

2023

# ANUARIO DEL OBSERVATORIO ASTRONÓMICO NACIONAL



INSTITUTO DE ASTRONOMÍA

UNIVERSIDAD NACIONAL  
AUTÓNOMA DE MÉXICO

ANUARIO DEL  
OBSERVATORIO  
ASTRONÓMICO NACIONAL

Edición CXLII

**2023**

INSTITUTO DE ASTRONOMÍA  
UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

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Instituto de Astronomía  
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## MAPA DE ESTRELLAS PARA EL AÑO 2023

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# Prefacio, 2023

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En el Anuario del Observatorio Astronómico Nacional se publican efemérides astronómicas del Sol, la Luna, planetas y estrellas, sucesos astronómicos como eclipses, ocultaciones y conjunciones; datos astronómicos generales, así como parámetros geométricos y físicos de los planetas y sus satélites.

Para el cálculo de las efemérides y los instantes en que ocurren los sucesos astronómicos, se toma el meridiano efemérico  $90^\circ$  al oeste del meridiano efemérico de Greenwich, y la diferencia entre el tiempo de las efemérides y el Universal se estima en  $\Delta T = 70$ s. Los instantes para los fenómenos astronómicos y las horas del paso por el meridiano  $90^\circ$  W.G., deberán corregirse por el horario de verano que corresponda al lugar geográfico y la época del año. De acuerdo al Decreto Presidencial sobre Husos Horarios (Ver Hora legal en la República mexicana).

Todos los cálculos de las efemérides astronómicas son referidos al Ecuador y Eclíptica de la época J2000.0, de acuerdo a las resoluciones tomadas por la Unión Astronómica Internacional (UAI) en 1976. Nuestros cálculos se fundamentan en los parámetros astronómicos y elementos orbitales medios, utilizados para otros anuarios astronómicos, como: *Astronomical Almanac*, *EUA*, *National Almanac of Royal Greenwich Observatory*, *Inglaterra*, *Jet Propulsion Laboratory*, *EUA* y *Service des Calculs Bureau des Longitudes*, Francia.

En esta edición, los cálculos son referidos a los fundamentos recomendados por la Unión Astronómica Internacional (2000) para la precesión y nutación, los sistemas de referencia celeste intermedio y el ángulo de rotación de la Tierra CIP, CIO, ICRS, CIRS. La relación entre los orígenes se da a partir de la longitud cero del origen intermedio terrestre y el origen de equinoccio verdadero y del origen del intermedio celeste (CIO), los cuales difieren por el ángulo de rotación de la Tierra (ERA). El ecuador verdadero y el intermedio son coplanares, cuyo polo es el intermedio celeste (CIP)

De acuerdo a las recomendaciones del grupo Working Group on Nomenclature for Fundamental Astronomy de la IAU, las efemérides para los planetas, el Sol y la Luna, se obtuvieron en función de la efemérides JPL Planetary and Lunar Ephemeris DE431/LE431. Para las estrellas se tomaron de los parámetros astronómicos del catálogo The Hipparcos and Tycho Catalog, ESA Hipparcos Space Astrometry Mission, a partir del cual se determinaron las posiciones medias de estrellas y posiciones aparentes de estrellas brillantes.

Para el cálculo de las declinaciones magnéticas se utilizó la décima generación del modelo del campo magnético terrestre adoptado por la “International Association of Geomagnetism and Aeronomy”. Los cálculos corresponden a las determinaciones, teóricas y observadas, para la República Mexicana del Departamento de Geomagnetismo y Exploración del Instituto de Geofísica de la Universidad Nacional Autónoma de México.

Se incluye un mapa de estrellas referidas al año 2019. En el apartado de nomenclatura de estrellas se incluyen los nombres comunes de estrellas a demás de los número de los catálogos Hipparco (NH) y los números asignados en el Bright Star Catalog de la Universidad de Yale (NBSC). En la tabla de posiciones medias se presentan las coordenadas ascensión recta en unidades (h, m, s), y declinación ( $^{\circ}$ , ‘, “), y en decimales de grado ( $^{\circ}$ ). Debemos señalar que en el futuro próximo las tablas de efemérides se darán en decimales de grado.

Todos los cálculos se efectuaron en los sistemas de cómputo del departamento de Astrofísica Computacional del Instituto de Astronomía, de la Universidad Nacional Autónoma de México.

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## Día Juliano, 2023

A las 0<sup>h</sup> del meridiano 90° W.G.

d	ds	dj	d	ds	dj	d	ds	dj	d	ds	dj
<b>enero</b>			20	lun	2459995.75	9	dom	2460043.75	30	mar	2460094.75
1	dom	2459945.75	21	mar	2459996.75	10	lun	2460044.75	31	mie	2460095.75
2	lun	2459946.75	22	mie	2459997.75	11	mar	2460045.75	<b>junio</b>		
3	mar	2459947.75	23	jue	2459998.75	12	mie	2460046.75	1	jue	2460096.75
4	mie	2459948.75	24	vie	2459999.75	13	jue	2460047.75	2	vie	2460097.75
5	jue	2459949.75	25	sab	2460000.75	14	vie	2460048.75	3	sab	2460098.75
6	vie	2459950.75	26	dom	2460001.75	15	sab	2460049.75	4	dom	2460099.75
7	sab	2459951.75	27	lun	2460002.75	16	dom	2460050.75	5	lun	2460100.75
8	dom	2459952.75	28	mar	2460003.75	17	lun	2460051.75	6	mar	2460101.75
9	lun	2459953.75	<b>marzo</b>			18	mar	2460052.75	7	mie	2460102.75
10	mar	2459954.75	1	mie	2460004.75	19	mie	2460053.75	8	jue	2460103.75
11	mie	2459955.75	2	jue	2460005.75	20	jue	2460054.75	9	vie	2460104.75
12	jue	2459956.75	3	vie	2460006.75	21	vie	2460055.75	10	sab	2460105.75
13	vie	2459957.75	4	sab	2460007.75	22	sab	2460056.75	11	dom	2460106.75
14	sab	2459958.75	5	dom	2460008.75	23	dom	2460057.75	12	lun	2460107.75
15	dom	2459959.75	6	lun	2460009.75	24	lun	2460058.75	13	mar	2460108.75
16	lun	2459960.75	7	mar	2460010.75	25	mar	2460059.75	14	mie	2460109.75
17	mar	2459961.75	8	mie	2460011.75	26	mie	2460060.75	15	jue	2460110.75
18	mie	2459962.75	9	jue	2460012.75	27	jue	2460061.75	16	vie	2460111.75
19	jue	2459963.75	10	vie	2460013.75	28	vie	2460062.75	17	sab	2460112.75
20	vie	2459964.75	11	sab	2460014.75	29	sab	2460063.75	18	dom	2460113.75
21	sab	2459965.75	12	dom	2460015.75	30	dom	2460064.75	19	lun	2460114.75
22	dom	2459966.75	13	lun	2460016.75	<b>mayo</b>			20	mar	2460115.75
23	lun	2459967.75	14	mar	2460017.75	1	lun	2460065.75	21	mie	2460116.75
24	mar	2459968.75	15	mie	2460018.75	2	mar	2460066.75	22	jue	2460117.75
25	mie	2459969.75	16	jue	2460019.75	3	mie	2460067.75	23	vie	2460118.75
26	jue	2459970.75	17	vie	2460020.75	4	jue	2460068.75	24	sab	2460119.75
27	vie	2459971.75	18	sab	2460021.75	5	vie	2460069.75	25	dom	2460120.75
28	sab	2459972.75	19	dom	2460022.75	6	sab	2460070.75	26	lun	2460121.75
29	dom	2459973.75	20	lun	2460023.75	7	dom	2460071.75	27	mar	2460122.75
30	lun	2459974.75	21	mar	2460024.75	8	lun	2460072.75	28	mie	2460123.75
31	mar	2459975.75	22	mie	2460025.75	9	mar	2460073.75	29	jue	2460124.75
<b>febrero</b>			23	jue	2460026.75	10	mie	2460074.75	30	vie	2460125.75
1	mie	2459976.75	24	vie	2460027.75	11	jue	2460075.75	<b>julio</b>		
2	jue	2459977.75	25	sab	2460028.75	12	vie	2460076.75	1	sab	2460126.75
3	vie	2459978.75	26	dom	2460029.75	13	sab	2460077.75	2	dom	2460127.75
4	sab	2459979.75	27	lun	2460030.75	14	dom	2460078.75	3	lun	2460128.75
5	dom	2459980.75	28	mar	2460031.75	15	lun	2460079.75	4	mar	2460129.75
6	lun	2459981.75	29	mie	2460032.75	16	mar	2460080.75	5	mie	2460130.75
7	mar	2459982.75	30	jue	2460033.75	17	mie	2460081.75	6	jue	2460131.75
8	mie	2459983.75	31	vie	2460034.75	18	jue	2460082.75	7	vie	2460132.75
9	jue	2459984.75	<b>abril</b>			19	vie	2460083.75	8	sab	2460133.75
10	vie	2459985.75	1	sab	2460035.75	20	sab	2460084.75	9	dom	2460134.75
11	sab	2459986.75	2	dom	2460036.75	21	dom	2460085.75	10	lun	2460135.75
12	dom	2459987.75	3	lun	2460037.75	22	lun	2460086.75	11	mar	2460136.75
13	lun	2459988.75	4	mar	2460038.75	23	mar	2460087.75	12	mie	2460137.75
14	mar	2459989.75	5	mie	2460039.75	24	mie	2460088.75	13	jue	2460138.75
15	mie	2459990.75	6	jue	2460040.75	25	jue	2460089.75	14	vie	2460139.75
16	jue	2459991.75	7	vie	2460041.75	26	vie	2460090.75	15	sab	2460140.75
17	vie	2459992.75	8	sab	2460042.75	27	sab	2460091.75	16	dom	2460141.75
18	sab	2459993.75				28	dom	2460092.75	17	lun	2460142.75
19	dom	2459994.75				29	lun	2460093.75	18	mar	2460143.75



d	ds	dj	d	ds	dj	d	ds	dj	d	ds	dj
19	mie	2460144.75	<b>septiembre</b>			13	vie	2460230.75	25	sab	2460273.75
20	jue	2460145.75	1	vie	2460188.75	14	sab	2460231.75	26	dom	2460274.75
21	vie	2460146.75	2	sab	2460189.75	15	dom	2460232.75	27	lun	2460275.75
22	sab	2460147.75	3	dom	2460190.75	16	lun	2460233.75	28	mar	2460276.75
23	dom	2460148.75	4	lun	2460191.75	17	mar	2460234.75	29	mie	2460277.75
24	lun	2460149.75	5	mar	2460192.75	18	mie	2460235.75	30	jue	2460278.75
25	mar	2460150.75	6	mie	2460193.75	19	jue	2460236.75	<b>diciembre</b>		
26	mie	2460151.75	7	jue	2460194.75	20	vie	2460237.75	1	vie	2460279.75
27	jue	2460152.75	8	vie	2460195.75	21	sab	2460238.75	2	sab	2460280.75
28	vie	2460153.75	9	sab	2460196.75	22	dom	2460239.75	3	dom	2460281.75
29	sab	2460154.75	10	dom	2460197.75	23	lun	2460240.75	4	lun	2460282.75
30	dom	2460155.75	11	lun	2460198.75	24	mar	2460241.75	5	mar	2460283.75
31	lun	2460156.75	12	mar	2460199.75	25	mie	2460242.75	6	mie	2460284.75
<b>agosto</b>			13	mie	2460200.75	26	jue	2460243.75	7	jue	2460285.75
1	mar	2460157.75	14	jue	2460201.75	27	vie	2460244.75	8	vie	2460286.75
2	mie	2460158.75	15	vie	2460202.75	28	sab	2460245.75	9	sab	2460287.75
3	jue	2460159.75	16	sab	2460203.75	29	dom	2460246.75	10	dom	2460288.75
4	vie	2460160.75	17	dom	2460204.75	30	lun	2460247.75	11	lun	2460289.75
5	sab	2460161.75	18	lun	2460205.75	31	mar	2460248.75	12	mar	2460290.75
6	dom	2460162.75	19	mar	2460206.75	<b>noviembre</b>			13	mie	2460291.75
7	lun	2460163.75	20	mie	2460207.75	1	mie	2460249.75	14	jue	2460292.75
8	mar	2460164.75	21	jue	2460208.75	2	jue	2460250.75	15	vie	2460293.75
9	mie	2460165.75	22	vie	2460209.75	3	vie	2460251.75	16	sab	2460294.75
10	jue	2460166.75	23	sab	2460210.75	4	sab	2460252.75	17	dom	2460295.75
11	vie	2460167.75	24	dom	2460211.75	5	dom	2460253.75	18	lun	2460296.75
12	sab	2460168.75	25	lun	2460212.75	6	lun	2460254.75	19	mar	2460297.75
13	dom	2460169.75	26	mar	2460213.75	7	mar	2460255.75	20	mie	2460298.75
14	lun	2460170.75	27	mie	2460214.75	8	mie	2460256.75	21	jue	2460299.75
15	mar	2460171.75	28	jue	2460215.75	9	jue	2460257.75	22	vie	2460300.75
16	mie	2460172.75	29	vie	2460216.75	10	vie	2460258.75	23	sab	2460301.75
17	jue	2460173.75	30	sab	2460217.75	11	sab	2460259.75	24	dom	2460302.75
18	vie	2460174.75	<b>octubre</b>			12	dom	2460260.75	25	lun	2460303.75
19	sab	2460175.75	1	dom	2460218.75	13	lun	2460261.75	26	mar	2460304.75
20	dom	2460176.75	2	lun	2460219.75	14	mar	2460262.75	27	mie	2460305.75
21	lun	2460177.75	3	mar	2460220.75	15	mie	2460263.75	28	jue	2460306.75
22	mar	2460178.75	4	mie	2460221.75	16	jue	2460264.75	29	vie	2460307.75
23	mie	2460179.75	5	jue	2460222.75	17	vie	2460265.75	30	sab	2460308.75
24	jue	2460180.75	6	vie	2460223.75	18	sab	2460266.75	31	dom	2460309.75
25	vie	2460181.75	7	sab	2460224.75	19	dom	2460267.75	<b>enero</b>		
26	sab	2460182.75	8	dom	2460225.75	20	lun	2460268.75	1	lun	2460310.75
27	dom	2460183.75	9	lun	2460226.75	21	mar	2460269.75	2	mar	2460311.75
28	lun	2460184.75	10	mar	2460227.75	22	mie	2460270.75	3	mie	2460312.75
29	mar	2460185.75	11	mie	2460228.75	23	jue	2460271.75			
30	mie	2460186.75	12	jue	2460229.75	24	vie	2460272.75			
31	jue	2460187.75									

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## Eras y ciclos cronológicos: 2023

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### Calendario Gregoriano

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#### Cómputo

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#### Eras

El año 2023 es el vigésimo tercero del siglo XXI de la Era Cristiana.

El año 2023 corresponde al año 6736 del Período Juliano.

El 1 de enero del año 2023 del Calendario Juliano, corresponde al 14 de enero.

Año	Era	Inicia
2776	Romana	enero 14
2683	Japonesa	enero 1
5784	Judía	septiembre 15
2335	Griega	septiembre 14
1445	Hégira	julio 18
7532	Bizantina	septiembre 14
	China	enero 22

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## Fiestas y aniversarios para el año 2023

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Año Nuevo	domingo 1 de enero
Epifanía	viernes 6 de enero
Proclamacion de la Constitucion de 1917	domingo 5 de febrero
Septuagésima	domingo 5 de febrero
Quinquagésima	domingo 19 de febrero
Carnaval	martes 21 de febrero
Miércoles de ceniza	miércoles 22 de febrero
Día de la Bandera	viernes 24 de febrero
Aniversario del Natalicio de Benito Juarez	martes 21 de marzo
Ramadán	jueves 23 de marzo
Domingo de Ramos	domingo 2 de abril
Viernes Santo	viernes 7 de abril
Pascua	domingo 9 de abril
Día del Trabajo	lunes 1 de mayo
Aniversario de la Batalla de Puebla	viernes 5 de mayo
Ascensión	jueves 18 de mayo
Pentecostés	domingo 28 de mayo
Trinidad	domingo 4 de junio
Corpus	jueves 8 de junio
Domingo de Corpus	domingo 11 de junio
San Pedro y San Pablo	jueves 29 de junio
Aniversario de la Muerte de Benito Juárez	martes 18 de julio
Año Nuevo Islámico	miércoles 19 de julio
Aniversario de la Muerte de Miguel Hidalgo	domingo 30 de julio
Aniversario de la Independencia de México	sabado 16 de septiembre
Año Nuevo Judío	sábado 16 de septiembre
Yom Kipur	lunes 25 de septiembre
Día de la Raza	jueves 12 de octubre
Conmemoracion de los Difuntos	jueves 2 de noviembre
Aniversario de la Revolución Mexicana	lunes 20 de noviembre
Adviento	domingo 3 de diciembre
Navidad	lunes 25 de diciembre

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## **Estaciones del año, 2023**

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Hora del meridiano 90° W.G.

---

mes	día	h	m	longitud $\lambda(^{\circ})$	Signo
<b><u>Invierno</u></b>					
Enero	17 .....	19 .....	14.....	300	Capricornio
Febrero	16 .....	6 .....	43.....	330	Acuario
<b><u>Primavera</u></b>					
Marzo	20 .....	15 .....	24.....	0	Piscis
Abril	22 .....	7 .....	48.....	30	Aries
Mayo	23 .....	5 .....	14.....	60	Tauro
<b><u>Verano</u></b>					
Junio	21 .....	8 .....	58.....	90	Géminis
Julio	20 .....	15 .....	18.....	120	Cáncer
Agosto	20 .....	20 .....	39.....	150	Leo
<b><u>Otoño</u></b>					
Septiembre	23 .....	0 .....	50.....	180	Virgo
Octubre	25 .....	14 .....	53.....	210	Libra
Noviembre	24 .....	9 .....	39.....	240	Escorpión
<b><u>Invierno</u></b>					
Diciembre	21 .....	21 .....	27.....	270	Sagitario

## Hora sidereal, 2023

A las 0<sup>h</sup> del meridiano 90° W.G.

