3.2	45.938	29.55	56.665	29.21	33.801	65.71	63.414	50.36
3 13.2	46.236	29.64	56.961	30.20	34.125	66.99	64.070	52.14
3 23.1	46.510	30.21	57.236	31.01	34.427	68.21	64.682	54.19
4 2.1	46.756	31.25	57.489	31.66	34.706	69.38	65.244	56.50
4 12.1	46.970	32.69	57.715	32.13	34.955	70.47	65.742	59.00
4 22.1	47.154	34.43	57.916	32.45	35.178	71.48	66.178	61.64
5 2.0	47.303	36.43	58.089	32.63	35.370	72.41	66.542	64.38
5 12.0	47.417	38.58	58.233	32.69	35.530	73.26	66.828	67.14
5 22.0	47.499	40.79	58.348	32.67	35.659	74.03	67.038	69.89
6 1.0	47.544	43.02	58.432	32.57	35.753	74.71	67.164	72.58
6 10.9	47.554	45.15	58.484	32.41	35.811	75.30	67.204	75.11
6 20.9	47.533	47.13	58.505	32.22	35.834	75.81	67.164	77.47
6 30.9	47.476	48.93	58.492	31.98	35.820	76.20	67.038	79.57
7 10.8	47.389	50.47	58.448	31.72	35.771	76.47	66.835	81.36
7 20.8	47.276	51.73	58.376	31.43	35.691	76.63	66.565	82.80
7 30.8	47.135	52.68	58.276	31.11	35.579	76.64	66.230	83.83
8 9.8	46.976	53.28	58.155	30.78	35.444	76.51	65.851	84.42
8 19.7	46.803	53.55	58.019	30.43	35.292	76.23	65.439	84.56
8 29.7	46.621	53.45	57.872	30.07	35.128	75.81	65.010	84.22
9 8.7	46.442	52.97	57.726	29.72	34.966	75.27	64.591	83.41
9 18.7	46.270	52.15	57.587	29.39	34.812	74.62	64.196	82.18
9 28.6	46.115	50.95	57.466	29.11	34.677	73.90	63.846	80.52
10 8.6	45.990	49.39	57.374	28.92	34.575	73.14	63.568	78.55
10 18.6	45.897	47.51	57.316	28.81	34.510	72.39	63.371	76.31
10 28.5	45.848	45.30	57.301	28.85	34.493	71.70	63.276	73.88
11 7.5	45.848	42.83	57.337	29.05	34.530	71.12	63.293	71.40
11 17.5	45.898	40.12	57.421	29.35	34.621	70.72	63.423	68.93
11 27.5	46.004	37.22	57.555	30.03	34.769	70.45	63.673	66.59
12 7.4	46.163	34.25	57.744	30.84	34.975	70.41	64.036	64.48
12 17.4	46.369	31.23	57.977	31.84	35.229	70.61	64.497	62.67
12 27.4	46.621	28.28	58.251	33.01	35.526	71.07	65.051	61.23
12 37.4	46.908	25.52	58.554	34.30	35.855	71.74	65.675	60.22
Pos. Med.	46.112	48.89	57.414	22.14	34.712	63.22	65.081	59.80
Secδ tanδ	1.119	.501	1.035	-.266	1.135	-.537	2.498	-2.289
Dob.Tran.	May 15		May 16		May 16		May 16	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	582		583		589		591	
EST.	α Serpentis		β Serpentis		βTrianguli Australis		γ Serpentis	
MAG.	2.65		3.67		2.85		3.85	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	15 45	+ 6 20	15 47	+15 20	15 57	-63 30	15 57	+15 34
mes d	s	"	s	"	s	"	s	"
1 -7.6	28.893	46.48	19.397	32.00	18.733	14.94	35.360	43.38
1 2.4	29.160	44.29	19.659	29.46	19.255	13.70	35.616	40.80
1 12.3	29.454	42.17	19.951	27.07	19.837	12.88	35.901	38.36
1 22.3	29.764	40.20	20.261	24.89	20.459	12.47	36.206	36.14
2 1.3	30.085	38.42	20.583	22.99	21.110	12.49	36.526	34.19
2 11.3	30.406	36.93	20.907	21.46	21.770	12.93	36.848	32.61
2 21.2	30.721	35.75	21.225	20.34	22.425	13.74	37.167	31.43
3 3.2	31.025	34.93	21.533	19.64	23.068	14.93	37.477	30.68
3 13.2	31.311	34.48	21.822	19.41	23.680	16.44	37.771	30.40
3 23.2	31.577	34.39	22.091	19.59	24.258	18.22	38.046	30.54
4 2.1	31.821	34.64	22.338	20.18	24.796	20.27	38.299	31.10
4 12.1	32.038	35.20	22.556	21.14	25.280	22.50	38.526	32.03
4 22.1	32.231	36.01	22.748	22.38	25.711	24.88	38.727	33.25
5 2.0	32.396	37.04	22.911	23.87	26.082	27.39	38.899	34.73
5 12.0	32.531	38.21	23.043	25.51	26.384	29.95	39.040	36.37
5 22.0	32.638	39.48	23.145	27.24	26.620	32.52	39.152	38.11
6 1.0	32.714	40.80	23.214	29.02	26.781	35.07	39.231	39.90
6 10.9	32.758	42.10	23.251	30.75	26.863	37.50	39.276	41.65
6 20.9	32.772	43.36	23.256	32.39	26.873	39.79	39.290	43.31
6 30.9	32.754	44.54	23.228	33.92	26.802	41.87	39.269	44.86
7 10.9	32.706	45.58	23.170	35.25	26.658	43.68	39.216	46.22
7 20.8	32.630	46.50	23.084	36.38	26.449	45.18	39.135	47.38
7 30.8	32.527	47.26	22.970	37.29	26.175	46.32	39.024	48.31
8 9.8	32.404	47.83	22.836	37.94	25.855	47.05	38.892	48.98
8 19.7	32.265	48.23	22.686	38.34	25.498	47.36	38.742	49.40
8 29.7	32.115	48.42	22.525	38.45	25.119	47.22	38.580	49.53
9 8.7	31.965	48.40	22.364	38.27	24.740	46.63	38.415	49.36
9 18.7	31.820	48.17	22.208	37.82	24.377	45.62	38.255	48.92
9 28.6	31.690	47.71	22.067	37.06	24.047	44.19	38.109	48.16
10 8.6	31.586	47.01	21.951	36.01	23.777	42.44	37.986	47.11
10 18.6	31.513	46.08	21.866	34.67	23.575	40.40	37.894	45.78
10 28.6	31.480	44.90	21.822	33.04	23.461	38.16	37.841	44.14
11 7.5	31.493	43.49	21.825	31.16	23.447	35.83	37.834	42.25
11 17.5	31.553	41.85	21.875	29.04	23.533	33.48	37.874	40.12
11 27.5	31.665	40.00	21.977	26.71	23.729	31.22	37.967	37.77
12 7.4	31.826	38.00	22.130	24.25	24.029	29.15	38.110	35.29
12 17.4	32.031	35.88	22.328	21.70	24.420	27.33	38.299	32.72
12 27.4	32.277	33.71	22.569	19.15	24.900	25.84	38.532	30.13
12 37.4	32.554	31.57	22.842	16.69	25.447	24.74	38.798	27.64
Pos. Med.	31.568	49.38	21.964	36.78	24.779	23.21	37.969	47.99
Secδ tanδ	1.006	.111	1.037	.274	2.242	-2.006	1.038	.279
Dob.Tran.	May 18		May 18		May 21		May 21	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	592		594		618		611	
EST.	π Scorpii		δ Scorpii		β Herculis		γ Apodis	
MAG.	2.89		2.32		2.77		3.89	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	16 0	-26 11	16 1	-22 41	16 31	+21 25	16 37	-78 56
mes d	s	"	s	"	s	"	s	"
1 -7.6	20.595	5.15	47.458	30.27	16.396	60.89	13.908	52.22
1 2.4	20.892	5.71	47.746	31.01	16.619	58.14	14.833	49.95
1 12.4	21.219	6.46	48.064	31.91	16.879	55.53	15.931	48.06
1 22.3	21.564	7.35	48.400	32.92	17.164	53.15	17.157	46.60
2 1.3	21.922	8.36	48.749	34.01	17.470	51.06	18.493	45.58
2 11.3	22.283	9.43	49.100	35.13	17.787	49.38	19.896	45.07
2 21.2	22.638	10.54	49.446	36.24	18.106	48.12	21.329	45.01
3 3.2	22.984	11.64	49.783	37.31	18.424	47.35	22.776	45.43
3 13.2	23.313	12.70	50.105	38.30	18.732	47.09	24.192	46.32
3 23.2	23.624	13.70	50.408	39.21	19.025	47.31	25.558	47.60
4 2.1	23.914	14.64	50.692	40.02	19.302	48.00	26.858	49.28
4 12.1	24.179	15.50	50.950	40.71	19.555	49.13	28.053	51.32
4 22.1	24.419	16.28	51.185	41.32	19.784	50.59	29.136	53.63
5 2.1	24.631	16.99	51.393	41.83	19.986	52.37	30.089	56.23
5 12.0	24.812	17.63	51.570	42.26	20.157	54.36	30.881	59.00
5 22.0	24.963	18.21	51.719	42.63	20.297	56.47	31.516	61.91
6 1.0	25.079	18.73	51.833	42.93	20.402	58.67	31.971	64.92
6 10.9	25.159	19.18	51.913	43.18	20.472	60.84	32.235	67.91
6 20.9	25.204	19.57	51.958	43.38	20.506	62.94	32.318	70.84
6 30.9	25.209	19.89	51.966	43.52	20.503	64.91	32.202	73.64
7 10.9	25.179	20.13	51.938	43.61	20.463	66.68	31.901	76.20
7 20.8	25.114	20.28	51.876	43.63	20.389	68.23	31.432	78.48
7 30.8	25.015	20.31	51.782	43.57	20.282	69.52	30.795	80.40
8 9.8	24.890	20.25	51.661	43.43	20.147	70.51	30.027	81.89
8 19.8	24.744	20.06	51.520	43.21	19.989	71.20	29.155	82.92
8 29.7	24.582	19.76	51.363	42.91	19.814	71.56	28.201	83.42
9 8.7	24.418	19.35	51.204	42.54	19.631	71.58	27.222	83.37
9 18.7	24.257	18.85	51.048	42.11	19.447	71.28	26.247	82.79
9 28.6	24.112	18.28	50.906	41.64	19.272	70.61	25.319	81.66
10 8.6	23.995	17.68	50.792	41.17	19.116	69.60	24.494	80.04
10 18.6	23.913	17.07	50.710	40.72	18.987	68.27	23.797	77.99
10 28.6	23.875	16.50	50.672	40.34	18.894	66.59	23.273	75.54
11 7.5	23.889	16.03	50.685	40.07	18.845	64.63	22.957	72.84
11 17.5	23.957	15.70	50.750	39.94	18.843	62.39	22.853	69.97
11 27.5	24.076	15.55	50.857	40.01	18.893	59.92	22.989	67.01
12 7.5	24.256	15.49	51.037	40.16	18.995	57.29	23.363	64.13
12 17.4	24.485	15.69	51.259	40.57	19.145	54.56	23.956	61.38
12 27.4	24.759	16.11	51.525	41.18	19.342	51.80	24.768	58.88
12 37.4	25.068	16.72	51.825	41.95	19.579	49.14	25.763	56.74
Pos. Med.	23.989	7.66	50.754	32.03	19.047	68.19	26.631	55.91
Secδ tanδ	1.114	-.492	1.084	-.418	1.074	.393	5.217	-5.120
Dob.Tran.	May 22		May 22		May 30		May 31	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	620		622		626		625	
EST.	τ Scorpii		ζ Ophiuchi		η Herculis		α Trianguli Australis	
MAG.	2.82		2.56		3.53		1.92	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	16 37	-28 16	16 38	-10 37	16 43	+38 52	16 51	-69 4
mes d	s	"	s	"	s	"	s	"
1 -7.6	24.907	.72	30.843	3.30	43.695	20.86	15.702	13.00
1 2.4	25.177	.92	31.082	4.51	43.908	17.55	16.218	10.96
1 12.4	25.482	1.29	31.353	5.76	44.167	14.46	16.831	9.26
1 22.4	25.812	1.80	31.648	7.02	44.462	11.67	17.513	7.93
2 1.3	26.161	2.43	31.960	8.25	44.787	9.26	18.257	6.97
2 11.3	26.520	3.13	32.281	9.38	45.132	7.37	19.039	6.45
2 21.3	26.879	3.89	32.603	10.37	45.485	6.02	19.838	6.32
3 3.2	27.237	4.67	32.923	11.20	45.841	5.26	20.649	6.60
3 13.2	27.584	5.44	33.234	11.82	46.189	5.13	21.446	7.27
3 23.2	27.919	6.18	33.533	12.24	46.523	5.59	22.220	8.29
4 2.2	28.238	6.90	33.819	12.45	46.838	6.63	22.965	9.65
4 12.1	28.536	7.57	34.084	12.47	47.126	8.19	23.659	11.32
4 22.1	28.813	8.20	34.331	12.32	47.384	10.17	24.300	13.24
5 2.1	29.065	8.80	34.555	12.02	47.609	12.53	24.877	15.41
5 12.1	29.288	9.37	34.753	11.62	47.793	15.15	25.375	17.76
5 22.0	29.480	9.91	34.924	11.14	47.939	17.92	25.794	20.24
6 1.0	29.638	10.43	35.063	10.61	48.042	20.79	26.122	22.82
6 11.0	29.758	10.93	35.170	10.06	48.100	23.63	26.348	25.41
6 20.9	29.841	11.40	35.243	9.52	48.115	26.37	26.479	27.97
6 30.9	29.881	11.84	35.278	9.00	48.084	28.95	26.502	30.43
7 10.9	29.880	12.22	35.277	8.51	48.010	31.26	26.421	32.72
7 20.9	29.841	12.53	35.241	8.06	47.896	33.29	26.245	34.78
7 30.8	29.761	12.76	35.170	7.65	47.742	34.97	25.972	36.55
8 9.8	29.648	12.90	35.069	7.30	47.556	36.26	25.620	37.94
8 19.8	29.508	12.92	34.943	6.99	47.344	37.15	25.203	38.94
8 29.8	29.345	12.81	34.798	6.72	47.110	37.61	24.732	39.49
9 8.7	29.173	12.59	34.643	6.51	46.867	37.61	24.238	39.55
9 18.7	28.999	12.24	34.485	6.36	46.622	37.18	23.738	39.14
9 28.7	28.833	11.78	34.335	6.28	46.384	36.28	23.255	38.24
10 8.6	28.689	11.25	34.204	6.28	46.168	34.95	22.823	36.90
10 18.6	28.575	10.66	34.100	6.38	45.978	33.20	22.454	35.16
10 28.6	28.503	10.05	34.031	6.60	45.827	31.03	22.176	33.06
11 7.6	28.480	9.48	34.007	6.97	45.725	28.51	22.010	30.72
11 17.5	28.509	8.97	34.029	7.47	45.673	25.68	21.959	28.21
11 27.5	28.596	8.60	34.102	8.13	45.680	22.57	22.039	25.62
12 7.5	28.733	8.35	34.224	8.97	45.747	19.32	22.250	23.07
12 17.5	28.928	8.20	34.394	9.97	45.871	15.97	22.581	20.64
12 27.4	29.173	8.26	34.610	11.09	46.052	12.63	23.035	18.42
12 37.4	29.457	8.50	34.861	12.28	46.282	9.44	23.589	16.49
Pos. Med.	28.466	.02	33.949	.16	46.304	30.41	23.225	14.31
Secδ tanδ	1.135	-.538	1.017	-.187	1.284	.806	2.799	-2.615
Dob.Tran.	May 31		May 31		Jun 2		Jun 4	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	628		633		631		634	
EST.	ε Scorpii		χ Ophiuchi		ζ Arae		ε Herculis	
MAG.	2.29		3.20		3.13		3.92	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	16 51	-34 20	16 58	+ 9 19	17 0	-56 1	17 1	+30 53
mes d	s	"	s	"	s	"	s	"
1 -7.6	45.411	15.14	49.774	67.07	39.107	39.05	13.298	16.26
1 2.4	45.680	14.91	49.976	64.89	39.458	37.55	13.490	13.18
1 12.4	45.990	14.86	50.215	62.76	39.872	36.31	13.725	10.26
1 22.4	46.328	14.98	50.479	60.76	40.330	35.37	13.993	7.57
2 1.3	46.689	15.26	50.766	58.94	40.827	34.72	14.290	5.21
2 11.3	47.063	15.67	51.066	57.42	41.349	34.40	14.606	3.29
2 21.3	47.441	16.19	51.372	56.21	41.881	34.38	14.932	1.86
3 3.3	47.819	16.80	51.680	55.36	42.420	34.65	15.263	.96
3 13.2	48.190	17.47	51.982	54.93	42.952	35.20	15.590	.64
3 23.2	48.549	18.17	52.276	54.88	43.470	36.00	15.908	.87
4 2.2	48.895	18.91	52.558	55.23	43.972	37.05	16.212	1.65
4 12.1	49.220	19.67	52.823	55.94	44.444	38.31	16.495	2.94
4 22.1	49.524	20.45	53.070	56.95	44.886	39.76	16.755	4.64
5 2.1	49.804	21.25	53.295	58.23	45.291	41.39	16.988	6.72
5 12.1	50.052	22.05	53.494	59.71	45.648	43.15	17.187	9.07
5 22.0	50.270	22.87	53.665	61.31	45.959	45.01	17.353	11.59
6 1.0	50.450	23.70	53.806	63.01	46.214	46.96	17.482	14.24
6 11.0	50.590	24.52	53.913	64.71	46.406	48.93	17.570	16.89
6 21.0	50.690	25.32	53.986	66.38	46.538	50.88	17.619	19.47
6 30.9	50.744	26.09	54.021	67.97	46.601	52.78	17.625	21.93
7 10.9	50.752	26.79	54.019	69.42	46.596	54.55	17.589	24.18
7 20.9	50.717	27.42	53.982	70.73	46.527	56.17	17.514	26.19
7 30.8	50.638	27.93	53.908	71.85	46.393	57.56	17.400	27.90
8 9.8	50.522	28.32	53.804	72.76	46.204	58.67	17.253	29.26
8 19.8	50.374	28.55	53.674	73.47	45.968	59.48	17.078	30.29
8 29.8	50.200	28.60	53.521	73.93	45.694	59.93	16.879	30.92
9 8.7	50.013	28.48	53.356	74.15	45.400	60.00	16.668	31.14
9 18.7	49.822	28.18	53.186	74.14	45.098	59.71	16.451	30.98
9 28.7	49.637	27.70	53.020	73.87	44.803	59.02	16.238	30.38
10 8.7	49.473	27.08	52.869	73.33	44.538	57.98	16.042	29.38
10 18.6	49.339	26.33	52.741	72.55	44.313	56.63	15.869	28.00
10 28.6	49.246	25.50	52.644	71.49	44.145	55.00	15.729	26.20
11 7.6	49.205	24.65	52.589	70.19	44.050	53.19	15.633	24.07
11 17.5	49.218	23.80	52.576	68.66	44.030	51.25	15.583	21.63
11 27.5	49.291	23.03	52.612	66.90	44.095	49.25	15.586	18.89
12 7.5	49.422	22.37	52.698	64.97	44.247	47.31	15.644	15.99
12 17.5	49.609	21.81	52.829	62.90	44.477	45.47	15.753	12.95
12 27.4	49.850	21.43	53.007	60.76	44.787	43.80	15.916	9.87
12 37.4	50.136	21.24	53.223	58.63	45.163	42.37	16.124	6.88
Pos. Med.	49.190	13.83	52.606	73.82	44.356	38.40	15.984	25.20
Secδ tanδ	1.211	-.683	1.013	.164	1.790	-1.484	1.165	.598
Dob.Tran.	Jun 4		Jun 6		Jun 6		Jun 6	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	638		643		641		644	
EST.	η Scorpii		π Herculis		δ Herculis*		ϑ Ophiuchi	
MAG.	3.33		3.16		3.14		3.27	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	17 13	-43 16	17 15	+36 46	17 16	+24 48	17 23	-25 1
mes d	s	"	s	"	s	"	s	"
1 -7.5	54.817	15.19	53.476	45.03	2.072	30.12	31.172	26.68
1 2.4	55.090	14.28	53.649	41.77	2.250	27.28	31.392	26.80
1 12.4	55.412	13.58	53.872	38.67	2.469	24.54	31.651	27.04
1 22.4	55.769	13.07	54.132	35.80	2.721	22.00	31.939	27.36
2 1.4	56.157	12.77	54.426	33.27	3.001	19.72	32.252	27.74
2 11.3	56.565	12.68	54.745	31.20	3.301	17.84	32.582	28.15
2 21.3	56.983	12.76	55.079	29.62	3.611	16.39	32.921	28.58
3 3.3	57.407	13.01	55.422	28.62	3.929	15.43	33.265	28.98
3 13.2	57.827	13.42	55.765	28.23	4.245	15.01	33.608	29.34
3 23.2	58.239	13.97	56.101	28.42	4.554	15.09	33.946	29.66
4 2.2	58.640	14.65	56.426	29.21	4.855	15.70	34.276	29.92
4 12.2	59.022	15.44	56.729	30.54	5.137	16.78	34.593	30.12
4 22.1	59.383	16.33	57.010	32.32	5.401	18.26	34.894	30.28
5 2.1	59.719	17.33	57.262	34.52	5.642	20.12	35.178	30.42
5 12.1	60.021	18.41	57.480	37.02	5.853	22.24	35.435	30.54
5 22.1	60.290	19.57	57.662	39.73	6.035	24.54	35.668	30.66
6 1.0	60.518	20.79	57.803	42.60	6.182	26.98	35.868	30.79
6 11.0	60.699	22.04	57.900	45.48	6.291	29.44	36.032	30.94
6 21.0	60.834	23.31	57.955	48.31	6.363	31.85	36.159	31.12
6 30.9	60.916	24.56	57.963	51.03	6.394	34.18	36.244	31.32
7 10.9	60.945	25.74	57.925	53.54	6.383	36.31	36.285	31.53
7 20.9	60.923	26.84	57.845	55.79	6.335	38.24	36.285	31.74
7 30.9	60.848	27.81	57.721	57.75	6.246	39.92	36.240	31.94
8 9.8	60.727	28.61	57.561	59.34	6.123	41.28	36.157	32.11
8 19.8	60.568	29.20	57.370	60.56	5.971	42.35	36.041	32.23
8 29.8	60.374	29.56	57.152	61.37	5.793	43.06	35.895	32.29
9 8.8	60.161	29.66	56.918	61.73	5.602	43.40	35.731	32.27
9 18.7	59.938	29.51	56.677	61.68	5.402	43.40	35.557	32.16
9 28.7	59.718	29.08	56.436	61.17	5.203	43.01	35.382	31.97
10 8.7	59.518	28.40	56.211	60.21	5.018	42.24	35.222	31.71
10 18.6	59.346	27.50	56.006	58.83	4.853	41.12	35.083	31.39
10 28.6	59.216	26.42	55.835	57.01	4.719	39.61	34.977	31.04
11 7.6	59.142	25.21	55.708	54.82	4.625	37.78	34.914	30.69
11 17.6	59.125	23.92	55.626	52.28	4.573	35.65	34.897	30.36
11 27.5	59.174	22.62	55.600	49.43	4.572	33.23	34.935	30.10
12 7.5	59.290	21.37	55.630	46.39	4.623	30.63	35.028	29.93
12 17.5	59.468	20.20	55.716	43.19	4.723	27.87	35.157	29.86
12 27.5	59.708	19.16	55.858	39.94	4.874	25.04	35.353	29.86
12 37.4	60.000	18.31	56.050	36.77	5.068	22.27	35.588	30.00
Pos. Med.	59.071	12.22	56.196	54.47	4.825	38.68	34.685	21.36
Secδ tanδ	1.373	-.941	1.249	.748	1.102	.462	1.104	-.467
Dob.Tran.	Jun 9		Jun 10		Jun 10		Jun 12	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	645		649		648		651	
EST.	β Arae		υ Scorpii		δ Arae		α Arae	
MAG.	2.85		2.69		3.62		2.95	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	17 27	-55 33	17 32	-37 18	17 33	-60 42	17 33	-49 53
mes d	s	"	s	"	s	"	s	"
1 -7.5	20.312	7.05	26.066	54.41	18.547	10.47	44.318	41.58
1 2.4	20.619	5.37	26.300	53.73	18.876	8.49	44.588	40.17
1 12.4	20.992	3.91	26.580	53.20	19.282	6.73	44.917	38.94
1 22.4	21.414	2.69	26.895	52.81	19.748	5.22	45.289	37.92
2 1.4	21.880	1.73	27.240	52.57	20.267	3.99	45.701	37.12
2 11.3	22.377	1.07	27.607	52.46	20.825	3.09	46.140	36.56
2 21.3	22.892	.67	27.985	52.48	21.406	2.49	46.595	36.22
3 3.3	23.420	.56	28.372	52.59	22.005	2.20	47.063	36.10
3 13.3	23.948	.72	28.760	52.80	22.607	2.25	47.532	36.21
3 23.2	24.470	1.14	29.143	53.09	23.204	2.58	47.997	36.52
4 2.2	24.982	1.80	29.520	53.45	23.791	3.22	48.454	37.03
4 12.2	25.471	2.71	29.883	53.89	24.354	4.14	48.894	37.73
4 22.1	25.936	3.81	30.229	54.38	24.888	5.30	49.313	38.60
5 2.1	26.369	5.13	30.556	54.96	25.388	6.72	49.707	39.64
5 12.1	26.760	6.62	30.855	55.60	25.838	8.35	50.066	40.83
5 22.1	27.108	8.25	31.125	56.31	26.239	10.15	50.388	42.15
6 1.0	27.403	10.01	31.359	57.09	26.579	12.11	50.665	43.60
6 11.0	27.638	11.85	31.552	57.93	26.849	14.17	50.890	45.11
6 21.0	27.813	13.72	31.702	58.80	27.049	16.27	51.062	46.68
7 1.0	27.919	15.60	31.804	59.69	27.170	18.40	51.175	48.26
7 10.9	27.956	17.40	31.856	60.57	27.210	20.45	51.226	49.80
7 20.9	27.927	19.10	31.860	61.41	27.175	22.39	51.218	51.26
7 30.9	27.829	20.63	31.812	62.19	27.058	24.15	51.147	52.59
8 9.8	27.671	21.92	31.721	62.85	26.873	25.66	51.023	53.73
8 19.8	27.461	22.95	31.590	63.38	26.626	26.88	50.851	54.65
8 29.8	27.204	23.65	31.423	63.75	26.326	27.75	50.636	55.30
9 8.8	26.921	24.00	31.236	63.92	25.992	28.22	50.395	55.65
9 18.7	26.622	23.99	31.035	63.89	25.639	28.30	50.138	55.68
9 28.7	26.322	23.58	30.831	63.66	25.283	27.94	49.879	55.38
10 8.7	26.043	22.81	30.642	63.22	24.949	27.16	49.636	54.76
10 18.7	25.797	21.71	30.476	62.60	24.649	26.01	49.421	53.84
10 28.6	25.600	20.29	30.345	61.83	24.405	24.49	49.248	52.65
11 7.6	25.470	18.63	30.263	60.95	24.234	22.68	49.133	51.25
11 17.6	25.409	16.80	30.231	60.00	24.142	20.66	49.079	49.70
11 27.5	25.431	14.85	30.258	59.03	24.143	18.49	49.097	48.05
12 7.5	25.536	12.90	30.346	58.09	24.239	16.28	49.189	46.39
12 17.5	25.720	10.98	30.490	57.22	24.426	14.08	49.350	44.77
12 27.5	25.984	9.18	30.692	56.43	24.705	11.98	49.582	43.24
12 37.4	26.317	7.56	30.943	55.78	25.064	10.06	49.875	41.87
Pos. Med.	25.508	3.00	30.019	48.92	24.360	5.87	49.001	36.53
Secδ tanδ	1.768	-1.458	1.257	-.762	2.043	-1.782	1.552	-1.187
Dob.Tran.	Jun 13		Jun 14		Jun 14		Jun 14	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	652		656		654		660	
EST.	λ Scorpii		α Ophiuchi		ϑ Scorpii		χ Scorpii	
MAG.	1.63		2.08		1.87		2.41	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	17 35	-37 7	17 36	+12 32	17 39	-43 0	17 44	-39 2
mes d	s	"	s	"	s	"	s	"
1 -7.5	16.625	17.07	4.283	27.66	5.007	46.69	11.212	32.48
1 2.4	16.855	16.38	4.448	25.40	5.247	45.63	11.435	31.63
1 12.4	17.132	15.84	4.654	23.20	5.539	44.73	11.708	30.92
1 22.4	17.443	15.44	4.889	21.11	5.870	44.00	12.018	30.35
2 1.4	17.786	15.18	5.152	19.20	6.236	43.43	12.360	29.91
2 11.3	18.150	15.05	5.434	17.58	6.626	43.05	12.726	29.62
2 21.3	18.526	15.04	5.727	16.29	7.031	42.83	13.107	29.46
3 3.3	18.911	15.13	6.030	15.38	7.447	42.77	13.499	29.41
3 13.3	19.298	15.31	6.334	14.91	7.865	42.86	13.894	29.47
3 23.2	19.680	15.56	6.635	14.85	8.279	43.08	14.287	29.63
4 2.2	20.057	15.89	6.931	15.22	8.689	43.44	14.675	29.88
4 12.2	20.420	16.29	7.214	15.99	9.084	43.93	15.051	30.23
4 22.1	20.768	16.75	7.483	17.10	9.462	44.53	15.413	30.66
5 2.1	21.096	17.29	7.735	18.53	9.819	45.27	15.756	31.19
5 12.1	21.397	17.90	7.963	20.18	10.147	46.11	16.072	31.81
5 22.1	21.669	18.59	8.166	22.00	10.443	47.06	16.359	32.52
6 1.0	21.906	19.34	8.339	23.95	10.701	48.10	16.610	33.33
6 11.0	22.101	20.15	8.478	25.92	10.913	49.22	16.820	34.20
6 21.0	22.255	21.00	8.582	27.86	11.080	50.39	16.987	35.13
7 1.0	22.360	21.87	8.647	29.75	11.194	51.59	17.103	36.10
7 10.9	22.415	22.74	8.672	31.49	11.253	52.77	17.168	37.07
7 20.9	22.422	23.58	8.659	33.08	11.259	53.91	17.183	38.02
7 30.9	22.377	24.35	8.606	34.49	11.210	54.96	17.145	38.90
8 9.8	22.288	25.02	8.517	35.65	11.111	55.87	17.060	39.68
8 19.8	22.159	25.56	8.398	36.59	10.970	56.62	16.933	40.33
8 29.8	21.995	25.94	8.251	37.27	10.789	57.16	16.767	40.81
9 8.8	21.808	26.13	8.086	37.67	10.583	57.45	16.577	41.09
9 18.7	21.608	26.12	7.911	37.81	10.362	57.50	16.372	41.16
9 28.7	21.405	25.91	7.733	37.66	10.138	57.28	16.162	41.00
10 8.7	21.216	25.49	7.566	37.23	9.927	56.80	15.963	40.62
10 18.7	21.048	24.90	7.416	36.52	9.739	56.09	15.785	40.04
10 28.6	20.916	24.15	7.292	35.51	9.588	55.15	15.642	39.27
11 7.6	20.831	23.28	7.205	34.24	9.488	54.06	15.545	38.36
11 17.6	20.796	22.35	7.157	32.71	9.442	52.84	15.499	37.35
11 27.5	20.820	21.39	7.156	30.94	9.459	51.56	15.512	36.30
12 7.5	20.905	20.47	7.204	28.99	9.542	50.29	15.587	35.25
12 17.5	21.045	19.60	7.297	26.88	9.686	49.05	15.719	34.24
12 27.5	21.243	18.81	7.437	24.67	9.891	47.90	15.909	33.30
12 37.4	21.491	18.15	7.618	22.47	10.152	46.87	16.152	32.48
Pos. Med.	20.568	11.27	7.161	35.90	9.237	40.71	15.234	25.82
Secδ tanδ	1.254	-.757	1.024	.222	1.368	-.933	1.287	-.811
Dob.Tran.	Jun 15		Jun 15		Jun 16		Jun 17	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	665		667		661		668	
EST.	β Ophiuchi		μ Herculis		η Pavonis		γ Ophiuchi	
MAG.	2.77		3.42		3.62		3.75	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	17 44	+ 4 33	17 47	+27 42	17 48	-64 43	17 49	+ 2 41
mes d	s	"	s	"	s	"	s	"
1 -7.5	41.033	22.52	24.674	17.31	7.940	62.58	7.351	50.35
1 2.5	41.197	20.72	24.818	14.39	8.272	60.32	7.512	48.66
1 12.4	41.399	18.93	25.006	11.55	8.696	58.25	7.712	46.98
1 22.4	41.630	17.22	25.230	8.87	9.192	56.41	7.941	45.36
2 1.4	41.889	15.64	25.487	6.44	9.753	54.85	8.198	43.87
2 11.3	42.167	14.29	25.770	4.40	10.365	53.62	8.474	42.59
2 21.3	42.456	13.20	26.069	2.77	11.008	52.71	8.762	41.54
3 3.3	42.756	12.42	26.382	1.63	11.679	52.14	9.061	40.80
3 13.3	43.058	12.00	26.699	1.04	12.359	51.92	9.362	40.38
3 23.2	43.358	11.92	27.016	.99	13.038	52.03	9.663	40.30
4 2.2	43.654	12.19	27.329	1.47	13.711	52.47	9.961	40.55
4 12.2	43.941	12.81	27.629	2.48	14.360	53.24	10.250	41.13
4 22.2	44.215	13.70	27.913	3.92	14.980	54.30	10.527	41.98
5 2.1	44.474	14.86	28.178	5.78	15.563	55.65	10.790	43.07
5 12.1	44.711	16.22	28.416	7.95	16.093	57.26	11.031	44.35
5 22.1	44.926	17.71	28.625	10.34	16.567	59.08	11.250	45.76
6 1.0	45.112	19.29	28.801	12.92	16.973	61.10	11.441	47.26
6 11.0	45.265	20.90	28.938	15.55	17.300	63.26	11.600	48.78
6 21.0	45.384	22.48	29.037	18.17	17.548	65.50	11.725	50.27
7 1.0	45.465	24.01	29.092	20.73	17.705	67.78	11.811	51.71
7 10.9	45.506	25.43	29.103	23.12	17.769	70.02	11.858	53.04
7 20.9	45.509	26.72	29.072	25.32	17.744	72.17	11.866	54.25
7 30.9	45.470	27.85	28.998	27.27	17.626	74.16	11.832	55.32
8 9.9	45.396	28.80	28.886	28.92	17.425	75.90	11.763	56.20
8 19.8	45.290	29.57	28.740	30.26	17.152	77.35	11.660	56.93
8 29.8	45.155	30.15	28.564	31.24	16.812	78.45	11.528	57.47
9 8.8	45.001	30.51	28.368	31.83	16.430	79.13	11.377	57.81
9 18.7	44.835	30.68	28.160	32.07	16.021	79.39	11.213	57.98
9 28.7	44.665	30.62	27.947	31.90	15.602	79.19	11.044	57.94
10 8.7	44.504	30.36	27.743	31.32	15.202	78.53	10.884	57.70
10 18.7	44.359	29.88	27.555	30.37	14.836	77.45	10.738	57.28
10 28.6	44.239	29.17	27.393	29.01	14.526	75.95	10.618	56.63
11 7.6	44.155	28.25	27.269	27.29	14.296	74.12	10.533	55.79
11 17.6	44.110	27.13	27.183	25.24	14.151	72.02	10.485	54.76
11 27.6	44.110	25.79	27.146	22.88	14.109	69.71	10.483	53.53
12 7.5	44.157	24.30	27.161	20.29	14.174	67.30	10.528	52.15
12 17.5	44.249	22.66	27.224	17.52	14.341	64.88	10.618	50.62
12 27.5	44.387	20.92	27.338	14.64	14.614	62.51	10.753	49.00
12 37.4	44.565	19.16	27.499	11.79	14.981	60.29	10.929	47.34
Pos. Med.	43.994	30.90	27.471	26.12	14.382	56.16	10.338	58.74
Secδ tanδ	1.003	.080	1.130	.525	2.343	-2.119	1.001	.047
Dob.Tran.	Jun 17		Jun 18		Jun 18		Jun 18	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	666		669		673		679	
EST.	ι^1 Scorpii		G Scorpii		ν Ophiuchi		γ Sagittarii	
MAG.	3.03		3.21		3.34		2.99	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	17 49	-40 8	17 51	-37 3	18 0	- 9 46	18 7	-30 25
mes d	s	"	s	"	s	"	s	"
1 -7.5	18.120	10.43	31.788	3.20	22.707	37.33	23.152	25.72
1 2.5	18.339	9.49	31.998	2.43	22.868	38.25	23.331	25.26
1 12.4	18.610	8.68	32.258	1.78	23.070	39.20	23.557	24.91
1 22.4	18.919	8.01	32.554	1.25	23.302	40.13	23.819	24.63
2 1.4	19.261	7.47	32.883	.84	23.561	41.01	24.112	24.43
2 11.3	19.629	7.09	33.236	.56	23.842	41.78	24.430	24.28
2 21.3	20.013	6.84	33.603	.37	24.135	42.41	24.763	24.16
3 3.3	20.409	6.71	33.984	.28	24.440	42.87	25.111	24.07
3 13.3	20.808	6.70	34.368	.28	24.749	43.12	25.465	23.99
3 23.2	21.207	6.80	34.751	.35	25.059	43.16	25.820	23.92
4 2.2	21.603	7.00	35.132	.50	25.369	42.99	26.176	23.85
4 12.2	21.986	7.31	35.502	.73	25.671	42.62	26.525	23.80
4 22.2	22.356	7.72	35.858	1.03	25.963	42.08	26.865	23.77
5 2.1	22.708	8.24	36.198	1.41	26.244	41.40	27.191	23.77
5 12.1	23.032	8.87	36.512	1.88	26.504	40.61	27.496	23.83
5 22.1	23.328	9.59	36.800	2.43	26.743	39.75	27.778	23.95
6 1.0	23.588	10.42	37.053	3.08	26.956	38.86	28.031	24.14
6 11.0	23.806	11.33	37.266	3.80	27.136	37.99	28.247	24.40
6 21.0	23.980	12.30	37.438	4.59	27.283	37.15	28.425	24.75
7 1.0	24.104	13.32	37.561	5.43	27.391	36.36	28.559	25.16
7 10.9	24.175	14.35	37.633	6.28	27.458	35.67	28.645	25.63
7 20.9	24.195	15.35	37.657	7.13	27.484	35.06	28.685	26.14
7 30.9	24.160	16.30	37.628	7.94	27.468	34.54	28.675	26.65
8 9.9	24.077	17.15	37.552	8.67	27.412	34.13	28.620	27.15
8 19.8	23.950	17.86	37.434	9.29	27.322	33.80	28.523	27.60
8 29.8	23.785	18.40	37.278	9.76	27.199	33.56	28.389	27.98
9 8.8	23.593	18.73	37.096	10.05	27.055	33.41	28.228	28.25
9 18.7	23.384	18.85	36.898	10.16	26.895	33.33	28.049	28.41
9 28.7	23.169	18.72	36.694	10.06	26.729	33.32	27.861	28.43
10 8.7	22.966	18.37	36.499	9.76	26.570	33.40	27.679	28.31
10 18.7	22.782	17.79	36.324	9.26	26.424	33.54	27.512	28.05
10 28.6	22.632	17.01	36.180	8.60	26.303	33.78	27.371	27.68
11 7.6	22.529	16.08	36.081	7.80	26.217	34.12	27.270	27.22
11 17.6	22.476	15.04	36.031	6.91	26.169	34.55	27.211	26.69
11 27.6	22.483	13.93	36.038	5.97	26.166	35.10	27.204	26.13
12 7.5	22.552	12.81	36.104	5.03	26.211	35.75	27.251	25.57
12 17.5	22.679	11.73	36.225	4.13	26.300	36.49	27.350	25.07
12 27.5	22.865	10.70	36.403	3.28	26.435	37.34	27.497	24.60
12 37.4	23.105	9.78	36.633	2.53	26.613	38.24	27.695	24.15
Pos. Med.	22.188	3.25	35.714	-4.31	25.874	28.66	26.803	16.64
Secδ tanδ	1.308	-.843	1.253	-.755	1.015	-.172	1.160	-.587
Dob.Tran.	Jun 18		Jun 19		Jun 21		Jun 23	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	680		1471		683		687	
EST.	72 Ophiuchi		ϑ Arae		η Sagittarii*		δ Sagittarii	
MAG.	3.73		3.66		3.11		2.70	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	18 8	+ 9 33	18 8	-50 5	18 19	-36 45	18 22	-29 49
mes d	s	"	s	"	s	"	s	"
1 -7.5	30.636	60.33	32.342	22.09	17.298	15.42	33.977	3.99
1 2.5	30.772	58.34	32.562	20.48	17.473	14.55	34.135	3.52
1 12.4	30.949	56.36	32.843	18.98	17.700	13.75	34.345	3.11
1 22.4	31.157	54.46	33.174	17.63	17.966	13.04	34.591	2.77
2 1.4	31.395	52.71	33.550	16.45	18.267	12.41	34.869	2.48
2 11.4	31.656	51.21	33.960	15.47	18.597	11.88	35.174	2.22
2 21.3	31.932	49.99	34.393	14.68	18.945	11.43	35.496	1.99
3 3.3	32.223	49.12	34.847	14.10	19.312	11.05	35.835	1.77
3 13.3	32.520	48.65	35.311	13.73	19.687	10.75	36.182	1.55
3 23.3	32.820	48.56	35.778	13.56	20.066	10.52	36.534	1.34
4 2.2	33.120	48.88	36.246	13.60	20.448	10.37	36.889	1.12
4 12.2	33.413	49.58	36.703	13.85	20.825	10.29	37.240	.91
4 22.2	33.698	50.62	37.147	14.29	21.193	10.30	37.583	.72
5 2.1	33.969	51.96	37.572	14.94	21.549	10.41	37.916	.57
5 12.1	34.221	53.54	37.968	15.78	21.883	10.63	38.230	.47
5 22.1	34.451	55.29	38.331	16.80	22.193	10.95	38.522	.45
6 1.1	34.654	57.17	38.654	17.99	22.473	11.39	38.787	.50
6 11.0	34.824	59.09	38.927	19.32	22.715	11.95	39.016	.65
6 21.0	34.961	61.01	39.148	20.75	22.916	12.60	39.209	.89
7 1.0	35.058	62.87	39.310	22.27	23.070	13.35	39.358	1.22
7 11.0	35.115	64.62	39.409	23.82	23.172	14.16	39.459	1.62
7 20.9	35.132	66.23	39.447	25.35	23.225	15.01	39.514	2.07
7 30.9	35.106	67.67	39.418	26.82	23.223	15.86	39.519	2.57
8 9.9	35.042	68.89	39.330	28.15	23.171	16.67	39.476	3.06
8 19.8	34.943	69.91	39.188	29.31	23.075	17.41	39.392	3.54
8 29.8	34.813	70.69	38.996	30.25	22.935	18.03	39.267	3.95
9 8.8	34.660	71.21	38.769	30.91	22.765	18.51	39.114	4.28
9 18.8	34.492	71.50	38.517	31.28	22.573	18.81	38.940	4.51
9 28.7	34.316	71.53	38.253	31.31	22.370	18.92	38.754	4.61
10 8.7	34.146	71.29	37.997	31.01	22.170	18.82	38.571	4.58
10 18.7	33.987	70.81	37.760	30.39	21.983	18.52	38.400	4.41
10 28.7	33.850	70.05	37.556	29.46	21.823	18.03	38.253	4.12
11 7.6	33.746	69.04	37.403	28.27	21.702	17.38	38.142	3.73
11 17.6	33.677	67.80	37.306	26.86	21.625	16.60	38.071	3.26
11 27.6	33.652	66.32	37.275	25.29	21.602	15.72	38.050	2.75
12 7.5	33.672	64.66	37.317	23.62	21.636	14.80	38.082	2.22
12 17.5	33.736	62.84	37.426	21.93	21.724	13.88	38.165	1.71
12 27.5	33.846	60.90	37.606	20.25	21.868	12.98	38.295	1.26
12 37.5	33.998	58.95	37.850	18.65	22.063	12.10	38.475	.76
Pos. Med.	33.563	69.64	36.966	12.93	21.153	5.22	37.583	-6.52
Secδ tanδ	1.014	.169	1.559	-1.195	1.248	-.747	1.153	-.573
Dob.Tran.	Jun 23		Jun 23		Jun 26		Jun 27	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	688		689		691		692	
EST.	η Serpentis		ε Sagittarii		α Telescopii		λ Sagittarii	
MAG.	3.26		1.85		3.51		2.81	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	18 22	- 2 53	18 25	-34 22	18 28	-45 57	18 29	-25 24
mes d	s	"	s	"	s	"	s	"
1 -7.5	34.766	34.27	48.086	23.03	47.491	17.05	29.183	29.81
1 2.5	34.898	35.54	48.249	22.29	47.671	15.60	29.321	29.62
1 12.5	35.071	36.81	48.463	21.59	47.909	14.21	29.519	29.45
1 22.4	35.276	38.05	48.715	20.97	48.195	12.92	29.748	29.33
2 1.4	35.510	39.20	49.002	20.41	48.523	11.74	30.010	29.23
2 11.4	35.767	40.19	49.318	19.92	48.886	10.71	30.298	29.13
2 21.3	36.040	40.99	49.653	19.50	49.274	9.82	30.603	29.02
3 3.3	36.328	41.55	50.006	19.12	49.684	9.09	30.925	28.87
3 13.3	36.625	41.84	50.369	18.79	50.107	8.52	31.257	28.68
3 23.3	36.925	41.85	50.737	18.50	50.538	8.11	31.594	28.44
4 2.2	37.229	41.58	51.109	18.27	50.973	7.86	31.936	28.16
4 12.2	37.528	41.04	51.477	18.09	51.404	7.79	32.274	27.83
4 22.2	37.821	40.27	51.837	17.98	51.826	7.89	32.607	27.49
5 2.2	38.104	39.29	52.188	17.94	52.236	8.17	32.930	27.15
5 12.1	38.370	38.16	52.518	18.00	52.621	8.64	33.236	26.83
5 22.1	38.617	36.92	52.826	18.16	52.981	9.28	33.523	26.56
6 1.1	38.840	35.61	53.106	18.43	53.306	10.11	33.783	26.34
6 11.0	39.031	34.29	53.348	18.81	53.587	11.09	34.011	26.21
6 21.0	39.190	33.01	53.553	19.30	53.822	12.20	34.203	26.16
7 1.0	39.311	31.77	53.711	19.89	54.004	13.44	34.353	26.21
7 11.0	39.390	30.65	53.819	20.55	54.126	14.73	34.458	26.34
7 20.9	39.430	29.63	53.879	21.26	54.191	16.07	34.518	26.55
7 30.9	39.425	28.75	53.885	21.99	54.194	17.39	34.529	26.82
8 9.9	39.381	28.02	53.842	22.71	54.138	18.63	34.494	27.12
8 19.9	39.301	27.42	53.755	23.38	54.030	19.77	34.418	27.43
8 29.8	39.186	26.98	53.625	23.96	53.871	20.73	34.303	27.73
9 8.8	39.047	26.70	53.464	24.42	53.676	21.48	34.159	27.99
9 18.8	38.890	26.54	53.281	24.73	53.453	21.98	33.994	28.18
9 28.7	38.724	26.54	53.085	24.88	53.215	22.20	33.816	28.30
10 8.7	38.560	26.68	52.891	24.84	52.978	22.11	33.641	28.33
10 18.7	38.406	26.96	52.709	24.62	52.754	21.75	33.475	28.27
10 28.7	38.273	27.39	52.551	24.24	52.557	21.09	33.331	28.14
11 7.6	38.171	27.97	52.430	23.70	52.402	20.17	33.221	27.93
11 17.6	38.103	28.68	52.351	23.05	52.296	19.04	33.149	27.67
11 27.6	38.077	29.55	52.323	22.31	52.248	17.74	33.123	27.40
12 7.6	38.097	30.54	52.350	21.52	52.265	16.32	33.147	27.12
12 17.5	38.159	31.65	52.430	20.74	52.344	14.85	33.221	26.86
12 27.5	38.267	32.85	52.563	19.97	52.487	13.35	33.345	26.82
12 37.5	38.415	34.08	52.745	19.21	52.689	11.90	33.503	26.44
Pos. Med.	37.804	24.70	51.837	12.22	51.771	5.70	32.642	18.91
Secδ tanδ	1.001	-.050	1.212	-.684	1.438	-1.034	1.107	-.475
Dob.Tran.	Jun 27		Jun 28		Jun 28		Jun 29	

VOLVER AL INDICE

VOLVER A LISTA D ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	699		1487		705		706	
EST.	α Lyrae (Vega)		φ Sagittarii		β Lyrae		σ Sagittarii	
MAG.	0.03		3.17		3.3 a 4.3		2.02	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	18 37	+38 48	18 47	-26 57	18 50	+33 23	18 56	-26 15
mes d	s	"	s	"	s	"	s	"
1 -7.5	45.237	22.41	11.430	56.37	58.424	28.54	47.271	58.95
1 2.5	45.311	19.28	11.556	56.11	58.489	25.63	47.391	58.75
1 12.5	45.438	16.16	11.733	55.69	58.603	22.70	47.552	58.32
1 22.4	45.611	13.14	11.948	55.38	58.759	19.84	47.755	57.99
2 1.4	45.828	10.32	12.196	55.07	58.957	17.16	47.992	57.67
2 11.4	46.084	7.85	12.472	54.77	59.191	14.78	48.258	57.33
2 21.4	46.369	5.79	12.769	54.45	59.454	12.78	48.546	56.98
3 3.3	46.682	4.23	13.085	54.11	59.744	11.23	48.854	56.58
3 13.3	47.012	3.26	13.414	53.73	60.052	10.23	49.176	56.14
3 23.3	47.352	2.86	13.751	53.31	60.372	9.77	49.509	55.66
4 2.2	47.699	3.07	14.096	52.87	60.702	9.90	49.850	55.13
4 12.2	48.042	3.89	14.441	52.40	61.031	10.59	50.193	54.58
4 22.2	48.375	5.24	14.783	51.94	61.355	11.80	50.535	54.03
5 2.2	48.694	7.10	15.119	51.49	61.669	13.51	50.872	53.48
5 12.1	48.988	9.38	15.440	51.09	61.962	15.63	51.196	52.98
5 22.1	49.253	11.99	15.743	50.75	62.233	18.07	51.503	52.54
6 1.1	49.484	14.89	16.022	50.49	62.473	20.79	51.788	52.19
6 11.1	49.672	17.93	16.268	50.34	62.675	23.67	52.041	51.94
6 21.0	49.817	21.05	16.481	50.29	62.838	26.64	52.261	51.80
7 1.0	49.913	24.18	16.651	50.36	62.956	29.63	52.440	51.79
7 11.0	49.957	27.20	16.776	50.53	63.025	32.53	52.574	51.90
7 20.9	49.953	30.06	16.855	50.79	63.048	35.30	52.662	52.10
7 30.9	49.896	32.72	16.883	51.13	63.020	37.88	52.699	52.40
8 9.9	49.791	35.07	16.864	51.52	62.946	40.18	52.689	52.76
8 19.9	49.645	37.11	16.801	51.93	62.830	42.20	52.634	53.16
8 29.8	49.457	38.79	16.696	52.33	62.674	43.88	52.536	53.56
9 8.8	49.241	40.04	16.559	52.70	62.487	45.17	52.406	53.94
9 18.8	49.003	40.89	16.398	52.99	62.277	46.09	52.249	54.27
9 28.8	48.750	41.27	16.221	53.21	62.051	46.58	52.075	54.52
10 8.7	48.497	41.19	16.043	53.31	61.823	46.63	51.898	54.68
10 18.7	48.252	40.67	15.871	53.31	61.599	46.27	51.726	54.73
10 28.7	48.026	39.66	15.718	53.21	61.391	45.45	51.570	54.69
11 7.6	47.830	38.21	15.595	53.01	61.210	44.21	51.444	54.55
11 17.6	47.670	36.34	15.509	52.73	61.061	42.57	51.351	54.33
11 27.6	47.555	34.06	15.466	52.40	60.952	40.53	51.301	54.04
12 7.6	47.491	31.48	15.473	52.03	60.891	38.19	51.299	53.72
12 17.5	47.478	28.63	15.528	51.65	60.875	35.58	51.343	53.37
12 27.5	47.520	25.58	15.634	51.31	60.910	32.76	51.438	53.04
12 37.5	47.614	22.49	15.775	50.94	60.994	29.88	51.567	52.74
Pos. Med.	48.162	31.44	14.896	43.93	61.321	37.39	50.690	45.85
Secδ tanδ	1.283	.804	1.122	-.509	1.198	.659	1.115	-.493
Dob.Tran.	Jul 1		Jul 3		Jul 4		Jul 5	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	1495		710		713		716	
EST.	114 G.Sagittarii		ξ^2 Sagittarii		γ Lyrae		ζ Aquilae	
MAG.	5.58		3.51		3.24		2.99	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	18 56	-16 20	18 59	-21 4	18 59	+32 43	19 6	+13 53
mes d	s	"	s	"	s	"	s	"
1 -7.5	55.879	48.84	11.693	28.16	50.987	24.71	32.052	60.85
1 2.5	55.989	49.09	11.813	27.99	51.043	21.86	32.127	58.84
1 12.5	56.140	49.45	11.957	28.16	51.148	18.98	32.243	56.80
1 22.5	56.329	49.76	12.151	28.16	51.295	16.16	32.394	54.81
2 1.4	56.549	50.02	12.376	28.12	51.483	13.49	32.579	52.94
2 11.4	56.796	50.20	12.629	28.04	51.708	11.11	32.794	51.30
2 21.4	57.064	50.29	12.904	27.90	51.962	9.10	33.032	49.93
3 3.3	57.351	50.26	13.198	27.67	52.245	7.53	33.293	48.90
3 13.3	57.651	50.08	13.507	27.35	52.547	6.49	33.571	48.28
3 23.3	57.962	49.76	13.826	26.93	52.863	5.99	33.860	48.07
4 2.3	58.281	49.30	14.154	26.42	53.190	6.06	34.160	48.29
4 12.2	58.601	48.70	14.484	25.82	53.519	6.71	34.463	48.96
4 22.2	58.920	48.00	14.813	25.17	53.844	7.86	34.765	50.00
5 2.2	59.236	47.21	15.139	24.48	54.160	9.51	35.064	51.40
5 12.2	59.538	46.38	15.451	23.78	54.458	11.59	35.349	53.11
5 22.1	59.825	45.54	15.749	23.12	54.734	13.99	35.618	55.05
6 1.1	60.091	44.72	16.024	22.50	54.982	16.68	35.865	57.17
6 11.1	60.328	43.95	16.270	21.96	55.193	19.54	36.083	59.40
6 21.0	60.533	43.26	16.484	21.52	55.365	22.49	36.269	61.65
7 1.0	60.700	42.67	16.659	21.19	55.493	25.48	36.417	63.91
7 11.0	60.823	42.19	16.789	20.98	55.573	28.38	36.523	66.06
7 21.0	60.905	41.82	16.876	20.88	55.607	31.17	36.587	68.10
7 30.9	60.939	41.57	16.914	20.88	55.590	33.78	36.606	69.97
8 9.9	60.928	41.43	16.906	20.97	55.525	36.12	36.582	71.62
8 19.9	60.876	41.36	16.856	21.13	55.419	38.19	36.517	73.06
8 29.8	60.784	41.38	16.763	21.33	55.271	39.93	36.415	74.24
9 8.8	60.661	41.45	16.639	21.56	55.092	41.28	36.282	75.14
9 18.8	60.515	41.55	16.490	21.77	54.888	42.28	36.127	75.78
9 28.8	60.352	41.68	16.323	21.96	54.667	42.84	35.954	76.12
10 8.7	60.186	41.82	16.153	22.12	54.443	42.98	35.777	76.16
10 18.7	60.025	41.96	15.988	22.22	54.221	42.70	35.604	75.93
10 28.7	59.880	42.10	15.838	22.28	54.013	41.97	35.442	75.38
11 7.7	59.761	42.24	15.716	22.29	53.831	40.82	35.305	74.55
11 17.6	59.675	42.40	15.626	22.27	53.679	39.28	35.195	73.45
11 27.6	59.628	42.58	15.577	22.23	53.566	37.33	35.120	72.08
12 7.6	59.625	42.78	15.573	22.18	53.499	35.07	35.087	70.49
12 17.5	59.666	43.01	15.613	22.13	53.476	32.54	35.093	68.70
12 27.5	59.753	43.25	15.702	22.08	53.503	29.79	35.143	66.77
12 37.5	59.876	43.50	15.818	21.98	53.578	26.96	35.234	64.78
Pos. Med.	59.088	36.50	14.988	15.25	53.886	33.51	34.945	71.13
Secδ tanδ	1.042	-.293	1.072	-.385	1.189	.643	1.030	.248
Dob.Tran.	Jul	6	Jul	6	Jul	6	Jul	8