d	dj	h	h	m	s	d	dj	h	h	m	s	d	dj	h	h	m	s
<b>Ene</b>						19	2459994.75	09.929	9	55	43.7	9	2460043.75	13.149	13	08	54.8
1	2459945.75	06.709	6	42	32.4	20	2459995.75	09.995	9	59	40.3	10	2460044.75	13.214	13	12	51.4
2	2459946.75	06.775	6	46	29.0	21	2459996.75	10.060	10	03	36.8	11	2460045.75	13.280	13	16	48.0
3	2459947.75	06.840	6	50	25.5	22	2459997.75	10.126	10	07	33.4	12	2460046.75	13.346	13	20	44.5
4	2459948.75	06.906	6	54	22.1	23	2459998.75	10.192	10	11	29.9	13	2460047.75	13.411	13	24	41.1
5	2459949.75	06.972	6	58	18.7	24	2459999.75	10.257	10	15	26.5	14	2460048.75	13.477	13	28	37.6
6	2459950.75	07.038	7	02	15.2	25	2460000.75	10.323	10	19	23.0	15	2460049.75	13.543	13	32	34.2
7	2459951.75	07.103	7	06	11.8	26	2460001.75	10.389	10	23	19.6	16	2460050.75	13.609	13	36	30.7
8	2459952.75	07.169	7	10	08.3	27	2460002.75	10.454	10	27	16.1	17	2460051.75	13.674	13	40	27.3
9	2459953.75	07.235	7	14	04.9	28	2460003.75	10.520	10	31	12.7	18	2460052.75	13.740	13	44	23.8
10	2459954.75	07.300	7	18	01.5	<b>Mar</b>						19	2460053.75	13.806	13	48	20.4
11	2459955.75	07.366	7	21	58.0	1	2460004.75	10.586	10	35	09.3	20	2460054.75	13.871	13	52	16.9
12	2459956.75	07.432	7	25	54.6	2	2460005.75	10.652	10	39	05.8	21	2460055.75	13.937	13	56	13.5
13	2459957.75	07.498	7	29	51.1	3	2460006.75	10.717	10	43	02.4	22	2460056.75	14.003	14	00	10.0
14	2459958.75	07.563	7	33	47.7	4	2460007.75	10.783	10	46	58.9	23	2460057.75	14.069	14	04	06.6
15	2459959.75	07.629	7	37	44.2	5	2460008.75	10.849	10	50	55.5	24	2460058.75	14.134	14	08	03.2
16	2459960.75	07.695	7	41	40.8	6	2460009.75	10.914	10	54	52.0	25	2460059.75	14.200	14	11	59.7
17	2459961.75	07.760	7	45	37.3	7	2460010.75	10.980	10	58	48.6	26	2460060.75	14.266	14	15	56.3
18	2459962.75	07.826	7	49	33.9	8	2460011.75	11.046	11	02	45.1	27	2460061.75	14.331	14	19	52.9
19	2459963.75	07.892	7	53	30.5	9	2460012.75	11.112	11	06	41.7	28	2460062.75	14.397	14	23	49.4
20	2459964.75	07.958	7	57	27.0	10	2460013.75	11.177	11	10	38.2	29	2460063.75	14.463	14	27	46.0
21	2459965.75	08.023	8	01	23.6	11	2460014.75	11.243	11	14	34.8	30	2460064.75	14.528	14	31	42.5
22	2459966.75	08.089	8	05	20.2	12	2460015.75	11.309	11	18	31.3	<b>May</b>					
23	2459967.75	08.155	8	09	16.7	13	2460016.75	11.374	11	22	27.9	1	2460065.75	14.594	14	35	39.1
24	2459968.75	08.220	8	13	13.3	14	2460017.75	11.440	11	26	24.4	2	2460066.75	14.660	14	39	35.6
25	2459969.75	08.286	8	17	09.8	15	2460018.75	11.506	11	30	21.0	3	2460067.75	14.726	14	43	32.2
26	2459970.75	08.352	8	21	06.4	16	2460019.75	11.572	11	34	17.6	4	2460068.75	14.791	14	47	28.7
27	2459971.75	08.417	8	25	02.9	17	2460020.75	11.637	11	38	14.1	5	2460069.75	14.857	14	51	25.3
28	2459972.75	08.483	8	28	59.5	18	2460021.75	11.703	11	42	10.7	6	2460070.75	14.923	14	55	21.8
29	2459973.75	08.549	8	32	56.0	19	2460022.75	11.769	11	46	07.2	7	2460071.75	14.988	14	59	18.4
30	2459974.75	08.615	8	36	52.6	20	2460023.75	11.834	11	50	03.8	8	2460072.75	15.054	15	03	14.9
31	2459975.75	08.680	8	40	49.2	21	2460024.75	11.900	11	54	00.3	9	2460073.75	15.120	15	07	11.5
<b>Feb</b>						22	2460025.75	11.966	11	57	56.9	10	2460074.75	15.186	15	11	08.1
1	2459976.75	08.746	8	44	45.7	23	2460026.75	12.032	12	01	53.4	11	2460075.75	15.251	15	15	04.6
2	2459977.75	08.812	8	48	42.3	24	2460027.75	12.097	12	05	50.0	12	2460076.75	15.317	15	19	01.2
3	2459978.75	08.877	8	52	38.8	25	2460028.75	12.163	12	09	46.5	13	2460077.75	15.383	15	22	57.7
4	2459979.75	08.943	8	56	35.4	26	2460029.75	12.229	12	13	43.1	14	2460078.75	15.448	15	26	54.3
5	2459980.75	09.009	9	00	32.0	27	2460030.75	12.294	12	17	39.6	15	2460079.75	15.514	15	30	50.8
6	2459981.75	09.075	9	04	28.5	28	2460031.75	12.360	12	21	36.2	16	2460080.75	15.580	15	34	47.4
7	2459982.75	09.140	9	08	25.1	29	2460032.75	12.426	12	25	32.8	17	2460081.75	15.646	15	38	43.9
8	2459983.75	09.206	9	12	21.6	30	2460033.75	12.491	12	29	29.3	18	2460082.75	15.711	15	42	40.5
9	2459984.75	09.272	9	16	18.2	31	2460034.75	12.557	12	33	25.9	19	2460083.75	15.777	15	46	37.1
10	2459985.75	09.337	9	20	14.7	<b>Abr</b>						20	2460084.75	15.843	15	50	33.6
11	2459986.75	09.403	9	24	11.3	1	2460035.75	12.623	12	37	22.4	21	2460085.75	15.908	15	54	30.2
12	2459987.75	09.469	9	28	07.8	2	2460036.75	12.689	12	41	19.0	22	2460086.75	15.974	15	58	26.7
13	2459988.75	09.535	9	32	04.4	3	2460037.75	12.754	12	45	15.5	23	2460087.75	16.040	16	02	23.3
14	2459989.75	09.600	9	36	00.9	4	2460038.75	12.820	12	49	12.1	24	2460088.75	16.106	16	06	19.9
15	2459990.75	09.666	9	39	57.5	5	2460039.75	12.886	12	53	08.6	25	2460089.75	16.171	16	10	16.4
16	2459991.75	09.732	9	43	54.0	6	2460040.75	12.951	12	57	05.2	26	2460090.75	16.237	16	14	13.0
17	2459992.75	09.797	9	47	50.6	7	2460041.75	13.017	13	01	01.7	27	2460091.75	16.303	16	18	09.5
18	2459993.75	09.863	9	51	47.2	8	2460042.75	13.083	13	04	58.3	28	2460092.75	16.368	16	22	06.1
												29	2460093.75	16.434	16	26	02.6

## Hora sidereal, 2023

A las 0<sup>h</sup> del meridiano 90° W.G.

d	dj	h	h	m	s	d	dj	h	h	m	s	d	dj	h	h	m	s
30	2460094.75	16.500	16	29	59.2	18	2460143.75	19.720	19	43	10.6	5	2460192.75	22.939	22	56	21.8
31	2460095.75	16.565	16	33	55.7	19	2460144.75	19.785	19	47	07.1	6	2460193.75	23.005	23	00	18.3
<b>Jun</b>						20	2460145.75	19.851	19	51	03.7	7	2460194.75	23.071	23	04	14.9
1	2460096.75	16.631	16	37	52.3	21	2460146.75	19.917	19	55	00.2	8	2460195.75	23.137	23	08	11.5
2	2460097.75	16.697	16	41	48.9	22	2460147.75	19.982	19	58	56.8	9	2460196.75	23.202	23	12	08.0
3	2460098.75	16.763	16	45	45.4	23	2460148.75	20.048	20	02	53.4	10	2460197.75	23.268	23	16	04.6
4	2460099.75	16.828	16	49	42.0	24	2460149.75	20.114	20	06	49.9	11	2460198.75	23.334	23	20	01.1
5	2460100.75	16.894	16	53	38.6	25	2460150.75	20.180	20	10	46.5	12	2460199.75	23.399	23	23	57.7
6	2460101.75	16.960	16	57	35.1	26	2460151.75	20.245	20	14	43.0	13	2460200.75	23.465	23	27	54.2
7	2460102.75	17.025	17	01	31.7	27	2460152.75	20.311	20	18	39.6	14	2460201.75	23.531	23	31	50.8
8	2460103.75	17.091	17	05	28.2	28	2460153.75	20.377	20	22	36.1	15	2460202.75	23.596	23	35	47.3
9	2460104.75	17.157	17	09	24.8	29	2460154.75	20.442	20	26	32.7	16	2460203.75	23.662	23	39	43.9
10	2460105.75	17.223	17	13	21.4	30	2460155.75	20.508	20	30	29.2	17	2460204.75	23.728	23	43	40.4
11	2460106.75	17.288	17	17	17.9	31	2460156.75	20.574	20	34	25.8	18	2460205.75	23.794	23	47	37.0
12	2460107.75	17.354	17	21	14.5	<b>Ago</b>						19	2460206.75	23.859	23	51	33.5
13	2460108.75	17.420	17	25	11.0	1	2460157.75	20.640	20	38	22.4	20	2460207.75	23.925	23	55	30.1
14	2460109.75	17.485	17	29	07.6	2	2460158.75	20.705	20	42	18.9	21	2460208.75	23.991	23	59	26.6
15	2460110.75	17.551	17	33	04.1	3	2460159.75	20.771	20	46	15.5	22	2460209.75	00.056	0	03	23.2
16	2460111.75	17.617	17	37	00.7	4	2460160.75	20.837	20	50	12.0	23	2460210.75	00.122	0	07	19.8
17	2460112.75	17.683	17	40	57.3	5	2460161.75	20.902	20	54	08.6	24	2460211.75	00.188	0	11	16.3
18	2460113.75	17.748	17	44	53.8	6	2460162.75	20.968	20	58	05.1	25	2460212.75	00.254	0	15	12.9
19	2460114.75	17.814	17	48	50.4	7	2460163.75	21.034	21	02	01.7	26	2460213.75	00.319	0	19	09.4
20	2460115.75	17.880	17	52	46.9	8	2460164.75	21.100	21	05	58.3	27	2460214.75	00.385	0	23	06.0
21	2460116.75	17.945	17	56	43.5	9	2460165.75	21.165	21	09	54.8	28	2460215.75	00.451	0	27	02.5
22	2460117.75	18.011	18	00	40.1	10	2460166.75	21.231	21	13	51.4	29	2460216.75	00.516	0	30	59.1
23	2460118.75	18.077	18	04	36.6	11	2460167.75	21.297	21	17	47.9	30	2460217.75	00.582	0	34	55.6
24	2460119.75	18.143	18	08	33.2	12	2460168.75	21.362	21	21	44.5	<b>Oct</b>					
25	2460120.75	18.208	18	12	29.7	13	2460169.75	21.428	21	25	41.0	1	2460218.75	00.648	0	38	52.2
26	2460121.75	18.274	18	16	26.3	14	2460170.75	21.494	21	29	37.6	2	2460219.75	00.714	0	42	48.7
27	2460122.75	18.340	18	20	22.8	15	2460171.75	21.559	21	33	34.2	3	2460220.75	00.779	0	46	45.3
28	2460123.75	18.405	18	24	19.4	16	2460172.75	21.625	21	37	30.7	4	2460221.75	00.845	0	50	41.8
29	2460124.75	18.471	18	28	15.9	17	2460173.75	21.691	21	41	27.3	5	2460222.75	00.911	0	54	38.4
30	2460125.75	18.537	18	32	12.5	18	2460174.75	21.757	21	45	23.8	6	2460223.75	00.976	0	58	35.0
<b>Jul</b>						19	2460175.75	21.822	21	49	20.4	7	2460224.75	01.042	1	02	31.5
1	2460126.75	18.603	18	36	09.1	20	2460176.75	21.888	21	53	16.9	8	2460225.75	01.108	1	06	28.1
2	2460127.75	18.668	18	40	05.6	21	2460177.75	21.954	21	57	13.5	9	2460226.75	01.174	1	10	24.6
3	2460128.75	18.734	18	44	02.2	22	2460178.75	22.019	22	01	10.0	10	2460227.75	01.239	1	14	21.2
4	2460129.75	18.800	18	47	58.8	23	2460179.75	22.085	22	05	06.6	11	2460228.75	01.305	1	18	17.7
5	2460130.75	18.865	18	51	55.3	24	2460180.75	22.151	22	09	03.1	12	2460229.75	01.371	1	22	14.3
6	2460131.75	18.931	18	55	51.9	25	2460181.75	22.217	22	12	59.7	13	2460230.75	01.436	1	26	10.8
7	2460132.75	18.997	18	59	48.4	26	2460182.75	22.282	22	16	56.2	14	2460231.75	01.502	1	30	07.4
8	2460133.75	19.062	19	03	45.0	27	2460183.75	22.348	22	20	52.8	15	2460232.75	01.568	1	34	03.9
9	2460134.75	19.128	19	07	41.5	28	2460184.75	22.414	22	24	49.4	16	2460233.75	01.633	1	38	00.5
10	2460135.75	19.194	19	11	38.1	29	2460185.75	22.479	22	28	45.9	17	2460234.75	01.699	1	41	57.0
11	2460136.75	19.260	19	15	34.7	30	2460186.75	22.545	22	32	42.5	18	2460235.75	01.765	1	45	53.6
12	2460137.75	19.325	19	19	31.2	31	2460187.75	22.611	22	36	39.0	19	2460236.75	01.831	1	49	50.2
13	2460138.75	19.391	19	23	27.8	<b>Sep</b>						20	2460237.75	01.896	1	53	46.7
14	2460139.75	19.457	19	27	24.3	1	2460188.75	22.677	22	40	35.6	21	2460238.75	01.962	1	57	43.3
15	2460140.75	19.522	19	31	20.9	2	2460189.75	22.742	22	44	32.1	22	2460239.75	02.028	2	01	39.8
16	2460141.75	19.588	19	35	17.5	3	2460190.75	22.808	22	48	28.7	23	2460240.75	02.093	2	05	36.4
17	2460142.75	19.654	19	39	14.0	4	2460191.75	22.874	22	52	25.2	24	2460241.75	02.159	2	09	33.0
												25	2460242.75	02.225	2	13	29.5

## Hora sideral, 2023

A las 0<sup>h</sup> del meridiano 90° W.G.

d	dj	h	h	m	s	d	dj	h	h	m	s	d	dj	h	h	m	s					
26	2460243.75	02.291	2	17	26.0	17	2460265.75	03.736	3	44	10.3	9	2460287.75	05.182	5	10	54.5					
27	2460244.75	02.356	2	21	22.6	18	2460266.75	03.802	3	48	06.9	10	2460288.75	05.248	5	14	51.1					
28	2460245.75	02.422	2	25	19.1	19	2460267.75	03.868	3	52	03.4	11	2460289.75	05.313	5	18	47.7					
29	2460246.75	02.488	2	29	15.7	20	2460268.75	03.933	3	55	60.0	12	2460290.75	05.379	5	22	44.2					
30	2460247.75	02.553	2	33	12.3	21	2460269.75	03.999	3	59	56.5	13	2460291.75	05.445	5	26	40.8					
31	2460248.75	02.619	2	37	08.8	22	2460270.75	04.065	4	03	53.1	14	2460292.75	05.510	5	30	37.4					
<b>Nov</b>						23	2460271.75	04.130	4	07	49.6	15	2460293.75	05.576	5	34	33.9					
1	2460249.75	02.685	2	41	05.4	24	2460272.75	04.196	4	11	46.2	16	2460294.75	05.642	5	38	30.5					
2	2460250.75	02.751	2	45	01.9	25	2460273.75	04.262	4	15	42.7	17	2460295.75	05.708	5	42	27.1					
3	2460251.75	02.816	2	48	58.5	26	2460274.75	04.328	4	19	39.3	18	2460296.75	05.773	5	46	23.6					
4	2460252.75	02.882	2	52	55.1	27	2460275.75	04.393	4	23	35.9	19	2460297.75	05.839	5	50	20.2					
5	2460253.75	02.948	2	56	51.6	28	2460276.75	04.459	4	27	32.4	20	2460298.75	05.905	5	54	16.7					
6	2460254.75	03.013	3	00	48.2	29	2460277.75	04.525	4	31	29.0	21	2460299.75	05.970	5	58	13.3					
7	2460255.75	03.079	3	04	44.7	30	2460278.75	04.590	4	35	25.5	22	2460300.75	06.036	6	02	09.8					
8	2460256.75	03.145	3	08	41.3	<b>Dic</b>						23	2460301.75	06.102	6	06	06.4					
9	2460257.75	03.211	3	12	37.8	1	2460279.75	04.656	4	39	22.1	24	2460302.75	06.167	6	10	02.9					
10	2460258.75	03.276	3	16	34.4	2	2460280.75	04.722	4	43	18.7	25	2460303.75	06.233	6	13	59.5					
11	2460259.75	03.342	3	20	30.9	3	2460281.75	04.788	4	47	15.2	26	2460304.75	06.299	6	17	56.1					
12	2460260.75	03.408	3	24	27.5	4	2460282.75	04.853	4	51	11.8	27	2460305.75	06.365	6	21	52.6					
13	2460261.75	03.473	3	28	24.0	5	2460283.75	04.919	4	55	08.3	28	2460306.75	06.430	6	25	49.2					
14	2460262.75	03.539	3	32	20.6	6	2460284.75	04.985	4	59	04.9	29	2460307.75	06.496	6	29	45.8					
15	2460263.75	03.605	3	36	17.2	7	2460285.75	05.050	5	03	01.4	30	2460308.75	06.562	6	33	42.3					
16	2460264.75	03.670	3	40	13.7	8	2460286.75	05.116	5	06	58.0	31	2460309.75	06.627	6	37	38.9					
												1	2460310.75	06.693	6	41	35.4					

## Sol, 2023

### Efermírides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	α m	s	vh s	δ °	“	”	dis UA	h	hp m	s	
ene	1	2459945.75	18	45	50.95	11.0	-23	1	11.35	12.7	0.98333	12	3	18.5
ene	2	2459946.75	18	50	15.68	11.0	-22	56	7.47	13.8	0.98331	12	3	46.7
ene	3	2459947.75	18	54	40.05	11.0	-22	50	36.21	14.9	0.98330	12	4	14.5
ene	4	2459948.75	18	59	4.04	11.0	-22	44	37.74	16.1	0.98330	12	4	42.0
ene	5	2459949.75	19	3	27.63	11.0	-22	38	12.25	17.2	0.98330	12	5	9.0
ene	6	2459950.75	19	7	50.78	10.9	-22	31	19.94	18.3	0.98330	12	5	35.6
ene	7	2459951.75	19	12	13.48	10.9	-22	24	0.99	19.4	0.98332	12	6	1.7
ene	8	2459952.75	19	16	35.69	10.9	-22	16	15.63	20.5	0.98334	12	6	27.3
ene	9	2459953.75	19	20	57.40	10.9	-22	8	4.07	21.6	0.98336	12	6	52.5
ene	10	2459954.75	19	25	18.57	10.9	-21	59	26.53	22.6	0.98339	12	7	17.1
ene	11	2459955.75	19	29	39.20	10.8	-21	50	23.25	23.7	0.98343	12	7	41.2
ene	12	2459956.75	19	33	59.25	10.8	-21	40	54.47	24.8	0.98347	12	8	4.7
ene	13	2459957.75	19	38	18.72	10.8	-21	31	0.45	25.8	0.98352	12	8	27.6
ene	14	2459958.75	19	42	37.58	10.8	-21	20	41.44	26.8	0.98358	12	8	49.9
ene	15	2459959.75	19	46	55.82	10.7	-21	9	57.72	27.8	0.98364	12	9	11.6
ene	16	2459960.75	19	51	13.41	10.7	-20	58	49.57	28.8	0.98370	12	9	32.6
ene	17	2459961.75	19	55	30.35	10.7	-20	47	17.30	29.8	0.98377	12	9	53.0
ene	18	2459962.75	19	59	46.61	10.6	-20	35	21.22	30.8	0.98385	12	10	12.7
ene	19	2459963.75	20	4	2.18	10.6	-20	23	1.67	31.8	0.98393	12	10	31.7
ene	20	2459964.75	20	8	17.03	10.6	-20	10	18.99	32.7	0.98401	12	10	50.0
ene	21	2459965.75	20	12	31.15	10.6	-19	57	13.54	33.7	0.98409	12	11	7.6
ene	22	2459966.75	20	16	44.51	10.5	-19	43	45.69	34.6	0.98418	12	11	24.3
ene	23	2459967.75	20	20	57.10	10.5	-19	29	55.81	35.5	0.98427	12	11	40.4
ene	24	2459968.75	20	25	8.90	10.5	-19	15	44.27	36.4	0.98437	12	11	55.6
ene	25	2459969.75	20	29	19.89	10.4	-19	1	11.45	37.2	0.98447	12	12	10.1
ene	26	2459970.75	20	33	30.08	10.4	-18	46	17.72	38.1	0.98457	12	12	23.7
ene	27	2459971.75	20	37	39.44	10.4	-18	31	3.49	38.9	0.98468	12	12	36.5
ene	28	2459972.75	20	41	47.98	10.3	-18	15	29.16	39.8	0.98479	12	12	48.5
ene	29	2459973.75	20	45	55.69	10.3	-17	59	35.13	40.6	0.98490	12	12	59.7
ene	30	2459974.75	20	50	2.58	10.3	-17	43	21.81	41.3	0.98502	12	13	10.0
ene	31	2459975.75	20	54	8.63	10.2	-17	26	49.61	42.1	0.98515	12	13	19.5
feb	1	2459976.75	20	58	13.86	10.2	-17	9	58.93	42.9	0.98528	12	13	28.1
feb	2	2459977.75	21	2	18.26	10.1	-16	52	50.19	43.6	0.98541	12	13	36.0
feb	3	2459978.75	21	6	21.83	10.1	-16	35	23.79	44.3	0.98555	12	13	43.0
feb	4	2459979.75	21	10	24.58	10.1	-16	17	40.13	45.0	0.98570	12	13	49.2
feb	5	2459980.75	21	14	26.51	10.0	-15	59	39.60	45.7	0.98585	12	13	54.6
feb	6	2459981.75	21	18	27.63	10.0	-15	41	22.61	46.4	0.98601	12	13	59.1
feb	7	2459982.75	21	22	27.95	10.0	-15	22	49.55	47.0	0.98617	12	14	2.9
feb	8	2459983.75	21	26	27.48	9.9	-15	4	0.80	47.7	0.98634	12	14	5.9
feb	9	2459984.75	21	30	26.22	9.9	-14	44	56.76	48.3	0.98651	12	14	8.1
feb	10	2459985.75	21	34	24.19	9.9	-14	25	37.82	48.9	0.98669	12	14	9.5
feb	11	2459986.75	21	38	21.39	9.9	-14	6	4.36	49.5	0.98687	12	14	10.1
feb	12	2459987.75	21	42	17.85	9.8	-13	46	16.78	50.1	0.98706	12	14	10.0
feb	13	2459988.75	21	46	13.58	9.8	-13	26	15.47	50.6	0.98725	12	14	9.2
feb	14	2459989.75	21	50	8.57	9.8	-13	6	0.84	51.1	0.98744	12	14	7.7
feb	15	2459990.75	21	54	2.86	9.7	-12	45	33.29	51.7	0.98764	12	14	5.4
feb	16	2459991.75	21	57	56.44	9.7	-12	24	53.25	52.2	0.98785	12	14	2.4
feb	17	2459992.75	22	1	49.32	9.7	-12	4	1.14	52.7	0.98805	12	13	58.7
feb	18	2459993.75	22	5	41.51	9.6	-11	42	57.40	53.1	0.98826	12	13	54.3



## Sol, 2023

### Efemérides de solpru2 para el año 2023

mes	día	dj	h	$\alpha$ m	s	vh s	$\delta$ °	"	vh "	dis UA	h	hp m	s	
feb	19	2459994.75	22	9	33.03	9.6	-11	21	42.47	53.6	0.98847	12	13	49.3
feb	20	2459995.75	22	13	23.86	9.6	-11	0	16.79	54.0	0.98868	12	13	43.6
feb	21	2459996.75	22	17	14.04	9.6	-10	38	40.78	54.4	0.98890	12	13	37.2
feb	22	2459997.75	22	21	3.56	9.5	-10	16	54.88	54.8	0.98911	12	13	30.2
feb	23	2459998.75	22	24	52.43	9.5	-9	54	59.53	55.2	0.98933	12	13	22.5
feb	24	2459999.75	22	28	40.69	9.5	-9	32	55.15	55.5	0.98955	12	13	14.2
feb	25	2460000.75	22	32	28.33	9.5	-9	10	42.17	55.9	0.98977	12	13	5.3
feb	26	2460001.75	22	36	15.37	9.4	-8	48	21.01	56.2	0.98999	12	12	55.8
feb	27	2460002.75	22	40	1.84	9.4	-8	25	52.10	56.5	0.99022	12	12	45.7
feb	28	2460003.75	22	43	47.74	9.4	-8	3	15.84	56.8	0.99045	12	12	35.0
mar	1	2460004.75	22	47	33.10	9.4	-7	40	32.66	57.1	0.99068	12	12	23.8
mar	2	2460005.75	22	51	17.94	9.3	-7	17	42.94	57.3	0.99092	12	12	12.1
mar	3	2460006.75	22	55	2.27	9.3	-6	54	47.09	57.6	0.99116	12	11	59.9
mar	4	2460007.75	22	58	46.11	9.3	-6	31	45.49	57.8	0.99140	12	11	47.2
mar	5	2460008.75	23	2	29.48	9.3	-6	8	38.51	58.0	0.99165	12	11	34.0
mar	6	2460009.75	23	6	12.41	9.3	-5	45	26.55	58.2	0.99190	12	11	20.4
mar	7	2460010.75	23	9	54.91	9.3	-5	22	9.95	58.4	0.99215	12	11	6.3
mar	8	2460011.75	23	13	37.02	9.2	-4	58	49.08	58.5	0.99241	12	10	51.9
mar	9	2460012.75	23	17	18.74	9.2	-4	35	24.30	58.7	0.99267	12	10	37.1
mar	10	2460013.75	23	21	0.12	9.2	-4	11	55.95	58.8	0.99293	12	10	21.9
mar	11	2460014.75	23	24	41.17	9.2	-3	48	24.38	58.9	0.99320	12	10	6.4
mar	12	2460015.75	23	28	21.91	9.2	-3	24	49.94	59.0	0.99347	12	9	50.6
mar	13	2460016.75	23	32	2.38	9.2	-3	1	12.99	59.1	0.99374	12	9	34.5
mar	14	2460017.75	23	35	42.58	9.2	-2	37	33.87	59.2	0.99402	12	9	18.1
mar	15	2460018.75	23	39	22.55	9.2	-2	13	52.95	59.3	0.99429	12	9	1.5
mar	16	2460019.75	23	43	2.30	9.1	-1	50	10.60	59.3	0.99457	12	8	44.7
mar	17	2460020.75	23	46	41.85	9.1	-1	26	27.20	59.3	0.99485	12	8	27.7
mar	18	2460021.75	23	50	21.21	9.1	-1	2	43.14	59.3	0.99513	12	8	10.5
mar	19	2460022.75	23	54	0.41	9.1	-0	38	58.80	59.3	0.99541	12	7	53.2
mar	20	2460023.75	23	57	39.46	9.1	-0	15	14.59	59.3	0.99570	12	7	35.7
mar	21	2460024.75	0	1	18.38	9.1	+0	8	29.11	59.3	0.99598	12	7	18.0
mar	22	2460025.75	0	4	57.18	9.1	+0	32	11.91	59.2	0.99626	12	7	0.3
mar	23	2460026.75	0	8	35.88	9.1	+0	55	53.43	59.2	0.99654	12	6	42.5
mar	24	2460027.75	0	12	14.51	9.1	+1	19	33.27	59.1	0.99682	12	6	24.5
mar	25	2460028.75	0	15	53.07	9.1	+1	43	11.05	59.0	0.99709	12	6	6.5
mar	26	2460029.75	0	19	31.59	9.1	+2	6	46.39	58.9	0.99737	12	5	48.5
mar	27	2460030.75	0	23	10.09	9.1	+2	30	18.91	58.7	0.99765	12	5	30.4
mar	28	2460031.75	0	26	48.57	9.1	+2	53	48.24	58.6	0.99793	12	5	12.4
mar	29	2460032.75	0	30	27.07	9.1	+3	17	14.01	58.4	0.99821	12	4	54.3
mar	30	2460033.75	0	34	5.59	9.1	+3	40	35.87	58.2	0.99849	12	4	36.3
mar	31	2460034.75	0	37	44.17	9.1	+4	3	53.45	58.0	0.99877	12	4	18.3
abr	1	2460035.75	0	41	22.81	9.1	+4	27	6.41	57.8	0.99905	12	4	0.4
abr	2	2460036.75	0	45	1.54	9.1	+4	50	14.42	57.6	0.99933	12	3	42.6
abr	3	2460037.75	0	48	40.38	9.1	+5	13	17.13	57.4	0.99962	12	3	24.8
abr	4	2460038.75	0	52	19.35	9.1	+5	36	14.21	57.1	0.99990	12	3	7.3
abr	5	2460039.75	0	55	58.48	9.1	+5	59	5.36	56.9	1.00019	12	2	49.9
abr	6	2460040.75	0	59	37.78	9.1	+6	21	50.24	56.6	1.00047	12	2	32.6
abr	7	2460041.75	1	3	17.28	9.2	+6	44	28.56	56.3	1.00076	12	2	15.6

## Sol, 2023

### Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	α m	s	vh s	δ °	“	”	dis UA	h	hp m	s	
abr	8	2460042.75	1	6	57.01	9.2	+7	6	60.00	56.0	1.00105	12	1	58.7
abr	9	2460043.75	1	10	36.97	9.2	+7	29	24.25	55.7	1.00134	12	1	42.1
abr	10	2460044.75	1	14	17.21	9.2	+7	51	41.02	55.4	1.00163	12	1	25.8
abr	11	2460045.75	1	17	57.72	9.2	+8	13	49.97	55.0	1.00192	12	1	9.8
abr	12	2460046.75	1	21	38.54	9.2	+8	35	50.78	54.7	1.00221	12	0	54.0
abr	13	2460047.75	1	25	19.68	9.2	+8	57	43.13	54.3	1.00250	12	0	38.6
abr	14	2460048.75	1	29	1.15	9.2	+9	19	26.66	53.9	1.00279	12	0	23.5
abr	15	2460049.75	1	32	42.98	9.3	+9	41	1.01	53.5	1.00308	12	0	8.8
abr	16	2460050.75	1	36	25.16	9.3	+10	2	25.85	53.1	1.00337	11	59	54.4
abr	17	2460051.75	1	40	7.72	9.3	+10	23	40.80	52.7	1.00365	11	59	40.4
abr	18	2460052.75	1	43	50.67	9.3	+10	44	45.51	52.3	1.00393	11	59	26.8
abr	19	2460053.75	1	47	34.02	9.3	+11	5	39.63	51.8	1.00421	11	59	13.6
abr	20	2460054.75	1	51	17.78	9.3	+11	26	22.80	51.3	1.00449	11	59	0.9
abr	21	2460055.75	1	55	1.97	9.4	+11	46	54.65	50.8	1.00476	11	58	48.5
abr	22	2460056.75	1	58	46.59	9.4	+12	7	14.85	50.3	1.00504	11	58	36.5
abr	23	2460057.75	2	2	31.66	9.4	+12	27	23.03	49.8	1.00530	11	58	25.0
abr	24	2460058.75	2	6	17.17	9.4	+12	47	18.84	49.3	1.00557	11	58	14.0
abr	25	2460059.75	2	10	3.14	9.4	+13	7	1.94	48.8	1.00583	11	58	3.4
abr	26	2460060.75	2	13	49.57	9.5	+13	26	31.97	48.2	1.00610	11	57	53.3
abr	27	2460061.75	2	17	36.48	9.5	+13	45	48.61	47.6	1.00635	11	57	43.6
abr	28	2460062.75	2	21	23.87	9.5	+14	4	51.53	47.0	1.00661	11	57	34.5
abr	29	2460063.75	2	25	11.76	9.5	+14	23	40.39	46.4	1.00687	11	57	25.8
abr	30	2460064.75	2	29	0.14	9.5	+14	42	14.89	45.8	1.00712	11	57	17.6
may	1	2460065.75	2	32	49.03	9.6	+15	0	34.70	45.2	1.00737	11	57	10.0
may	2	2460066.75	2	36	38.45	9.6	+15	18	39.53	44.6	1.00762	11	57	2.8
may	3	2460067.75	2	40	28.39	9.6	+15	36	29.07	43.9	1.00787	11	56	56.2
may	4	2460068.75	2	44	18.87	9.6	+15	54	3.04	43.3	1.00812	11	56	50.2
may	5	2460069.75	2	48	9.90	9.6	+16	11	21.15	42.6	1.00836	11	56	44.7
may	6	2460070.75	2	52	1.50	9.7	+16	28	23.14	41.9	1.00861	11	56	39.7
may	7	2460071.75	2	55	53.66	9.7	+16	45	8.73	41.2	1.00885	11	56	35.3
may	8	2460072.75	2	59	46.39	9.7	+17	1	37.64	40.5	1.00910	11	56	31.5
may	9	2460073.75	3	3	39.71	9.7	+17	17	49.60	39.8	1.00934	11	56	28.2
may	10	2460074.75	3	7	33.61	9.8	+17	33	44.32	39.0	1.00958	11	56	25.5
may	11	2460075.75	3	11	28.09	9.8	+17	49	21.51	38.3	1.00981	11	56	23.5
may	12	2460076.75	3	15	23.17	9.8	+18	4	40.86	37.6	1.01005	11	56	22.0
may	13	2460077.75	3	19	18.83	9.8	+18	19	42.07	36.8	1.01028	11	56	21.1
may	14	2460078.75	3	23	15.08	9.9	+18	34	24.85	36.0	1.01051	11	56	20.8
may	15	2460079.75	3	27	11.92	9.9	+18	48	48.89	35.2	1.01074	11	56	21.1
may	16	2460080.75	3	31	9.34	9.9	+19	2	53.89	34.4	1.01096	11	56	21.9
may	17	2460081.75	3	35	7.34	9.9	+19	16	39.56	33.6	1.01118	11	56	23.4
may	18	2460082.75	3	39	5.92	10.0	+19	30	5.63	32.8	1.01139	11	56	25.4
may	19	2460083.75	3	43	5.05	10.0	+19	43	11.81	31.9	1.01160	11	56	28.0
may	20	2460084.75	3	47	4.75	10.0	+19	55	57.82	31.1	1.01180	11	56	31.1
may	21	2460085.75	3	51	4.98	10.0	+20	8	23.40	30.2	1.01200	11	56	34.8
may	22	2460086.75	3	55	5.75	10.1	+20	20	28.28	29.3	1.01219	11	56	39.0
may	23	2460087.75	3	59	7.03	10.1	+20	32	12.19	28.4	1.01238	11	56	43.7
may	24	2460088.75	4	3	8.81	10.1	+20	43	34.89	27.6	1.01257	11	56	48.9
may	25	2460089.75	4	7	11.08	10.1	+20	54	36.12	26.6	1.01275	11	56	54.7
may	26	2460090.75	4	11	13.84	10.1	+21	5	15.66	25.7	1.01292	11	57	0.8

## Sol, 2023

### Efemérides de solpru2 para el año 2023

mes	día	dj	h	$\alpha$ m	s	vh s	$\delta$ °	"	vh "	dis UA	h	hp m	s	
may	27	2460091.75	4	15	17.05	10.2	+21	15	33.28	24.8	1.01310	11	57	7.5
may	28	2460092.75	4	19	20.72	10.2	+21	25	28.75	23.9	1.01326	11	57	14.6
may	29	2460093.75	4	23	24.83	10.2	+21	35	1.89	22.9	1.01343	11	57	22.2
may	30	2460094.75	4	27	29.36	10.2	+21	44	12.48	22.0	1.01359	11	57	30.2
may	31	2460095.75	4	31	34.31	10.2	+21	53	0.36	21.0	1.01375	11	57	38.6
jun	1	2460096.75	4	35	39.66	10.2	+22	1	25.34	20.1	1.01390	11	57	47.4
jun	2	2460097.75	4	39	45.41	10.3	+22	9	27.28	19.1	1.01405	11	57	56.5
jun	3	2460098.75	4	43	51.53	10.3	+22	17	6.02	18.1	1.01420	11	58	6.1
jun	4	2460099.75	4	47	58.01	10.3	+22	24	21.44	17.2	1.01435	11	58	16.0
jun	5	2460100.75	4	52	4.85	10.3	+22	31	13.40	16.2	1.01449	11	58	26.3
jun	6	2460101.75	4	56	12.02	10.3	+22	37	41.77	15.2	1.01463	11	58	36.9
jun	7	2460102.75	5	0	19.51	10.3	+22	43	46.42	14.2	1.01477	11	58	47.8
jun	8	2460103.75	5	4	27.30	10.3	+22	49	27.20	13.2	1.01490	11	58	59.1
jun	9	2460104.75	5	8	35.38	10.3	+22	54	43.99	12.2	1.01503	11	59	10.6
jun	10	2460105.75	5	12	43.72	10.4	+22	59	36.64	11.2	1.01516	11	59	22.4
jun	11	2460106.75	5	16	52.31	10.4	+23	4	5.03	10.2	1.01528	11	59	34.4
jun	12	2460107.75	5	21	1.13	10.4	+23	8	9.06	9.1	1.01540	11	59	46.7
jun	13	2460108.75	5	25	10.15	10.4	+23	11	48.63	8.1	1.01552	11	59	59.1
jun	14	2460109.75	5	29	19.36	10.4	+23	15	3.65	7.1	1.01563	12	0	11.8
jun	15	2460110.75	5	33	28.73	10.4	+23	17	54.05	6.1	1.01573	12	0	24.6
jun	16	2460111.75	5	37	38.23	10.4	+23	20	19.77	5.0	1.01583	12	0	37.5
jun	17	2460112.75	5	41	47.84	10.4	+23	22	20.75	4.0	1.01592	12	0	50.6
jun	18	2460113.75	5	45	57.52	10.4	+23	23	56.97	3.0	1.01600	12	1	3.7
jun	19	2460114.75	5	50	7.25	10.4	+23	25	8.38	1.9	1.01608	12	1	16.9
jun	20	2460115.75	5	54	17.00	10.4	+23	25	54.96	0.9	1.01616	12	1	30.1
jun	21	2460116.75	5	58	26.73	10.4	+23	26	16.70	-0.1	1.01623	12	1	43.2
jun	22	2460117.75	6	2	36.43	10.4	+23	26	13.59	-1.2	1.01629	12	1	56.4
jun	23	2460118.75	6	6	46.07	10.4	+23	25	45.65	-2.2	1.01635	12	2	9.4
jun	24	2460119.75	6	10	55.61	10.4	+23	24	52.90	-3.2	1.01640	12	2	22.4
jun	25	2460120.75	6	15	5.04	10.4	+23	23	35.36	-4.3	1.01644	12	2	35.3
jun	26	2460121.75	6	19	14.33	10.4	+23	21	53.09	-5.3	1.01649	12	2	48.1
jun	27	2460122.75	6	23	23.46	10.4	+23	19	46.15	-6.3	1.01652	12	3	0.6
jun	28	2460123.75	6	27	32.41	10.4	+23	17	14.59	-7.3	1.01656	12	3	13.0
jun	29	2460124.75	6	31	41.15	10.4	+23	14	18.52	-8.4	1.01658	12	3	25.2
jun	30	2460125.75	6	35	49.67	10.3	+23	10	58.01	-9.4	1.01661	12	3	37.2
jul	1	2460126.75	6	39	57.94	10.3	+23	7	13.19	-10.4	1.01663	12	3	48.9
jul	2	2460127.75	6	44	5.96	10.3	+23	3	4.16	-11.4	1.01664	12	4	0.3
jul	3	2460128.75	6	48	13.69	10.3	+22	58	31.06	-12.4	1.01666	12	4	11.5
jul	4	2460129.75	6	52	21.13	10.3	+22	53	34.00	-13.4	1.01667	12	4	22.4
jul	5	2460130.75	6	56	28.25	10.3	+22	48	13.09	-14.4	1.01668	12	4	32.9
jul	6	2460131.75	7	0	35.04	10.3	+22	42	28.46	-15.3	1.01668	12	4	43.2
jul	7	2460132.75	7	4	41.49	10.3	+22	36	20.20	-16.3	1.01668	12	4	53.0
jul	8	2460133.75	7	8	47.57	10.2	+22	29	48.46	-17.3	1.01668	12	5	2.6
jul	9	2460134.75	7	12	53.28	10.2	+22	22	53.34	-18.3	1.01667	12	5	11.7
jul	10	2460135.75	7	16	58.61	10.2	+22	15	35.01	-19.2	1.01666	12	5	20.5
jul	11	2460136.75	7	21	3.52	10.2	+22	7	53.63	-20.2	1.01664	12	5	28.9
jul	12	2460137.75	7	25	8.02	10.2	+21	59	49.37	-21.1	1.01662	12	5	36.8
jul	13	2460138.75	7	29	12.08	10.2	+21	51	22.42	-22.1	1.01659	12	5	44.3