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	717		1496		720		1502	
EST.	λ Aquilae		τ Sagittarii		π Sagittarii*		β^1 Sagittarii*	
MAG.	3.44		3.32		2.89		4.01	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	19 7	- 4 50	19 8	-27 37	19 11	-20 58	19 24	-44 24
mes d	s	"	s	"	s	"	s	"
1 -7.5	33.079	44.30	28.393	65.07	13.460	64.86	24.022	47.35
1 2.5	33.170	45.27	28.504	64.69	13.566	64.80	24.122	45.86
1 12.5	33.301	46.25	28.652	64.21	13.698	64.79	24.279	44.33
1 22.5	33.466	47.20	28.845	63.74	13.881	64.75	24.484	42.79
2 1.4	33.663	48.08	29.073	63.27	14.095	64.66	24.736	41.27
2 11.4	33.888	48.81	29.332	62.79	14.337	64.51	25.028	39.80
2 21.4	34.133	49.37	29.614	62.29	14.602	64.30	25.352	38.40
3 3.3	34.400	49.72	29.918	61.76	14.889	63.99	25.708	37.09
3 13.3	34.681	49.81	30.238	61.19	15.191	63.59	26.086	35.89
3 23.3	34.973	49.65	30.570	60.59	15.505	63.09	26.482	34.82
4 2.3	35.276	49.23	30.913	59.96	15.831	62.49	26.895	33.87
4 12.2	35.582	48.55	31.260	59.32	16.160	61.81	27.315	33.09
4 22.2	35.888	47.66	31.607	58.69	16.491	61.07	27.738	32.48
5 2.2	36.191	46.57	31.951	58.09	16.820	60.29	28.159	32.07
5 12.2	36.484	45.34	32.284	57.54	17.137	59.51	28.569	31.86
5 22.1	36.762	44.01	32.601	57.07	17.441	58.76	28.961	31.87
6 1.1	37.021	42.61	32.897	56.71	17.725	58.06	29.330	32.11
6 11.1	37.252	41.22	33.163	56.47	17.980	57.45	29.662	32.58
6 21.0	37.453	39.86	33.395	56.35	18.204	56.95	29.956	33.26
7 1.0	37.617	38.57	33.587	56.37	18.389	56.57	30.201	34.14
7 11.0	37.740	37.39	33.733	56.53	18.531	56.31	30.391	35.19
7 21.0	37.822	36.34	33.833	56.80	18.629	56.18	30.525	36.37
7 30.9	37.859	35.42	33.882	57.17	18.678	56.16	30.596	37.65
8 9.9	37.852	34.67	33.881	57.61	18.680	56.25	30.606	38.96
8 19.9	37.805	34.05	33.835	58.09	18.639	56.41	30.560	40.25
8 29.9	37.719	33.60	33.744	58.59	18.555	56.63	30.456	41.48
9 8.8	37.603	33.30	33.618	59.06	18.438	56.88	30.306	42.57
9 18.8	37.463	33.12	33.465	59.48	18.294	57.13	30.120	43.48
9 28.8	37.306	33.09	33.292	59.81	18.131	57.36	29.904	44.17
10 8.7	37.144	33.18	33.113	60.04	17.962	57.56	29.678	44.59
10 18.7	36.986	33.38	32.937	60.15	17.796	57.71	29.450	44.73
10 28.7	36.840	33.71	32.776	60.14	17.643	57.81	29.235	44.56
11 7.7	36.719	34.15	32.642	60.01	17.515	57.86	29.049	44.10
11 17.6	36.626	34.70	32.540	59.78	17.418	57.87	28.899	43.38
11 27.6	36.569	35.37	32.480	59.46	17.360	57.85	28.796	42.40
12 7.6	36.553	36.13	32.467	59.08	17.346	57.80	28.747	41.22
12 17.6	36.578	36.98	32.499	58.66	17.375	57.75	28.754	39.88
12 27.5	36.645	37.89	32.582	58.22	17.451	57.69	28.819	38.42
12 37.5	36.751	38.83	32.705	57.82	17.569	57.32	28.940	36.89
Pos. Med.	36.105	32.30	31.807	51.10	16.719	51.17	27.945	30.57
Secδ tanδ	1.004	-.085	1.129	-.523	1.071	-.383	1.400	-.980
Dob.Tran.	Jul 8		Jul 8		Jul 9		Jul 12	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	728		730		732		1513	
EST.	α Sagittarii		δ Aquilae		β Cygni*p.		β Sagittae	
MAG.	3.97		3.36		3.08		4.37	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	19 25	-40 33	19 26	+ 3 9	19 31	+28 0	19 42	+17 31
mes d	s	"	s	"	s	"	s	"
1 -7.4	35.122	72.48	44.088	50.98	42.155	44.05	8.823	62.08
1 2.5	35.219	71.22	44.155	49.62	42.185	41.53	8.858	60.04
1 12.5	35.368	69.92	44.262	48.24	42.261	38.93	8.935	57.95
1 22.5	35.563	68.60	44.402	46.90	42.375	36.36	9.047	55.88
2 1.4	35.801	67.28	44.575	45.63	42.529	33.87	9.195	53.89
2 11.4	36.077	66.00	44.778	44.55	42.721	31.63	9.376	52.10
2 21.4	36.384	64.77	45.004	43.67	42.942	29.69	9.585	50.57
3 3.4	36.719	63.59	45.253	43.06	43.194	28.13	9.822	49.37
3 13.3	37.076	62.49	45.521	42.77	43.470	27.06	10.081	48.59
3 23.3	37.450	61.47	45.803	42.80	43.764	26.47	10.358	48.22
4 2.3	37.841	60.55	46.097	43.16	44.075	26.41	10.652	48.30
4 12.3	38.238	59.75	46.399	43.86	44.393	26.90	10.955	48.86
4 22.2	38.638	59.09	46.703	44.85	44.714	27.87	11.264	49.82
5 2.2	39.038	58.58	47.007	46.12	45.034	29.33	11.574	51.19
5 12.2	39.427	58.26	47.302	47.60	45.342	31.21	11.876	52.92
5 22.1	39.801	58.12	47.585	49.25	45.634	33.42	12.166	54.91
6 1.1	40.152	58.19	47.851	51.03	45.905	35.93	12.439	57.15
6 11.1	40.470	58.47	48.089	52.85	46.143	38.63	12.684	59.53
6 21.1	40.751	58.94	48.299	54.67	46.349	41.45	12.900	61.98
7 1.0	40.987	59.61	48.474	56.46	46.513	44.32	13.079	64.47
7 11.0	41.170	60.44	48.607	58.14	46.632	47.16	13.217	66.90
7 21.0	41.301	61.41	48.701	59.70	46.706	49.89	13.312	69.22
7 31.0	41.373	62.48	48.748	61.11	46.731	52.49	13.361	71.41
8 9.9	41.387	63.61	48.752	62.32	46.709	54.86	13.364	73.38
8 19.9	41.347	64.73	48.716	63.36	46.643	56.99	13.326	75.14
8 29.9	41.252	65.82	48.639	64.20	46.533	58.82	13.245	76.65
9 8.8	41.115	66.79	48.530	64.82	46.389	60.31	13.130	77.86
9 18.8	40.942	67.62	48.395	65.25	46.218	61.48	12.987	78.79
9 28.8	40.743	68.26	48.241	65.47	46.025	62.25	12.822	79.41
10 8.8	40.532	68.67	48.080	65.49	45.823	62.63	12.648	79.71
10 18.7	40.321	68.84	47.919	65.32	45.619	62.64	12.470	79.70
10 28.7	40.122	68.74	47.767	64.94	45.423	62.22	12.299	79.35
11 7.7	39.949	68.38	47.636	64.38	45.246	61.41	12.145	78.69
11 17.7	39.811	67.80	47.530	63.64	45.094	60.21	12.014	77.73
11 27.6	39.717	66.98	47.457	62.72	44.975	58.64	11.912	76.46
12 7.6	39.675	65.99	47.422	61.66	44.895	56.75	11.847	74.94
12 17.6	39.683	64.86	47.424	60.46	44.854	54.57	11.819	73.19
12 27.5	39.747	63.63	47.468	59.16	44.858	52.17	11.830	71.26
12 37.5	39.864	62.33	47.550	57.83	44.906	49.65	11.882	69.23
Pos. Med.	38.873	55.97	47.019	62.87	45.032	52.91	11.670	72.19
Secδ tanδ	1.316	-.856	1.002	.055	1.133	.532	1.049	.316
Dob.Tran.	Jul 13		Jul 13		Jul 14		Jul 17	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	741		743		745		746	
EST.	γ Aquilae		δ Sagittae		α Aquilae (Altair)		η Aquilae	
MAG.	2.72		3.82		0.77		3.5 a 4.3	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	19 47	+10 40	19 48	+18 35	19 51	+ 8 55	19 53	+ 1 4
mes d	s	"	s	"	s	"	s	"
1 -7.4	25.463	26.34	28.663	45.50	58.757	62.89	43.391	9.58
1 2.5	25.503	24.65	28.692	43.45	58.798	61.32	43.434	8.43
1 12.5	25.581	22.93	28.761	41.33	58.877	59.72	43.516	7.26
1 22.5	25.694	21.23	28.866	39.23	58.989	58.14	43.630	6.12
2 1.5	25.841	19.60	29.006	37.20	59.136	56.64	43.777	5.05
2 11.4	26.019	18.16	29.182	35.37	59.314	55.32	43.955	4.13
2 21.4	26.224	16.95	29.385	33.79	59.519	54.23	44.159	3.41
3 3.4	26.456	16.03	29.617	32.54	59.750	53.41	44.389	2.93
3 13.3	26.710	15.48	29.873	31.71	60.003	52.95	44.640	2.75
3 23.3	26.981	15.30	30.147	31.30	60.273	52.84	44.909	2.86
4 2.3	27.270	15.52	30.440	31.35	60.562	53.12	45.195	3.28
4 12.3	27.568	16.14	30.743	31.87	60.860	53.79	45.493	4.02
4 22.2	27.873	17.12	31.053	32.81	61.165	54.80	45.797	5.04
5 2.2	28.180	18.45	31.365	34.17	61.474	56.14	46.107	6.31
5 12.2	28.482	20.07	31.670	35.89	61.777	57.77	46.411	7.80
5 22.2	28.773	21.92	31.964	37.90	62.070	59.60	46.708	9.44
6 1.1	29.049	23.97	32.241	40.16	62.348	61.62	46.991	11.19
6 11.1	29.299	26.12	32.491	42.57	62.601	63.73	47.250	12.99
6 21.1	29.522	28.31	32.712	45.07	62.827	65.87	47.483	14.79
7 1.0	29.709	30.51	32.897	47.61	63.019	68.01	47.682	16.54
7 11.0	29.856	32.63	33.039	50.10	63.170	70.07	47.842	18.19
7 21.0	29.963	34.64	33.140	52.50	63.281	72.01	47.962	19.72
7 31.0	30.023	36.51	33.194	54.76	63.346	73.81	48.036	21.10
8 9.9	30.039	38.18	33.202	56.81	63.367	75.41	48.066	22.28
8 19.9	30.013	39.65	33.168	58.64	63.346	76.81	48.054	23.29
8 29.9	29.945	40.88	33.090	60.22	63.282	77.98	47.999	24.11
9 8.9	29.843	41.86	32.978	61.51	63.185	78.90	47.909	24.71
9 18.8	29.713	42.60	32.838	62.51	63.059	79.59	47.791	25.14
9 28.8	29.560	43.07	32.674	63.20	62.910	80.03	47.649	25.37
10 8.8	29.397	43.28	32.500	63.55	62.751	80.21	47.496	25.41
10 18.7	29.231	43.23	32.321	63.59	62.588	80.16	47.338	25.29
10 28.7	29.070	42.91	32.148	63.29	62.431	79.85	47.186	24.98
11 7.7	28.926	42.33	31.991	62.66	62.290	79.30	47.049	24.51
11 17.7	28.804	41.52	31.855	61.73	62.170	78.54	46.934	23.90
11 27.6	28.710	40.45	31.749	60.47	62.078	77.53	46.847	23.12
12 7.6	28.652	39.18	31.678	58.96	62.022	76.35	46.795	22.22
12 17.6	28.629	37.73	31.642	57.21	62.001	75.00	46.777	21.21
12 27.6	28.645	36.13	31.647	55.27	62.018	73.51	46.797	20.11
12 37.5	28.700	34.47	31.692	53.22	62.073	71.96	46.855	18.97
Pos. Med.	28.312	37.49	31.502	55.49	61.625	74.66	46.266	22.33
Secδ tanδ	1.018	.189	1.055	.337	1.012	.157	1.000	.019
Dob.Tran.	Jul 18		Jul 19		Jul 19		Jul 20	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	749		752		748		754	
EST.	β Aquilae		γ Sagittae		ε Pavonis		δ Pavonis	
MAG.	3.71		3.47		3.96		3.56	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	19 56	+ 6 27	19 59	+19 33	20 3	-72 50	20 11	-66 6
mes d	s	"	s	"	s	"	s	"
1 -7.4	31.091	67.96	50.657	36.81	22.812	44.08	6.730	71.79
1 2.5	31.127	66.51	50.674	34.77	22.794	41.20	6.735	69.22
1 12.5	31.202	65.03	50.731	32.66	22.915	38.17	6.841	66.50
1 22.5	31.310	63.58	50.823	30.54	23.162	35.09	7.036	63.70
2 1.5	31.451	62.20	50.952	28.49	23.534	32.01	7.320	60.87
2 11.4	31.624	60.99	51.116	26.62	24.024	29.03	7.689	58.11
2 21.4	31.823	59.98	51.310	25.00	24.611	26.21	8.127	55.46
3 3.4	32.049	59.25	51.533	23.70	25.293	23.59	8.633	52.97
3 13.4	32.298	58.85	51.782	22.82	26.053	21.26	9.196	50.71
3 23.3	32.564	58.79	52.051	22.35	26.871	19.24	9.804	48.71
4 2.3	32.849	59.08	52.341	22.34	27.745	17.55	10.454	47.00
4 12.3	33.146	59.75	52.643	22.81	28.650	16.27	11.129	45.63
4 22.2	33.449	60.73	52.953	23.71	29.572	15.37	11.821	44.61
5 2.2	33.758	62.03	53.268	25.04	30.502	14.90	12.523	43.97
5 12.2	34.062	63.59	53.578	26.74	31.412	14.87	13.215	43.74
5 22.2	34.357	65.34	53.878	28.74	32.291	15.26	13.887	43.88
6 1.1	34.638	67.26	54.162	31.01	33.122	16.08	14.528	44.44
6 11.1	34.896	69.26	54.421	33.45	33.877	17.30	15.117	45.38
6 21.1	35.127	71.28	54.652	35.99	34.550	18.88	15.648	46.67
7 1.1	35.324	73.29	54.846	38.59	35.119	20.80	16.104	48.31
7 11.0	35.482	75.21	54.999	41.14	35.567	22.99	16.472	50.21
7 21.0	35.599	77.02	55.111	43.61	35.891	25.37	16.750	52.33
7 31.0	35.672	78.69	55.175	45.95	36.075	27.90	16.924	54.62
8 9.9	35.699	80.15	55.193	48.09	36.116	30.46	16.993	56.97
8 19.9	35.684	81.43	55.167	50.02	36.024	32.97	16.962	59.31
8 29.9	35.627	82.49	55.098	51.70	35.792	35.36	16.827	61.57
9 8.9	35.535	83.31	54.993	53.08	35.441	37.50	16.602	63.63
9 18.8	35.414	83.92	54.859	54.18	34.987	39.33	16.301	65.43
9 28.8	35.270	84.29	54.699	54.96	34.444	40.77	15.932	66.89
10 8.8	35.114	84.43	54.527	55.40	33.848	41.73	15.523	67.93
10 18.8	34.954	84.35	54.350	55.53	33.221	42.21	15.091	68.52
10 28.7	34.797	84.04	54.175	55.30	32.590	42.13	14.655	68.62
11 7.7	34.657	83.52	54.015	54.75	31.996	41.50	14.244	68.21
11 17.7	34.536	82.79	53.874	53.87	31.454	40.35	13.873	67.32
11 27.6	34.444	81.86	53.761	52.67	30.996	38.69	13.562	65.94
12 7.6	34.386	80.76	53.681	51.20	30.647	36.60	13.329	64.15
12 17.6	34.362	79.51	53.636	49.48	30.411	34.14	13.179	62.01
12 27.6	34.375	78.13	53.629	47.56	30.307	31.38	13.123	59.57
12 37.5	34.427	76.70	53.662	45.52	30.340	28.42	13.166	56.92
Pos. Med.	33.936	79.66	53.481	46.63	29.616	21.70	12.087	49.69
Secδ tanδ	1.006	.113	1.061	.355	3.389	-3.238	2.470	-2.258
Dob.Tran.	Jul 21		Jul 21		Jul 22		Jul 24	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	756		761		762		765	
EST.	ϑ Aquilae		α^2 Capricorni		β Capricorni		γ Cygni	
MAG.	3.23		3.57		3.08		2.20	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	20 12	- 0 44	20 19	-12 27	20 22	-14 41	20 23	+40 19
mes d	s	"	s	"	s	"	s	"
1 -7.4	34.329	52.37	25.111	66.33	23.569	73.05	5.712	76.20
1 2.6	34.357	53.37	25.141	66.67	23.597	73.27	5.660	73.62
1 12.5	34.422	54.37	25.209	66.95	23.663	73.41	5.655	70.84
1 22.5	34.519	55.34	25.308	67.15	23.760	73.43	5.695	67.98
2 1.5	34.649	56.25	25.439	67.36	23.889	73.52	5.783	65.11
2 11.4	34.811	57.01	25.605	67.40	24.054	73.42	5.918	62.39
2 21.4	34.999	57.59	25.798	67.30	24.246	73.18	6.096	59.91
3 3.4	35.215	57.94	26.018	67.03	24.466	72.78	6.316	57.76
3 13.4	35.454	58.02	26.263	66.57	24.711	72.21	6.575	56.08
3 23.3	35.713	57.82	26.528	65.92	24.977	71.47	6.865	54.88
4 2.3	35.993	57.32	26.814	65.08	25.264	70.56	7.186	54.23
4 12.3	36.286	56.52	27.115	64.06	25.567	69.49	7.526	54.18
4 22.3	36.590	55.47	27.428	62.90	25.882	68.29	7.880	54.70
5 2.2	36.902	54.17	27.750	61.61	26.207	66.99	8.242	55.78
5 12.2	37.212	52.67	28.071	60.23	26.532	65.63	8.599	57.39
5 22.2	37.516	51.04	28.389	58.82	26.854	64.26	8.946	59.45
6 1.1	37.810	49.29	28.697	57.41	27.166	62.90	9.274	61.93
6 11.1	38.082	47.51	28.985	56.05	27.459	61.62	9.572	64.72
6 21.1	38.330	45.75	29.249	54.78	27.729	60.43	9.835	67.75
7 1.1	38.546	44.03	29.482	53.63	27.967	59.38	10.057	70.96
7 11.0	38.724	42.41	29.676	52.63	28.166	58.49	10.228	74.23
7 21.0	38.863	40.93	29.830	51.78	28.326	57.77	10.351	77.50
7 31.0	38.956	39.60	29.939	51.12	28.439	57.22	10.418	80.72
8 10.0	39.004	38.46	30.000	50.64	28.505	56.86	10.430	83.77
8 19.9	39.010	37.50	30.018	50.31	28.526	56.66	10.392	86.63
8 29.9	38.972	36.74	29.989	50.15	28.501	56.62	10.301	89.23
9 8.9	38.897	36.18	29.922	50.13	28.436	56.70	10.166	91.50
9 18.8	38.791	35.79	29.822	50.22	28.338	56.88	9.994	93.45
9 28.8	38.660	35.58	29.694	50.40	28.211	57.14	9.789	94.99
10 8.8	38.514	35.55	29.550	50.65	28.067	57.45	9.565	96.09
10 18.8	38.361	35.67	29.398	50.95	27.915	57.78	9.328	96.77
10 28.7	38.210	35.95	29.247	51.28	27.762	58.13	9.088	96.97
11 7.7	38.072	36.37	29.108	51.63	27.622	58.47	8.858	96.68
11 17.7	37.952	36.92	28.987	51.98	27.499	58.79	8.643	95.94
11 27.7	37.858	37.60	28.892	52.35	27.401	59.10	8.453	94.71
12 7.6	37.796	38.38	28.829	52.70	27.336	59.37	8.296	93.05
12 17.6	37.766	39.27	28.799	53.06	27.304	59.62	8.175	91.01
12 27.6	37.772	40.22	28.806	53.39	27.308	59.84	8.096	88.61
12 37.5	37.814	41.19	28.851	53.69	27.351	60.01	8.063	85.98
Pos. Med.	37.160	38.91	28.004	50.46	26.469	56.66	8.659	82.17
Secδ tanδ	1.000	-.013	1.024	-.221	1.034	-.262	1.312	.849
Dob.Tran.	Jul 25		Jul 26		Jul 27		Jul 27	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	764		768		769		774	
EST.	α Pavonis		ε Delphini		α Indi		α Delphini	
MAG.	1.94		4.03		3.11		3.77	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	20 27	-56 38	20 34	+11 23	20 39	-47 11	20 40	+15 59
mes d	s	"	s	"	s	"	s	"
1 -7.4	34.831	86.77	23.130	17.88	17.529	84.84	46.644	61.94
1 2.6	34.825	84.68	23.128	16.36	17.525	83.26	46.630	60.25
1 12.5	34.889	82.40	23.161	14.78	17.576	81.48	46.653	58.47
1 22.5	35.016	80.00	23.227	13.19	17.676	79.57	46.708	56.67
2 1.5	35.207	77.51	23.327	11.65	17.826	77.54	46.797	54.90
2 11.5	35.459	75.02	23.460	10.25	18.024	75.44	46.921	53.27
2 21.4	35.762	72.56	23.622	9.06	18.264	73.34	47.075	51.84
3 3.4	36.117	70.18	23.814	8.12	18.545	71.23	47.262	50.67
3 13.4	36.516	67.94	24.035	7.53	18.863	69.18	47.478	49.87
3 23.3	36.951	65.87	24.279	7.28	19.213	67.22	47.720	49.43
4 2.3	37.423	63.99	24.548	7.42	19.594	65.36	47.987	49.41
4 12.3	37.919	62.37	24.834	7.97	19.999	63.68	48.274	49.83
4 22.3	38.434	61.02	25.134	8.88	20.422	62.17	48.575	50.65
5 2.2	38.963	59.97	25.445	10.16	20.860	60.88	48.889	51.88
5 12.2	39.491	59.27	25.757	11.75	21.302	59.86	49.205	53.46
5 22.2	40.012	58.90	26.067	13.59	21.741	59.11	49.518	55.33
6 1.2	40.516	58.89	26.366	15.65	22.169	58.66	49.822	57.47
6 11.1	40.986	59.25	26.647	17.85	22.574	58.53	50.107	59.78
6 21.1	41.418	59.94	26.904	20.12	22.949	58.70	50.369	62.20
7 1.1	41.799	60.98	27.131	22.43	23.284	59.20	50.600	64.69
7 11.0	42.116	62.32	27.320	24.68	23.569	59.99	50.792	67.15
7 21.0	42.367	63.89	27.470	26.85	23.800	61.03	50.946	69.55
7 31.0	42.542	65.69	27.575	28.89	23.969	62.31	51.055	71.84
8 10.0	42.637	67.61	27.634	30.75	24.073	63.76	51.117	73.95
8 19.9	42.656	69.59	27.650	32.41	24.114	65.31	51.135	75.87
8 29.9	42.595	71.57	27.622	33.85	24.089	66.93	51.109	77.56
9 8.9	42.465	73.44	27.555	35.03	24.005	68.51	51.043	78.98
9 18.9	42.274	75.14	27.456	35.98	23.871	70.00	50.944	80.15
9 28.8	42.029	76.59	27.329	36.66	23.691	71.33	50.815	81.03
10 8.8	41.750	77.72	27.184	37.07	23.482	72.42	50.669	81.61
10 18.8	41.449	78.49	27.030	37.23	23.255	73.25	50.511	81.91
10 28.7	41.142	78.85	26.873	37.11	23.020	73.75	50.349	81.89
11 7.7	40.850	78.77	26.725	36.74	22.795	73.90	50.195	81.57
11 17.7	40.583	78.27	26.590	36.13	22.589	73.71	50.053	80.98
11 27.7	40.356	77.34	26.477	35.27	22.415	73.16	49.932	80.09
12 7.6	40.184	76.02	26.392	34.20	22.282	72.27	49.837	78.95
12 17.6	40.068	74.36	26.336	32.93	22.194	71.09	49.771	77.57
12 27.6	40.019	72.40	26.313	31.51	22.157	69.62	49.737	76.00
12 37.6	40.038	70.22	26.325	29.99	22.173	67.95	49.738	74.30
Pos. Med.	38.888	63.49	25.866	29.10	20.983	61.87	49.370	72.14
Secδ tanδ	1.819	-1.520	1.020	.201	1.472	-1.080	1.040	.287
Dob.Tran.	Jul 29		Jul 30		Jul 31		Ago 1	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	777		775		780		781	
EST.	α Cygni (Deneb)		β Pavonis		ε Cygni		ε Aquarii	
MAG.	1.25		3.42		2.46		3.77	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	20 42	+45 21	20 47	-66 6	20 47	+34 3	20 49	- 9 24
mes d	s	"	s	"	s	"	s	"
1 -7.4	15.110	76.59	8.796	58.08	11.813	54.62	.506	19.04
1 2.6	15.018	74.05	8.706	55.63	11.758	52.37	.508	19.51
1 12.6	14.975	71.27	8.711	52.93	11.744	49.93	.546	19.92
1 22.5	14.981	68.36	8.803	50.06	11.770	47.39	.614	20.26
2 1.5	15.037	65.38	8.983	47.07	11.837	44.82	.712	20.50
2 11.5	15.147	62.51	9.250	44.07	11.946	42.36	.844	20.67
2 21.4	15.305	59.84	9.591	41.11	12.095	40.10	1.005	20.66
3 3.4	15.512	57.46	10.006	38.23	12.283	38.13	1.195	20.45
3 13.4	15.764	55.52	10.488	35.53	12.509	36.57	1.412	20.02
3 23.4	16.055	54.05	11.024	33.04	12.767	35.45	1.653	19.39
4 2.3	16.382	53.13	11.614	30.79	13.056	34.83	1.920	18.53
4 12.3	16.736	52.82	12.242	28.87	13.369	34.77	2.205	17.46
4 22.3	17.108	53.08	12.900	27.27	13.700	35.23	2.507	16.21
5 2.3	17.492	53.94	13.581	26.04	14.043	36.23	2.823	14.80
5 12.2	17.875	55.36	14.266	25.23	14.388	37.72	3.143	13.27
5 22.2	18.250	57.26	14.945	24.82	14.729	39.64	3.464	11.68
6 1.2	18.608	59.64	15.607	24.85	15.058	41.96	3.779	10.05
6 11.1	18.936	62.37	16.230	25.31	15.363	44.59	4.079	8.45
6 21.1	19.229	65.39	16.805	26.16	15.641	47.44	4.358	6.92
7 1.1	19.478	68.64	17.317	27.41	15.883	50.48	4.609	5.50
7 11.1	19.676	72.01	17.749	29.01	16.081	53.59	4.825	4.22
7 21.0	19.822	75.42	18.097	30.90	16.235	56.70	5.003	3.11
7 31.0	19.910	78.82	18.346	33.05	16.338	59.78	5.137	2.18
8 10.0	19.938	82.09	18.490	35.34	16.390	62.70	5.225	1.45
8 20.0	19.912	85.20	18.534	37.71	16.393	65.46	5.268	.91
8 29.9	19.829	88.09	18.470	40.09	16.346	67.99	5.266	.56
9 8.9	19.697	90.66	18.309	42.34	16.256	70.21	5.222	.38
9 18.9	19.524	92.92	18.063	44.41	16.128	72.14	5.144	.34
9 28.8	19.312	94.78	17.737	46.21	15.967	73.71	5.035	.44
10 8.8	19.076	96.20	17.357	47.63	15.785	74.87	4.907	.64
10 18.8	18.823	97.20	16.938	48.64	15.588	75.66	4.766	.93
10 28.8	18.561	97.69	16.499	49.17	15.384	76.00	4.620	1.28
11 7.7	18.305	97.68	16.068	49.18	15.185	75.91	4.482	1.68
11 17.7	18.059	97.19	15.660	48.70	14.997	75.39	4.355	2.11
11 27.7	17.835	96.17	15.296	47.69	14.828	74.43	4.249	2.58
12 7.6	17.641	94.69	14.996	46.21	14.687	73.07	4.171	3.04
12 17.6	17.481	92.78	14.766	44.32	14.575	71.34	4.120	3.51
12 27.6	17.363	90.46	14.620	42.04	14.498	69.28	4.102	3.98
12 37.6	17.292	87.86	14.565	39.47	14.460	66.98	4.118	4.40
Pos. Med.	18.123	81.06	13.412	32.35	14.655	61.15	3.244	3.04
Secδ tanδ	1.423	1.013	2.469	-2.258	1.207	.676	1.014	-.166
Dob.Tran.	Ago 1		Ago 2		Ago 2		Ago 3	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	785		792		1552		797	
EST.	β Indi		ξ Cygni		ϑ Capricorni		ζ Cygni	
MAG.	3.65		3.72		4.07		3.20	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	20 56	-58 21	21 5	+44 1	21 7	-17 7	21 13	+30 19
mes d	s	"	s	"	s	"	s	"
1 -7.4	43.147	46.54	48.661	46.33	19.934	66.24	58.666	51.31
1 2.6	43.084	44.48	48.553	44.02	19.922	66.31	58.598	49.34
1 12.6	43.092	42.16	48.489	41.43	19.946	66.26	58.567	47.18
1 22.5	43.163	39.66	48.469	38.68	20.001	66.11	58.570	44.89
2 1.5	43.300	37.01	48.497	35.82	20.108	65.90	58.610	42.55
2 11.5	43.503	34.29	48.576	33.01	20.201	65.47	58.691	40.28
2 21.5	43.762	31.57	48.703	30.37	20.351	64.91	58.808	38.17
3 3.4	44.078	28.88	48.879	27.96	20.531	64.20	58.965	36.31
3 13.4	44.446	26.30	49.102	25.96	20.740	63.31	59.160	34.81
3 23.4	44.858	23.87	49.366	24.39	20.975	62.27	59.389	33.70
4 2.3	45.314	21.61	49.670	23.33	21.238	61.07	59.652	33.05
4 12.3	45.803	19.61	50.005	22.85	21.523	59.72	59.942	32.93
4 22.3	46.319	17.87	50.364	22.93	21.828	58.27	60.254	33.28
5 2.3	46.858	16.44	50.741	23.60	22.149	56.72	60.585	34.15
5 12.2	47.403	15.37	51.122	24.83	22.479	55.14	60.923	35.50
5 22.2	47.949	14.65	51.501	26.56	22.813	53.57	61.263	37.26
6 1.2	48.486	14.32	51.869	28.76	23.144	52.03	61.596	39.41
6 11.2	48.995	14.40	52.212	31.34	23.462	50.60	61.912	41.87
6 21.1	49.471	14.85	52.525	34.23	23.762	49.29	62.206	44.56
7 1.1	49.899	15.70	52.799	37.39	24.035	48.14	62.469	47.45
7 11.1	50.267	16.89	53.025	40.68	24.275	47.20	62.692	50.41
7 21.0	50.570	18.38	53.202	44.05	24.476	46.45	62.875	53.39
7 31.0	50.797	20.15	53.324	47.45	24.634	45.92	63.011	56.36
8 10.0	50.941	22.10	53.388	50.75	24.744	45.60	63.097	59.19
8 20.0	51.007	24.17	53.397	53.92	24.809	45.48	63.136	61.88
8 29.9	50.987	26.30	53.351	56.89	24.826	45.55	63.125	64.37
9 8.9	50.891	28.36	53.254	59.59	24.799	45.78	63.071	66.58
9 18.9	50.727	30.31	53.114	61.99	24.734	46.12	62.978	68.52
9 28.9	50.499	32.05	52.934	64.03	24.636	46.56	62.851	70.13
10 8.8	50.228	33.48	52.726	65.66	24.514	47.05	62.698	71.38
10 18.8	49.925	34.57	52.497	66.87	24.376	47.55	62.529	72.28
10 28.8	49.605	35.24	52.256	67.61	24.230	48.05	62.348	72.77
11 7.7	49.290	35.47	52.014	67.85	24.088	48.51	62.168	72.85
11 17.7	48.991	35.25	51.779	67.63	23.955	48.92	61.993	72.55
11 27.7	48.724	34.55	51.559	66.88	23.840	49.27	61.832	71.82
12 7.7	48.505	33.42	51.363	65.66	23.751	49.53	61.693	70.73
12 17.6	48.337	31.90	51.196	64.00	23.688	49.72	61.577	69.27
12 27.6	48.232	30.01	51.065	61.92	23.656	49.82	61.491	67.49
12 37.6	48.195	27.83	50.975	59.53	23.658	49.82	61.438	65.47
Pos. Med.	46.935	20.97	51.607	50.10	22.628	48.02	61.388	57.64
Secδ tanδ	1.906	-1.623	1.391	.967	1.046	-.308	1.159	.585