## Sol, 2023

### Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	α			vh s	δ °	“ ”		dis UA	h	hp		
			h	m	s			“	”			m	s	
jul	14	2460139.75	7	33	15.69	10.1	+21	42	32.99	-23.0	1.01656	12	5	51.4
jul	15	2460140.75	7	37	18.82	10.1	+21	33	21.28	-23.9	1.01652	12	5	57.9
jul	16	2460141.75	7	41	21.46	10.1	+21	23	47.50	-24.8	1.01647	12	6	4.0
jul	17	2460142.75	7	45	23.59	10.1	+21	13	51.88	-25.7	1.01642	12	6	9.6
jul	18	2460143.75	7	49	25.19	10.0	+21	3	34.65	-26.6	1.01637	12	6	14.6
jul	19	2460144.75	7	53	26.25	10.0	+20	52	56.03	-27.5	1.01630	12	6	19.1
jul	20	2460145.75	7	57	26.75	10.0	+20	41	56.27	-28.4	1.01623	12	6	23.1
jul	21	2460146.75	8	1	26.68	10.0	+20	30	35.60	-29.2	1.01616	12	6	26.4
jul	22	2460147.75	8	5	26.03	9.9	+20	18	54.29	-30.1	1.01608	12	6	29.2
jul	23	2460148.75	8	9	24.80	9.9	+20	6	52.59	-30.9	1.01599	12	6	31.4
jul	24	2460149.75	8	13	22.96	9.9	+19	54	30.76	-31.7	1.01590	12	6	33.1
jul	25	2460150.75	8	17	20.53	9.9	+19	41	49.06	-32.6	1.01581	12	6	34.1
jul	26	2460151.75	8	21	17.48	9.8	+19	28	47.79	-33.4	1.01571	12	6	34.5
jul	27	2460152.75	8	25	13.82	9.8	+19	15	27.20	-34.2	1.01560	12	6	34.3
jul	28	2460153.75	8	29	9.54	9.8	+19	1	47.60	-34.9	1.01549	12	6	33.4
jul	29	2460154.75	8	33	4.65	9.8	+18	47	49.27	-35.7	1.01538	12	6	32.0
jul	30	2460155.75	8	36	59.14	9.7	+18	33	32.50	-36.5	1.01527	12	6	29.9
jul	31	2460156.75	8	40	53.01	9.7	+18	18	57.59	-37.2	1.01515	12	6	27.2
ago	1	2460157.75	8	44	46.26	9.7	+18	4	4.81	-37.9	1.01502	12	6	23.9
ago	2	2460158.75	8	48	38.89	9.7	+17	48	54.43	-38.7	1.01490	12	6	20.0
ago	3	2460159.75	8	52	30.92	9.6	+17	33	26.71	-39.4	1.01477	12	6	15.4
ago	4	2460160.75	8	56	22.35	9.6	+17	17	41.91	-40.1	1.01464	12	6	10.3
ago	5	2460161.75	9	0	13.18	9.6	+17	1	40.26	-40.8	1.01451	12	6	4.6
ago	6	2460162.75	9	4	3.43	9.6	+16	45	22.04	-41.4	1.01437	12	5	58.3
ago	7	2460163.75	9	7	53.10	9.5	+16	28	47.51	-42.1	1.01423	12	5	51.4
ago	8	2460164.75	9	11	42.20	9.5	+16	11	56.97	-42.8	1.01409	12	5	44.0
ago	9	2460165.75	9	15	30.74	9.5	+15	54	50.72	-43.4	1.01394	12	5	35.9
ago	10	2460166.75	9	19	18.72	9.5	+15	37	29.05	-44.0	1.01379	12	5	27.4
ago	11	2460167.75	9	23	6.14	9.5	+15	19	52.29	-44.6	1.01363	12	5	18.2
ago	12	2460168.75	9	26	53.00	9.4	+15	2	0.75	-45.2	1.01347	12	5	8.5
ago	13	2460169.75	9	30	39.32	9.4	+14	43	54.75	-45.8	1.01330	12	4	58.3
ago	14	2460170.75	9	34	25.09	9.4	+14	25	34.62	-46.4	1.01313	12	4	47.5
ago	15	2460171.75	9	38	10.32	9.4	+14	7	0.69	-47.0	1.01295	12	4	36.2
ago	16	2460172.75	9	41	55.02	9.3	+13	48	13.26	-47.5	1.01277	12	4	24.3
ago	17	2460173.75	9	45	39.18	9.3	+13	29	12.68	-48.1	1.01259	12	4	11.9
ago	18	2460174.75	9	49	22.83	9.3	+13	9	59.28	-48.6	1.01240	12	3	59.0
ago	19	2460175.75	9	53	5.97	9.3	+12	50	33.37	-49.1	1.01220	12	3	45.6
ago	20	2460176.75	9	56	48.61	9.3	+12	30	55.29	-49.6	1.01200	12	3	31.7
ago	21	2460177.75	10	0	30.75	9.2	+12	11	5.37	-50.1	1.01180	12	3	17.3
ago	22	2460178.75	10	4	12.42	9.2	+11	51	3.95	-50.5	1.01159	12	3	2.4
ago	23	2460179.75	10	7	53.62	9.2	+11	30	51.36	-51.0	1.01137	12	2	47.0
ago	24	2460180.75	10	11	34.36	9.2	+11	10	27.94	-51.4	1.01116	12	2	31.2
ago	25	2460181.75	10	15	14.67	9.2	+10	49	54.02	-51.8	1.01094	12	2	15.0
ago	26	2460182.75	10	18	54.54	9.1	+10	29	9.93	-52.2	1.01071	12	1	58.3
ago	27	2460183.75	10	22	34.01	9.1	+10	8	16.02	-52.6	1.01049	12	1	41.2
ago	28	2460184.75	10	26	13.07	9.1	+9	47	12.61	-53.0	1.01026	12	1	23.7
ago	29	2460185.75	10	29	51.75	9.1	+9	26	0.01	-53.4	1.01003	12	1	5.8
ago	30	2460186.75	10	33	30.07	9.1	+9	4	38.53	-53.8	1.00980	12	0	47.6
ago	31	2460187.75	10	37	8.05	9.1	+8	43	8.46	-54.1	1.00957	12	0	29.0

## Sol, 2023

### Efemérides de solpru2 para el año 2023

mes	día	dj	h	$\alpha$ m	s	vh s	$\delta$ °	"	vh "	dis UA	h	hp m	s
sep	1	2460188.75	10	40	45.70	9.1	+8	21	30.06 -54.4	1.00933	12	0	10.1
sep	2	2460189.75	10	44	23.06	9.0	+7	59	43.60 -54.8	1.00910	11	59	50.9
sep	3	2460190.75	10	48	0.15	9.0	+7	37	49.35 -55.1	1.00886	11	59	31.5
sep	4	2460191.75	10	51	36.98	9.0	+7	15	47.61 -55.4	1.00862	11	59	11.8
sep	5	2460192.75	10	55	13.59	9.0	+6	53	38.68 -55.7	1.00838	11	58	51.8
sep	6	2460193.75	10	58	49.98	9.0	+6	31	22.87 -55.9	1.00814	11	58	31.6
sep	7	2460194.75	11	2	26.18	9.0	+6	9	0.50 -56.2	1.00790	11	58	11.3
sep	8	2460195.75	11	6	2.20	9.0	+5	46	31.90 -56.4	1.00765	11	57	50.7
sep	9	2460196.75	11	9	38.06	9.0	+5	23	57.41 -56.7	1.00740	11	57	30.0
sep	10	2460197.75	11	13	13.77	9.0	+5	1	17.36 -56.9	1.00715	11	57	9.2
sep	11	2460198.75	11	16	49.35	9.0	+4	38	32.10 -57.1	1.00690	11	56	48.2
sep	12	2460199.75	11	20	24.82	9.0	+4	15	41.97 -57.3	1.00664	11	56	27.1
sep	13	2460200.75	11	24	0.19	9.0	+3	52	47.31 -57.5	1.00638	11	56	5.9
sep	14	2460201.75	11	27	35.48	9.0	+3	29	48.47 -57.6	1.00611	11	55	44.7
sep	15	2460202.75	11	31	10.72	9.0	+3	6	45.80 -57.8	1.00585	11	55	23.4
sep	16	2460203.75	11	34	45.90	9.0	+2	43	39.63 -57.9	1.00558	11	55	2.0
sep	17	2460204.75	11	38	21.07	9.0	+2	20	30.33 -58.0	1.00530	11	54	40.6
sep	18	2460205.75	11	41	56.22	9.0	+1	57	18.25 -58.1	1.00503	11	54	19.2
sep	19	2460206.75	11	45	31.39	9.0	+1	34	3.74 -58.2	1.00475	11	53	57.9
sep	20	2460207.75	11	49	6.58	9.0	+1	10	47.15 -58.3	1.00447	11	53	36.5
sep	21	2460208.75	11	52	41.82	9.0	+0	47	28.84 -58.3	1.00419	11	53	15.2
sep	22	2460209.75	11	56	17.13	9.0	+0	24	9.17 -58.4	1.00390	11	52	53.9
sep	23	2460210.75	11	59	52.52	9.0	+0	0	48.50 -58.4	1.00361	11	52	32.8
sep	24	2460211.75	12	3	28.01	9.0	-0	22	32.81 -58.4	1.00333	11	52	11.7
sep	25	2460212.75	12	7	3.62	9.0	-0	45	54.41 -58.4	1.00304	11	51	50.7
sep	26	2460213.75	12	10	39.38	9.0	-1	9	15.97 -58.4	1.00275	11	51	29.9
sep	27	2460214.75	12	14	15.30	9.0	-1	32	37.15 -58.4	1.00246	11	51	9.3
sep	28	2460215.75	12	17	51.40	9.0	-1	55	57.63 -58.3	1.00218	11	50	48.9
sep	29	2460216.75	12	21	27.72	9.0	-2	19	17.11 -58.3	1.00189	11	50	28.6
sep	30	2460217.75	12	25	4.28	9.0	-2	42	35.31 -58.2	1.00161	11	50	8.7
oct	1	2460218.75	12	28	41.11	9.0	-3	5	51.92 -58.1	1.00132	11	49	48.9
oct	2	2460219.75	12	32	18.24	9.1	-3	29	6.64 -58.0	1.00104	11	49	29.5
oct	3	2460220.75	12	35	55.69	9.1	-3	52	19.14 -57.9	1.00076	11	49	10.4
oct	4	2460221.75	12	39	33.47	9.1	-4	15	29.08 -57.8	1.00047	11	48	51.6
oct	5	2460222.75	12	43	11.62	9.1	-4	38	36.11 -57.7	1.00019	11	48	33.2
oct	6	2460223.75	12	46	50.15	9.1	-5	1	39.87 -57.5	0.99991	11	48	15.2
oct	7	2460224.75	12	50	29.07	9.1	-5	24	39.97 -57.3	0.99963	11	47	57.5
oct	8	2460225.75	12	54	8.42	9.2	-5	47	36.00 -57.2	0.99935	11	47	40.3
oct	9	2460226.75	12	57	48.18	9.2	-6	10	27.61 -57.0	0.99907	11	47	23.5
oct	10	2460227.75	13	1	28.40	9.2	-6	33	14.66 -56.7	0.99878	11	47	7.2
oct	11	2460228.75	13	5	9.10	9.2	-6	55	56.61 -56.5	0.99850	11	46	51.4
oct	12	2460229.75	13	8	50.29	9.2	-7	18	32.99 -56.3	0.99822	11	46	36.0
oct	13	2460230.75	13	12	31.99	9.3	-7	41	3.43 -56.0	0.99793	11	46	21.2
oct	14	2460231.75	13	16	14.21	9.3	-8	3	27.53 -55.7	0.99765	11	46	6.8
oct	15	2460232.75	13	19	56.97	9.3	-8	25	44.92 -55.4	0.99736	11	45	53.0
oct	16	2460233.75	13	23	40.28	9.3	-8	47	55.20 -55.1	0.99708	11	45	39.8
oct	17	2460234.75	13	27	24.17	9.4	-9	9	57.96 -54.8	0.99679	11	45	27.1
oct	18	2460235.75	13	31	8.64	9.4	-9	31	52.81 -54.4	0.99651	11	45	15.1

## Sol, 2023

### Efermídes a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	α m	s	vh s	δ °	“	”	dis UA	h	hp m	s	
oct	19	2460236.75	13	34	53.71	9.4	-9	53	39.32	-54.1	0.99622	11	45	3.6
oct	20	2460237.75	13	38	39.40	9.4	-10	15	17.11	-53.7	0.99593	11	44	52.7
oct	21	2460238.75	13	42	25.70	9.5	-10	36	45.74	-53.3	0.99565	11	44	42.4
oct	22	2460239.75	13	46	12.64	9.5	-10	58	4.82	-52.9	0.99536	11	44	32.8
oct	23	2460240.75	13	50	0.23	9.5	-11	19	13.94	-52.4	0.99508	11	44	23.8
oct	24	2460241.75	13	53	48.48	9.5	-11	40	12.69	-52.0	0.99480	11	44	15.5
oct	25	2460242.75	13	57	37.41	9.6	-12	1	0.69	-51.5	0.99452	11	44	7.9
oct	26	2460243.75	14	1	27.04	9.6	-12	21	37.56	-51.1	0.99424	11	44	1.0
oct	27	2460244.75	14	5	17.38	9.6	-12	42	2.94	-50.6	0.99397	11	43	54.8
oct	28	2460245.75	14	9	8.45	9.7	-13	2	16.47	-50.1	0.99369	11	43	49.3
oct	29	2460246.75	14	13	0.28	9.7	-13	22	17.81	-49.5	0.99343	11	43	44.6
oct	30	2460247.75	14	16	52.88	9.7	-13	42	6.58	-49.0	0.99316	11	43	40.6
oct	31	2460248.75	14	20	46.27	9.8	-14	1	42.43	-48.4	0.99290	11	43	37.5
nov	1	2460249.75	14	24	40.45	9.8	-14	21	4.96	-47.9	0.99264	11	43	35.1
nov	2	2460250.75	14	28	35.44	9.8	-14	40	13.80	-47.3	0.99239	11	43	33.5
nov	3	2460251.75	14	32	31.25	9.9	-14	59	8.52	-46.7	0.99214	11	43	32.7
nov	4	2460252.75	14	36	27.88	9.9	-15	17	48.73	-46.1	0.99189	11	43	32.8
nov	5	2460253.75	14	40	25.35	9.9	-15	36	14.02	-45.4	0.99164	11	43	33.7
nov	6	2460254.75	14	44	23.66	10.0	-15	54	23.96	-44.8	0.99140	11	43	35.5
nov	7	2460255.75	14	48	22.82	10.0	-16	12	18.15	-44.1	0.99116	11	43	38.1
nov	8	2460256.75	14	52	22.83	10.0	-16	29	56.17	-43.4	0.99092	11	43	41.6
nov	9	2460257.75	14	56	23.70	10.1	-16	47	17.59	-42.7	0.99068	11	43	45.9
nov	10	2460258.75	15	0	25.43	10.1	-17	4	22.01	-42.0	0.99045	11	43	51.1
nov	11	2460259.75	15	4	28.02	10.1	-17	21	9.01	-41.2	0.99021	11	43	57.1
nov	12	2460260.75	15	8	31.47	10.2	-17	37	38.17	-40.5	0.98998	11	44	4.0
nov	13	2460261.75	15	12	35.77	10.2	-17	53	49.08	-39.7	0.98975	11	44	11.7
nov	14	2460262.75	15	16	40.94	10.3	-18	9	41.34	-38.9	0.98953	11	44	20.3
nov	15	2460263.75	15	20	46.95	10.3	-18	25	14.53	-38.1	0.98930	11	44	29.8
nov	16	2460264.75	15	24	53.80	10.3	-18	40	28.25	-37.2	0.98907	11	44	40.1
nov	17	2460265.75	15	29	1.48	10.4	-18	55	22.09	-36.4	0.98885	11	44	51.2
nov	18	2460266.75	15	33	9.99	10.4	-19	9	55.65	-35.5	0.98863	11	45	3.1
nov	19	2460267.75	15	37	19.30	10.4	-19	24	8.53	-34.7	0.98842	11	45	15.9
nov	20	2460268.75	15	41	29.41	10.5	-19	38	0.34	-33.8	0.98820	11	45	29.4
nov	21	2460269.75	15	45	40.31	10.5	-19	51	30.72	-32.9	0.98799	11	45	43.8
nov	22	2460270.75	15	49	52.00	10.5	-20	4	39.29	-31.9	0.98778	11	45	58.9
nov	23	2460271.75	15	54	4.46	10.6	-20	17	25.72	-31.0	0.98758	11	46	14.8
nov	24	2460272.75	15	58	17.68	10.6	-20	29	49.68	-30.0	0.98738	11	46	31.5
nov	25	2460273.75	16	2	31.67	10.6	-20	41	50.87	-29.1	0.98719	11	46	48.9
nov	26	2460274.75	16	6	46.41	10.6	-20	53	28.96	-28.1	0.98700	11	47	7.1
nov	27	2460275.75	16	11	1.89	10.7	-21	4	43.67	-27.1	0.98682	11	47	26.0
nov	28	2460276.75	16	15	18.10	10.7	-21	15	34.70	-26.1	0.98664	11	47	45.7
nov	29	2460277.75	16	19	35.02	10.7	-21	26	1.75	-25.1	0.98647	11	48	6.0
nov	30	2460278.75	16	23	52.64	10.8	-21	36	4.52	-24.1	0.98631	11	48	27.1
dic	1	2460279.75	16	28	10.95	10.8	-21	45	42.71	-23.1	0.98614	11	48	48.8
dic	2	2460280.75	16	32	29.91	10.8	-21	54	56.04	-22.0	0.98599	11	49	11.2
dic	3	2460281.75	16	36	49.52	10.8	-22	3	44.20	-20.9	0.98584	11	49	34.3
dic	4	2460282.75	16	41	9.75	10.9	-22	12	6.92	-19.9	0.98569	11	49	58.0
dic	5	2460283.75	16	45	30.59	10.9	-22	20	3.94	-18.8	0.98555	11	50	22.2
dic	6	2460284.75	16	49	52.00	10.9	-22	27	34.98	-17.7	0.98541	11	50	47.1

## Sol, 2023

### Efemérides de solpru2 para el año 2023

mes	día	dj	h	$\alpha$ m	s	vh s	°	$\delta$ "	“	”	dis UA	h	hp m	s
dic	7	2460285.75	16	54	13.96	10.9	-22	34	39.80	-16.6	0.98528	11	51	12.5
dic	8	2460286.75	16	58	36.45	11.0	-22	41	18.17	-15.5	0.98515	11	51	38.5
dic	9	2460287.75	17	2	59.43	11.0	-22	47	29.85	-14.4	0.98502	11	52	4.9
dic	10	2460288.75	17	7	22.89	11.0	-22	53	14.64	-13.2	0.98490	11	52	31.8
dic	11	2460289.75	17	11	46.79	11.0	-22	58	32.35	-12.1	0.98478	11	52	59.1
dic	12	2460290.75	17	16	11.09	11.0	-23	3	22.79	-11.0	0.98467	11	53	26.9
dic	13	2460291.75	17	20	35.77	11.0	-23	7	45.81	-9.8	0.98456	11	53	55.0
dic	14	2460292.75	17	25	0.78	11.1	-23	11	41.23	-8.7	0.98445	11	54	23.4
dic	15	2460293.75	17	29	26.08	11.1	-23	15	8.93	-7.5	0.98434	11	54	52.1
dic	16	2460294.75	17	33	51.63	11.1	-23	18	8.78	-6.3	0.98424	11	55	21.1
dic	17	2460295.75	17	38	17.40	11.1	-23	20	40.65	-5.2	0.98414	11	55	50.3
dic	18	2460296.75	17	42	43.34	11.1	-23	22	44.45	-4.0	0.98405	11	56	19.7
dic	19	2460297.75	17	47	9.43	11.1	-23	24	20.11	-2.8	0.98396	11	56	49.3
dic	20	2460298.75	17	51	35.63	11.1	-23	25	27.55	-1.6	0.98388	11	57	18.9
dic	21	2460299.75	17	56	1.91	11.1	-23	26	6.76	-0.5	0.98380	11	57	48.6
dic	22	2460300.75	18	0	28.23	11.1	-23	26	17.71	0.7	0.98372	11	58	18.4
dic	23	2460301.75	18	4	54.57	11.1	-23	26	0.43	1.9	0.98365	11	58	48.2
dic	24	2460302.75	18	9	20.90	11.1	-23	25	14.91	3.1	0.98359	11	59	18.0
dic	25	2460303.75	18	13	47.18	11.1	-23	24	1.21	4.2	0.98353	11	59	47.7
dic	26	2460304.75	18	18	13.38	11.1	-23	22	19.36	5.4	0.98348	12	0	17.3
dic	27	2460305.75	18	22	39.48	11.1	-23	20	9.42	6.6	0.98344	12	0	46.8
dic	28	2460306.75	18	27	5.44	11.1	-23	17	31.43	7.7	0.98340	12	1	16.2
dic	29	2460307.75	18	31	31.23	11.1	-23	14	25.46	8.9	0.98337	12	1	45.5
dic	30	2460308.75	18	35	56.82	11.1	-23	10	51.60	10.1	0.98335	12	2	14.5
dic	31	2460309.75	18	40	22.18	11.0	-23	6	49.93	11.2	0.98333	12	2	43.3
ene	1	2460310.75	18	44	47.28	11.0	-23	2	20.54	12.4	0.98332	12	3	11.8
ene	2	2460311.75	18	49	12.10	10.7	-22	57	23.56	13.1	0.98331	12	3	40.1
ene	3	2460312.75	18	53	29.24	39.5	-22	52	8.13	50.4	0.97491	18	53	29.2