Dob.Tran.	Ago 5		Ago 7		Ago 8		Ago 9	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	800		804		1561		806	
EST.	α Equulei		1 Pegasi		ι Capricorni		ζ Capricorni	
MAG.	3.92		4.08		4.28		3.74	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	21 17	+ 5 20	21 23	+19 54	21 23	-16 43	21 28	-22 17
mes d	s	"	s	"	s	"	s	"
1 -7.4	3.302	63.87	13.392	44.49	37.183	47.16	4.510	78.34
1 2.6	3.274	62.77	13.341	42.89	37.159	47.24	4.480	78.17
1 12.6	3.276	61.64	13.321	41.15	37.167	47.21	4.483	77.83
1 22.5	3.308	60.51	13.331	39.33	37.205	47.06	4.518	77.36
2 1.5	3.369	59.43	13.374	37.50	37.278	46.79	4.585	76.77
2 11.5	3.463	58.48	13.453	35.75	37.368	46.42	4.681	76.00
2 21.5	3.586	57.69	13.563	34.17	37.502	45.81	4.811	75.04
3 3.4	3.740	57.11	13.709	32.81	37.665	45.06	4.974	73.94
3 13.4	3.926	56.82	13.889	31.77	37.858	44.13	5.169	72.70
3 23.4	4.139	56.83	14.101	31.09	38.079	43.04	5.392	71.33
4 2.4	4.381	57.17	14.344	30.82	38.329	41.77	5.647	69.82
4 12.3	4.646	57.85	14.614	31.00	38.605	40.36	5.927	68.22
4 22.3	4.932	58.84	14.907	31.60	38.901	38.83	6.230	66.55
5 2.3	5.236	60.15	15.218	32.63	39.217	37.21	6.554	64.83
5 12.2	5.549	61.72	15.539	34.05	39.544	35.54	6.890	63.14
5 22.2	5.866	63.49	15.864	35.82	39.878	33.87	7.233	61.49
6 1.2	6.181	65.45	16.187	37.90	40.211	32.24	7.577	59.94
6 11.2	6.483	67.52	16.496	40.21	40.534	30.70	7.911	58.53
6 21.1	6.768	69.63	16.787	42.69	40.841	29.29	8.230	57.29
7 1.1	7.028	71.75	17.051	45.30	41.125	28.04	8.526	56.26
7 11.1	7.255	73.81	17.281	47.93	41.375	27.00	8.788	55.47
7 21.1	7.447	75.77	17.473	50.54	41.590	26.16	9.014	54.91
7 31.0	7.596	77.59	17.622	53.09	41.762	25.55	9.196	54.60
8 10.0	7.701	79.23	17.725	55.49	41.887	25.17	9.330	54.54
8 20.0	7.763	80.68	17.783	57.73	41.967	25.00	9.418	54.69
8 29.9	7.779	81.91	17.795	59.76	41.999	25.03	9.456	55.04
9 8.9	7.755	82.91	17.765	61.53	41.987	25.24	9.448	55.55
9 18.9	7.695	83.69	17.698	63.06	41.937	25.57	9.399	56.17
9 28.9	7.603	84.25	17.597	64.29	41.850	26.02	9.313	56.88
10 8.8	7.489	84.57	17.473	65.21	41.738	26.53	9.199	57.60
10 18.8	7.358	84.70	17.331	65.84	41.609	27.08	9.066	58.31
10 28.8	7.219	84.61	17.178	66.13	41.468	27.62	8.921	58.98
11 7.8	7.082	84.34	17.026	66.11	41.329	28.13	8.775	59.55
11 17.7	6.952	83.88	16.878	65.77	41.196	28.60	8.636	60.01
11 27.7	6.835	83.24	16.742	65.11	41.077	28.99	8.510	60.34
12 7.7	6.740	82.46	16.626	64.17	40.981	29.30	8.407	60.53
12 17.6	6.667	81.54	16.531	62.95	40.909	29.53	8.328	60.57
12 27.6	6.621	80.51	16.462	61.49	40.865	29.65	8.279	60.47
12 37.6	6.605	79.42	16.424	59.85	40.853	29.67	8.261	60.21
Pos. Med.	5.888	76.40	16.006	53.20	39.780	28.66	7.109	58.32
Secδ tanδ	1.004	.094	1.064	.362	1.044	-.300	1.081	-.410
Dob.Tran.	Ago 10		Ago 12		Ago 12		Ago 13	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	808		1568		812		810	
EST.	β Aquarii		ρ Cygni		γ Capricorni		ν Octantis	
MAG.	2.91		4.02		3.68		3.76	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	21 32	- 5 27	21 34	+45 41	21 41	-16 32	21 44	-77 16
mes d	s	"	s	"	s	"	s	"
1 -7.4	51.457	43.52	53.631	77.49	27.517	64.03	7.674	57.98
1 2.6	51.424	44.12	53.489	75.42	27.479	64.14	7.190	55.49
1 12.6	51.421	44.68	53.389	73.03	27.471	64.11	6.858	52.59
1 22.6	51.445	45.17	53.329	70.41	27.492	63.96	6.676	49.41
2 1.5	51.499	45.56	53.316	67.63	27.544	63.68	6.652	45.99
2 11.5	51.581	45.79	53.355	64.84	27.623	63.41	6.795	42.44
2 21.5	51.693	45.93	53.442	62.14	27.732	62.65	7.086	38.86
3 3.4	51.837	45.85	53.582	59.62	27.877	61.84	7.529	35.29
3 13.4	52.013	45.52	53.774	57.44	28.052	60.87	8.116	31.86
3 23.4	52.216	44.96	54.013	55.66	28.257	59.72	8.825	28.60
4 2.4	52.450	44.14	54.298	54.34	28.493	58.39	9.656	25.58
4 12.3	52.709	43.07	54.621	53.58	28.757	56.90	10.588	22.89
4 22.3	52.990	41.78	54.974	53.37	29.044	55.30	11.600	20.55
5 2.3	53.292	40.29	55.353	53.73	29.354	53.59	12.686	18.62
5 12.3	53.606	38.63	55.744	54.67	29.677	51.84	13.812	17.16
5 22.2	53.927	36.86	56.138	56.12	30.010	50.08	14.958	16.16
6 1.2	54.249	35.01	56.527	58.08	30.346	48.35	16.109	15.67
6 11.2	54.562	33.15	56.897	60.46	30.674	46.71	17.223	15.70
6 21.1	54.861	31.33	57.242	63.19	30.989	45.20	18.285	16.21
7 1.1	55.138	29.58	57.551	66.22	31.283	43.86	19.267	17.23
7 11.1	55.383	27.97	57.815	69.45	31.546	42.73	20.134	18.70
7 21.1	55.594	26.50	58.032	72.81	31.775	41.81	20.877	20.57
7 31.0	55.765	25.23	58.194	76.24	31.963	41.13	21.466	22.81
8 10.0	55.891	24.16	58.298	79.62	32.105	40.69	21.881	25.31
8 20.0	55.975	23.30	58.347	82.93	32.203	40.47	22.124	28.00
8 30.0	56.012	22.66	58.338	86.08	32.253	40.48	22.174	30.80
9 8.9	56.007	22.23	58.276	89.00	32.258	40.67	22.038	33.57
9 18.9	55.965	21.98	58.168	91.66	32.223	41.01	21.731	36.22
9 28.9	55.888	21.91	58.015	93.99	32.152	41.49	21.252	38.66
10 8.8	55.787	22.00	57.828	95.93	32.052	42.03	20.636	40.75
10 18.8	55.668	22.21	57.616	97.48	31.933	42.62	19.908	42.44
10 28.8	55.537	22.53	57.385	98.56	31.800	43.23	19.091	43.63
11 7.8	55.405	22.94	57.146	99.17	31.665	43.79	18.234	44.24
11 17.7	55.279	23.41	56.908	99.30	31.533	44.32	17.366	44.30
11 27.7	55.164	23.94	56.676	98.90	31.412	44.77	16.521	43.73
12 7.7	55.068	24.50	56.464	98.01	31.311	45.13	15.745	42.57
12 17.7	54.993	25.09	56.273	96.66	31.230	45.39	15.054	40.87
12 27.6	54.944	25.68	56.111	94.85	31.174	45.55	14.481	38.63
12 37.6	54.922	26.24	55.987	92.68	31.148	45.59	14.050	35.97
Pos. Med.	53.968	27.99	56.543	79.67	30.010	45.34	12.718	28.05
Secδ tanδ	1.005	-.096	1.432	1.025	1.043	-.297	4.540	-4.428
Dob.Tran.	Ago 14		Ago 15		Ago 16		Ago 17	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	815		819		822		827	
EST.	ε Pegasi		δ Capricorni		γ Gruis		α Aquarii	
MAG.	0.7 A 3.5		2.87		3.01		2.96	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	21 45	+ 9 59	21 48	-16 0	21 55	-37 14	22 7	- 0 11
mes d	s	"	s	"	s	"	s	"
1 -7.4	23.838	23.59	24.233	56.00	25.355	61.89	3.222	55.95
1 2.6	23.786	22.42	24.190	56.14	25.283	61.11	3.165	56.70
1 12.6	23.761	21.18	24.177	56.15	25.248	60.04	3.132	57.44
1 22.6	23.763	19.92	24.192	56.04	25.248	58.74	3.124	58.15
2 1.5	23.793	18.66	24.237	55.78	25.283	57.21	3.141	58.78
2 11.5	23.855	17.51	24.316	55.50	25.357	55.48	3.188	59.28
2 21.5	23.947	16.51	24.411	54.80	25.467	53.60	3.262	59.63
3 3.5	24.072	15.70	24.548	54.02	25.615	51.57	3.368	59.82
3 13.4	24.230	15.17	24.717	53.05	25.802	49.43	3.508	59.74
3 23.4	24.420	14.95	24.915	51.91	26.025	47.24	3.679	59.41
4 2.4	24.641	15.07	25.145	50.58	26.285	45.01	3.884	58.80
4 12.3	24.892	15.57	25.404	49.10	26.579	42.79	4.118	57.89
4 22.3	25.166	16.40	25.687	47.49	26.902	40.63	4.380	56.73
5 2.3	25.463	17.58	25.993	45.76	27.253	38.55	4.667	55.30
5 12.3	25.774	19.08	26.314	43.99	27.623	36.64	4.971	53.65
5 22.2	26.093	20.83	26.646	42.20	28.005	34.90	5.288	51.84
6 1.2	26.414	22.82	26.981	40.43	28.395	33.40	5.611	49.89
6 11.2	26.727	24.96	27.310	38.76	28.778	32.19	5.930	47.87
6 21.2	27.026	27.20	27.627	37.21	29.150	31.26	6.239	45.84
7 1.1	27.304	29.50	27.924	35.82	29.500	30.66	6.531	43.82
7 11.1	27.551	31.78	28.191	34.64	29.817	30.40	6.796	41.91
7 21.1	27.764	33.99	28.425	33.67	30.096	30.47	7.030	40.11
7 31.0	27.938	36.10	28.618	32.94	30.329	30.87	7.227	38.47
8 10.0	28.067	38.04	28.766	32.47	30.509	31.57	7.382	37.04
8 20.0	28.155	39.81	28.870	32.21	30.638	32.52	7.495	35.80
8 30.0	28.197	41.37	28.926	32.19	30.709	33.69	7.563	34.79
9 8.9	28.196	42.69	28.937	32.36	30.725	35.01	7.589	34.02
9 18.9	28.159	43.78	28.909	32.69	30.692	36.41	7.577	33.45
9 28.9	28.088	44.62	28.843	33.15	30.612	37.85	7.528	33.10
10 8.9	27.990	45.21	28.749	33.70	30.496	39.23	7.452	32.95
10 18.8	27.874	45.57	28.634	34.30	30.350	40.49	7.354	32.96
10 28.8	27.744	45.68	28.504	34.92	30.184	41.58	7.240	33.14
11 7.8	27.611	45.56	28.372	35.52	30.011	42.44	7.120	33.45
11 17.7	27.480	45.23	28.241	36.07	29.838	43.04	6.998	33.88
11 27.7	27.357	44.67	28.121	36.55	29.674	43.34	6.882	34.42
12 7.7	27.251	43.93	28.018	36.94	29.530	43.32	6.779	35.02
12 17.7	27.161	43.00	27.934	37.25	29.408	43.01	6.689	35.70
12 27.6	27.094	41.92	27.875	37.45	29.316	42.38	6.619	36.43
12 37.6	27.053	40.75	27.843	37.52	29.258	41.47	6.572	37.16
Pos. Med.	26.315	34.61	26.686	37.52	27.863	37.57	5.562	42.11
Secδ tanδ	1.015	.176	1.040	-.287	1.256	-.760	1.000	-.003
Dob.Tran.	Ago 17		Ago 18		Ago 20		Ago 23	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	829		834		841		842	
EST.	α Gruis		ϑ Pegasi		α Tucanae		γ Aquarii	
MAG.	1.74		3.53		2.86		3.84	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	22 9	-46 50	22 11	+ 6 19	22 20	-60 7	22 22	- 1 15
mes d	s	"	s	"	s	"	s	"
1 -7.3	47.220	37.85	26.810	15.38	11.027	82.58	56.087	42.92
1 2.6	47.107	36.73	26.747	14.43	10.819	81.01	56.022	43.61
1 12.6	47.036	35.25	26.708	13.43	10.665	79.02	55.980	44.28
1 22.6	47.003	33.49	26.692	12.42	10.567	76.67	55.959	44.90
2 1.6	47.013	31.45	26.702	11.44	10.528	74.01	55.963	45.44
2 11.5	47.068	29.18	26.742	10.57	10.554	71.11	55.996	45.85
2 21.5	47.166	26.76	26.810	9.83	10.640	68.05	56.056	46.08
3 3.5	47.309	24.19	26.909	9.28	10.791	64.86	56.144	46.18
3 13.4	47.498	21.54	27.044	8.97	11.006	61.65	56.270	46.03
3 23.4	47.729	18.88	27.211	8.95	11.280	58.47	56.428	45.62
4 2.4	48.005	16.22	27.412	9.24	11.614	55.35	56.619	44.94
4 12.4	48.320	13.64	27.645	9.86	12.004	52.42	56.843	43.97
4 22.3	48.671	11.19	27.905	10.79	12.442	49.69	57.095	42.76
5 2.3	49.056	8.90	28.191	12.04	12.926	47.21	57.375	41.29
5 12.3	49.464	6.85	28.495	13.57	13.443	45.08	57.675	39.61
5 22.3	49.890	5.07	28.812	15.32	13.985	43.30	57.989	37.78
6 1.2	50.326	3.59	29.135	17.28	14.542	41.94	58.313	35.81
6 11.2	50.759	2.48	29.455	19.37	15.098	41.03	58.636	33.78
6 21.2	51.181	1.73	29.765	21.54	15.641	40.55	58.951	31.75
7 1.1	51.581	1.38	30.058	23.75	16.160	40.56	59.250	29.74
7 11.1	51.947	1.44	30.323	25.91	16.636	41.04	59.525	27.83
7 21.1	52.272	1.87	30.558	27.99	17.063	41.95	59.771	26.05
7 31.1	52.547	2.68	30.756	29.96	17.425	43.28	59.982	24.43
8 10.0	52.764	3.82	30.912	31.75	17.712	44.97	60.151	23.03
8 20.0	52.922	5.24	31.026	33.35	17.922	46.95	60.279	21.83
8 30.0	53.015	6.90	31.096	34.75	18.046	49.18	60.363	20.86
9 9.0	53.044	8.69	31.124	35.91	18.083	51.52	60.405	20.13
9 18.9	53.016	10.56	31.113	36.85	18.042	53.91	60.408	19.61
9 28.9	52.931	12.44	31.067	37.55	17.920	56.25	60.374	19.31
10 8.9	52.799	14.20	30.992	38.02	17.731	58.42	60.310	19.20
10 18.8	52.631	15.80	30.896	38.28	17.487	60.36	60.224	19.26
10 28.8	52.435	17.16	30.783	38.33	17.197	61.96	60.119	19.48
11 7.8	52.225	18.20	30.663	38.19	16.881	63.13	60.005	19.82
11 17.8	52.010	18.90	30.541	37.87	16.553	63.87	59.889	20.26
11 27.7	51.802	19.20	30.423	37.37	16.226	64.10	59.774	20.79
12 7.7	51.612	19.09	30.317	36.73	15.919	63.80	59.669	21.39
12 17.7	51.445	18.59	30.223	35.95	15.639	63.01	59.576	22.03
12 27.7	51.310	17.69	30.148	35.06	15.399	61.72	59.500	22.71
12 37.6	51.212	16.42	30.094	34.11	15.209	59.98	59.444	23.37
Pos. Med.	49.686	11.11	29.163	27.15	13.558	53.11	58.344	28.91
Secδ tanδ	1.462	-1.066	1.006	.111	2.008	-1.741	1.000	-.022
Dob.Tran.	Ago 23		Ago 24		Ago 26		Ago 27	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	846		850		855		856	
EST.	δ^1 Gruis		η Aquarii		ζ Pegasi		β Gruis	
MAG.	3.97		4.02		3.40		2.11 Var.	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	22 30	-43 21	22 36	+ 0 0	22 42	+10 57	22 44	-46 44
mes d	s	"	s	"	s	"	s	"
1 -7.3	44.818	78.42	37.783	39.37	41.883	44.81	8.677	89.32
1 2.7	44.699	77.59	37.711	38.66	41.800	43.84	8.532	88.46
1 12.6	44.613	76.39	37.658	37.96	41.735	42.78	8.420	87.20
1 22.6	44.560	74.88	37.626	37.31	41.691	41.68	8.342	85.60
2 1.6	44.543	73.07	37.617	36.71	41.669	40.55	8.300	83.66
2 11.5	44.567	71.01	37.636	36.25	41.675	39.50	8.302	81.44
2 21.5	44.630	68.75	37.682	35.95	41.709	38.55	8.343	79.01
3 3.5	44.735	66.30	37.755	35.82	41.775	37.76	8.430	76.37
3 13.5	44.884	63.73	37.866	35.89	41.877	37.21	8.563	73.61
3 23.4	45.074	61.10	38.010	36.23	42.013	36.91	8.741	70.78
4 2.4	45.309	58.42	38.189	36.85	42.187	36.93	8.967	67.90
4 12.4	45.585	55.77	38.401	37.76	42.397	37.30	9.238	65.07
4 22.4	45.897	53.20	38.644	38.93	42.638	37.99	9.549	62.32
5 2.3	46.246	50.75	38.916	40.36	42.911	39.03	9.901	59.71
5 12.3	46.622	48.49	39.211	42.01	43.206	40.39	10.285	57.31
5 22.3	47.019	46.46	39.522	43.83	43.519	42.02	10.692	55.15
6 1.2	47.430	44.70	39.845	45.80	43.844	43.91	11.118	53.30
6 11.2	47.843	43.29	40.169	47.85	44.170	45.98	11.549	51.81
6 21.2	48.250	42.21	40.487	49.93	44.490	48.18	11.977	50.68
7 1.2	48.642	41.52	40.792	51.99	44.798	50.48	12.392	49.97
7 11.1	49.005	41.24	41.074	53.96	45.082	52.78	12.779	49.70
7 21.1	49.333	41.34	41.329	55.82	45.339	55.05	13.133	49.83
7 31.1	49.617	41.83	41.550	57.52	45.562	57.24	13.443	50.39
8 10.1	49.847	42.69	41.730	59.02	45.745	59.29	13.699	51.33
8 20.0	50.025	43.85	41.871	60.31	45.889	61.18	13.900	52.60
8 30.0	50.141	45.29	41.968	61.37	45.988	62.88	14.038	54.19
9 9.0	50.198	46.93	42.023	62.19	46.046	64.35	14.114	55.97
9 18.9	50.200	48.69	42.039	62.80	46.065	65.61	14.131	57.90
9 28.9	50.147	50.51	42.018	63.17	46.046	66.61	14.088	59.91
10 8.9	50.049	52.28	41.966	63.35	45.996	67.37	13.996	61.86
10 18.9	49.913	53.95	41.890	63.35	45.922	67.90	13.861	63.71
10 28.8	49.746	55.42	41.794	63.18	45.826	68.19	13.690	65.36
11 7.8	49.563	56.63	41.687	62.88	45.719	68.25	13.499	66.72
11 17.8	49.371	57.53	41.574	62.46	45.605	68.11	13.294	67.76
11 27.8	49.179	58.08	41.462	61.94	45.489	67.74	13.085	68.42
12 7.7	49.000	58.23	41.356	61.35	45.378	67.20	12.885	68.65
12 17.7	48.837	58.02	41.260	60.70	45.274	66.48	12.699	68.47
12 27.7	48.699	57.40	41.178	60.00	45.182	65.59	12.536	67.86
12 37.6	48.591	56.42	41.113	59.31	45.107	64.61	12.402	66.84
Pos. Med.	47.008	52.07	39.968	52.70	44.101	54.36	10.727	62.09
Secδ tanδ	1.376	-.944	1.000	.000	1.019	.194	1.459	-1.063
Dob.Tran.	Ago 29		Ago 30		Sep 1		Sep 1	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	857		860		862		864	
EST.	η Pegasi		ε Gruis		μ Pegasi		λ Aquarii	
MAG.	2.94		3.49		3.48		3.74	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	22 44	+30 20	22 50	-51 10	22 51	+24 43	22 53	- 7 26
mes d	s	"	s	"	s	"	s	"
1 -7.3	9.679	75.47	2.913	83.78	11.922	67.66	54.546	51.67
1 2.7	9.559	74.20	2.739	82.81	11.813	66.50	54.467	52.16
1 12.6	9.460	72.65	2.601	81.40	11.724	65.12	54.405	52.56
1 22.6	9.383	70.90	2.499	79.63	11.654	63.57	54.362	52.86
2 1.6	9.332	68.98	2.438	77.50	11.608	61.89	54.340	53.04
2 11.6	9.316	67.01	2.423	75.07	11.593	60.19	54.345	53.05
2 21.5	9.333	65.07	2.453	72.42	11.609	58.53	54.378	52.88
3 3.5	9.389	63.22	2.532	69.57	11.661	56.98	54.416	52.78
3 13.5	9.488	61.60	2.663	66.60	11.753	55.65	54.527	51.98
3 23.4	9.629	60.25	2.843	63.57	11.884	54.59	54.656	51.16
4 2.4	9.813	59.25	3.075	60.51	12.057	53.85	54.820	50.11
4 12.4	10.039	58.67	3.356	57.53	12.270	53.52	55.020	48.82
4 22.4	10.301	58.51	3.682	54.65	12.519	53.57	55.251	47.33
5 2.3	10.598	58.82	4.052	51.93	12.802	54.06	55.515	45.63
5 12.3	10.920	59.60	4.457	49.46	13.110	54.97	55.803	43.78
5 22.3	11.260	60.79	4.889	47.27	13.437	56.27	56.112	41.82
6 1.3	11.612	62.41	5.342	45.41	13.778	57.94	56.435	39.78
6 11.2	11.963	64.38	5.802	43.95	14.120	59.92	56.762	37.74
6 21.2	12.307	66.65	6.260	42.88	14.456	62.16	57.087	35.74
7 1.2	12.635	69.19	6.706	42.25	14.779	64.62	57.402	33.82
7 11.1	12.936	71.89	7.123	42.09	15.077	67.20	57.697	32.05
7 21.1	13.206	74.71	7.506	42.36	15.347	69.87	57.967	30.45
7 31.1	13.438	77.60	7.842	43.08	15.581	72.56	58.205	29.06
8 10.1	13.626	80.46	8.121	44.19	15.774	75.20	58.404	27.91
8 20.0	13.771	83.26	8.342	45.65	15.925	77.76	58.564	27.01
8 30.0	13.868	85.94	8.495	47.43	16.031	80.18	58.680	26.36
9 9.0	13.919	88.44	8.580	49.42	16.093	82.41	58.754	25.97
9 19.0	13.929	90.74	8.601	51.54	16.115	84.43	58.788	25.79
9 28.9	13.898	92.79	8.557	53.73	16.096	86.21	58.784	25.84
10 8.9	13.832	94.54	8.456	55.86	16.045	87.71	58.746	26.06
10 18.9	13.738	96.01	8.308	57.86	15.967	88.93	58.683	26.41
10 28.8	13.620	97.13	8.119	59.64	15.864	89.84	58.597	26.89
11 7.8	13.487	97.89	7.904	61.09	15.747	90.43	58.497	27.44
11 17.8	13.344	98.30	7.673	62.20	15.620	90.71	58.390	28.04
11 27.8	13.196	98.32	7.435	62.88	15.488	90.65	58.279	28.66
12 7.7	13.051	97.97	7.205	63.10	15.358	90.27	58.173	29.26
12 17.7	12.912	97.26	6.989	62.87	15.233	89.59	58.073	29.83
12 27.7	12.783	96.19	6.795	62.17	15.117	88.60	57.984	30.36
12 37.7	12.673	94.83	6.634	61.03	15.018	87.37	57.912	30.81
Pos. Med.	12.078	78.81	4.897	55.60	14.228	72.47	56.589	36.09
Secδ tanδ	1.159	.586	1.595	-1.243	1.101	.461	1.008	-.131
Dob.Tran.	Sep 1		Sep 3		Sep 3		Sep 4	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	866		867		869		871	
EST.	δ Aquarii		α Piscis Austrini (Fomalhaut)		o Andromedae		α Pegasi	
MAG.	3.27		1.16		3.62		2.49	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	22 55	-15 40	22 59	-29 29	23 3	+42 27	23 5	+15 20
mes d	s	"	s	"	s	"	s	"
1 -7.3	58.050	83.03	1.324	34.16	3.499	49.20	59.854	27.06
1 2.7	57.967	83.29	1.222	33.99	3.326	48.05	59.757	26.11
1 12.6	57.902	83.38	1.143	33.53	3.173	46.50	59.675	25.02
1 22.6	57.856	83.30	1.086	32.80	3.043	44.63	59.610	23.85
2 1.6	57.833	83.04	1.054	31.80	2.942	42.49	59.565	22.61
2 11.6	57.837	82.57	1.052	30.55	2.880	40.19	59.546	21.40
2 21.5	57.868	81.94	1.080	29.07	2.858	37.83	59.555	20.26
3 3.5	57.926	81.09	1.142	27.36	2.883	35.48	59.595	19.25
3 13.5	58.020	79.97	1.241	25.44	2.960	33.30	59.673	18.46
3 23.5	58.149	78.67	1.377	23.37	3.088	31.34	59.786	17.91
4 2.4	58.315	77.16	1.552	21.16	3.269	29.71	59.939	17.65
4 12.4	58.517	75.47	1.766	18.85	3.501	28.49	60.132	17.75
4 22.4	58.751	73.64	2.016	16.49	3.778	27.72	60.360	18.20
5 2.3	59.018	71.66	2.301	14.11	4.098	27.43	60.622	19.00
5 12.3	59.311	69.61	2.614	11.79	4.450	27.67	60.911	20.16
5 22.3	59.625	67.53	2.950	9.56	4.825	28.40	61.221	21.62
6 1.3	59.955	65.45	3.304	7.47	5.217	29.63	61.547	23.39
6 11.2	60.289	63.45	3.664	5.59	5.610	31.31	61.878	25.38
6 21.2	60.622	61.57	4.023	3.95	5.997	33.38	62.207	27.55
7 1.2	60.946	59.84	4.374	2.59	6.369	35.82	62.526	29.86
7 11.2	61.250	58.34	4.704	1.57	6.713	38.55	62.824	32.23
7 21.1	61.528	57.07	5.008	.87	7.024	41.48	63.098	34.61
7 31.1	61.775	56.07	5.277	.53	7.294	44.59	63.340	36.96
8 10.1	61.982	55.35	5.504	.54	7.517	47.77	63.544	39.21
8 20.0	62.149	54.91	5.687	.87	7.693	50.97	63.709	41.33
8 30.0	62.271	54.75	5.822	1.52	7.816	54.14	63.832	43.28
9 9.0	62.348	54.85	5.907	2.42	7.887	57.18	63.912	45.01
9 19.0	62.385	55.17	5.945	3.53	7.912	60.08	63.954	46.54
9 28.9	62.381	55.69	5.938	4.80	7.889	62.76	63.957	47.83
10 8.9	62.342	56.34	5.892	6.14	7.825	65.15	63.927	48.86
10 18.9	62.276	57.09	5.813	7.50	7.727	67.26	63.871	49.66
10 28.9	62.185	57.91	5.706	8.81	7.596	69.00	63.791	50.19
11 7.8	62.081	58.72	5.582	10.00	7.444	70.35	63.695	50.48
11 17.8	61.967	59.50	5.447	11.03	7.274	71.29	63.588	50.53
11 27.8	61.850	60.21	5.307	11.84	7.091	71.77	63.475	50.32
12 7.7	61.738	60.81	5.172	12.40	6.906	71.80	63.363	49.90
12 17.7	61.633	61.30	5.046	12.69	6.721	71.38	63.253	49.26
12 27.7	61.539	61.65	4.932	12.70	6.542	70.49	63.150	48.42
12 37.7	61.463	61.83	4.839	12.41	6.379	69.20	63.060	47.44
Pos. Med.	60.040	64.74	3.257	11.60	6.015	48.42	61.991	34.45
Secδ tanδ	1.039	-.281	1.149	-.565	1.356	.915	1.037	.274
Dob.Tran.	Sep 4		Sep 5		Sep 6		Sep 7	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	1605		878		879		1612	
EST.	ι Gruis		γ Piscium		γ Sculptoris		98 Aquarii	
MAG.	3.90		3.69		4.41		3.97	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	23 11	-45 6	23 18	+ 3 25	23 20	-32 23	23 24	-19 57
mes d	s	"	s	"	s	"	s	"
1 -7.3	45.841	56.28	27.299	7.87	9.997	56.99	16.633	58.90
1 2.7	45.682	55.71	27.211	7.15	9.876	56.87	16.533	59.14
1 12.7	45.549	54.71	27.135	6.42	9.774	56.41	16.447	59.15
1 22.6	45.443	53.34	27.073	5.70	9.692	55.65	16.377	58.94
2 1.6	45.369	51.61	27.029	5.02	9.633	54.57	16.327	58.50
2 11.6	45.332	49.55	27.009	4.44	9.604	53.20	16.301	57.81
2 21.5	45.332	47.23	27.014	3.99	9.603	51.59	16.301	56.92
3 3.5	45.374	44.67	27.048	3.72	9.636	49.71	16.330	55.79
3 13.5	45.462	41.94	27.113	3.67	9.707	47.62	16.393	54.41
3 23.5	45.595	39.09	27.215	3.79	9.817	45.36	16.491	52.83
4 2.4	45.775	36.14	27.357	4.22	9.968	42.95	16.629	51.04
4 12.4	46.004	33.20	27.536	4.95	10.161	40.44	16.806	49.09
4 22.4	46.275	30.31	27.749	5.95	10.392	37.88	17.019	47.00
5 2.4	46.590	27.49	27.998	7.23	10.663	35.31	17.268	44.80
5 12.3	46.941	24.87	28.275	8.77	10.967	32.81	17.549	42.55
5 22.3	47.322	22.45	28.574	10.51	11.297	30.40	17.854	40.30
6 1.3	47.726	20.31	28.892	12.44	11.649	28.15	18.181	38.08
6 11.2	48.142	18.51	29.217	14.50	12.013	26.14	18.517	35.97
6 21.2	48.560	17.06	29.544	16.62	12.380	24.38	18.857	34.02
7 1.2	48.973	16.03	29.863	18.77	12.742	22.94	19.193	32.26
7 11.2	49.364	15.43	30.166	20.87	13.088	21.85	19.514	30.76
7 21.1	49.728	15.26	30.446	22.90	13.410	21.11	19.813	29.53
7 31.1	50.055	15.53	30.698	24.80	13.701	20.77	20.084	28.61
8 10.1	50.333	16.23	30.914	26.51	13.952	20.80	20.318	28.01
8 20.1	50.561	17.29	31.093	28.04	14.160	21.19	20.513	27.72
8 30.0	50.731	18.71	31.230	29.34	14.320	21.93	20.665	27.76
9 9.0	50.841	20.39	31.327	30.41	14.430	22.95	20.772	28.08
9 19.0	50.894	22.27	31.385	31.25	14.492	24.21	20.838	28.64
9 28.9	50.889	24.28	31.405	31.85	14.507	25.65	20.861	29.42
10 8.9	50.833	26.31	31.393	32.22	14.479	27.18	20.847	30.35
10 18.9	50.732	28.28	31.352	32.41	14.415	28.75	20.801	31.38
10 28.9	50.593	30.11	31.288	32.39	14.319	30.27	20.728	32.46
11 7.8	50.427	31.69	31.207	32.22	14.202	31.66	20.635	33.51
11 17.8	50.243	33.00	31.114	31.90	14.069	32.88	20.529	34.51
11 27.8	50.047	33.94	31.013	31.46	13.926	33.87	20.414	35.40
12 7.8	49.854	34.47	30.913	30.92	13.783	34.56	20.298	36.13
12 17.7	49.667	34.60	30.813	30.29	13.644	34.97	20.184	36.69
12 27.7	49.494	34.28	30.719	29.60	13.514	35.05	20.077	37.05
12 37.7	49.344	33.54	30.636	28.88	13.401	34.79	19.982	37.19
Pos. Med.	47.563	29.55	29.293	19.06	11.706	33.84	18.389	39.78
Secδ tanδ	1.417	-1.004	1.002	.060	1.184	-.634	1.064	-.363
Dob.Tran.	Sep 8		Sep 10		Sep 10		Sep 11	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

NUM.	1614		886		892		1619	
EST.	ϑ Piscium		β Sculptoris		ι Piscium		χ Andromedae	
MAG.	4.28		4.37		4.13		4.14	
UT	AR.	DEC.	AR.	DEC.	AR.	DEC.	AR.	DEC.
	h m	° ′	h m	° ′	h m	° ′	h m	° ′
	23 29	+ 6 30	23 34	-37 40	23 41	+ 5 45	23 41	+44 28
mes d	s	"	s	"	s	"	s	"
1 -7.3	13.860	59.66	18.364	62.48	13.944	43.24	38.002	33.95
1 2.7	13.765	58.91	18.221	62.32	13.848	42.51	37.812	33.21
1 12.7	13.681	58.12	18.095	61.76	13.760	41.75	37.632	32.03
1 22.6	13.610	57.32	17.989	60.85	13.684	40.99	37.467	30.49
2 1.6	13.554	56.52	17.906	59.59	13.622	40.25	37.325	28.61
2 11.6	13.522	55.81	17.852	57.99	13.581	39.58	37.216	26.51
2 21.6	13.513	55.20	17.829	56.11	13.563	39.02	37.144	24.27
3 3.5	13.534	54.74	17.841	53.96	13.574	38.62	37.117	21.96
3 13.5	13.587	54.52	17.894	51.59	13.617	38.45	37.144	19.72
3 23.5	13.675	54.46	17.987	49.04	13.693	38.44	37.223	17.65
4 2.4	13.804	54.69	18.124	46.35	13.812	38.69	37.360	15.80
4 12.4	13.973	55.24	18.307	43.58	13.971	39.26	37.555	14.32
4 22.4	14.177	56.07	18.531	40.78	14.166	40.11	37.801	13.22
5 2.4	14.417	57.20	18.799	37.98	14.399	41.25	38.097	12.57
5 12.3	14.688	58.61	19.104	35.29	14.663	42.66	38.435	12.41
5 22.3	14.982	60.25	19.438	32.73	14.953	44.30	38.805	12.73
6 1.3	15.297	62.11	19.800	30.37	15.265	46.15	39.200	13.55
6 11.3	15.621	64.13	20.176	28.28	15.588	48.14	39.606	14.83
6 21.2	15.947	66.24	20.559	26.49	15.916	50.23	40.014	16.53
7 1.2	16.268	68.42	20.940	25.05	16.240	52.38	40.415	18.64
7 11.2	16.574	70.59	21.307	24.00	16.550	54.52	40.795	21.08
7 21.1	16.858	72.70	21.653	23.35	16.842	56.59	41.148	23.77
7 31.1	17.115	74.72	21.968	23.13	17.107	58.57	41.466	26.69
8 10.1	17.338	76.58	22.244	23.33	17.339	60.38	41.741	29.75
8 20.1	17.524	78.27	22.476	23.91	17.537	62.03	41.971	32.88
8 30.0	17.670	79.75	22.659	24.87	17.695	63.46	42.151	36.04
9 9.0	17.776	80.99	22.789	26.14	17.812	64.65	42.280	39.13
9 19.0	17.843	82.02	22.869	27.66	17.892	65.62	42.362	42.14
9 29.0	17.872	82.81	22.897	29.38	17.934	66.36	42.395	44.98
10 8.9	17.868	83.37	22.879	31.18	17.942	66.86	42.383	47.60
10 18.9	17.836	83.72	22.821	33.01	17.922	67.16	42.332	49.97
10 28.9	17.778	83.86	22.726	34.78	17.875	67.25	42.244	52.03
11 7.8	17.703	83.82	22.605	36.40	17.809	67.17	42.126	53.73
11 17.8	17.614	83.62	22.464	37.81	17.728	66.93	41.983	55.06
11 27.8	17.515	83.25	22.308	38.95	17.636	66.54	41.819	55.95
12 7.8	17.414	82.77	22.150	39.74	17.539	66.04	41.642	56.40
12 17.7	17.312	82.17	21.992	40.20	17.439	65.44	41.455	56.41
12 27.7	17.213	81.46	21.841	40.27	17.340	64.76	41.265	55.93
12 37.7	17.123	80.71	21.704	39.95	17.248	64.03	41.082	55.03
Pos. Med.	15.788	69.38	19.893	38.06	15.817	52.64	40.377	31.03
Secδ tanδ	1.007	.114	1.263	-.772	1.005	.101	1.401	.982
Dob.Tran.	Sep 13		Sep 14		Sep 16		Sep 16	

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS VOLVER AL INICIO DE LA LISTA DE ESTRELLAS