### Efemérides de solpru2 para el año 2024

mes	día	dj	h	$\alpha$ m	s	vh s	°	$\delta$ "	“	”	dis UA	h	hp m	s
ene	4	2460313.75	19	9	17.41*****		-22	31	57.73	-23.7	1.08995	19	9	17.4
ene	5	2460314.75	19	1	18.42746.7		-22	41	25.96*****		0.98332	19	1	18.4
nov	24	0.00	0	0	0.00	0.0	#0	0	0.00	0.0	0.00000	0	0	0.0
nov	24	0.00	0	0	0.00	0.0	#0	0	0.00	0.0	0.00000			

## Luna, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis DT	sed	pax	fase	hp h	
ene	1	2459945.75	2	18	30.9	+13	22	24.1	61.2	15.3	56.1	72.4	19.4
ene	2	2459946.75	3	6	48.0	+18	12	42.0	61.9	15.1	55.5	80.9	20.1
ene	3	2459947.75	3	56	42.6	+22	11	36.6	62.4	15.0	55.1	88.0	20.9
ene	4	2459948.75	4	48	24.6	+25	8	28.9	62.9	14.9	54.7	93.6	21.7
ene	5	2459949.75	5	41	33.0	+26	54	27.4	63.2	14.8	54.4	97.5	22.5
ene	6	2459950.75	6	35	18.4	+27	24	6.9	63.5	14.7	54.1	99.6	23.4
ene	7	2459951.75	7	28	35.7	+26	36	52.8	63.7	14.7	54.0	99.9	0.2
ene	8	2459952.75	8	20	24.5	+24	37	16.4	63.7	14.7	53.9	98.4	1.0
ene	9	2459953.75	9	10	6.4	+21	33	48.3	63.7	14.7	54.0	95.2	1.7
ene	10	2459954.75	9	57	32.3	+17	37	7.4	63.5	14.7	54.1	90.3	2.5
ene	11	2459955.75	10	42	59.9	+12	58	19.3	63.2	14.8	54.4	83.9	3.2
ene	12	2459956.75	11	27	6.8	+07	47	58.8	62.8	14.9	54.7	76.2	3.8
ene	13	2459957.75	12	10	44.4	+02	16	3.2	62.2	15.1	55.3	67.5	4.5
ene	14	2459958.75	12	54	54.0	-03	27	33.0	61.5	15.2	55.9	57.8	5.2
ene	15	2459959.75	13	40	44.7	-09	11	48.8	60.6	15.4	56.7	47.6	5.9
ene	16	2459960.75	14	29	31.2	-14	43	2.4	59.7	15.7	57.6	37.2	6.6
ene	17	2459961.75	15	22	26.4	-19	43	9.6	58.7	16.0	58.6	27.0	7.4
ene	18	2459962.75	16	20	24.6	-23	48	42.3	57.8	16.2	59.5	17.6	8.3
ene	19	2459963.75	17	23	30.4	-26	32	10.7	56.9	16.4	60.4	9.6	9.3
ene	20	2459964.75	18	30	25.2	-27	27	45.4	56.3	16.6	61.1	3.7	10.4
ene	21	2459965.75	19	38	28.8	-26	20	47.1	56.0	16.7	61.4	0.5	11.4
ene	22	2459966.75	20	44	38.3	-23	15	16.5	55.9	16.7	61.5	0.3	12.5
ene	23	2459967.75	21	46	47.4	-18	32	58.1	56.2	16.7	61.2	3.3	13.4
ene	24	2459968.75	22	44	19.1	-12	44	56.2	56.8	16.5	60.6	9.0	14.3
ene	25	2459969.75	23	37	46.6	-06	22	34.4	57.5	16.3	59.8	16.9	15.1
ene	26	2459970.75	0	28	17.0	+00	7	27.5	58.4	16.0	58.8	26.3	15.9
ene	27	2459971.75	1	17	5.9	+06	24	22.4	59.4	15.8	57.9	36.6	16.7
ene	28	2459972.75	2	5	24.3	+12	12	14.9	60.4	15.5	56.9	47.1	17.4
ene	29	2459973.75	2	54	11.1	+17	18	23.5	61.3	15.3	56.1	57.3	18.2
ene	30	2459974.75	3	44	8.5	+21	31	58.5	62.0	15.1	55.4	67.0	18.9
ene	31	2459975.75	4	35	35.5	+24	43	26.0	62.7	14.9	54.9	75.9	19.7
feb	1	2459976.75	5	28	23.1	+26	44	46.5	63.1	14.8	54.5	83.6	20.5
feb	2	2459977.75	6	21	54.3	+27	30	40.5	63.5	14.8	54.2	90.0	21.4
feb	3	2459978.75	7	15	13.0	+26	59	42.9	63.7	14.7	54.0	95.0	22.2
feb	4	2459979.75	8	7	21.1	+25	15	1.1	63.7	14.7	53.9	98.3	23.0
feb	5	2459980.75	8	57	35.9	+22	23	47.7	63.7	14.7	54.0	99.9	23.8
feb	6	2459981.75	9	45	39.9	+18	36	0.9	63.5	14.7	54.1	99.7	0.5
feb	7	2459982.75	10	31	41.5	+14	2	54.5	63.3	14.8	54.3	97.6	1.2
feb	8	2459983.75	11	16	9.5	+08	55	52.6	63.0	14.9	54.6	93.8	1.9
feb	9	2459984.75	11	59	47.5	+03	25	59.7	62.6	15.0	55.0	88.3	2.5
feb	10	2459985.75	12	43	29.1	-02	15	51.5	62.0	15.1	55.4	81.3	3.2
feb	11	2459986.75	13	28	15.2	-07	58	23.5	61.4	15.2	56.0	72.9	3.9
feb	12	2459987.75	14	15	12.1	-13	28	54.0	60.7	15.4	56.6	63.4	4.6
feb	13	2459988.75	15	5	27.2	-18	32	1.4	59.9	15.6	57.4	53.0	5.4
feb	14	2459989.75	15	59	58.5	-22	48	41.0	59.1	15.9	58.2	42.2	6.2
feb	15	2459990.75	16	59	13.5	-25	56	8.3	58.2	16.1	59.1	31.4	7.1



## Luna, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis DT	sed	pax	fas fase	hp h	
feb	16	2459991.75	18	2	41.6	-27	30	39.1	57.4	16.3	59.9	21.3	8.1
feb	17	2459992.75	19	8	38.4	-27	13	36.2	56.8	16.5	60.5	12.4	9.1
feb	18	2459993.75	20	14	30.1	-24	58	58.0	56.4	16.6	61.0	5.5	10.2
feb	19	2459994.75	21	17	55.4	-20	57	5.3	56.2	16.7	61.2	1.3	11.2
feb	20	2459995.75	22	17	37.4	-15	31	44.4	56.3	16.6	61.1	0.0	12.1
feb	21	2459996.75	23	13	31.5	-09	13	6.2	56.7	16.5	60.7	1.8	13.0
feb	22	2459997.75	0	6	21.6	-02	31	15.1	57.3	16.3	60.0	6.3	13.8
feb	23	2459998.75	0	57	12.5	+04	7	34.9	58.2	16.1	59.1	13.1	14.6
feb	24	2459999.75	1	47	11.3	+10	22	8.9	59.1	15.8	58.1	21.5	15.3
feb	25	2460000.75	2	37	17.0	+15	55	45.5	60.1	15.6	57.2	30.9	16.1
feb	26	2460001.75	3	28	12.9	+20	35	17.3	61.1	15.3	56.3	40.9	16.9
feb	27	2460002.75	4	20	20.8	+24	10	22.4	61.9	15.1	55.5	50.9	17.7
feb	28	2460003.75	5	13	36.2	+26	33	11.2	62.6	15.0	54.9	60.6	18.5
mar	1	2460004.75	6	7	28.0	+27	38	54.5	63.1	14.8	54.5	69.8	19.3
mar	2	2460005.75	7	1	6.5	+27	26	23.8	63.5	14.8	54.2	78.1	20.2
mar	3	2460006.75	7	53	38.2	+25	58	32.8	63.6	14.7	54.0	85.4	21.0
mar	4	2460007.75	8	44	22.2	+23	21	52.5	63.6	14.7	54.0	91.5	21.8
mar	5	2460008.75	9	32	60.0	+19	45	28.7	63.5	14.8	54.2	96.0	22.5
mar	6	2460009.75	10	19	36.8	+15	19	53.4	63.2	14.8	54.4	98.9	23.2
mar	7	2460010.75	11	4	38.0	+10	16	13.8	62.9	14.9	54.7	100.0	23.9
mar	8	2460011.75	11	48	42.5	+04	45	50.2	62.5	15.0	55.0	99.2	0.6
mar	9	2460012.75	12	32	39.3	-00	59	40.7	62.0	15.1	55.4	96.5	1.2
mar	10	2460013.75	13	17	23.6	-06	48	4.0	61.5	15.2	55.9	91.8	1.9
mar	11	2460014.75	14	3	54.8	-12	25	50.1	61.0	15.4	56.4	85.4	2.6
mar	12	2460015.75	14	53	12.8	-17	37	32.7	60.4	15.5	56.9	77.3	3.4
mar	13	2460016.75	15	46	9.1	-22	5	15.6	59.8	15.7	57.5	67.8	4.2
mar	14	2460017.75	16	43	11.5	-25	28	42.8	59.1	15.8	58.1	57.3	5.1
mar	15	2460018.75	17	44	2.7	-27	27	9.6	58.5	16.0	58.7	46.2	6.0
mar	16	2460019.75	18	47	27.0	-27	43	29.9	57.9	16.2	59.3	35.0	7.0
mar	17	2460020.75	19	51	22.3	-26	9	36.0	57.4	16.3	59.9	24.4	8.0
mar	18	2460021.75	20	53	44.5	-22	49	51.0	57.1	16.4	60.2	15.0	9.0
mar	19	2460022.75	21	53	12.8	-18	0	25.9	56.9	16.5	60.4	7.5	9.9
mar	20	2460023.75	22	49	26.8	-12	5	14.7	56.9	16.5	60.4	2.4	10.8
mar	21	2460024.75	23	42	54.7	-05	31	13.6	57.2	16.4	60.1	0.1	11.6
mar	22	2460025.75	0	34	30.9	+01	15	6.4	57.7	16.2	59.6	0.7	12.4
mar	23	2460026.75	1	25	17.5	+07	49	36.1	58.3	16.0	58.9	3.9	13.2
mar	24	2460027.75	2	16	12.0	+13	51	21.9	59.2	15.8	58.1	9.3	14.0
mar	25	2460028.75	3	7	58.5	+19	2	60.0	60.1	15.6	57.2	16.5	14.8
mar	26	2460029.75	4	0	59.7	+23	10	38.0	61.0	15.4	56.4	24.9	15.6
mar	27	2460030.75	4	55	11.0	+26	4	6.2	61.8	15.2	55.6	34.1	16.4
mar	28	2460031.75	5	49	59.8	+27	37	24.8	62.5	15.0	55.0	43.8	17.3
mar	29	2460032.75	6	44	33.6	+27	49	10.2	63.0	14.9	54.6	53.4	18.1
mar	30	2460033.75	7	37	55.9	+26	42	31.1	63.3	14.8	54.3	62.9	18.9
mar	31	2460034.75	8	29	23.8	+24	24	16.2	63.5	14.8	54.2	71.8	19.7
abr	1	2460035.75	9	18	38.0	+21	3	32.7	63.4	14.8	54.2	79.9	20.5
abr	2	2460036.75	10	5	44.4	+16	50	29.2	63.2	14.8	54.4	87.0	21.2

## Luna, 2023

Efermídes a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis DT	sed	pax	fase	hp h	
abr	3	2460037.75	10	51	9.1	+11	55	31.4	62.8	14.9	54.7	92.7	21.9
abr	4	2460038.75	11	35	32.3	+06	29	14.0	62.4	15.0	55.1	97.0	22.6
abr	5	2460039.75	12	19	43.1	+00	42	41.4	61.9	15.1	55.6	99.4	23.2
abr	6	2460040.75	13	4	36.9	-05	11	56.4	61.3	15.3	56.1	99.9	23.9
abr	7	2460041.75	13	51	12.1	-11	0	41.9	60.7	15.4	56.6	98.3	0.6
abr	8	2460042.75	14	40	26.9	-16	27	14.1	60.2	15.6	57.1	94.5	1.4
abr	9	2460043.75	15	33	10.6	-21	12	33.6	59.7	15.7	57.6	88.7	2.2
abr	10	2460044.75	16	29	48.5	-24	55	41.2	59.2	15.8	58.1	80.9	3.1
abr	11	2460045.75	17	30	2.5	-27	15	48.2	58.8	15.9	58.5	71.5	4.0
abr	12	2460046.75	18	32	38.7	-27	56	21.0	58.4	16.0	58.8	60.8	5.0
abr	13	2460047.75	19	35	40.4	-26	49	40.4	58.1	16.1	59.1	49.5	6.0
abr	14	2460048.75	20	37	9.0	-23	59	38.3	57.9	16.2	59.4	38.0	6.9
abr	15	2460049.75	21	35	46.9	-19	40	21.5	57.7	16.2	59.5	27.2	7.9
abr	16	2460050.75	22	31	14.1	-14	12	19.4	57.7	16.2	59.6	17.5	8.7
abr	17	2460051.75	23	23	57.5	-07	58	33.7	57.8	16.2	59.5	9.6	9.5
abr	18	2460052.75	0	14	50.9	-01	22	16.4	58.0	16.1	59.2	3.9	10.3
abr	19	2460053.75	1	4	57.7	+05	14	12.0	58.4	16.0	58.8	0.7	11.1
abr	20	2460054.75	1	55	18.8	+11	29	49.1	59.0	15.9	58.3	0.1	11.9
abr	21	2460055.75	2	46	43.9	+17	5	12.2	59.6	15.7	57.6	1.9	12.6
abr	22	2460056.75	3	39	42.4	+21	43	14.1	60.4	15.5	56.9	5.9	13.5
abr	23	2460057.75	4	34	14.9	+25	10	0.7	61.1	15.3	56.2	11.8	14.3
abr	24	2460058.75	5	29	49.3	+27	16	7.3	61.9	15.1	55.6	19.0	15.2
abr	25	2460059.75	6	25	27.1	+27	57	45.9	62.5	15.0	55.0	27.4	16.0
abr	26	2460060.75	7	20	0.3	+27	17	1.0	63.0	14.9	54.6	36.4	16.9
abr	27	2460061.75	8	12	34.0	+25	20	47.3	63.3	14.8	54.3	45.9	17.7
abr	28	2460062.75	9	2	40.3	+22	18	53.3	63.4	14.8	54.2	55.4	18.5
abr	29	2460063.75	9	50	21.1	+18	22	4.8	63.3	14.8	54.3	64.7	19.2
abr	30	2460064.75	10	36	2.5	+13	40	52.6	63.0	14.9	54.6	73.5	19.9
may	1	2460065.75	11	20	26.8	+08	25	15.9	62.6	15.0	55.0	81.6	20.5
may	2	2460066.75	12	4	26.3	+02	45	9.6	62.0	15.1	55.5	88.6	21.2
may	3	2460067.75	12	48	59.7	-03	8	41.5	61.3	15.3	56.1	94.2	21.9
may	4	2460068.75	13	35	9.9	-09	3	35.3	60.6	15.5	56.7	98.0	22.6
may	5	2460069.75	14	24	0.8	-14	43	47.4	59.9	15.6	57.4	99.9	23.3
may	6	2460070.75	15	16	28.8	-19	49	50.3	59.3	15.8	58.0	99.4	0.2
may	7	2460071.75	16	13	8.2	-23	58	58.3	58.8	15.9	58.5	96.6	1.0
may	8	2460072.75	17	13	47.5	-26	47	30.6	58.4	16.0	58.9	91.3	2.0
may	9	2460073.75	18	17	12.1	-27	55	44.4	58.1	16.1	59.2	83.8	3.0
may	10	2460074.75	19	21	13.5	-27	13	49.4	58.0	16.2	59.3	74.5	4.0
may	11	2460075.75	20	23	35.3	-24	45	12.5	57.9	16.2	59.4	63.8	4.9
may	12	2460076.75	21	22	44.9	-20	44	56.4	58.0	16.2	59.3	52.4	5.9
may	13	2460077.75	22	18	15.8	-15	34	27.2	58.1	16.1	59.2	40.9	6.7
may	14	2460078.75	23	10	35.3	-09	36	39.8	58.3	16.1	59.0	29.9	7.5
may	15	2460079.75	0	0	41.2	-03	13	20.1	58.6	16.0	58.7	20.2	8.3
may	16	2460080.75	0	49	42.5	+03	15	28.2	58.9	15.9	58.4	12.0	9.1
may	17	2460081.75	1	38	46.8	+09	30	58.9	59.3	15.8	57.9	5.8	9.8
may	18	2460082.75	2	28	52.8	+15	15	14.5	59.9	15.6	57.4	1.8	10.6

## Luna, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis DT	sed	pax	fas fase	hp h	
may	19	2460083.75	3	20	41.6	+20	11	5.4	60.4	15.5	56.9	0.1	11.4
may	20	2460084.75	4	14	27.3	+24	2	55.0	61.0	15.3	56.3	0.6	12.2
may	21	2460085.75	5	9	48.8	+26	38	15.2	61.6	15.2	55.8	3.2	13.1
may	22	2460086.75	6	5	50.6	+27	49	44.3	62.2	15.1	55.3	7.7	13.9
may	23	2460087.75	7	1	17.0	+27	36	30.6	62.7	14.9	54.8	13.7	14.8
may	24	2460088.75	7	54	57.2	+26	3	58.1	63.1	14.8	54.5	21.0	15.6
may	25	2460089.75	8	46	6.2	+23	21	53.9	63.4	14.8	54.3	29.3	16.4
may	26	2460090.75	9	34	33.4	+19	41	56.6	63.4	14.8	54.2	38.3	17.1
may	27	2460091.75	10	20	38.1	+15	15	36.4	63.3	14.8	54.3	47.7	17.8
may	28	2460092.75	11	5	0.2	+10	13	20.7	62.9	14.9	54.6	57.2	18.5
may	29	2460093.75	11	48	32.7	+04	44	41.3	62.4	15.0	55.1	66.6	19.2
may	30	2460094.75	12	32	16.4	-01	0	56.4	61.8	15.2	55.7	75.6	19.8
may	31	2460095.75	13	17	17.8	-06	52	57.5	61.0	15.4	56.4	83.7	20.5
jun	1	2460096.75	14	4	46.8	-12	38	7.1	60.1	15.6	57.2	90.7	21.3
jun	2	2460097.75	14	55	52.0	-17	59	4.1	59.3	15.8	58.0	96.0	22.0
jun	3	2460098.75	15	51	26.6	-22	33	38.4	58.6	16.0	58.7	99.2	22.9
jun	4	2460099.75	16	51	44.7	-25	56	3.5	57.9	16.2	59.3	99.9	23.8
jun	5	2460100.75	17	55	52.2	-27	41	27.0	57.5	16.3	59.8	98.0	0.8
jun	6	2460101.75	19	1	40.4	-27	33	21.1	57.3	16.4	60.0	93.4	1.9
jun	7	2460102.75	20	6	25.7	-25	30	17.2	57.2	16.4	60.1	86.3	2.9
jun	8	2460103.75	21	7	57.4	-21	46	16.1	57.4	16.3	59.9	77.2	3.8
jun	9	2460104.75	22	5	20.4	-16	44	59.3	57.6	16.2	59.6	66.6	4.7
jun	10	2460105.75	22	58	50.1	-10	52	34.5	58.0	16.1	59.2	55.4	5.6
jun	11	2460106.75	23	49	23.4	-04	33	4.8	58.5	16.0	58.7	44.0	6.3
jun	12	2460107.75	0	38	13.7	+01	52	49.5	59.0	15.9	58.2	33.2	7.1
jun	13	2460108.75	1	26	35.3	+08	7	15.9	59.6	15.7	57.7	23.4	7.8
jun	14	2460109.75	2	15	34.7	+13	54	2.2	60.1	15.6	57.2	14.9	8.6
jun	15	2460110.75	3	6	3.8	+18	57	44.3	60.7	15.4	56.7	8.3	9.4
jun	16	2460111.75	3	58	31.0	+23	3	41.2	61.2	15.3	56.2	3.5	10.2
jun	17	2460112.75	4	52	51.9	+25	58	52.3	61.8	15.2	55.7	0.7	11.0
jun	18	2460113.75	5	48	25.2	+27	33	51.4	62.3	15.0	55.2	0.0	11.9
jun	19	2460114.75	6	43	59.9	+27	44	49.4	62.7	14.9	54.8	1.3	12.7
jun	20	2460115.75	7	38	17.8	+26	34	30.1	63.1	14.8	54.5	4.4	13.6
jun	21	2460116.75	8	30	18.6	+24	11	14.3	63.4	14.8	54.2	9.2	14.4
jun	22	2460117.75	9	19	35.0	+20	46	38.1	63.5	14.7	54.1	15.4	15.1
jun	23	2460118.75	10	6	13.3	+16	33	5.1	63.5	14.7	54.1	22.8	15.8
jun	24	2460119.75	10	50	45.3	+11	42	9.4	63.4	14.8	54.3	31.2	16.5
jun	25	2460120.75	11	33	59.2	+06	24	5.8	63.0	14.9	54.6	40.3	17.2
jun	26	2460121.75	12	16	53.2	+00	48	13.0	62.5	15.0	55.0	49.9	17.8
jun	27	2460122.75	13	0	32.4	-04	56	6.8	61.8	15.2	55.7	59.7	18.5
jun	28	2460123.75	13	46	7.5	-10	38	3.4	60.9	15.4	56.4	69.4	19.2
jun	29	2460124.75	14	34	52.3	-16	3	38.6	60.0	15.6	57.3	78.6	19.9
jun	30	2460125.75	15	27	55.4	-20	54	13.1	59.0	15.9	58.2	86.7	20.7
jul	1	2460126.75	16	26	1.2	-24	45	55.5	58.2	16.1	59.1	93.4	21.6
jul	2	2460127.75	17	28	58.5	-27	11	53.7	57.4	16.3	59.9	98.0	22.6
jul	3	2460128.75	18	35	13.8	-27	48	37.5	56.8	16.5	60.5	99.9	23.7