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

923 σ Octantis Mag. 5.47 Tipo esp. F0

Día	ENERO		FEBRERO		MARZO		ABRIL		MAYO		JUNIO	
	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
	h m s	- ° ′ ″	h m s	- ° ′ ″	h m s	- ° ′ ″	h m s	- ° ′ ″	h m s	- ° ′ ″	h m s	- ° ′ ″
	21 28	-88 51	21 28	-88 50	21 28	-88 50	21 28	-88 50	21 29	-88 50	21 29	-88 50
1	24.89	19.66	17.99	68.84	26.59	58.34	49.64	48.32	21.66	41.91	58.23	40.11
2	24.56	19.37	17.96	68.50	27.00	58.01	50.54	47.99	22.98	41.74	59.44	40.18
3	24.19	19.09	17.88	68.14	27.38	57.65	51.54	47.66	24.32	41.61	60.58	40.26
4	23.77	18.82	17.80	67.74	27.80	57.26	52.64	47.35	25.65	41.50	61.64	40.35
5	23.27	18.54	17.77	67.32	28.29	56.85	53.79	47.07	26.94	41.42	62.63	40.42
6	22.71	18.25	17.83	66.89	28.89	56.44	54.96	46.82	28.16	41.35	63.58	40.49
7	22.11	17.92	18.00	66.45	29.58	56.03	56.11	46.60	29.30	41.29	64.52	40.55
8	21.53	17.57	18.26	66.02	30.36	55.65	57.22	46.39	30.39	41.23	65.45	40.60
9	21.02	17.19	18.61	65.61	31.19	55.29	58.27	46.20	31.42	41.16	66.41	40.63
10	20.60	16.79	19.00	65.23	32.04	54.96	59.26	46.01	32.43	41.08	67.42	40.67
11	20.29	16.39	19.40	64.86	32.86	54.65	60.19	45.82	33.43	40.99	68.48	40.70
12	20.08	16.00	19.77	64.52	33.64	54.36	61.09	45.62	34.45	40.89	69.60	40.74
13	19.94	15.63	20.10	64.19	34.37	54.08	61.97	45.40	35.51	40.78	70.77	40.80
14	19.83	15.28	20.37	63.86	35.04	53.79	62.87	45.17	36.63	40.67	71.97	40.88
15	19.71	14.96	20.59	63.53	35.67	53.50	63.79	44.94	37.81	40.56	73.18	40.99
16	19.56	14.65	20.78	63.18	36.27	53.19	64.77	44.69	39.06	40.46	74.35	41.12
17	19.35	14.34	20.96	62.82	36.87	52.87	65.82	44.44	40.36	40.39	75.45	41.27
18	19.09	14.03	21.14	62.44	37.49	52.54	66.93	44.20	41.68	40.33	76.47	41.43
19	18.79	13.71	21.37	62.04	38.16	52.19	68.12	43.98	43.01	40.30	77.40	41.58
20	18.46	13.37	21.65	61.64	38.90	51.84	69.36	43.77	44.30	40.30	78.24	41.72
21	18.14	13.01	22.00	61.22	39.71	51.49	70.63	43.58	45.53	40.31	79.05	41.84
22	17.83	12.64	22.45	60.81	40.60	51.14	71.90	43.43	46.67	40.33	79.86	41.93
23	17.57	12.24	22.98	60.40	41.56	50.81	73.13	43.29	47.71	40.33	80.73	42.00
24	17.38	11.83	23.59	60.01	42.59	50.50	74.28	43.16	48.70	40.32	81.69	42.08
25	17.27	11.42	24.25	59.64	43.64	50.21	75.33	43.04	49.67	40.28	82.74	42.16
26	17.26	11.00	24.92	59.30	44.67	49.95	76.32	42.90	50.69	40.22	83.85	42.27
27	17.34	10.60	25.55	58.97	45.64	49.70	77.26	42.73	51.78	40.15	84.98	42.42
28	17.49	10.21	26.11	58.66	46.53	49.47	78.23	42.54	52.98	40.09	86.08	42.59
29	17.67	9.85			47.34	49.22	79.27	42.32	54.27	40.04	87.11	42.79
30	17.83	9.50			48.09	48.94	80.41	42.11	55.60	40.03	88.06	43.01
31	17.95	9.17			48.84	48.64			56.94	40.05		

POSICIONES APARENTES AL PASO SUPERIOR POR GREENWICH

923 σ Octantis Mag. 5.47 Tipo esp. F0

Día	JULIO		AGOSTO		SEPTIEMBRE		OCTUBRE		NOVIEMBRE		DICIEMBRE	
	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
	h m s	- ° ′ ″	h m s	- ° ′ ″	h m s	- ° ′ ″	h m s	- ° ′ ″	h m s	- ° ′ ″	h m s	- ° ′ ″
	21 30	-88 50	21 30	-88 50	21 30	-88 50	21 30	-88 51	21 29	-88 51	21 29	-88 51
1	28.91	43.23	48.47	50.42	50.85	59.67	35.98	7.35	67.55	11.37	36.43	9.57
2	29.68	43.44	48.70	50.69	50.71	59.93	35.37	7.58	66.43	11.45	35.30	9.38
3	30.39	43.65	48.95	50.94	50.60	60.21	34.72	7.81	65.23	11.49	34.23	9.17
4	31.07	43.84	49.24	51.18	50.49	60.51	33.99	8.06	63.99	11.50	33.26	8.93
5	31.73	44.02	49.57	51.42	50.34	60.82	33.15	8.29	62.78	11.47	32.41	8.68
6	32.41	44.19	49.94	51.67	50.12	61.15	32.21	8.51	61.64	11.42	31.67	8.45
7	33.11	44.35	50.36	51.94	49.80	61.48	31.20	8.70	60.60	11.35	30.99	8.24
8	33.86	44.51	50.80	52.22	49.37	61.81	30.17	8.85	59.66	11.28	30.32	8.06
9	34.67	44.68	51.21	52.53	48.84	62.11	29.18	8.97	58.80	11.23	29.60	7.89
10	35.53	44.86	51.58	52.86	48.27	62.38	28.27	9.07	57.96	11.21	28.82	7.73
11	36.42	45.05	51.85	53.20	47.69	62.62	27.44	9.17	57.09	11.21	27.96	7.57
12	37.32	45.27	52.02	53.54	47.15	62.84	26.70	9.28	56.16	11.21	27.04	7.40
13	38.18	45.52	52.08	53.87	46.69	63.05	25.99	9.41	55.15	11.23	26.07	7.21
14	38.99	45.78	52.07	54.17	46.31	63.26	25.27	9.56	54.06	11.23	25.09	6.99
15	39.70	46.06	51.99	54.71	45.98	63.50	24.50	9.73	52.91	11.22	24.13	6.75
16	40.32	46.33	52.01	54.95	45.66	63.75	23.66	9.91	51.72	11.18	23.20	6.50
17	40.84	46.59	52.11	55.19	45.32	64.02	22.73	10.09	50.52	11.12	22.32	6.22
18	41.30	46.83	52.27	55.44	44.91	64.32	21.72	10.26	49.32	11.04	21.51	5.94
19	41.75	47.04	52.48	55.71	44.42	64.62	20.64	10.41	48.15	10.94	20.79	5.65
20	42.23	47.24	52.69	56.01	43.84	64.92	19.51	10.54	47.04	10.82	20.13	5.36
21	42.78	47.42	52.86	56.33	43.17	65.21	18.37	10.65	45.99	10.69	19.54	5.08
22	43.41	47.61	52.95	56.67	42.42	65.49	17.23	10.74	45.01	10.56	18.99	4.82
23	44.11	47.82	52.95	57.02	41.63	65.74	16.11	10.80	44.08	10.43	18.44	4.57
24	44.84	48.06	52.85	57.37	40.82	65.97	15.05	10.86	43.21	10.31	17.88	4.32
25	45.56	48.32	52.66	57.71	40.02	66.19	14.04	10.90	42.36	10.20	17.28	4.09
26	46.23	48.61	52.41	58.03	39.24	66.39	13.08	10.94	41.50	10.11	16.62	3.85
27	46.81	48.92	52.12	58.33	38.51	66.58	12.17	10.99	40.61	10.02	15.90	3.60
28	47.29	49.24	51.81	58.62	37.82	66.76	11.30	11.05	39.67	9.93	15.14	3.32
29	47.67	49.55	51.52	58.89	37.18	66.95	10.42	11.12	38.65	9.83	14.37	3.01
30	47.98	49.86	51.26	59.15	36.57	67.14	9.53	11.20	37.56	9.72	13.63	2.67
31	48.24	50.15	51.03	59.41			8.58	11.29			12.99	2.31

VOLVER AL INDICE

VOLVER A LISTA DE ESTRELLAS

VOLVER AL EJEMPLO 1 VOLVER AL EJEMPLO 3

Tabla 1. CONVERSIÓN DE TIEMPO SOLAR MEDIO A TIEMPO SIDÉREO MEDIO (corrección aditiva)

TM	Correc.	TM	Correc.	TM	Correc.	TM	Correc.	TM	Correc.
h	m s	m	s	m	s	s	s	s	s
1	0 09 856	1	0 164	31	5 093	1	0 003	31	0 085
2	0 19.713	2	0.329	32	5.257	2	0.005	32	0.088
3	0 29.569	3	0.493	33	5.421	3	0.008	33	0.090
4	0 39.426	4	0.657	34	5.585	4	0.011	34	0.093
5	0 49.282	5	0.821	35	5.750	5	0.014	35	0.096
6	0 59.139	6	0.986	36	5.914	6	0.016	36	0.099
7	1 08.995	7	1.150	37	6.078	7	0.019	37	0.101
8	1 18.852	8	1.314	38	6.242	8	0.022	38	0.104
9	1 28.708	9	1.478	39	6.407	9	0.025	39	0.107
10	1 38.565	10	1.643	40	6.571	10	0.027	40	0.110
11	1 48.421	11	1.807	41	6.735	11	0.030	41	0.112
12	1 58.278	12	1.971	42	6.900	12	0.033	42	0.115
13	2 08.134	13	2.136	43	7.064	13	0.036	43	0.118
14	2 17.991	14	2.300	44	7.228	14	0.038	44	0.120
15	2 27.847	15	2.464	45	7.392	15	0.041	45	0.123
16	2 37.704	16	2.628	46	7.557	16	0.044	46	0.126
17	2 47.560	17	2.793	47	7.721	17	0.047	47	0.129
18	2 57.417	18	2.957	48	7.885	18	0.049	48	0.131
19	3 07.273	19	3.121	49	8.049	19	0.052	49	0.134
20	3 17.129	20	3.285	50	8.214	20	0.055	50	0.137
21	3 26.986	21	3.450	51	8.378	21	0.057	51	0.140
22	3 36.842	22	3.614	52	8.542	22	0.060	52	0.142
23	3 46.699	23	3.778	53	8.707	23	0.063	53	0.145
24	3 56.555	24	3.943	54	8.871	24	0.066	54	0.148
		25	4.107	55	9.035	25	0.068	55	0.151
		26	4.271	56	9.199	26	0.071	56	0.153
		27	4.435	57	9.364	27	0.074	57	0.156
		28	4.600	58	9.528	28	0.077	58	0.159
		29	4.764	59	9.692	29	0.079	59	0.162
		30	4.928	60	9.856	30	0.082	60	0.164

VOLVER AL INDICE

VOLVER AL EJEMPLO 2

Tabla 2. CONVERSIÓN DE TIEMPO SIDÉREO MEDIO
A TIEMPO SOLAR MEDIO
(corrección sustractiva)

TS	Correc.	TS	Correc.	TS	Correc.	TS	Correc.	TS	Correc.
h	m s	m	s	m	s	s	s	s	s
1	0 09 830	1	0 164	31	5 079	1	0 003	31	0 085
2	0 19.659	2	0.328	32	5.242	2	0.005	32	0.087
3	0 29.489	3	0.491	33	5.406	3	0.008	33	0.090
4	0 39.318	4	0.655	34	5.570	4	0.011	34	0.093
5	0 49.148	5	0.819	35	5.734	5	0.014	35	0.096
6	0 58.977	6	0.983	36	5.898	6	0.016	36	0.098
7	1 08.807	7	1.147	37	6.062	7	0.019	37	0.101
8	1 18.636	8	1.311	38	6.225	8	0.022	38	0.104
9	1 28.466	9	1.474	39	6.389	9	0.025	39	0.106
10	1 38.296	10	1.638	40	6.553	10	0.027	40	0.109
11	1 48.125	11	1.802	41	6.717	11	0.030	41	0.112
12	1 57.955	12	1.966	42	6.881	12	0.033	42	0.115
13	2 07.784	13	2.130	43	7.045	13	0.035	43	0.117
14	2 17.614	14	2.294	44	7.208	14	0.038	44	0.120
15	2 27.443	15	2.457	45	7.372	15	0.041	45	0.123
16	2 37.273	16	2.621	46	7.536	16	0.044	46	0.126
17	2 47.103	17	2.785	47	7.700	17	0.046	47	0.128
18	2 56.932	18	2.949	48	7.864	18	0.049	48	0.131
19	3 06.762	19	3.113	49	8.027	19	0.052	49	0.134
20	3 16.591	20	3.277	50	8.191	20	0.055	50	0.137
21	3 26.421	21	3.440	51	8.355	21	0.057	51	0.139
22	3 36.250	22	3.604	52	8.519	22	0.060	52	0.142
23	3 46.080	23	3.768	53	8.683	23	0.063	53	0.145
24	3 55.909	24	3.932	54	8.847	24	0.066	54	0.147
		25	4.096	55	9.010	25	0.068	55	0.150
		26	4.259	56	9.174	26	0.071	56	0.153
		27	4.423	57	9.338	27	0.074	57	0.156
		28	4.587	58	9.502	28	0.076	58	0.158
		29	4.751	59	9.666	29	0.079	59	0.161
		30	4.915	60	9.830	30	0.082	60	0.164

VOLVER AL INDICE

Tabla3 CONVERSIÓN DE MAGNITUDES EN EL SISTEMA SEXAGESIMAL AL SISTEMA HORARIO

o	h	m	o	h	m	o	h	m	o	h	m	o	h	m	o	h	m	o	h	m
0	0	00	60	4	00	120	8	00	180	12	00	240	16	00	300	20	00	360	24	00
1	0	04	61	4	04	121	8	04	181	12	04	241	16	04	301	20	04			
2	0	08	62	4	08	122	8	08	182	12	08	242	16	08	302	20	08			
3	0	12	63	4	12	123	8	12	183	12	12	243	16	12	303	20	12			
4	0	16	64	4	16	124	8	16	184	12	16	244	16	16	304	20	16			
5	0	20	65	4	20	125	8	20	185	12	20	245	16	20	305	20	20			
6	0	24	66	4	24	126	8	24	186	12	24	246	16	24	306	20	24			
7	0	28	67	4	28	127	8	28	187	12	28	247	16	28	307	20	28			
8	0	32	68	4	32	128	8	32	188	12	32	248	16	32	308	20	32			
9	0	36	69	4	36	129	8	36	189	12	36	249	16	36	309	20	36			
10	0	40	70	4	40	130	8	40	190	12	40	250	16	40	310	20	40			
11	0	44	71	4	44	131	8	44	191	12	44	251	16	44	311	20	44			
12	0	48	72	4	48	132	8	48	192	12	48	252	16	48	312	20	48			
13	0	52	73	4	52	133	8	52	193	12	52	253	16	52	313	20	52			
14	0	56	74	4	56	134	8	56	194	12	56	254	16	56	314	20	56			
15	1	00	75	5	00	135	9	00	195	13	00	255	17	00	315	21	00			
16	1	04	76	5	04	136	9	04	196	13	04	256	17	04	316	21	04			
17	1	08	77	5	08	137	9	08	197	13	08	257	17	08	317	21	08			
18	1	12	78	5	12	138	9	12	198	13	12	258	17	12	318	21	12			
19	1	16	79	5	16	139	9	16	199	13	16	259	17	16	319	21	16			
20	1	20	80	5	20	140	9	20	200	13	20	260	17	20	320	21	20			
21	1	24	81	5	24	141	9	24	201	13	24	261	17	24	321	21	24			
22	1	28	82	5	28	142	9	28	202	13	28	262	17	28	322	21	28			
23	1	32	83	5	32	143	9	32	203	13	32	263	17	32	323	21	32			
24	1	36	84	5	36	144	9	36	204	13	36	264	17	36	324	21	36			
25	1	40	85	5	40	145	9	40	205	13	40	265	17	40	325	21	40			
26	1	44	86	5	44	146	9	44	206	13	44	266	17	44	326	21	44			
27	1	48	87	5	48	147	9	48	207	13	48	267	17	48	327	21	48			
28	1	52	88	5	52	148	9	52	208	13	52	268	17	52	328	21	52			
29	1	56	89	5	56	149	9	56	209	13	56	269	17	56	329	21	56			
30	2	00	90	6	00	150	10	00	210	14	00	270	18	00	330	22	00			
31	2	04	91	6	04	151	10	04	211	14	04	271	18	04	331	22	04			
32	2	08	92	6	08	152	10	08	212	14	08	272	18	08	332	22	08			
33	2	12	93	6	12	153	10	12	213	14	12	273	18	12	333	22	12			
34	2	16	94	6	16	154	10	16	214	14	16	274	18	16	334	22	16			
35	2	20	95	6	20	155	10	20	215	14	20	275	18	20	335	22	20			
36	2	24	96	6	24	156	10	24	216	14	24	276	18	24	336	22	24			
37	2	28	97	6	28	157	10	28	217	14	28	277	18	28	337	22	28			
38	2	32	98	6	32	158	10	32	218	14	32	278	18	32	338	22	32			
39	2	36	99	6	36	159	10	36	219	14	36	279	18	36	339	22	36			
40	2	40	100	6	40	160	10	40	220	14	40	280	18	40	340	22	40			
41	2	44	101	6	44	161	10	44	221	14	44	281	18	44	341	22	44			
42	2	48	102	6	48	162	10	48	222	14	48	282	18	48	342	22	48			
43	2	52	103	6	52	163	10	52	223	14	52	283	18	52	343	22	52			
44	2	56	104	6	56	164	10	56	224	14	56	284	18	56	344	22	56			
45	3	00	105	7	00	165	11	00	225	15	00	285	19	00	345	23	00			
46	3	04	106	7	04	166	11	04	226	15	04	286	19	04	346	23	04			
47	3	08	107	7	08	167	11	08	227	15	08	287	19	08	347	23	08			
48	3	12	108	7	12	168	11	12	228	15	12	288	19	12	348	23	12			
49	3	16	109	7	16	169	11	16	229	15	16	289	19	16	349	23	16			
50	3	20	110	7	20	170	11	20	230	15	20	290	19	20	350	23	20			
51	3	24	111	7	24	171	11	24	231	15	24	291	19	24	351	23	24			
52	3	28	112	7	28	172	11	28	232	15	28	292	19	28	352	23	28			
53	3	32	113	7	32	173	11	32	233	15	32	293	19	32	353	23	32			
54	3	36	114	7	36	174	11	36	234	15	36	294	19	36	354	23	36			
55	3	40	115	7	40	175	11	40	235	15	40	295	19	40	355	23	40			
56	3	44	116	7	44	176	11	44	236	15	44	296	19	44	356	23	44			
57	3	48	117	7	48	177	11	48	237	15	48	297	19	48	357	23	48			
58	3	52	118	7	52	178	11	52	238	15	52	298	19	52	358	23	52			
59	3	56	119	7	56	179	11	56	239	15	56	299	19	56	359	23	56			
60	4	00	120	8	00	180	12	00	240	16	00	300	20	00	360	24	00			

'	m	s
0	0	00
1	0	04
2	0	08
3	0	12
4	0	16
5	0	20
6	0	24
7	0	28
8	0	32
9	0	36
10	0	40
11	0	44
12	0	48
13	0	52
14	0	56
15	1	00
16	1	04
17	1	08
18	1	12
19	1	16
20	1	20
21	1	24
22	1	28
23	1	32
24	1	36
25	1	40
26	1	44
27	1	48
28	1	52
29	1	56
30	2	00
31	2	04
32	2	08
33	2	12
34	2	16
35	2	20
36	2	24
37	2	28
38	2	32
39	2	36
40	2	40
41	2	44
42	2	48
43	2	52
44	2	56
45	3	00
46	3	04
47	3	08
48	3	12
49	3	16
50	3	20
51	3	24
52	3	28
53	3	32
54	3	36
55	3	40
56	3	44
57	3	48
58	3	52
59	3	56
60	4	00

"	s
0	0.00
1	0.07
2	0.13
3	0.20
4	0.27
5	0.33
6	0.40
7	0.47
8	0.53
9	0.60
10	0.67
11	0.73
12	0.80
13	0.87
14	0.93
15	1.00
16	1.07
17	1.13
18	1.20
19	1.27
20	1.33
21	1.40
22	1.47
23	1.53
24	1.60
25	1.67
26	1.73
27	1.80
28	1.87
29	1.93
30	2.00
31	2.07
32	2.13
33	2.20
34	2.27
35	2.33
36	2.40
37	2.47
38	2.53
39	2.60
40	2.67
41	2.73
42	2.80
43	2.87
44	2.93
45	3.00
46	3.07
47	3.13
48	3.20
49	3.27
50	3.33
51	3.40
52	3.47
53	3.53
54	3.60
55	3.67
56	3.73
57	3.80
58	3.87
59	3.93
60	4.00

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Tabla 4

CONVERSIÓN DE MAGNITUDES EN EL SISTEMA HORARIO AL SISTEMA SEXAGESIMAL

Horas		Minutos		Segundos		Centésimos de segundo			
h	°	m	° '	s	' "	s	"	s	"
0	0	0	0 00	0	0 00	0.00	0.00	0.50	7.50
1	15	1	0 15	1	0 15	0.01	0.15	0.51	7.65
2	30	2	0 30	2	0 30	0.02	0.30	0.52	7.80
3	45	3	0 45	3	0 45	0.03	0.45	0.53	7.95
4	60	4	1 00	4	1 00	0.04	0.60	0.54	8.10
		5	1 15	5	1 15				
5	75	6	1 30	6	1 30	0.05	0.75	0.55	8.25
6	90	7	1 45	7	1 45	0.06	0.90	0.56	8.40
7	105	8	2 00	8	2 00	0.07	1.05	0.57	8.55
8	120	9	2 15	9	2 15	0.08	1.20	0.58	8.70
9	135					0.09	1.35	0.59	8.85
		10	2 30	10	2 30				
10	150	11	2 45	11	2 45	0.10	1.50	0.60	9.00
11	165	12	3 00	12	3 00	0.11	1.65	0.61	9.15
12	180	13	3 15	13	3 15	0.12	1.80	0.62	9.30
13	195	14	3 30	14	3 30	0.13	1.95	0.63	9.45
14	210	15	3 45	15	3 45	0.14	2.10	0.64	9.60
		16	4 00	16	4 00				
15	225	17	4 15	17	4 15	0.15	2.25	0.65	9.75
16	240	18	4 30	18	4 30	0.16	2.40	0.66	9.90
17	255	19	4 45	19	4 45	0.17	2.55	0.67	10.05
18	270					0.18	2.70	0.68	10.20
19	285	20	5 00	20	5 00	0.19	2.85	0.69	10.35
		21	5 15	21	5 15				
20	300	22	5 30	22	5 30	0.20	3.00	0.70	10.50
21	315	23	5 45	23	5 45	0.21	3.15	0.71	10.65
22	330	24	6 00	24	6 00	0.22	3.30	0.72	10.80
23	345	25	6 15	25	6 15	0.23	3.45	0.73	10.95
24	360	26	6 30	26	6 30	0.24	3.60	0.74	11.10
		27	6 45	27	6 45				
		28	7 00	28	7 00	0.25	3.75	0.75	11.25
		29	7 15	29	7 15	0.26	3.90	0.76	11.40
						0.27	4.05	0.77	11.55
		30	7 30	30	7 30	0.28	4.20	0.78	11.70
		31	7 45	31	7 45	0.29	4.35	0.79	11.85
		32	8 00	32	8 00				
		33	8 15	33	8 15	0.30	4.50	0.80	12.00
		34	8 30	34	8 30	0.31	4.65	0.81	12.15
		35	8 45	35	8 45	0.32	4.80	0.82	12.30
		36	9 00	36	9 00	0.33	4.95	0.83	12.45
		37	9 15	37	9 15	0.34	5.15	0.84	12.60
		38	9 30	38	9 30				
		39	9 45	39	9 45	0.35	5.25	0.85	12.75
						0.36	5.40	0.86	12.90
		40	10 00	40	10 00	0.37	5.55	0.87	13.05
		41	10 15	41	10 15	0.38	5.70	0.88	13.20
		42	10 30	42	10 30	0.39	5.85	0.89	13.35
		43	10 45	43	10 45				
		44	11 00	44	11 00	0.40	6.00	0.90	13.50
		45	11 15	45	11 15	0.41	6.15	0.91	13.65
		46	11 30	46	11 30	0.42	6.30	0.92	13.80
		47	11 45	47	11 45	0.43	6.45	0.93	13.95
		48	12 00	48	12 00	0.44	6.60	0.94	14.10
		49	12 15	49	12 15				
						0.45	6.75	0.95	14.25
		50	12 30	50	12 30	0.46	6.90	0.96	14.40
		51	12 45	51	12 45	0.47	7.05	0.97	14.55
		52	13 00	52	13 00	0.48	7.20	0.98	14.70
		53	13 15	53	13 15	0.49	7.35	0.99	14.85
		54	13 30	54	13 30				
		55	13 45	55	13 45	0.50	7.50	1.00	15.00
		56	14 00	56	14 00				
		57	14 15	57	14 15				
		58	14 30	58	14 30				
		59	14 45	59	14 45				
		60	15 00	60	15 00				

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Tabla 5.TRANSFORMACIÓN DE HORAS, MINUTOS Y SEGUNDOS A FRACCIÓN DECIMAL DEL DÍA

	0^h	1^h	2^h	3^h	4^h	5^h	Segundos	
m	d	d	d	d	d	d	s	d
0	0.00000	0.04167	0.08333	0.12500	0.16667	0.20833	0	0.00000
1	.00069	.04236	.08403	.12569	.16736	.20903	1	.00001
2	.00139	.04306	.08472	.12639	.16806	.20972	2	.00002
3	.00208	.04375	.08542	.12708	.16875	.21042	3	.00003
4	.00278	.04444	.08611	.12778	.16944	.21111	4	.00005
5	0.00347	0.04514	0.08681	0.12847	0.17014	0.21181	5	0.00006
6	.00417	.04583	.08750	.12917	.17083	.21250	6	.00007
7	.00486	.04653	.08819	.12986	.17153	.21319	7	.00008
8	.00556	.04722	.08889	.13056	.17222	.21389	8	.00009
9	.00625	.04792	.08958	.13125	.17292	.21458	9	.00010
10	0.00694	0.04861	0.09028	0.13194	0.17361	0.21528	10	0.00012
11	.00764	.04931	.09097	.13264	.17431	.21597	11	.00013
12	.00833	.05000	.09167	.13333	.17500	.21667	12	.00014
13	.00903	.05069	.09236	.13403	.17569	.21736	13	.00015
14	.00972	.05139	.09306	.13472	.17639	.21806	14	.00016
15	0.01042	0.05208	0.09375	0.13542	0.17708	0.21875	15	0.00017
16	.01111	.05278	.09444	.13611	.17778	.21944	16	.00019
17	.01181	.05347	.09514	.13681	.17847	.22014	17	.00020
18	.01250	.05417	.09583	.13750	.17917	.22083	18	.00021
19	.01319	.05486	.09653	.13819	.17986	.22153	19	.00022
20	0.01389	0.05556	0.09722	0.13889	0.18056	0.22222	20	0.00023
21	.01458	.05625	.09792	.13958	.18125	.22292	21	.00024
22	.01528	.05694	.09861	.14028	.18194	.22361	22	.00025
23	.01597	.05764	.09931	.14097	.18264	.22431	23	.00027
24	.01667	.05833	.10000	.14167	.18333	.22500	24	.00028
25	0.01736	0.05903	0.10069	0.14236	0.18403	0.22569	25	0.00029
26	.01806	.05972	.10139	.14306	.18472	.22639	26	.00030
27	.01875	.06042	.10208	.14375	.18542	.22708	27	.00031
28	.01944	.06111	.10278	.14444	.18611	.22778	28	.00032
29	.02014	.06181	.10347	.14514	.18681	.22847	29	.00034
30	0.02083	0.06250	0.10417	0.14583	0.18750	0.22917	30	0.00035
31	.02153	.06319	.10486	.14653	.18819	.22986	31	.00036
32	.02222	.06389	.10556	.14722	.18889	.23056	32	.00037
33	.02292	.06458	.10625	.14792	.18958	.23125	33	.00038
34	.02361	.06528	.10694	.14861	.19028	.23194	34	.00039
35	0.02431	0.06597	0.10764	0.14931	0.19097	0.23264	35	0.00041
36	.02500	.06667	.10833	.15000	.19167	.23333	36	.00042
37	.02569	.06736	.10903	.15069	.19236	.23403	37	.00043
38	.02639	.06806	.10972	.15139	.19306	.23472	38	.00044
39	.02708	.06875	.11042	.15208	.19375	.23542	39	.00045
40	0.02778	0.06944	0.11111	0.15278	0.19444	0.23611	40	0.00046
41	.02847	.07014	.11181	.15347	.19514	.23681	41	.00047
42	.02917	.07083	.11250	.15417	.19583	.23750	42	.00049
43	.02986	.07153	.11319	.15486	.19653	.23819	43	.00050
44	.03056	.07222	.11389	.15556	.19722	.23889	44	.00051
45	0.03125	0.07292	0.11458	0.15625	0.19792	0.23958	45	0.00052
46	.03194	.07361	.11528	.15694	.19861	.24028	46	.00053
47	.03264	.07431	.11597	.15764	.19931	.24097	47	.00054
48	.03333	.07500	.11667	.15833	.20000	.24167	48	.00056
49	.03403	.07569	.11736	.15903	.20069	.24236	49	.00057
50	0.03472	0.07639	0.11806	0.15972	0.20139	0.24306	50	0.00058
51	.03542	.07708	.11875	.16042	.20208	.24375	51	.00059
52	.03611	.07778	.11944	.16111	.20278	.24444	52	.00060
53	.03681	.07847	.12014	.16181	.20347	.24514	53	.00061
54	.03750	.07917	.12083	.16250	.20417	.24583	54	.00062
55	0.03819	0.07986	0.12153	0.16319	0.20486	0.24653	55	0.00064
56	.03889	.08056	.12222	.16389	.20556	.24722	56	.00065
57	.03958	.08125	.12292	.16458	.20625	.24792	57	.00066
58	.04028	.08194	.12361	.16528	.20694	.24861	58	.00067
59	0.04097	0.08264	0.12431	0.16597	0.20764	0.24931	59	0.00068

Interv.	6^h	12^h	18^h	24^h
Frac.Día	0^d25	0^d50	0^d75	1^d00

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Tabla 6. TRANSFORMACIÓN DE INTERVALOS DE TIEMPO EXPRESADOS EN FRACCIONES DECIMALES DE DÍA A UNIDADES HORARIAS

Intervalo	Unidades Horarias	Intervalo	Unidades Horarias	Intervalo	Unidades Horarias	Intervalo	Unidades Horarias	Intervalo	Un. Hor.
d	h m s	d	h m s	d	m s	d	m s	d	s
0 00	0 00 00	0 50	12 00 00	0 0000	0 00 00	0 0050	7 12 00	0 000 00	0 00
1	14 24	51	14 24	1	08.64	51	20.64		
2	28 48	52	28 48	2	17.28	52	29.28	. 1	0.86
3	43 12	53	43 12	3	25.92	53	37.92		
4	57 36	54	57 36	4	34.56	54	46.56	. 2	1.73
5	1 12 00	55	13 12 00	5	43.20	55	55.20		
6	26 24	56	26 24	6	51.84	56	8 03.84	. 3	2.59
7	40 48	57	40 48	7	1 00.48	57	12.48		
8	55 12	58	55 12	8	09.12	58	21.12	. 4	3.46
9	2 09 36	59	14 09 36	9	17.76	59	29.76		
								0.000 05	4.32
0.10	24 00	0.60	24 00	0.0010	26.40	0.0060	38.40		
11	38 24	61	38 24	11	35.04	61	47.04	. 6	5.18
12	52 48	62	52 48	12	43.68	62	55.68		
13	3 07 12	63	15 07 12	13	52.32	63	9 04.32	. 7	6.05
14	21 36	64	21 36	14	2 00.96	64	12.96		
15	36 00	65	36 00	15	09.60	65	21.60	. 8	6.91
16	50 24	66	50 24	16	18.24	66	30.24		
17	4 04 48	67	16 04 48	17	26.88	67	38.88	. 9	7.78
18	19 12	68	19 12	18	35.52	68	47.52		
19	33 36	69	33 36	19	44.16	69	56.16	0.000 10	8.64
0.20	48 00	0.70	16 48 00	0.0020	52.80	0.0070	10 04.80		
21	5 02 24	71	17 02 24	21	3 01.44	71	13.44		
22	16 48	72	16 48	22	10.08	72	22.08		
23	31 12	73	31 12	23	18.72	73	30.72		
24	45 36	74	45 36	24	27.36	74	39.36		
25	6 00 00	75	18 00 00	25	36.00	75	48.00		
26	14 24	76	14 24	26	44.64	76	56.64		
27	28 48	77	28 48	27	53.28	77	11 05.28		
28	43 12	78	43 12	28	4 01.92	78	13.92		
29	57 36	79	57 36	29	10.56	79	22.56		
0.30	7 12 00	0.80	19 12 00	0.0030	19.20	0.0080	31.20		
31	26 24	81	26 24	31	27.84	81	39.84		
32	40 48	82	40 48	32	36.48	82	48.48		
33	55 12	83	55 12	33	45.12	83	57.12		
34	8 09 36	84	20 09 36	34	53.76	84	12 05.76		
35	24 00	85	24 00	35	5 02.40	85	14.40		
36	38 24	86	38 24	36	11.04	86	23.04		
37	52 48	87	52 48	37	19.68	87	31.68		
38	9 07 12	88	21 07 12	38	28.32	88	40.32		
39	21 36	89	21 36	39	36.96	89	48.96		
0.40	36 00	0.90	36 00	0.0040	45.60	0.0090	57.60		
41	50 24	91	50 24	41	54.24	91	13 06.24		
42	10 04 48	92	22 04 48	42	6 02.88	92	14.88		
43	19 12	93	19 12	43	11.52	93	23.52		
44	33 36	94	33 36	44	20.16	94	31.16		
45	48 00	95	48 00	45	28.80	95	40.80		
46	11 02 24	96	23 02 24	46	37.44	96	49.44		
47	16 48	97	16 48	47	46.08	97	58.08		
48	31 12	98	31 12	48	54.72	98	14 06.72		
0.49	45 36	0.99	45 36	0.0049	7 03.36	099	15.36		

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TABLAS DE REFRACCIÓN

Las tablas que se dan a continuación han sido tomadas del Almanaque Náutico de San Fernando (España), deducidas a su vez de las tablas de refracción de la Connaissance des Temps. La **Tabla 7** provee los valores de las correcciones M, N y P, a la lectura del barómetro H', para obtener la presión barométrica H, reducida a la temperatura del aire y corregida de la variación de la gravedad por la influencia de la latitud φ y de la altitud (dada en metros), conforme a la expresión:

$$H = H' [1 - 0.00264 \cos 2\varphi - 0.000\,000\,196\, a - 0.000\,163\, (t' - t)]$$

En la que t y t' son las temperaturas del aire y del termómetro adjunto al barómetro en grados centígrados, supuesta la escala barométrica del latón. La presión barométrica corregida será:

H = H' + M + N + P
Su valor será el argumento para entrar en la tabla que da el factor B.

La Refracción Normal Ro, que se obtiene de la **Tabla 8** en función de la distancia cenital aparente, corresponde a las siguientes condiciones: φ = 45°; altitud = 0 metros; temperatura del aire ambiente = 0°C; presión barométrica = 760 mm a 0°C; tensión del vapor de agua = 6 mm.

En la **tabla 9** se dan las correcciones que deben efectuarse a la Refracción Normal Ro para obtener la Refracción Verdadera R, en cualquier condición de observación, despreciando la influencia muy pequeña del mayor o menor grado de humedad del aire.

El factor corrección A se da en función de la temperatura t del aire. El factor B en función de la presión barométrica reducida H. el factor α en función de la distancia cenital para Z<81° y de Z y t para Z>81°. El factor β en función de la Refracción Normal corregida por temperatura R'.

La Refracción Verdadera será:

$$R = Ro\ (1 + A\alpha)\ (1 + B\beta) = R'\ (1 + B\beta)$$

Los factores α y β se consideran iguales a la unidad cuando Z<45° para α y cuando es Z<60° para β. Podrá prescindirse de dichos factores aún para mayores distancias cenitales, cuando no se requiera un valor extremadamente aproximado de la refracción.

Ejemplo 1:

Z = 23° 27'.6; φ = - 35°.5; H' = 757.6 mm; a = 50 m; t = 12°.6; t'= 18°.6

H'	= 757.6 mm		Ro	= 26″ 08	
M	= -1.29	A	= -0,0461	1 + A = 0.9539	
N	= -0.11	R'	= Ro (1 + A) = 24″ 88		
P	= -0.01	B	= -0,0053	1 + B = 0.9947	
			R	= R' (1 + B) = 24″ 75	
H	= 756 mm				

Ejemplo 2

Z = 85°15'.2; φ = -47°; H'= 750.8 mm; a = 400 m; t = 12°.5; t'= 20°.5

H'	= 750.8 mm		Ro	= 10'40″.2 = 640″.2
M	= -0.79	A	= -0.0458	
N	= -0.06	α	= 1. 121	
P	= -0.06	R'	= Ro (1 + Aα) = 640″.2 x 0,9487 = 607″.4	
		B	= -0.0132	
H	= 749.90 mm	β	= 1.012	
		R	= R'(1 + Bβ) = 607″.4 x 0,9866=599″.26 =9'59″.3	

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Tabla 7. **VOLVER A TABLAS DE REFRACCION**

Corrección a las lecturas barométricas (H') para deducir la (H) que ha de servir de argumento de entrada en la Tabla de Refracción

H = H' + M + N + P

PRIMERA CORRECCIÓN (M)

φ	t' - t													Var.
	+16°	+14°	+12°	+10°	+8°	+6°	+4°	+2°	0°	-2°	-4°	-6°	-8°	-10°	Por 1°deφ
0	-3,67	-3,44	-3,22	-2,99	-2,76	-2.53	-2.30	-2,08	-1,85	-1,62	-1,39	-1,16	-0,94	-0,71	0,011
10	3,56	3,33	3,11	2.88	2,65	2,42	2,19	1,97	1,74	1,51	1,28	1,05	0,83	0,60	0,026
15	3,38	3,20	2.97	2,74	2,51	2,28	2,05	1,83	1,60	1,37	1,14	0,91	0,69	0,45	0,034
18	3,32	3,09	2,86	2,63	2,40	2,18	1,95	1,72	1,49	1,26	1,04	0,80	0,58	0,34	0,040
20	3,24	3,01	2,79	2,55	2,32	2,10	1,87	1,64	1,41	1,18	0,96	0,73	0,50	0,26	
22	-3,16	-2,93	-2,70	-2,47	-2,24	-2,02	-1,78	-1,56	-1,33	-1,10	-0,87	-0,64	-0,42	-0,17	0,043
24	3,06	2,83	2,60	2,37	2,14	1,92	1,69	1,46	1,23	1,00	0,78	0,55	0,32	-0,08	0,046
26	2,97	2,74	2,51	2,28	2,05	1,83	1,60	1,37	1,14	0,91	0,69	0,45	0,23	+0,01	0,049
28	2,86	2,62	2,40	2,17	1,94	1,71	1,48	1,26	1,03	0,80	0,57	0,34	0,12	0,11	0,052
30	2,75	2,52	2,30	2,06	1,83	1,61	1,38	1,15	0,92	0,69	0,47	0,24	-0,01	0,22	0,055
32	-2,64	-2,41	-2,18	-1,95	-1,72	-1,50	-1,27	-1,04	-0,81	-0,58	-0,36	-0,13	+0,10	+0,33	0,057
34	2,52	2,29	2,06	1,83	1,60	1,38	1,15	0,92	0,69	0,46	0,24	-0,01	0,22	0,45	0,059
36	2,39	2,16	1,93	1,71	1,48	1,25	1,02	0,80	0,57	0,34	-0,11	+0,12	0,34	0,57	0,060
38	2,27	2,04	1,82	1,59	1,36	1,13	0,90	0,68	0,45	0,22	+0,01	0,24	0,46	0,69	0,062
40	2,15	1,92	1,69	1,46	1,23	1,01	0,78	0,55	0,32	-0,09	0,13	0,36	0,59	0,82	0,063
42	-2,02	-1,79	-1,57	-1,34	-1,11	-0,88	-0,65	-0,43	-0,20	+0,03	+0,26	+0,49	+0,71	+0,94	0,064
44	1,89	1,66	1,43	1,20	0,97	0,75	0,52	0,29	-0,06	0,17	0,39	0,62	0,85	1,08	0,064
46	1,76	1,53	1,31	1,08	0,85	0,62	0,39	0,17	+0,06	0,29	0,52	0,75	0,97	1,20	0,065
48	1,63	1,40	1,18	0,94	0,71	0,49	0,26	-0,03	0,20	0,43	0,65	0,88	1,11	1,34	0,064
50	1,S0	1,27	1,05	0,82	0,59	0,36	0,13	+0,09	0,32	0,55	0,78	1,01	1,23	1,46	0,064
52	-1,38	-1,15	-0,92	-0,69	-0,46	-0,24	-0,01	+0,22	+0,45	+0,68	+0,90	+1,13	+1.36	+1,59	0,063
54	1,26	1,03	0,80	0,57	0,34	0,12	+0,11	0,34	0,57	0,80	1,02	1,25	1,48	1,71	0,062
56	1,13	0,90	0,68	0,45	0,22	+0,01	0,24	0,46	0,69	0,92	1,15	1,38	1,60	1,83	0,060
58	1,01	0,78	0,56	0,33	-0,10	0,13	0,36	0,58	0,81	1,04	1,27	1,50	1,72	1,95	0,059
60	0,90	0,67	0,45	0,22	+0,01	0,24	0,47	0,69	0,92	1,15	1,38	1,61	1,83	2,06	0,057

Variación por 1° en (t'- t) = 0,114

SEGUNDA CORRECCIÓN (N)

H'	560	580	600	620	640	660	680	700	720	740	760	780
M												
0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0	0,00	0,00	0,00	0,00
0,5	0,01	0,09	0,07	0,06	0,04	0,02	0,01	0	0,01	0,02	0,04	0,06
1,0	0,02	0,17	0,14	0,11	0,09	0,06	0,03	0	0,03	0,06	0,09	0,11
1,5	0,03	0,25	0,21	0,17	0,13	0,09	0,05	0	0,05	0,09	0,13	0,17
2,0	0,04	0,34	0,29	0,23	0,17	0,11	0,06	0	0,06	0,11	0,17	0,23
2,5	0,05	0,43	0,35	0,29	0,21	0,14	0,07	0	0,07	0,14	0,21	0,29
3,0	0,0ó	0,51	0,43	0,34	0,26	0,17	0,09	0	0,09	0,17	0,26	0,34
3,5	0,07	0,ó0	0,50	0,40	0,30	0,20	0,10	0	0,10	0,20	0,30	0,40
4,0	0,08	0,68	0,57	0,46	0,35	0,23	0,11	0	0,11	0,23	0,35	0,46

Para H' > 700 + si M es > 0 y - si M es < 0

Signo de corrección

Para H' < 700 + si M es < 0 y - si M es > 0

TERCERA CORRECCIÓN (P)

Altitud	P	Altitud	P	Altitud	P	Altitud	P	Altitud	P	Altitud	P
0		340		835		1430		2035		2755	
25	0,00	410	0,06	930	0,12	1530	0,18	2140	0,24	2925	0,30
80	0,01	485	0,07	1030	0,13	1630	0,19	2245	0,25	3115	0,31
140	0,02	570	0,08	1130	0,14	1730	0,20	2355	0,26		
205	0,03	655	0,09	1230	0,15	1830	0,21	2475	0,27		
270	0,04	745	0,10	1330	0,16	1930	0,22	2605	0,28		
340	0,05	835	0,11	1430	0,17	2035	0,23	2755	0,29		

Corrección negativa

VOLVER AL INDICE

Tabla 8. **VOLVER A TABLAS DE REFRACCION**

REFRACCIÓN ASTRONÓMICA NORMAL (R_0)

Para 760 m/m del Barómetro y 0° del Termómetro centígrado

Distancia Zenital Aparente	Refrac-ción	Variación por 10'	Distancia Zenital Aparente	Refracción	Variación por 10'	Distancia Zenital Aparente	Refracción	Variación por 10'	Distancia Zenital Aparente	Refracción	Variación por 1'
°	"	"	° '	' "	"	° '	' "	"	° '	' "	"
0	0,00	0,175	**45 00**	1 0,04	0,35	**68 00**	2 27,8	1,20	**83 00**	7 39,3	1,00
1	1,05	0,175	**45 30**	1 0,09	0,36	**68 20**	2 30,2	1,30	**83 10**	7 49,3	1,04
2	2,10	0,175	**46 00**	1 2,17	0,36	**68 40**	2 32,8	1,30	**83 20**	7 59,7	1,09
3	3,15	0,175	**46 30**	1 3,26	0,37	**69 00**	2 35,4	1,35	**83 30**	8 10,6	1,13
4	4,20	0,175	**47 00**	1 4,37	0,38	**69 20**	2 38,1	1,40	**83 40**	8 21,9	1,19
5	5,25	0,177	**47 30**	1 5,51	0,39	**69 40**	2 40,9	1,45	**83 50**	8 33,8	1,23
6	6,31	0,178	**48 00**	1 6,67	0,39	**70 00**	2 43,8	1,45	**84 00**	8 46,1	1,29
7	7,38	0,178	**48 30**	1 7,84	0,40	**70 20**	2 46,7	1,55	**84 10**	8 59,0	1,35
8	8,45	0,178	**49 00**	1 9,04	0,41	**70 40**	2 49,8	1,60	**84 20**	9 12,5	1,42
9	9,52	0,180	**49 30**	1 10,27	0,41	**71 00**	2 53,0	1,60	**84 30**	9 26,7	1,49
10	10,60	0,180	**50 00**	1 11,51	0,43	**71 20**	2 56,2	1,70	**84 40**	9 41,6	1,56
11	11,68	0,182	**50 30**	1 12,80	0,43	**71 40**	2 59,6	1,75	**84 50**	9 57,2	1,63
12	12,77	0,183	**51 00**	1 14,10	0,44	**72 00**	3 3,1	1,80	**85 00**	10 13,5	1,72
13	13,87	0,185	**51 30**	1 15,42	0,46	**72 20**	3 6,7	1,90	**85 10**	10 30,7	1,82
14	14,98	0,187	**52 00**	1 16,79	0,46	**72 40**	3 10,5	1,90	**85 20**	10 48,9	1,91
15	16,10	0,188	**52 30**	1 18,18	0,47	**73 00**	3 14,3	2,05	**85 30**	11 8,0	2,01
16	17,23	0,190	**53 00**	1 19,60	0,49	**73 20**	3 18,4	2,05	**85 40**	11 28,1	2,12
17	18,37	0,193	**53 30**	1 21,06	0,50	**73 40**	3 22,5	2,20	**85 50**	11 49,3	2,25
18	19,53	0,193	**54 00**	1 22,56	0,51	**74 00**	3 26,9	2,25	**86 00**	12 11,8	2,38
19	20,69	0,197	**54 30**	1 24,08	0,52	**74 20**	3 31,4	2,35	**86 10**	12 35,6	2,53
20	21,87	0,200	**55 00**	1 25,64	0,54	**74 40**	3 36,1	2,45	**86 20**	13 0,9	2,68
21	23,07	0,202	**55 30**	1 27,26	0,54	**75 00**	3 41,0	2,55	**86 30**	13 27,7	2,85
22	24,28	0,205	**56 00**	1 28,89	0,56	**75 20**	3 46,1	2,65	**86 40**	13 56,2	3,03
23	25,51	0,207	**56 30**	1 30,58	0,58	**75 40**	3 51,4	2,80	**86 50**	14 26,5	3,23
24	26,75	0,212	**57 00**	1 32,31	0,59	**76 00**	3 57,0	2,90	**87 00**	14 58,8	3,45
25	28,02	0,215	**57 30**	1 34,09	0,61	**76 20**	4 2,8	3,05	**87 10**	15 33,3	3,69
26	29,31	0,217	**58 00**	1 35,92	0,62	**76 40**	4 8,9	3,15	**87 20**	16 10,2	3,95
27	30,61	0,223	**58 30**	1 37,79	0,65	**77 00**	4 15,2	3,35	**87 30**	16 49,7	4,24
28	31,95	0,227	**59 00**	1 39,73	0,66	**77 20**	4 21,9	3,50	**87 40**	17 32,1	4,55
29	33,31	0,230	**59 30**	1 41,72	0,68	**77 40**	4 28,9	3,70	**87 50**	18,17,6	4,90
30	34,69	0,235	**60 00**	1 43,76	0,70	**78 00**	4 36,3	3,85	**88 00**	19 6,6	5,28
31	36,10	0,240	**60 30**	1 45,87	0,72	**78 20**	4 44,0	4,10	**88 10**	19 59,4	5,70
32	37,54	0,245	**61 00**	1 48,04	0,75	**78 40**	4 52,2	4,30	**88 20**	20 56,4	6,18
33	39,01	0,252	**61 30**	1 50,29	0,77	**79 00**	5 0,8	4,53	**88 30**	21 58,2	6,69
34	40,52	0,258	**62 00**	1 52,60	0,80	**79 20**	5 9,9	4,85	**88 40**	23 5,1	7,27
35	42,07	0,262	**62 30**	1 54,99	0,83	**79 40**	5 19,6	5,10	**88 50**	24 17,8	7,92
36	43,64	0,270	**63 00**	1 57,47	0,85	**80 00**	5 29,8	5,40	**89 00**	25 37,0	8,44
37	45,26	0,277	**63 30**	2 0,02	0,88	**80 20**	5 40,6	5,80	**89 05**	26 19,2	8,82
38	46,92	0,287	**64 00**	2 2,67	0,91	**80 40**	5 52,2	6,15	**89 10**	27 3,3	9,22
39	48,64	0,293	**64 30**	2 5,41	0,95	**81 00**	6 4,5	6,60	**89 15**	27 49,4	9,64
40	50,40	0,302	**65 00**	2 8,25	0,98	**81 20**	6 17,7	7,00	**89 20**	28 37,6	10,10
41	52,21	0,310	**65 30**	2 11,19	1,02	**81 40**	6 31,7	7,55	**89 25**	29 28,1	10,56
42	54,07	0,322	**66 00**	2 14,26	1,06	**82 00**	6 46,8	8,10	**89 30**	30 20,9	11,06
43	56,00	0,330	**66 30**	2 17,44	1,10	**82 20**	7 3,0	8,70	**89 35**	31 16,2	11,60
44	57,98	0,343	**67 00**	2 20,74	1,15	**82 40**	7 20,4	9,45	**89 40**	32 14,2	12,16
45	60,04	0,355	**67 30**	2 24,19	1,20	**83 00**	7 39,2	10,20	**89 45**	33 15,0	12,76
46	62,17	0,367	**68 00**	2 27,78	1,24	**83 20**	7 59,7	11,10	**89 50**	34 18,8	13,38
47	64,37		**68 30**	2 31,51		**83 40**	8 21,9		**89 55**	35 25,7	