## Luna, 2023

Efermídes a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis DT	sed	pax	fase	hp h	
jul	4	2460129.75	19	42	3.4	-26	24	56.0	56.5	16.6	60.8	99.0	0.7
jul	5	2460130.75	20	46	38.1	-23	7	32.3	56.5	16.6	60.9	95.2	1.7
jul	6	2460131.75	21	47	12.7	-18	18	28.4	56.7	16.5	60.7	88.7	2.7
jul	7	2460132.75	22	43	27.3	-12	26	54.6	57.1	16.4	60.2	80.0	3.5
jul	8	2460133.75	23	36	3.6	-06	1	39.6	57.7	16.2	59.6	69.8	4.3
jul	9	2460134.75	0	26	12.5	+00	32	32.2	58.4	16.0	58.9	58.9	5.1
jul	10	2460135.75	1	15	11.0	+06	55	30.0	59.1	15.8	58.1	47.8	5.9
jul	11	2460136.75	2	4	11.1	+12	50	32.2	59.9	15.6	57.4	37.1	6.6
jul	12	2460137.75	2	54	11.4	+18	3	5.1	60.6	15.4	56.7	27.3	7.4
jul	13	2460138.75	3	45	50.3	+22	19	51.6	61.3	15.3	56.1	18.6	8.2
jul	14	2460139.75	4	39	17.2	+25	28	56.4	61.9	15.1	55.6	11.4	9.0
jul	15	2460140.75	5	34	6.3	+27	20	56.5	62.4	15.0	55.1	5.9	9.8
jul	16	2460141.75	6	29	19.7	+27	50	48.8	62.8	14.9	54.7	2.1	10.7
jul	17	2460142.75	7	23	43.7	+26	59	14.9	63.2	14.8	54.4	0.2	11.5
jul	18	2460143.75	8	16	12.6	+24	52	38.6	63.5	14.8	54.2	0.2	12.4
jul	19	2460144.75	9	6	7.4	+21	41	31.5	63.6	14.7	54.0	2.0	13.1
jul	20	2460145.75	9	53	21.8	+17	38	16.1	63.7	14.7	54.0	5.5	13.8
jul	21	2460146.75	10	38	17.1	+12	55	12.7	63.6	14.7	54.0	10.6	14.5
jul	22	2460147.75	11	21	33.4	+07	43	38.9	63.4	14.8	54.2	17.1	15.2
jul	23	2460148.75	12	4	2.6	+02	13	43.4	63.1	14.8	54.5	24.8	15.8
jul	24	2460149.75	12	46	44.3	-03	25	1.7	62.5	15.0	55.0	33.6	16.5
jul	25	2460150.75	13	30	44.1	-09	2	39.7	61.9	15.1	55.6	43.1	17.1
jul	26	2460151.75	14	17	12.4	-14	27	28.0	61.0	15.3	56.3	53.2	17.8
jul	27	2460152.75	15	7	20.2	-19	24	24.6	60.1	15.6	57.2	63.4	18.6
jul	28	2460153.75	16	2	7.2	-23	33	52.5	59.1	15.8	58.2	73.5	19.5
jul	29	2460154.75	17	1	58.2	-26	31	50.1	58.2	16.1	59.1	82.7	20.4
jul	30	2460155.75	18	6	12.1	-27	53	11.1	57.3	16.3	60.0	90.6	21.4
jul	31	2460156.75	19	12	47.5	-27	19	1.9	56.6	16.5	60.7	96.4	22.4
ago	1	2460157.75	20	18	56.3	-24	44	57.8	56.2	16.7	61.2	99.5	23.5
ago	2	2460158.75	21	22	14.2	-20	24	13.1	56.0	16.7	61.4	99.7	0.5
ago	3	2460159.75	22	21	33.0	-14	43	12.3	56.2	16.7	61.2	96.8	1.4
ago	4	2460160.75	23	17	0.4	-08	13	22.5	56.6	16.5	60.7	91.0	2.2
ago	5	2460161.75	0	9	30.8	-01	24	41.9	57.3	16.4	60.0	83.1	3.1
ago	6	2460162.75	1	0	16.7	+05	17	24.5	58.1	16.1	59.2	73.6	3.8
ago	7	2460163.75	1	50	30.4	+11	32	27.3	59.0	15.9	58.3	63.2	4.6
ago	8	2460164.75	2	41	13.7	+17	3	56.2	59.9	15.6	57.4	52.5	5.4
ago	9	2460165.75	3	33	9.7	+21	38	13.1	60.8	15.4	56.6	42.0	6.2
ago	10	2460166.75	4	26	34.9	+25	3	59.4	61.5	15.2	55.9	32.1	7.0
ago	11	2460167.75	5	21	13.5	+27	12	39.1	62.2	15.1	55.3	23.2	7.9
ago	12	2460168.75	6	16	18.9	+27	59	25.6	62.8	14.9	54.8	15.5	8.7
ago	13	2460169.75	7	10	45.7	+27	24	28.8	63.2	14.8	54.4	9.2	9.6
ago	14	2460170.75	8	3	31.0	+25	33	6.8	63.5	14.8	54.2	4.4	10.4
ago	15	2460171.75	8	53	53.2	+22	34	42.9	63.7	14.7	54.0	1.3	11.1
ago	16	2460172.75	9	41	39.4	+18	40	57.9	63.7	14.7	53.9	0.0	11.9
ago	17	2460173.75	10	27	3.7	+14	4	8.7	63.7	14.7	54.0	0.5	12.6
ago	18	2460174.75	11	10	39.4	+08	56	4.6	63.6	14.7	54.1	2.8	13.2

## Luna, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis DT	sed	pax	fas fase	hp h	
ago	19	2460175.75	11	53	12.1	+03	27	44.9	63.3	14.8	54.3	6.8	13.9
ago	20	2460176.75	12	35	35.0	-02	10	28.3	63.0	14.9	54.6	12.4	14.5
ago	21	2460177.75	13	18	47.0	-07	48	13.9	62.5	15.0	55.0	19.4	15.2
ago	22	2460178.75	14	3	51.4	-13	14	15.9	61.9	15.1	55.6	27.8	15.8
ago	23	2460179.75	14	51	52.8	-18	15	15.4	61.1	15.3	56.3	37.2	16.6
ago	24	2460180.75	15	43	50.3	-22	34	44.2	60.3	15.5	57.0	47.4	17.4
ago	25	2460181.75	16	40	21.4	-25	52	39.1	59.4	15.8	57.9	58.1	18.3
ago	26	2460182.75	17	41	18.0	-27	46	46.7	58.4	16.0	58.8	68.8	19.2
ago	27	2460183.75	18	45	26.1	-27	57	6.1	57.6	16.3	59.7	78.9	20.2
ago	28	2460184.75	19	50	34.2	-26	12	30.1	56.8	16.5	60.5	87.7	21.2
ago	29	2460185.75	20	54	20.9	-22	36	6.2	56.3	16.6	61.1	94.5	22.2
ago	30	2460186.75	21	55	10.6	-17	25	27.5	56.0	16.7	61.4	98.8	23.2
ago	31	2460187.75	22	52	36.7	-11	7	46.2	56.1	16.7	61.3	100.0	0.1
sep	1	2460188.75	23	47	9.1	-04	13	45.7	56.4	16.6	61.0	98.1	0.9
sep	2	2460189.75	0	39	47.0	+02	47	1.6	57.0	16.4	60.3	93.5	1.7
sep	3	2460190.75	1	31	38.0	+09	28	44.1	57.8	16.2	59.5	86.5	2.5
sep	4	2460191.75	2	23	43.1	+15	29	57.5	58.7	15.9	58.6	77.9	3.3
sep	5	2460192.75	3	16	46.8	+20	33	32.5	59.7	15.7	57.6	68.2	4.1
sep	6	2460193.75	4	11	7.6	+24	26	16.0	60.7	15.4	56.7	58.0	5.0
sep	7	2460194.75	5	6	32.5	+26	58	54.9	61.5	15.2	55.9	47.8	5.8
sep	8	2460195.75	6	2	17.7	+28	6	52.0	62.3	15.0	55.2	38.0	6.7
sep	9	2460196.75	6	57	20.8	+27	50	37.3	62.9	14.9	54.7	28.8	7.6
sep	10	2460197.75	7	50	40.9	+26	15	37.8	63.3	14.8	54.3	20.5	8.4
sep	11	2460198.75	8	41	37.0	+23	31	5.8	63.6	14.7	54.1	13.4	9.2
sep	12	2460199.75	9	29	55.8	+19	48	18.0	63.7	14.7	54.0	7.6	9.9
sep	13	2460200.75	10	15	49.9	+15	19	7.0	63.7	14.7	54.0	3.4	10.6
sep	14	2460201.75	10	59	50.8	+10	15	9.4	63.6	14.7	54.1	0.8	11.3
sep	15	2460202.75	11	42	41.6	+04	47	32.2	63.3	14.8	54.3	0.0	11.9
sep	16	2460203.75	12	25	12.3	-00	52	54.6	63.0	14.9	54.6	1.0	12.6
sep	17	2460204.75	13	8	17.6	-06	35	9.8	62.6	15.0	54.9	3.9	13.2
sep	18	2460205.75	13	52	55.0	-12	7	22.6	62.1	15.1	55.3	8.6	13.9
sep	19	2460206.75	14	40	2.6	-17	16	8.3	61.6	15.2	55.8	15.0	14.6
sep	20	2460207.75	15	30	33.1	-21	45	48.3	61.0	15.4	56.4	22.9	15.4
sep	21	2460208.75	16	25	2.0	-25	18	18.6	60.3	15.5	57.0	32.3	16.2
sep	22	2460209.75	17	23	29.1	-27	34	10.4	59.5	15.7	57.8	42.6	17.1
sep	23	2460210.75	18	25	2.2	-28	15	27.8	58.8	15.9	58.5	53.6	18.1
sep	24	2460211.75	19	27	59.5	-27	10	27.8	58.0	16.1	59.3	64.8	19.1
sep	25	2460212.75	20	30	21.2	-24	17	55.3	57.4	16.3	59.9	75.5	20.1
sep	26	2460213.75	21	30	34.3	-19	48	18.1	56.8	16.5	60.5	84.9	21.0
sep	27	2460214.75	22	28	0.7	-14	1	31.6	56.5	16.6	60.8	92.5	21.9
sep	28	2460215.75	23	22	54.9	-07	23	9.6	56.4	16.6	60.9	97.6	22.7
sep	29	2460216.75	0	16	5.1	-00	20	55.8	56.6	16.5	60.7	99.9	23.6
sep	30	2460217.75	1	8	34.0	+06	37	46.1	57.1	16.4	60.2	99.2	0.4
oct	1	2460218.75	2	1	22.4	+13	7	34.4	57.8	16.2	59.5	95.8	1.2
oct	2	2460219.75	2	55	17.5	+18	46	19.0	58.6	16.0	58.7	90.1	2.0
oct	3	2460220.75	3	50	41.2	+23	15	57.3	59.6	15.7	57.7	82.6	2.9

## Luna, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis DT	sed	pax	fase	hp h	
oct	4	2460221.75	4	47	21.1	+26	23	31.2	60.5	15.5	56.8	73.8	3.7
oct	5	2460222.75	5	44	29.9	+28	2	6.6	61.4	15.3	56.0	64.3	4.6
oct	6	2460223.75	6	40	57.8	+28	11	27.2	62.2	15.1	55.3	54.5	5.5
oct	7	2460224.75	7	35	35.8	+26	57	19.5	62.8	14.9	54.7	44.7	6.4
oct	8	2460225.75	8	27	37.1	+24	29	44.7	63.2	14.8	54.4	35.3	7.2
oct	9	2460226.75	9	16	46.5	+21	0	41.7	63.5	14.7	54.1	26.5	7.9
oct	10	2460227.75	10	3	17.5	+16	42	18.4	63.6	14.7	54.1	18.6	8.6
oct	11	2460228.75	10	47	44.0	+11	46	0.3	63.5	14.8	54.2	11.8	9.3
oct	12	2460229.75	11	30	51.4	+06	22	27.2	63.2	14.8	54.4	6.4	9.9
oct	13	2460230.75	12	13	31.6	+00	42	2.8	62.9	14.9	54.7	2.5	10.6
oct	14	2460231.75	12	56	40.1	-05	4	23.2	62.5	15.0	55.0	0.4	11.2
oct	15	2460232.75	13	41	14.3	-10	44	47.9	62.0	15.1	55.4	0.1	11.9
oct	16	2460233.75	14	28	10.9	-16	5	14.4	61.5	15.2	55.9	1.9	12.6
oct	17	2460234.75	15	18	20.3	-20	49	24.5	61.0	15.4	56.4	5.7	13.4
oct	18	2460235.75	16	12	15.2	-24	38	48.2	60.4	15.5	56.9	11.5	14.2
oct	19	2460236.75	17	9	53.7	-27	14	5.3	59.9	15.6	57.4	19.1	15.1
oct	20	2460237.75	18	10	25.0	-28	18	5.1	59.4	15.8	57.9	28.3	16.1
oct	21	2460238.75	19	12	12.4	-27	39	55.0	58.8	15.9	58.4	38.8	17.0
oct	22	2460239.75	20	13	22.6	-25	18	21.6	58.3	16.1	58.9	50.0	18.0
oct	23	2460240.75	21	12	27.5	-21	22	17.4	57.9	16.2	59.4	61.4	18.9
oct	24	2460241.75	22	8	49.9	-16	8	15.9	57.5	16.3	59.8	72.3	19.8
oct	25	2460242.75	23	2	42.9	-09	57	16.3	57.3	16.3	60.0	82.2	20.6
oct	26	2460243.75	23	54	53.5	-03	12	21.2	57.2	16.4	60.1	90.3	21.4
oct	27	2460244.75	0	46	24.9	+03	42	36.0	57.3	16.3	60.0	96.1	22.2
oct	28	2460245.75	1	38	22.6	+10	23	30.4	57.7	16.2	59.6	99.3	23.0
oct	29	2460246.75	2	31	42.1	+16	26	50.3	58.2	16.1	59.1	99.9	23.8
oct	30	2460247.75	3	26	56.7	+21	30	51.1	58.9	15.9	58.4	97.8	0.7
oct	31	2460248.75	4	24	4.3	+25	17	27.5	59.7	15.7	57.6	93.5	1.6
nov	1	2460249.75	5	22	20.4	+27	34	32.6	60.5	15.5	56.8	87.2	2.5
nov	2	2460250.75	6	20	26.6	+28	17	52.5	61.4	15.3	56.0	79.6	3.4
nov	3	2460251.75	7	16	55.4	+27	31	23.8	62.1	15.1	55.4	70.9	4.3
nov	4	2460252.75	8	10	40.9	+25	25	19.8	62.7	14.9	54.8	61.6	5.1
nov	5	2460253.75	9	1	14.5	+22	12	59.7	63.2	14.8	54.4	52.1	5.9
nov	6	2460254.75	9	48	44.6	+18	7	58.4	63.4	14.8	54.2	42.6	6.6
nov	7	2460255.75	10	33	45.4	+13	22	32.9	63.4	14.8	54.2	33.4	7.3
nov	8	2460256.75	11	17	5.9	+08	7	26.2	63.3	14.8	54.3	24.8	7.9
nov	9	2460257.75	11	59	42.4	+02	32	22.1	62.9	14.9	54.6	17.0	8.6
nov	10	2460258.75	12	42	34.9	-03	12	54.5	62.5	15.0	55.0	10.4	9.2
nov	11	2460259.75	13	26	45.6	-08	57	29.0	61.9	15.1	55.5	5.2	9.9
nov	12	2460260.75	14	13	16.4	-14	28	9.8	61.3	15.3	56.1	1.6	10.6
nov	13	2460261.75	15	3	4.4	-19	28	37.9	60.7	15.4	56.6	0.1	11.4
nov	14	2460262.75	15	56	49.5	-23	39	21.8	60.1	15.6	57.2	0.7	12.2
nov	15	2460263.75	16	54	36.1	-26	39	1.7	59.6	15.7	57.7	3.6	13.1
nov	16	2460264.75	17	55	34.8	-28	8	0.3	59.1	15.8	58.1	8.8	14.1
nov	17	2460265.75	18	58	1.0	-27	53	30.0	58.8	15.9	58.5	16.1	15.0
nov	18	2460266.75	19	59	46.8	-25	53	43.9	58.5	16.0	58.8	25.2	16.0

## Luna, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis DT	sed	pax	fas fase	hp h	
nov	19	2460267.75	20	59	9.4	-22	18	18.4	58.2	16.1	59.0	35.6	16.9
nov	20	2460268.75	21	55	22.9	-17	24	45.7	58.1	16.1	59.2	46.9	17.8
nov	21	2460269.75	22	48	38.3	-11	34	4.0	58.0	16.1	59.3	58.4	18.6
nov	22	2460270.75	23	39	44.6	-05	7	39.0	58.0	16.1	59.3	69.4	19.4
nov	23	2460271.75	0	29	49.3	+01	33	36.2	58.1	16.1	59.2	79.4	20.2
nov	24	2460272.75	1	20	4.0	+08	9	8.4	58.3	16.1	59.0	87.8	20.9
nov	25	2460273.75	2	11	34.6	+14	18	16.3	58.6	16.0	58.7	94.2	21.7
nov	26	2460274.75	3	5	10.0	+19	40	15.2	59.0	15.9	58.3	98.3	22.6
nov	27	2460275.75	4	1	8.6	+23	55	24.0	59.6	15.7	57.7	100.0	23.4
nov	28	2460276.75	4	59	5.2	+26	47	28.8	60.2	15.6	57.1	99.2	0.3
nov	29	2460277.75	5	57	49.0	+28	6	49.5	60.9	15.4	56.5	96.3	1.2
nov	30	2460278.75	6	55	42.5	+27	52	34.1	61.6	15.2	55.8	91.5	2.1
dic	1	2460279.75	7	51	15.5	+26	12	21.7	62.2	15.0	55.2	85.1	3.0
dic	2	2460280.75	8	43	34.3	+23	19	26.9	62.8	14.9	54.8	77.4	3.8
dic	3	2460281.75	9	32	29.0	+19	28	54.3	63.2	14.8	54.4	68.9	4.6
dic	4	2460282.75	10	18	25.1	+14	54	51.2	63.4	14.8	54.3	59.8	5.3
dic	5	2460283.75	11	2	9.4	+09	49	19.9	63.4	14.8	54.2	50.4	5.9
dic	6	2460284.75	11	44	39.5	+04	22	26.8	63.2	14.8	54.4	40.9	6.6
dic	7	2460285.75	12	26	58.5	-01	16	42.9	62.8	14.9	54.8	31.7	7.2
dic	8	2460286.75	13	10	12.4	-06	58	48.4	62.2	15.1	55.3	23.1	7.9
dic	9	2460287.75	13	55	29.4	-12	32	45.7	61.5	15.2	55.9	15.3	8.5
dic	10	2460288.75	14	43	56.4	-17	44	23.1	60.8	15.4	56.6	8.7	9.3
dic	11	2460289.75	15	36	29.8	-22	15	20.7	60.0	15.6	57.3	3.7	10.1
dic	12	2460290.75	16	33	36.9	-25	43	29.1	59.3	15.8	58.0	0.7	11.0
dic	13	2460291.75	17	34	50.5	-27	45	38.1	58.7	16.0	58.6	0.1	11.9
dic	14	2460292.75	18	38	33.8	-28	3	23.7	58.2	16.1	59.1	2.0	12.9
dic	15	2460293.75	19	42	21.9	-26	29	46.7	57.9	16.2	59.4	6.6	13.9
dic	16	2460294.75	20	43	58.2	-23	12	10.4	57.7	16.2	59.6	13.5	14.9
dic	17	2460295.75	21	42	4.7	-18	29	21.9	57.7	16.2	59.6	22.4	15.8
dic	18	2460296.75	22	36	33.9	-12	45	22.2	57.8	16.2	59.5	32.8	16.6
dic	19	2460297.75	23	28	9.1	-06	24	20.3	58.0	16.1	59.2	44.0	17.4
dic	20	2460298.75	0	17	58.7	+00	11	45.0	58.3	16.1	58.9	55.3	18.2
dic	21	2460299.75	1	7	19.0	+06	43	10.1	58.7	16.0	58.6	66.3	19.0
dic	22	2460300.75	1	57	22.6	+12	51	31.8	59.1	15.9	58.2	76.3	19.7
dic	23	2460301.75	2	49	9.3	+18	18	53.7	59.5	15.7	57.8	84.9	20.5
dic	24	2460302.75	3	43	15.3	+22	47	37.9	60.0	15.6	57.3	91.8	21.4
dic	25	2460303.75	4	39	39.3	+26	1	34.8	60.5	15.5	56.9	96.7	22.2
dic	26	2460304.75	5	37	33.8	+27	48	35.1	61.0	15.4	56.4	99.4	23.1
dic	27	2460305.75	6	35	32.7	+28	3	28.5	61.5	15.2	55.9	99.9	0.0
dic	28	2460306.75	7	31	58.6	+26	49	35.2	62.1	15.1	55.4	98.4	0.9
dic	29	2460307.75	8	25	36.4	+24	17	34.3	62.6	15.0	54.9	95.0	1.7
dic	30	2460308.75	9	15	53.2	+20	42	7.5	63.0	14.9	54.6	89.9	2.5
dic	31	2460309.75	10	2	56.5	+16	18	33.8	63.3	14.8	54.3	0.0	10.0
ene	1	2460310.75	10	47	22.4	+11	20	40.7	63.5	14.8	54.2	0.0	10.8
ene	2	2460311.75	11	40	28.9	+04	41	35.5	65.8	14.2	52.3	0.0	11.7