VOLVER AL INDICE

Tabla 9. **VOLVER A TABLAS DE REFRACCION**

CORRECCIÓN DE LAS REFRACCIONES NORMALES

FACTOR A								FACTOR B			
t	A Variación Por 0°,1 - 0,00045	t	A variación Por 0°,1 - 0,00038	t	A variación por 0°,1 - 0,00033	T	A variación por 0°,1 - 0,00029	Barómetro	B Variación por m/m + 0,0013	Barómetro	B Variación Por m/m + 0,0013
°		°		°		°		m/m		m/m	
-30	+ 0,1291	-10	+ 0,0398	+10	- 0,0369	+30	- 0,1035	630	- 0,1711	710	- 0,0658
29	0,1243	9	0,0357	11	0,0405	31	0,1066	634	0,1658	714	0,0605
28	0,1195	8	0,0316	12	0,0440	32	0,1097	638	0,1605	718	0,0553
27	0,1148	7	0,0275	13	0,0475	33	0,1127	642	0,1533	722	0,0500
26	0,1101	6	0,0235	14	0,0510	34	0,1158	646	0,1500	726	0,0447
-25	+ 0,1054	- 5	+ 0,0195	+15	- 0,0545	+35	- 0,1188	650	- 0,1447	730	- 0,0395
24	0,1008	4	0,0155	16	0,0579	36	0,1218	654	0,1395	734	0,0342
23	0,0962	3	0,0116	17	0,0613	37	0,1248	658	0,1342	738	0,0289
22	0,0917	2	0,0077	18	0,0647	38	0,1277	662	0,1289	742	0,0237
21	0,0872	- 1	+ 0,0038	19	0,0680	39	0,1307	666	0,1237	746	0,0184
-20	+ 0,0827	0	0,0000	+20	- 0,0714	+40	- 0,1336	670	- 0,1184	750	- 0,0132
19	0,0782	+ 1	- 0,0038	21	0,0747	41	0,1365	674	0,1132	754	0,0079
18	0,0738	2	0,0076	22	0,0780	42	0,1394	678	0,1079	758	- 0,0026
17	0,0694	3	0,0114	23	0,0812	43	0,1422	682	0,1026	762	+ 0,0026
16	0,0651	4	0,0151	24	0,0845	44	0,1451	686	0,0974	766	0,0079
-15	+ 0,0668	+ 5	- 0,0188	+25	- 0,0877	+45	- 0,1479	690	- 0,0921	770	+ 0,0132
14	0,0565	6	0,0225	26	0,0909	46	0,1507	694	0,0868	774	0,0184
13	0,0523	7	0,0261	27	0,0941	47	0,1535	698	0,0816	778	0,0237
12	0,0481	8	0,0298	28	0,0972	48	0,1563	702	0,0763	782	0,0289
11	0,0439	9	0,0334	29	0,1004	49	0,1591	706	0,0711	786	0,0342
10	0,0398	10	0,0369	30	0,1035	50	0,1618	710	0,0658	790	0,0395

FACTOR α												FACTOR β		
Para zenitales > 45° < 81°												Refracción corregida de temperatura	β	
z	α	z	α	z	α	z	α	z	α	z	α			
°		°		°		°		°		°		6'	1,004	Para zenitales > 60°
45	1,000	55	1,002	63	1,004	68	1,007	72	1,011	76	1,020	8	1,008	
46	1,001	56	1,003	64	1,005	69	1,008	73	1,013	77	1,023	10	1,012	
49	1,001	59	1,003	65	1,005	70	1,009	74	1,015	78	1,026	12	1,017	
50	1,002	60	1,004	66	1,006	71	1,010	75	1,017	79	],031	14	1,023	
55	1,002	63	1,004	67	1,007	72	1,011	76	1,020	80	1,037	16	1,029	
												18	1,035	
												20	1,041	
												22	1,048	
												24	1,055	
												26	1,062	
												28	1,069	
												30	1,076	
												32	1,083	
												34	1,091	
												36	1,098	
												38	1,106	
												40	1,114	
												42	1,121	
												44	1,129	

Para zenitales > 81°

z	t -30°	-20°	-10°	0°	+10°	+20°	+30°	+40°	+50°
°									
81	1,046	1,046	1,045	1,045	1,045	1,044	1,044	1,044	1,043
82	1,057	1,056	1,056	1,055	1,054	1,054	1,053	1,053	1,052
83	1,071	1,071	1,070	1,069	1,068	1,067	1,067	1,066	1,065
84	1,091	1,090	1,088	1,087	1,086	1,085	1,084	1,083	1,082
85	1,120	1,118	1,116	1,114	1,112	1,111	1,109	1,108	1,107
86	1,162	1,158	1,155	1,152	1,149	1,147	1,144	1,142	1,140
87	1,226	1,220	1,215	1,210	1,206	1,202	1,198	1,194	1,191
88	1,327	1,317	1,307	1,299	1,291	1,284	1,278	1,271	1,266
89	1,499	1,479	1,460	1,444	1,429	1,416	1,403	1,392	1,381

(Refracción)" = $R"_0 (1 + A\,\alpha)\,(1 + B\,\beta)$

VOLVER AL INDICE

SEÑALES HORARIAS GENERADAS POR EL ONBA

a) TELEFONÍA: Anuncios parlantes precediendo los segundos 10, 20, 30, 40, 50 y 00 durante las 24 horas y emitidos por la red telefónica de todo el país (n° telefónico 113).

b) RADIOTELEFONÍA: Señal audible indicativa de hora y media hora, emitida por todas las estaciones del Servicio de Radiodifusión Sonora con modulación de amplitud, en ondas hectométricas de la Capital Federal (ver gráfico).

c) FRECUENCIAS PATRONES Y HORA: Modulación de pulsos de 5 ciclos de 1000Hz cada segundo, omitiendo el segundo 59, anuncios parlantes de horas y minutos cada cinco minutos seguidos de la modulación de 1000 y 440Hz alternativos, identificación de la estación (LOL, LOL, LOL) e información de DUT1 según código CCIR, pulso alargado (500 ms), emitidos directamente desde el Observatorio Naval (ver gráfico).

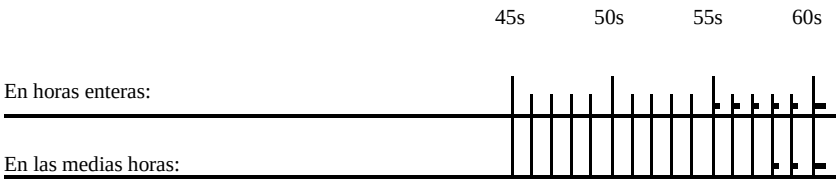
CUADRO DE SEÑALES HORARIAS

Estación Transmisora	Caracte-rísticas	Hora UTC de emisión Inicia	Termina	Frecuencia kHz	Tipo de onda	Sistema y origen De la señal
Observatorio Naval (Buenos Aires)	LOL	(1)	(1)	10000 15000	A1, A2, A3,	Patrones de frecuencia y hora
Caracas (Venezuela)	YVTO	*		5000		
Fort Collins (EE.UU)	WWV	*		2500,5000 10000,15000 20000	6 A9	Patrón de frecuencia y hora Bureau of Standards
Playa Ancha Radio (Chile)	CBV	08 55 12 55 16 55 21 55	09 00 13 00 17 00 22 00	4228 8677	A2	Americano Inst. Hid. Armada

***** Emisión continua

(1) Ver gráfico de una hora de transmisión en páginas siguientes.

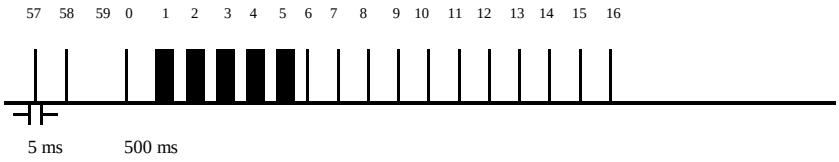
HORA OFICIAL ARGENTINA POR RADIOTELEFONÍA



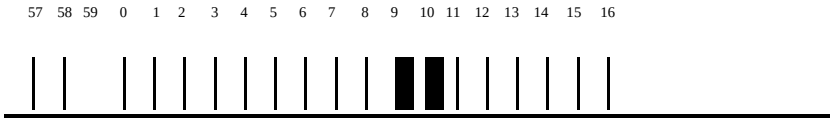
(Señales horarias)

EJEMPLOS DE CÓDIGO DUT 1

DUT 1 = +0,5s



DUT 1 = - 0,2s



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SERVICIO DE FRECUENCIAS PATRONES Y HORA

ESTACIÓN EMISORA: (LOL) Observatorio Naval Buenos. Aires. Av. España 2099. Cap. Fed.

HORAS DE EMISIÓN: 14:00 a 15::00 Tiempo Universal Coordinado (UTC) los días hábiles.

RADIOFRECUENCIAS PATRONES: 10 MHz – 15MHz .

POTENCIA DE ANTENA: 2 Kw.

AUDIOFRECUENCIAS PATRONES: Las portadoras se modularán en 1000 y 440 Hz alternativamente.

RELOJ PATRÓN: Atómico de Cesio Symmetricom 5071 A.

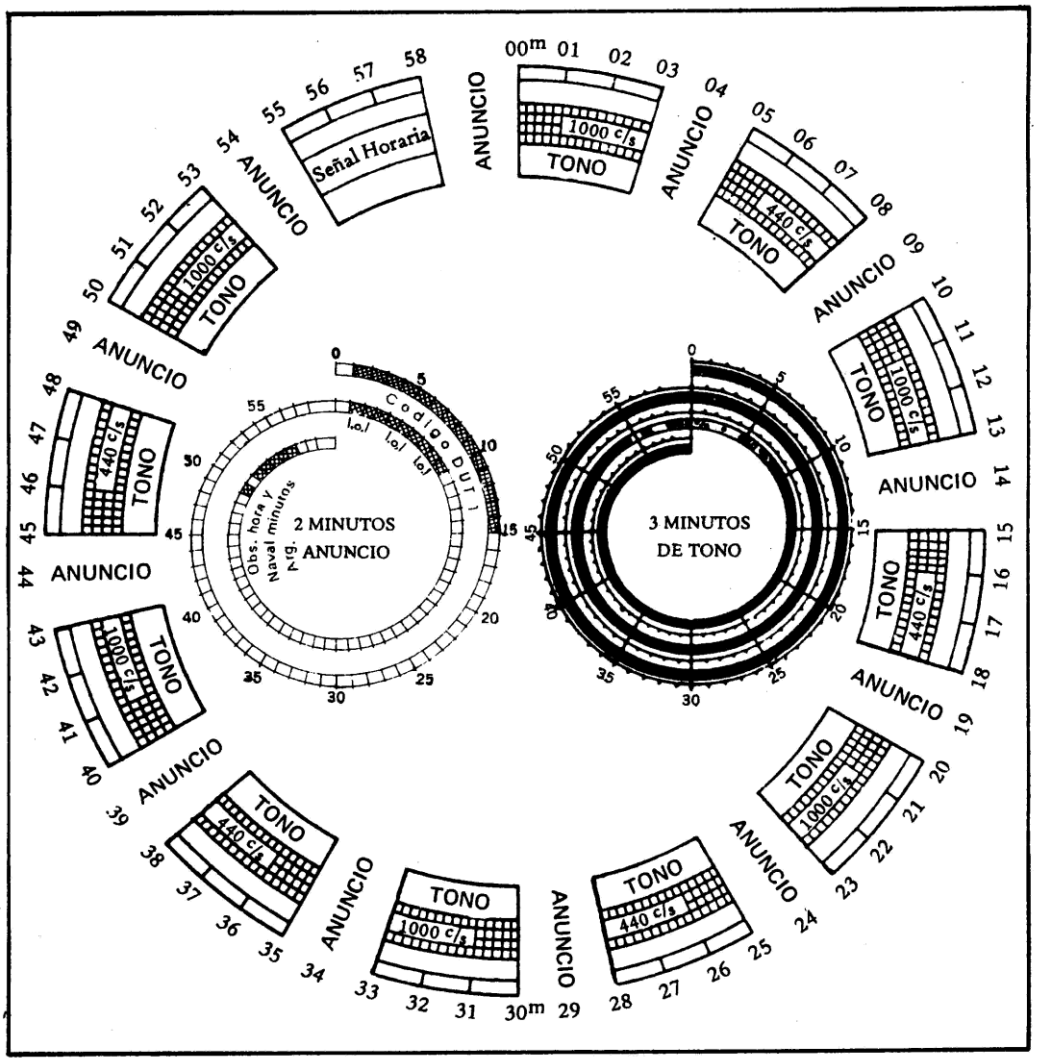

Gráfico de una hora de transmisión

INTERVALOS DE MODULACIÓN: 3 minutos sobre 5 minutos, iniciando en todos los minutos múltiplos de cinco, excepto en los 55 minutos, intervalo destinado a señal horaria especial de precisión.

EXACTITUD DE LAS FRECUENCIAS: $\pm$ 2 x 10^{-10}

SEÑAL HORARIA DE PRECISIÓN: Durante toda la señal se emite un top de cinco milisegundos de duración en cada segundo, excepto en los segundos 59 (que se suprime). El top consiste en la emisión de 5 ciclos de una modulación de 1000 Hz.

SEÑAL HORARIA: De tiempo uniforme coordinado (UTC).

PRECISIÓN EN LOS INTERVALOS DE TIEMPO PATRÓN: El intervalo entre la iniciación de dos tops consecutivos es de un segundo de tiempo atómico, con una precisión del microsegundo. La iniciación y fin de las modulaciones están sincronizadas con los pulsos horarios, quedando así definidos intervalos exactos de 1,3 y 5 minutos o mayores.

ANUNCIOS: Al término de los 3 minutos de tono se emite información del código DUT1, al comenzar el minuto siguiente en código morse, la característica de la estación, y antes de la iniciación del tono siguiente se anuncia el origen de la señal con la frase "Observatorio Naval Argentina", seguida por el anuncio de la hora y minuto exacto correspondiente al inicio de los próximos 3 minutos del tono siguiente.

PATRÓN MUSICAL: La modulación de 440 Hz. corresponde a la nota "la" de la quinta octava de la escala musical, pudiendo adoptarse como patrón musical.

El servicio de Frecuencias Patrones y Hora está operado por el Observatorio Naval de Buenos Aires, y controlado en colaboración con el laboratorio de Electrónica de la Dirección General del Material de Comunicaciones Navales.

Para todo lo relacionado con este servicio, dirigirse al Observatorio Naval Buenos Aires
Avenida España 2099, (C1107 AMA) Ciudad Autónoma de Buenos Aires.
onba@hidro.gov.ar

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TABLA 10. HORA OFICIAL EN DIVERSOS LUGARES DEL MUNDO
(Actualizados a Noviembre de 2023)

(La columna de la derecha indica el intervalo que debe sumarse algebraicamente a la hora oficial de un lugar para obtener la hora correspondiente en UTC)

Afganistán	-	04h	30m
Albania*	-	01	00
Alemania*	-	01	00
Almirantazgo, Is.	-	10	00
Amirante, Is.	-	04	00
Andamán, Is.	-	05	30
Angola	-	01	00
Antigua	+	04	00
Arabia Saudita	-	03	00
Argelia	-	01	00
Argentina, República	+	03	00
Malvinas Is.	+	03	00
Armenia	-	04	00
Aruba	+	04	00
Ascensión, I.		00	00
Australia:			
Occidental	-	08	00
Del Norte y del Sur*	-	09	30
Queensland, Nva. Gales del Sur*, Victoria*, Tasmania*, Capital*, Whitsunday Is.	-	10	00
Austria*	-	01	00
Azerbaiján*	-	04	00
Azores, Is.*	+	01	00
Bahamas*	+	05	00
Bahrein	-	03	00
Baleares, Is.*	-	01	00
Bangladesh	-	06	00
Barbados	+	04	00
Barbuda	+	04	00
Barlovento Is.			
Antigua, San Martín, San Cristóbal	+	04	00
Bélgica*	-	01	00
Bélice	+	06	00
Benin	-	01	00
Bermudas*	+	04	00
Bielorrusia	-	03	00
Birmania (Myanmar)	-	06	30
Bolivia	+	04	00
Bosnia y Herzegovina*	-	01	00
Botswana, República de	-	02	00
Brasil			
Fernando de Noronha I, Trinidad I., Is. Océanicas	+	02	00
Norte y Noreste de los Estados Costeros, Mina Gerais*, Goiás*, Brasilia*, Tocantins, Sur y Este de los Estados de la costa*	+	03	00

Matto Grosso do Sul*, Matto Grosso*, Este del Amazonas, Rondonia, Matto Grosso*,Roraima……..	+	04h	00m
Acre y Oeste del Amazonas……	+	05	00
Brunei	-	08	00
Bulgaria*	-	02	00
Burkina Faso.....		00	00
Burundi	-	02	00
Bután	-	06	00
Cabo verde, Is.	+	01	00
Caimán Is.	+	05	00
Camboya.....	-	07	00
Camerún, República de.....	-	01	00
Canadá:			
Terranova, I.....	+	03	30
Labrador*, Nueva Brunswich*, Nueva Escocia*, Isla Príncipe Eduardo*, y Québec al este del Meridiano 63° W	+	04	00
Nunavut* al este del meridiano 85° W, Ontario al este del meridiano 90° W* y Quebec al oeste del meridiano 63°W*.....	+	05	00
Manitoba*, Nunavut* entre los meridianos 85°W y 102° W, Ontario al oeste del meridiano 90°W* y Saskatchewan.....	+	06	00
Alberta*,Nunavut* oeste del meridiano 102° W y territorios del Noroeste*	+	07	00
Columbia Británica* y Yukón*	+	08	00
Centroafricana , República de.....	-	01	00
Chad.....	-	01	00
Chagos, Archipiélago y Diego García	-	06	00
Chatham, Is.*.....	-	12	45
Channel, I.*.....		00	00
Checa, República*.....	-	01	00
Chile*	+	04	00
China, República Popular de	-	08	00
Chipre: Ercan*, Larnaca*	-	02	00
Christmas, I. (Océano Índico)	-	07	00
Cocos, Is.	-	06	30
Colombia	+	05	00
Comores, Is.	-	03	00
Congo, República Democrática:			
Oeste: Kinsahasa, Equateur	-	01	00
Este: Orientale, Kasai, Kivu, Shaba.....	-	02	00
Congo, República	-	01	00
Cook, Is.....	+	10	00
Córcega*.....	-	01	00
Corea del Norte.....	-	08	30
Corea, República de (sur)	-	09	00
Costa de Márfil		00	00
Costa Rica.....	+	06	00
Croacia*.....	-	01	00

Cuba*	+	05h	00 m
Curaçao, I.	+	04	00
Dinamarca*	-	01	00
Djibouti	-	03	00
Dominica Is.	+	04	00
Dominicana, República	+	04	00
Ecuador	+	05	00
El Salvador, República del	+	06	00
Egipto, República Árabe de*	-	02	00
Emiratos Árabes Unidos	-	04	00
Eritrea	-	03	00
Eslovaquia, República*	-	01	00
Eslovenia*	-	01	00
España*:	-	01	00
Canarias, Is.*		00	00
Estados Unidos de América*:			
Connecticut, Delaware, distrito de Columbia, Florida, Georgia, Indiana, Kentucky este, Maine, Maryland, Massachusetts, Michigan, Nueva Hasmpshire, Nueva Yersey, Nueva York, Carolina del Norte, Ohio, Pennsylvania, Rhode Island, Carolina del Sur, Tennessee este, Vermont, Virginia,Washington D.C, Oeste de Virginia	+	05	00
Alabama,Arkansas,Illinois,Iowa,Kansas,Kentucky Oeste,Luisiana, Minnesota,Mississippi,Missouri, Nebraska este, Dakota del Norte este, Oklahoma, Dakota del Sur este, Tennessee oeste, Texas y Wisconsin	+	06	00
Arizona, Colorado, Idaho sur, Montana,Nebraska oeste, Nueva México, Dakota del Norte oeste, Dakota del Sur oeste, Utah y Wyoming	+	07	00
California, Idaho norte,Nevada, Oregón y Washington.	+	08	00
Alaska, Islas Aleutianas al este del meridiano 169° 30’W.	+	09	00
Islas Aleutianas al oeste del meridiano 169° 30’W e Islas Hawaii.	+	10	00
Estonia*	-	02	00
Etiopía	-	03	00
Fanning, I.	+	10	00
Faeroes, I.*		00	00
Fidji, I*.	-	12	00
Filipinas, República de	-	08	00
Finlandia*	-	02	00
Francia*	-	01	00
Gabón	-	01	00
Galápagos, Is.	+	06	00
Gambia		00	00
Georgia	-	04	00
Georgias del Sur, Islas	+	02	00
Ghana		00	00
Granada, I.	+	04	00

Grecia*	-	02h	00m
Groenlandia:			
Danmarkshav, Mesters Vig		00	00
Scoresby Sound*	+	01	00
General*	+	03	00
Thule*, Pituffik*	+	04	00
Guadalupe, I.	+	04	00
Guam, I.	-	10	00
Guatemala	+	06	00
Guayana Francesa	+	03	00
Guyana, República de	+	04	00
Guinea Bissau		00	00
Guinea Ecuatorial, República de	-	01	00
Haití*	+	05	00
Holanda*	-	01	00
Honduras	+	06	00
Hong Kong	-	08	00
Hungría*	-	01	00
India	-	05	30
Indonesia, República de:			
Bangka, Billiton, Java, oeste y centro de Kalimantan, Madura y Sumatra	-	07	00
Bali, Flores, sur y este de Kalimantan, Lombok, Sulawesi, Sumba, Sumbawa y Timor	-	08	00
Aru, Irian Jaya, Kai, Molucas y Tanimbar	-	09	00
Irak	-	03	00
Irán*	-	03	30
Irlanda, República de*		00	00
Irlanda del Norte*		00	00
Islandia		00	00
Israel*	-	02	00
Italia*	-	01	00
Jamaica	+	05	00
Jan Mayen, I.*	-	01	00
Japón	-	09	00
Jordania	-	03	00
Juan Fernandez, I.*	+	04	00
Kazajstán			
Oeste: Aktau, Uralsk, Atyrau	-	05	00
Este y Centro: Kzyl-Orda, Astana	-	06	00
Kenia	-	03	00
Kergulen Is.	-	05	00
Kirguistán	-	06	00
Kiribati, República :			
Gilbert Is.	-	12	00
Phoenix, Is.	-	13	00
Line, Is.	-	14	00
Kuwait	-	03	00
Laos	-	07	00

Laquedivias, Is.	-	05h	30m
Lesotho	-	02	00
Letonia*	-	02	00
Líbano*	-	02	00
Liberia		00	00
Libia*	-	02	00
Liechtenstein*	-	01	00
Lituania*	-	02	00
Lord Hawe Is*.	-	10	30
Luxemburgo*	-	01	00
Macao	-	08	00
Macedonia*	-	01	00
Macias Nguema (Fernando Poo)	-	01	00
Madagascar, República Democrática de	-	03	00
Madeira, I.*		00	00
Malasia, Malaya,Sabah, Sarawak	-	08	00
Malawi	-	02	00
Maldivas, República de	-	05	00
Malí, República de		00	00
Malta, I.*	-	01	00
Malvinas, Is.	+	03	00
Marquesas, Is.	+	09	30
Marruecos*		00	00
Martinica, I.	+	04	00
Mauricio, Is.	-	04	00
Mauritania		00	00
Méjico*			
General*	+	06	00
Sonora, Sinaloa*, Nayarit*, Chihuahua*, Sur del distrito			
Baja California*	+	07	00
Norte del Distrito de Baja California*	+	08	00
Micronesia:			
Carolinas, Is., Marianas, Is.	-	10	00
Marshall, Is.	-	12	00
Midway, I.	+	11	00
Moldavia*	-	02	00
Mónaco*	-	01	00
Mongolia	-	08	00
Montenegro*	-	01	00
Mozambique	-	02	00
Namibia*	-	02	00
Naurú	-	12	00
Nepal	-	05	45
Nicaragua	+	06	00
Nicobar, I.	-	05	30
Niger	-	01	00
Nigeria, República de	-	01	00
Niue, I.	+	11	00
Norfolk, I.	-	11	30

Noruega*	-	01h	00 m
Novaya Zemlya	-	03	00
Nueva Caledonia	-	11	00
Nueva Zelanda*	-	12	00
Okinawa	-	09	00
Omán	-	04	00
Pagalu (Annobon, Is.)	-	01	00
Pakistán	-	05	00
Palau, Is.	-	09	00
Panamá, República de	+	05	00
Papua (Nueva Guinea)	-	10	00
Paraguay*	+	04	00
Pascua, I.*	+	06	00
Pescadores, Is.	-	08	00
Perú	+	05	00
Polonia*	-	01	00
Portugal*		00	00
Príncipe, I.		00	00
Puerto Rico	+	04	00
Qatar	-	03	00
Reino Unido*		00	00
Reunión, I.	-	04	00
Ruanda	-	02	00
Rumania*	-	02	00
Rusia*:			
Kaliningrado	-	02	00
Moscú, San Petesburgo, Volgogrado y Arkangel	-	03	00
Samara, Astrakhan, Saratov, Volgograd	-	04	00
Ekaterinburg,Ufa, Perm, Novyy Port	-	05	00
Omsk	-	06	00
Norilsk,Krasnoyarsk, Dikson, ,Novosibirsk,Tomsk	-	07	00
Irkutsk, Bratsk, Ulan Ude	-	08	00
Yakutsk, Tiksi y Chita	-	09	00
Khabarovsk, Vladivostok , Oshotsk.	-	10	00
Sakhalin Is, Is. Kuriles, Magadan	-	11	00
Petropavlovsk-K, Anadyr,	-	12	00
Ryukyu, Is.	-	09	00
Salomón , I.	-	11	00
Samoa	-	13	00
San Pedro y Miquelón*	+	03	00
San Cruz, I.	-	11	00
Santa Elena, I.		00	00
Santo Tomé		00	00
Schouten, Is.	-	09	00
Senegal		00	00
Serbia*	-	01	00
Seychelles	-	04	00
Sierra Leona		00	00
Singapur	-	08	00
Siria, República Árabe*	-	03	00

Sociedad, I.	+	10h	00m
Socotra	-	03	00
Somalía, República de	-	03	00
Spitzbergen*(Svalbard)*	-	01	00
Sri Lanka	-	05	30
Sudán, República de	-	02	00
Sudáfrica, República de	-	02	00
Suecia*	-	01	00
Suiza*	-	01	00
Surinam	+	03	00
Swazilandia	-	02	00
Taiwan	-	08	00
Tadgikistán	-	05	00
Tanzania	-	03	00
Thailandia	-	07	00
Timor-Leste	-	09	00
Togo, República de		00	00
Tonga, I.	-	13	00
Trinidad Tobago	+	04	00
Tristán de Cunha		00	00
Tuamotu, Is.	+	10	00
Tubuai Is	+	10	00
Túnez	-	01	00
Turks y Caicos, Is.*	+	05	00
Turkemenistán	-	05	00
Turquia*	-	03	00
Tuvalu	-	12	00
Ucrania*	-	02	00
Uganda	-	03	00
Uruguay*	+	03	00
Uzbekistán	-	05	00
Vanuatu, República de	-	11	00
Venezuela	+	04	00
Vietnam, República Socialista de	-	07	00
Vírgines, Is.	+	04	00
Yemen	-	03	00
Zambia, República de	-	02	00
Zimbawe	-	02	00

*Suele modificarse los meses de verano.

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