## Mercurio, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\delta$ °	"	dis UA	hp h	
ene	1	2459945.75	19	41	1.73	-20	26	56.22	0.7442	12.8
ene	2	2459946.75	19	38	2.75	-20	14	18.05	0.7258	12.7
ene	3	2459947.75	19	34	17.42	-20	3	19.82	0.7096	12.5
ene	4	2459948.75	19	29	50.66	-19	54	4.79	0.6959	12.4
ene	5	2459949.75	19	24	49.47	-19	46	33.26	0.6851	12.2
ene	6	2459950.75	19	19	22.72	-19	40	43.12	0.6772	12.1
ene	7	2459951.75	19	13	40.67	-19	36	30.66	0.6723	11.9
ene	8	2459952.75	19	7	54.25	-19	33	51.38	0.6705	11.8
ene	9	2459953.75	19	2	14.35	-19	32	40.56	0.6716	11.6
ene	10	2459954.75	18	56	51.03	-19	32	53.54	0.6755	11.4
ene	11	2459955.75	18	51	52.90	-19	34	25.66	0.6821	11.3
ene	12	2459956.75	18	47	26.81	-19	37	11.96	0.6911	11.2
ene	13	2459957.75	18	43	37.64	-19	41	6.96	0.7021	11.0
ene	14	2459958.75	18	40	28.45	-19	46	4.35	0.7150	10.9
ene	15	2459959.75	18	38	0.60	-19	51	56.93	0.7293	10.8
ene	16	2459960.75	18	36	14.14	-19	58	36.71	0.7450	10.7
ene	17	2459961.75	18	35	8.08	-20	5	55.04	0.7617	10.6
ene	18	2459962.75	18	34	40.68	-20	13	42.91	0.7792	10.6
ene	19	2459963.75	18	34	49.76	-20	21	51.18	0.7973	10.5
ene	20	2459964.75	18	35	32.84	-20	30	10.82	0.8158	10.4
ene	21	2459965.75	18	36	47.34	-20	38	33.09	0.8345	10.4
ene	22	2459966.75	18	38	30.70	-20	46	49.70	0.8535	10.4
ene	23	2459967.75	18	40	40.42	-20	54	52.89	0.8724	10.3
ene	24	2459968.75	18	43	14.14	-21	2	35.51	0.8914	10.3
ene	25	2459969.75	18	46	9.67	-21	9	50.99	0.9102	10.3
ene	26	2459970.75	18	49	24.99	-21	16	33.42	0.9288	10.3
ene	27	2459971.75	18	52	58.23	-21	22	37.44	0.9471	10.3
ene	28	2459972.75	18	56	47.72	-21	27	58.28	0.9652	10.3
ene	29	2459973.75	19	0	51.93	-21	32	31.67	0.9830	10.3
ene	30	2459974.75	19	5	9.47	-21	36	13.79	1.0005	10.3
ene	31	2459975.75	19	9	39.10	-21	39	1.28	1.0175	10.3
feb	1	2459976.75	19	14	19.70	-21	40	51.12	1.0343	10.3
feb	2	2459977.75	19	19	10.26	-21	41	40.66	1.0506	10.3
feb	3	2459978.75	19	24	9.86	-21	41	27.55	1.0665	10.3
feb	4	2459979.75	19	29	17.69	-21	40	9.70	1.0821	10.3
feb	5	2459980.75	19	34	33.00	-21	37	45.27	1.0972	10.4
feb	6	2459981.75	19	39	55.13	-21	34	12.63	1.1119	10.4
feb	7	2459982.75	19	45	23.48	-21	29	30.33	1.1263	10.4
feb	8	2459983.75	19	50	57.51	-21	23	37.11	1.1402	10.4
feb	9	2459984.75	19	56	36.72	-21	16	31.84	1.1537	10.5
feb	10	2459985.75	20	2	20.67	-21	8	13.55	1.1668	10.5
feb	11	2459986.75	20	8	8.97	-20	58	41.37	1.1795	10.5
feb	12	2459987.75	20	14	1.24	-20	47	54.54	1.1918	10.6
feb	13	2459988.75	20	19	57.17	-20	35	52.42	1.2038	10.6
feb	14	2459989.75	20	25	56.46	-20	22	34.43	1.2153	10.6
feb	15	2459990.75	20	31	58.84	-20	8	0.10	1.2264	10.7



## Mercurio, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\circ$	$\delta$ "	"	dis UA	hp h
feb	16	2459991.75	20	38	4.07	-19	52	9.02	1.2372	10.7
feb	17	2459992.75	20	44	11.93	-19	35	0.84	1.2475	10.7
feb	18	2459993.75	20	50	22.23	-19	16	35.27	1.2575	10.8
feb	19	2459994.75	20	56	34.78	-18	56	52.07	1.2671	10.8
feb	20	2459995.75	21	2	49.45	-18	35	51.04	1.2763	10.9
feb	21	2459996.75	21	9	6.10	-18	13	32.01	1.2851	10.9
feb	22	2459997.75	21	15	24.62	-17	49	54.85	1.2935	10.9
feb	23	2459998.75	21	21	44.91	-17	24	59.45	1.3015	11.0
feb	24	2459999.75	21	28	6.90	-16	58	45.76	1.3092	11.0
feb	25	2460000.75	21	34	30.54	-16	31	13.75	1.3164	11.1
feb	26	2460001.75	21	40	55.77	-16	2	23.42	1.3232	11.1
feb	27	2460002.75	21	47	22.58	-15	32	14.80	1.3296	11.1
feb	28	2460003.75	21	53	50.94	-15	0	47.96	1.3356	11.2
mar	1	2460004.75	22	0	20.84	-14	28	2.98	1.3412	11.2
mar	2	2460005.75	22	6	52.31	-13	54	0.01	1.3463	11.3
mar	3	2460006.75	22	13	25.36	-13	18	39.22	1.3509	11.3
mar	4	2460007.75	22	20	0.01	-12	42	0.83	1.3551	11.4
mar	5	2460008.75	22	26	36.32	-12	4	5.14	1.3588	11.4
mar	6	2460009.75	22	33	14.33	-11	24	52.51	1.3620	11.4
mar	7	2460010.75	22	39	54.09	-10	44	23.40	1.3646	11.5
mar	8	2460011.75	22	46	35.68	-10	2	38.36	1.3667	11.5
mar	9	2460012.75	22	53	19.15	-9	19	38.10	1.3682	11.6
mar	10	2460013.75	23	0	4.59	-8	35	23.45	1.3691	11.6
mar	11	2460014.75	23	6	52.04	-7	49	55.49	1.3693	11.7
mar	12	2460015.75	23	13	41.59	-7	3	15.47	1.3688	11.7
mar	13	2460016.75	23	20	33.28	-6	15	24.97	1.3676	11.8
mar	14	2460017.75	23	27	27.16	-5	26	25.87	1.3656	11.8
mar	15	2460018.75	23	34	23.24	-4	36	20.45	1.3627	11.9
mar	16	2460019.75	23	41	21.52	-3	45	11.45	1.3591	11.9
mar	17	2460020.75	23	48	21.97	-2	53	2.12	1.3544	12.0
mar	18	2460021.75	23	55	24.52	-1	59	56.28	1.3488	12.0
mar	19	2460022.75	0	2	29.03	-1	5	58.52	1.3422	12.1
mar	20	2460023.75	0	9	35.33	0	11	14.19	1.3345	12.1
mar	21	2460024.75	0	16	43.17	+0	44	10.54	1.3256	12.2
mar	22	2460025.75	0	23	52.21	+1	40	8.58	1.3156	12.2
mar	23	2460026.75	0	31	2.04	+2	36	31.84	1.3043	12.3
mar	24	2460027.75	0	38	12.13	+3	33	11.17	1.2917	12.3
mar	25	2460028.75	0	45	21.85	+4	29	56.38	1.2779	12.4
mar	26	2460029.75	0	52	30.44	+5	26	36.27	1.2627	12.4
mar	27	2460030.75	0	59	37.03	+6	22	58.66	1.2462	12.5
mar	28	2460031.75	1	6	40.63	+7	18	50.58	1.2284	12.6
mar	29	2460032.75	1	13	40.13	+8	13	58.42	1.2093	12.6
mar	30	2460033.75	1	20	34.33	+9	8	8.14	1.1891	12.7
mar	31	2460034.75	1	27	21.93	+10	1	5.59	1.1677	12.7
abr	1	2460035.75	1	34	1.59	+10	52	36.77	1.1452	12.7
abr	2	2460036.75	1	40	31.92	+11	42	28.12	1.1219	12.8

## Mercurio, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
abr	3	2460037.75	1	46	51.50	+12	30	26.78	1.0977	12.8
abr	4	2460038.75	1	52	58.94	+13	16	20.85	1.0728	12.9
abr	5	2460039.75	1	58	52.88	+13	59	59.56	1.0474	12.9
abr	6	2460040.75	2	4	32.00	+14	41	13.32	1.0216	12.9
abr	7	2460041.75	2	9	55.05	+15	19	53.82	0.9955	13.0
abr	8	2460042.75	2	15	0.86	+15	55	54.00	0.9694	13.0
abr	9	2460043.75	2	19	48.36	+16	29	7.90	0.9433	13.0
abr	10	2460044.75	2	24	16.53	+16	59	30.65	0.9174	13.0
abr	11	2460045.75	2	28	24.48	+17	26	58.25	0.8918	13.0
abr	12	2460046.75	2	32	11.39	+17	51	27.46	0.8667	13.0
abr	13	2460047.75	2	35	36.56	+18	12	55.67	0.8420	13.0
abr	14	2460048.75	2	38	39.37	+18	31	20.79	0.8180	13.0
abr	15	2460049.75	2	41	19.33	+18	46	41.13	0.7947	12.9
abr	16	2460050.75	2	43	36.06	+18	58	55.42	0.7722	12.9
abr	17	2460051.75	2	45	29.33	+19	8	2.76	0.7505	12.9
abr	18	2460052.75	2	46	59.04	+19	14	2.68	0.7298	12.8
abr	19	2460053.75	2	48	5.27	+19	16	55.24	0.7101	12.8
abr	20	2460054.75	2	48	48.29	+19	16	41.14	0.6914	12.7
abr	21	2460055.75	2	49	8.57	+19	13	21.96	0.6738	12.7
abr	22	2460056.75	2	49	6.82	+19	7	0.30	0.6574	12.6
abr	23	2460057.75	2	48	43.97	+18	57	40.12	0.6422	12.5
abr	24	2460058.75	2	48	1.22	+18	45	26.92	0.6282	12.5
abr	25	2460059.75	2	47	0.02	+18	30	28.06	0.6154	12.4
abr	26	2460060.75	2	45	42.10	+18	12	52.94	0.6039	12.3
abr	27	2460061.75	2	44	9.40	+17	52	53.20	0.5938	12.2
abr	28	2460062.75	2	42	24.10	+17	30	42.78	0.5849	12.1
abr	29	2460063.75	2	40	28.56	+17	6	37.87	0.5774	12.0
abr	30	2460064.75	2	38	25.27	+16	40	56.81	0.5712	11.9
may	1	2460065.75	2	36	16.83	+16	13	59.79	0.5663	11.8
may	2	2460066.75	2	34	5.86	+15	46	8.46	0.5627	11.7
may	3	2460067.75	2	31	54.93	+15	17	45.43	0.5604	11.6
may	4	2460068.75	2	29	46.56	+14	49	13.73	0.5594	11.5
may	5	2460069.75	2	27	43.12	+14	20	56.22	0.5596	11.4
may	6	2460070.75	2	25	46.81	+13	53	14.99	0.5610	11.3
may	7	2460071.75	2	23	59.59	+13	26	30.84	0.5635	11.2
may	8	2460072.75	2	22	23.22	+13	1	2.86	0.5672	11.1
may	9	2460073.75	2	20	59.16	+12	37	8.02	0.5719	11.0
may	10	2460074.75	2	19	48.66	+12	15	1.00	0.5776	10.9
may	11	2460075.75	2	18	52.70	+11	54	54.04	0.5843	10.9
may	12	2460076.75	2	18	12.04	+11	36	56.97	0.5919	10.8
may	13	2460077.75	2	17	47.20	+11	21	17.23	0.6003	10.7
may	14	2460078.75	2	17	38.53	+11	8	0.09	0.6096	10.6
may	15	2460079.75	2	17	46.23	+10	57	8.80	0.6196	10.6
may	16	2460080.75	2	18	10.32	+10	48	44.83	0.6303	10.5
may	17	2460081.75	2	18	50.74	+10	42	48.12	0.6417	10.5
may	18	2460082.75	2	19	47.32	+10	39	17.29	0.6538	10.4

## Mercurio, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
may	19	2460083.75	2	20	59.82	+10	38	9.87	0.6664	10.4
may	20	2460084.75	2	22	27.97	+10	39	22.50	0.6796	10.3
may	21	2460085.75	2	24	11.44	+10	42	51.13	0.6933	10.3
may	22	2460086.75	2	26	9.89	+10	48	31.17	0.7075	10.3
may	23	2460087.75	2	28	22.98	+10	56	17.61	0.7222	10.2
may	24	2460088.75	2	30	50.37	+11	6	5.14	0.7374	10.2
may	25	2460089.75	2	33	31.74	+11	17	48.28	0.7529	10.2
may	26	2460090.75	2	36	26.77	+11	31	21.37	0.7689	10.2
may	27	2460091.75	2	39	35.20	+11	46	38.70	0.7852	10.2
may	28	2460092.75	2	42	56.76	+12	3	34.51	0.8019	10.2
may	29	2460093.75	2	46	31.24	+12	22	3.03	0.8190	10.1
may	30	2460094.75	2	50	18.45	+12	41	58.49	0.8363	10.1
may	31	2460095.75	2	54	18.24	+13	3	15.12	0.8540	10.1
jun	1	2460096.75	2	58	30.50	+13	25	47.16	0.8719	10.1
jun	2	2460097.75	3	2	55.16	+13	49	28.82	0.8901	10.2
jun	3	2460098.75	3	7	32.17	+14	14	14.30	0.9086	10.2
jun	4	2460099.75	3	12	21.54	+14	39	57.74	0.9272	10.2
jun	5	2460100.75	3	17	23.29	+15	6	33.17	0.9461	10.2
jun	6	2460101.75	3	22	37.48	+15	33	54.50	0.9651	10.2
jun	7	2460102.75	3	28	4.21	+16	1	55.47	0.9843	10.2
jun	8	2460103.75	3	33	43.60	+16	30	29.60	1.0035	10.3
jun	9	2460104.75	3	39	35.77	+16	59	30.17	1.0228	10.3
jun	10	2460105.75	3	45	40.89	+17	28	50.13	1.0422	10.3
jun	11	2460106.75	3	51	59.11	+17	58	22.12	1.0615	10.4
jun	12	2460107.75	3	58	30.62	+18	27	58.38	1.0808	10.4
jun	13	2460108.75	4	5	15.57	+18	57	30.68	1.0999	10.5
jun	14	2460109.75	4	12	14.09	+19	26	50.35	1.1188	10.5
jun	15	2460110.75	4	19	26.28	+19	55	48.16	1.1375	10.6
jun	16	2460111.75	4	26	52.21	+20	24	14.35	1.1558	10.6
jun	17	2460112.75	4	34	31.85	+20	51	58.63	1.1737	10.7
jun	18	2460113.75	4	42	25.11	+21	18	50.15	1.1911	10.8
jun	19	2460114.75	4	50	31.76	+21	44	37.60	1.2079	10.8
jun	20	2460115.75	4	58	51.48	+22	9	9.29	1.2239	10.9
jun	21	2460116.75	5	7	23.78	+22	32	13.28	1.2391	11.0
jun	22	2460117.75	5	16	8.00	+22	53	37.55	1.2534	11.1
jun	23	2460118.75	5	25	3.34	+23	13	10.23	1.2667	11.1
jun	24	2460119.75	5	34	8.77	+23	30	39.87	1.2789	11.2
jun	25	2460120.75	5	43	23.13	+23	45	55.70	1.2898	11.3
jun	26	2460121.75	5	52	45.07	+23	58	47.97	1.2995	11.4
jun	27	2460122.75	6	2	13.10	+24	9	8.21	1.3078	11.5
jun	28	2460123.75	6	11	45.62	+24	16	49.47	1.3147	11.6
jun	29	2460124.75	6	21	20.95	+24	21	46.57	1.3202	11.7
jun	30	2460125.75	6	30	57.39	+24	23	56.20	1.3242	11.8
jul	1	2460126.75	6	40	33.26	+24	23	16.94	1.3268	11.9
jul	2	2460127.75	6	50	6.91	+24	19	49.19	1.3280	12.0
jul	3	2460128.75	6	59	36.79	+24	13	35.28	1.3279	12.1

## Mercurio, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
jul	4	2460129.75	7	9	1.49	+24	4	39.04	1.3264	12.2
jul	5	2460130.75	7	18	19.73	+23	53	5.65	1.3237	12.2
jul	6	2460131.75	7	27	30.39	+23	39	1.42	1.3199	12.3
jul	7	2460132.75	7	36	32.53	+23	22	33.53	1.3149	12.4
jul	8	2460133.75	7	45	25.36	+23	3	49.81	1.3089	12.5
jul	9	2460134.75	7	54	8.24	+22	42	58.51	1.3020	12.6
jul	10	2460135.75	8	2	40.70	+22	20	8.14	1.2943	12.7
jul	11	2460136.75	8	11	2.37	+21	55	27.24	1.2858	12.7
jul	12	2460137.75	8	19	13.00	+21	29	4.34	1.2766	12.8
jul	13	2460138.75	8	27	12.45	+21	1	7.78	1.2668	12.9
jul	14	2460139.75	8	35	0.64	+20	31	45.66	1.2564	12.9
jul	15	2460140.75	8	42	37.58	+20	1	5.83	1.2455	13.0
jul	16	2460141.75	8	50	3.31	+19	29	15.78	1.2342	13.0
jul	17	2460142.75	8	57	17.94	+18	56	22.67	1.2224	13.1
jul	18	2460143.75	9	4	21.60	+18	22	33.33	1.2103	13.2
jul	19	2460144.75	9	11	14.42	+17	47	54.23	1.1979	13.2
jul	20	2460145.75	9	17	56.59	+17	12	31.55	1.1852	13.3
jul	21	2460146.75	9	24	28.26	+16	36	31.12	1.1723	13.3
jul	22	2460147.75	9	30	49.63	+15	59	58.50	1.1591	13.3
jul	23	2460148.75	9	37	0.86	+15	22	58.99	1.1458	13.4
jul	24	2460149.75	9	43	2.11	+14	45	37.65	1.1323	13.4
jul	25	2460150.75	9	48	53.56	+14	7	59.32	1.1186	13.4
jul	26	2460151.75	9	54	35.32	+13	30	8.66	1.1048	13.5
jul	27	2460152.75	10	0	7.54	+12	52	10.17	1.0909	13.5
jul	28	2460153.75	10	5	30.30	+12	14	8.22	1.0768	13.5
jul	29	2460154.75	10	10	43.70	+11	36	7.06	1.0627	13.5
jul	30	2460155.75	10	15	47.80	+10	58	10.87	1.0485	13.6
jul	31	2460156.75	10	20	42.62	+10	20	23.77	1.0342	13.6
ago	1	2460157.75	10	25	28.17	+9	42	49.84	1.0198	13.6
ago	2	2460158.75	10	30	4.42	+9	5	33.16	1.0054	13.6
ago	3	2460159.75	10	34	31.34	+8	28	37.79	0.9909	13.6
ago	4	2460160.75	10	38	48.82	+7	52	7.84	0.9764	13.6
ago	5	2460161.75	10	42	56.77	+7	16	7.51	0.9619	13.6
ago	6	2460162.75	10	46	55.02	+6	40	41.10	0.9473	13.6
ago	7	2460163.75	10	50	43.39	+6	5	53.06	0.9327	13.6
ago	8	2460164.75	10	54	21.65	+5	31	48.04	0.9181	13.6
ago	9	2460165.75	10	57	49.51	+4	58	30.89	0.9035	13.6
ago	10	2460166.75	11	1	6.66	+4	26	6.75	0.8889	13.6
ago	11	2460167.75	11	4	12.72	+3	54	41.02	0.8744	13.6
ago	12	2460168.75	11	7	7.29	+3	24	19.45	0.8599	13.6
ago	13	2460169.75	11	9	49.89	+2	55	8.16	0.8454	13.5
ago	14	2460170.75	11	12	20.03	+2	27	13.65	0.8310	13.5
ago	15	2460171.75	11	14	37.13	+2	0	42.90	0.8167	13.5
ago	16	2460172.75	11	16	40.60	+1	35	43.33	0.8026	13.5
ago	17	2460173.75	11	18	29.78	+1	12	22.88	0.7885	13.4
ago	18	2460174.75	11	20	3.99	+0	50	50.03	0.7747	13.4

## Mercurio, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
ago	19	2460175.75	11	21	22.53	+0	31	13.78	0.7611	13.3
ago	20	2460176.75	11	22	24.65	+0	13	43.63	0.7478	13.3
ago	21	2460177.75	11	23	9.62	-0	1	30.41	0.7347	13.2
ago	22	2460178.75	11	23	36.71	-0	14	17.93	0.7220	13.2
ago	23	2460179.75	11	23	45.25	-0	24	28.23	0.7098	13.1
ago	24	2460180.75	11	23	34.61	-0	31	50.49	0.6980	13.0
ago	25	2460181.75	11	23	4.30	-0	36	14.00	0.6869	13.0
ago	26	2460182.75	11	22	13.94	-0	37	28.52	0.6763	12.9
ago	27	2460183.75	11	21	3.39	-0	35	24.68	0.6665	12.8
ago	28	2460184.75	11	19	32.76	-0	29	54.50	0.6576	12.7
ago	29	2460185.75	11	17	42.47	-0	20	52.00	0.6496	12.6
ago	30	2460186.75	11	15	33.33	-0	8	13.90	0.6427	12.5
ago	31	2460187.75	11	13	6.61	+0	7	59.61	0.6370	12.4
sep	1	2460188.75	11	10	24.05	+0	27	44.21	0.6325	12.3
sep	2	2460189.75	11	7	27.92	+0	50	50.72	0.6295	12.2
sep	3	2460190.75	11	4	21.03	+1	17	4.64	0.6281	12.1
sep	4	2460191.75	11	1	6.70	+1	46	5.91	0.6283	11.9
sep	5	2460192.75	10	57	48.72	+2	17	28.92	0.6302	11.8
sep	6	2460193.75	10	54	31.25	+2	50	42.90	0.6341	11.7
sep	7	2460194.75	10	51	18.72	+3	25	12.76	0.6398	11.6
sep	8	2460195.75	10	48	15.70	+4	0	20.14	0.6476	11.5
sep	9	2460196.75	10	45	26.71	+4	35	24.79	0.6574	11.4
sep	10	2460197.75	10	42	56.10	+5	9	46.04	0.6692	11.3
sep	11	2460198.75	10	40	47.89	+5	42	44.24	0.6831	11.1
sep	12	2460199.75	10	39	5.64	+6	13	42.09	0.6989	11.1
sep	13	2460200.75	10	37	52.35	+6	42	5.68	0.7167	11.0
sep	14	2460201.75	10	37	10.40	+7	7	25.26	0.7362	10.9
sep	15	2460202.75	10	37	1.49	+7	29	15.69	0.7575	10.8
sep	16	2460203.75	10	37	26.67	+7	47	16.71	0.7803	10.8
sep	17	2460204.75	10	38	26.34	+8	1	12.85	0.8045	10.7
sep	18	2460205.75	10	40	0.29	+8	10	53.33	0.8299	10.7
sep	19	2460206.75	10	42	7.74	+8	16	11.81	0.8563	10.6
sep	20	2460207.75	10	44	47.45	+8	17	6.05	0.8835	10.6
sep	21	2460208.75	10	47	57.75	+8	13	37.61	0.9113	10.6
sep	22	2460209.75	10	51	36.62	+8	5	51.50	0.9395	10.6
sep	23	2460210.75	10	55	41.81	+7	53	55.78	0.9678	10.6
sep	24	2460211.75	11	0	10.89	+7	38	1.17	0.9961	10.6
sep	25	2460212.75	11	5	1.32	+7	18	20.65	1.0241	10.6
sep	26	2460213.75	11	10	10.54	+6	55	8.96	1.0517	10.7
sep	27	2460214.75	11	15	36.07	+6	28	42.17	1.0787	10.7
sep	28	2460215.75	11	21	15.48	+5	59	17.22	1.1049	10.7
sep	29	2460216.75	11	27	6.52	+5	27	11.48	1.1303	10.7
sep	30	2460217.75	11	33	7.13	+4	52	42.34	1.1547	10.8
oct	1	2460218.75	11	39	15.41	+4	16	6.88	1.1781	10.8
oct	2	2460219.75	11	45	29.70	+3	37	41.56	1.2004	10.8
oct	3	2460220.75	11	51	48.55	+2	57	42.06	1.2216	10.9

## Mercurio, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
oct	4	2460221.75	11	58	10.69	+2	16	23.06	1.2416	10.9
oct	5	2460222.75	12	4	35.08	+1	33	58.15	1.2604	11.0
oct	6	2460223.75	12	11	0.83	+0	50	39.82	1.2781	11.0
oct	7	2460224.75	12	17	27.21	+0	6	39.42	1.2947	11.1
oct	8	2460225.75	12	23	53.65	-0	37	52.79	1.3102	11.1
oct	9	2460226.75	12	30	19.69	-1	22	47.60	1.3246	11.1
oct	10	2460227.75	12	36	45.00	-2	7	56.77	1.3379	11.2
oct	11	2460228.75	12	43	9.31	-2	53	12.96	1.3502	11.2
oct	12	2460229.75	12	49	32.45	-3	38	29.64	1.3615	11.3
oct	13	2460230.75	12	55	54.31	-4	23	41.02	1.3719	11.3
oct	14	2460231.75	13	2	14.83	-5	8	41.96	1.3814	11.3
oct	15	2460232.75	13	8	34.00	-5	53	27.89	1.3900	11.4
oct	16	2460233.75	13	14	51.84	-6	37	54.76	1.3978	11.4
oct	17	2460234.75	13	21	8.39	-7	21	58.95	1.4047	11.5
oct	18	2460235.75	13	27	23.72	-8	5	37.24	1.4109	11.5
oct	19	2460236.75	13	33	37.93	-8	48	46.73	1.4163	11.5
oct	20	2460237.75	13	39	51.12	-9	31	24.84	1.4210	11.6
oct	21	2460238.75	13	46	3.38	-10	13	29.36	1.4250	11.6
oct	22	2460239.75	13	52	14.83	-10	54	57.95	1.4283	11.6
oct	23	2460240.75	13	58	25.60	-11	35	48.66	1.4309	11.7
oct	24	2460241.75	14	4	35.80	-12	15	59.72	1.4329	11.7
oct	25	2460242.75	14	10	45.58	-12	55	29.48	1.4343	11.8
oct	26	2460243.75	14	16	55.04	-13	34	16.37	1.4351	11.8
oct	27	2460244.75	14	23	4.32	-14	12	18.96	1.4353	11.8
oct	28	2460245.75	14	29	13.54	-14	49	35.85	1.4348	11.9
oct	29	2460246.75	14	35	22.80	-15	26	5.73	1.4339	11.9
oct	30	2460247.75	14	41	32.24	-16	1	47.32	1.4323	11.9
oct	31	2460248.75	14	47	41.94	-16	36	39.36	1.4303	12.0
nov	1	2460249.75	14	53	51.99	-17	10	40.61	1.4276	12.0
nov	2	2460250.75	15	0	2.49	-17	43	49.83	1.4244	12.1
nov	3	2460251.75	15	6	13.51	-18	16	5.78	1.4207	12.1
nov	4	2460252.75	15	12	25.11	-18	47	27.22	1.4165	12.1
nov	5	2460253.75	15	18	37.35	-19	17	52.90	1.4117	12.2
nov	6	2460254.75	15	24	50.26	-19	47	21.57	1.4064	12.2
nov	7	2460255.75	15	31	3.89	-20	15	51.95	1.4005	12.2
nov	8	2460256.75	15	37	18.23	-20	43	22.74	1.3941	12.3
nov	9	2460257.75	15	43	33.30	-21	9	52.65	1.3872	12.3
nov	10	2460258.75	15	49	49.06	-21	35	20.35	1.3797	12.4
nov	11	2460259.75	15	56	5.49	-21	59	44.49	1.3717	12.4
nov	12	2460260.75	16	2	22.53	-22	23	3.71	1.3631	12.4
nov	13	2460261.75	16	8	40.10	-22	45	16.64	1.3540	12.5
nov	14	2460262.75	16	14	58.08	-23	6	21.88	1.3443	12.5
nov	15	2460263.75	16	21	16.35	-23	26	18.03	1.3341	12.6
nov	16	2460264.75	16	27	34.73	-23	45	3.67	1.3232	12.6
nov	17	2460265.75	16	33	53.03	-24	2	37.38	1.3118	12.6
nov	18	2460266.75	16	40	11.01	-24	18	57.75	1.2998	12.7

## Mercurio, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
nov	19	2460267.75	16	46	28.38	-24	34	3.35	1.2872	12.7
nov	20	2460268.75	16	52	44.83	-24	47	52.81	1.2740	12.7
nov	21	2460269.75	16	58	59.98	-25	0	24.78	1.2601	12.8
nov	22	2460270.75	17	5	13.40	-25	11	37.95	1.2456	12.8
nov	23	2460271.75	17	11	24.60	-25	21	31.10	1.2305	12.9
nov	24	2460272.75	17	17	33.02	-25	30	3.10	1.2147	12.9
nov	25	2460273.75	17	23	38.02	-25	37	12.92	1.1983	12.9
nov	26	2460274.75	17	29	38.87	-25	42	59.66	1.1812	13.0
nov	27	2460275.75	17	35	34.73	-25	47	22.60	1.1635	13.0
nov	28	2460276.75	17	41	24.64	-25	50	21.20	1.1451	13.0
nov	29	2460277.75	17	47	7.54	-25	51	55.12	1.1260	13.1
nov	30	2460278.75	17	52	42.18	-25	52	4.31	1.1063	13.1
dic	1	2460279.75	17	58	7.17	-25	50	49.02	1.0859	13.1
dic	2	2460280.75	18	3	20.94	-25	48	9.86	1.0648	13.1
dic	3	2460281.75	18	8	21.72	-25	44	7.85	1.0432	13.2
dic	4	2460282.75	18	13	7.49	-25	38	44.48	1.0210	13.2
dic	5	2460283.75	18	17	36.02	-25	32	1.73	0.9982	13.2
dic	6	2460284.75	18	21	44.79	-25	24	2.16	0.9750	13.2
dic	7	2460285.75	18	25	31.05	-25	14	48.90	0.9514	13.2
dic	8	2460286.75	18	28	51.74	-25	4	25.69	0.9275	13.2
dic	9	2460287.75	18	31	43.57	-24	52	56.82	0.9034	13.1
dic	10	2460288.75	18	34	3.04	-24	40	27.12	0.8793	13.1
dic	11	2460289.75	18	35	46.50	-24	27	1.84	0.8553	13.1
dic	12	2460290.75	18	36	50.29	-24	12	46.53	0.8317	13.0
dic	13	2460291.75	18	37	10.87	-23	57	46.86	0.8087	13.0
dic	14	2460292.75	18	36	45.14	-23	42	8.49	0.7865	12.9
dic	15	2460293.75	18	35	30.67	-23	25	56.90	0.7655	12.8
dic	16	2460294.75	18	33	26.12	-23	9	17.46	0.7459	12.7
dic	17	2460295.75	18	30	31.65	-22	52	15.60	0.7282	12.6
dic	18	2460296.75	18	26	49.30	-22	34	57.35	0.7126	12.5
dic	19	2460297.75	18	22	23.30	-22	17	30.03	0.6995	12.3
dic	20	2460298.75	18	17	20.22	-22	0	3.23	0.6891	12.2
dic	21	2460299.75	18	11	48.81	-21	42	49.58	0.6816	12.0
dic	22	2460300.75	18	5	59.64	-21	26	5.21	0.6773	11.9
dic	23	2460301.75	18	0	4.30	-21	10	9.45	0.6762	11.7
dic	24	2460302.75	17	54	14.63	-20	55	23.69	0.6782	11.5
dic	25	2460303.75	17	48	41.76	-20	42	9.57	0.6833	11.4
dic	26	2460304.75	17	43	35.36	-20	30	46.83	0.6912	11.2
dic	27	2460305.75	17	39	3.15	-20	21	31.34	0.7017	11.1
dic	28	2460306.75	17	35	10.62	-20	14	33.71	0.7145	11.0
dic	29	2460307.75	17	32	1.17	-20	9	58.70	0.7292	10.8
dic	30	2460308.75	17	29	36.24	-20	7	45.40	0.7457	10.7
dic	31	2460309.75	17	27	55.76	-20	7	47.90	0.7635	17.5
ene	1	2460310.75	17	26	58.44	-20	9	56.42	0.7824	17.4
ene	2	2460311.75	17	26	42.21	-20	13	58.39	0.8020	17.4
ene	3	2460312.75	17	27	1.51	-20	19	25.37	0.8148	17.5
ene	4	2460313.75	17	39	0.23	-20	46	3.75	0.9364	17.7

## Venus, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
ene	1	2459945.75	20	0	16.84	-21	58	47.87	1.6068	13.1
ene	2	2459946.75	20	5	34.92	-21	44	43.00	1.6039	13.1
ene	3	2459947.75	20	10	51.87	-21	29	59.40	1.6009	13.1
ene	4	2459948.75	20	16	7.66	-21	14	37.66	1.5979	13.2
ene	5	2459949.75	20	21	22.25	-20	58	38.43	1.5949	13.2
ene	6	2459950.75	20	26	35.61	-20	42	2.34	1.5918	13.2
ene	7	2459951.75	20	31	47.74	-20	24	50.03	1.5887	13.2
ene	8	2459952.75	20	36	58.60	-20	7	2.18	1.5856	13.3
ene	9	2459953.75	20	42	8.18	-19	48	39.45	1.5824	13.3
ene	10	2459954.75	20	47	16.46	-19	29	42.55	1.5792	13.3
ene	11	2459955.75	20	52	23.44	-19	10	12.16	1.5759	13.3
ene	12	2459956.75	20	57	29.11	-18	50	8.98	1.5727	13.3
ene	13	2459957.75	21	2	33.45	-18	29	33.74	1.5693	13.3
ene	14	2459958.75	21	7	36.48	-18	8	27.16	1.5660	13.4
ene	15	2459959.75	21	12	38.19	-17	46	49.96	1.5626	13.4
ene	16	2459960.75	21	17	38.58	-17	24	42.90	1.5592	13.4
ene	17	2459961.75	21	22	37.65	-17	2	6.72	1.5557	13.4
ene	18	2459962.75	21	27	35.42	-16	39	2.18	1.5522	13.4
ene	19	2459963.75	21	32	31.90	-16	15	30.08	1.5487	13.5
ene	20	2459964.75	21	37	27.07	-15	51	31.19	1.5451	13.5
ene	21	2459965.75	21	42	20.97	-15	27	6.32	1.5415	13.5
ene	22	2459966.75	21	47	13.58	-15	2	16.27	1.5379	13.5
ene	23	2459967.75	21	52	4.93	-14	37	1.85	1.5342	13.5
ene	24	2459968.75	21	56	55.03	-14	11	23.86	1.5304	13.5
ene	25	2459969.75	22	1	43.89	-13	45	23.08	1.5267	13.5
ene	26	2459970.75	22	6	31.53	-13	19	0.33	1.5229	13.6
ene	27	2459971.75	22	11	17.98	-12	52	16.39	1.5190	13.6
ene	28	2459972.75	22	16	3.26	-12	25	12.08	1.5151	13.6
ene	29	2459973.75	22	20	47.40	-11	57	48.19	1.5112	13.6
ene	30	2459974.75	22	25	30.42	-11	30	5.52	1.5072	13.6
ene	31	2459975.75	22	30	12.35	-11	2	4.87	1.5032	13.6
feb	1	2459976.75	22	34	53.22	-10	33	47.05	1.4992	13.6
feb	2	2459977.75	22	39	33.07	-10	5	12.83	1.4951	13.7
feb	3	2459978.75	22	44	11.92	-9	36	23.00	1.4910	13.7
feb	4	2459979.75	22	48	49.80	-9	7	18.35	1.4869	13.7
feb	5	2459980.75	22	53	26.75	-8	37	59.64	1.4827	13.7
feb	6	2459981.75	22	58	2.81	-8	8	27.64	1.4784	13.7
feb	7	2459982.75	23	2	38.02	-7	38	43.12	1.4742	13.7
feb	8	2459983.75	23	7	12.40	-7	8	46.82	1.4699	13.7
feb	9	2459984.75	23	11	46.00	-6	38	39.50	1.4655	13.7
feb	10	2459985.75	23	16	18.87	-6	8	21.89	1.4612	13.7
feb	11	2459986.75	23	20	51.04	-5	37	54.74	1.4567	13.7
feb	12	2459987.75	23	25	22.55	-5	7	18.78	1.4523	13.8
feb	13	2459988.75	23	29	53.45	-4	36	34.75	1.4478	13.8
feb	14	2459989.75	23	34	23.78	-4	5	43.37	1.4432	13.8
feb	15	2459990.75	23	38	53.58	-3	34	45.39	1.4387	13.8



## Venus, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
feb	16	2459991.75	23	43	22.89	-3	3	41.56	1.4341	13.8
feb	17	2459992.75	23	47	51.74	-2	32	32.62	1.4294	13.8
feb	18	2459993.75	23	52	20.19	-2	1	19.32	1.4247	13.8
feb	19	2459994.75	23	56	48.25	-1	30	2.44	1.4200	13.8
feb	20	2459995.75	0	1	15.98	-0	58	42.72	1.4152	13.8
feb	21	2459996.75	0	5	43.41	-0	27	20.93	1.4104	13.8
feb	22	2459997.75	0	10	10.58	+0	4	2.18	1.4055	13.8
feb	23	2459998.75	0	14	37.53	+0	35	25.88	1.4006	13.9
feb	24	2459999.75	0	19	4.29	+1	6	49.40	1.3957	13.9
feb	25	2460000.75	0	23	30.92	+1	38	12.01	1.3907	13.9
feb	26	2460001.75	0	27	57.44	+2	9	32.95	1.3857	13.9
feb	27	2460002.75	0	32	23.91	+2	40	51.49	1.3806	13.9
feb	28	2460003.75	0	36	50.34	+3	12	6.87	1.3755	13.9
mar	1	2460004.75	0	41	16.79	+3	43	18.36	1.3703	13.9
mar	2	2460005.75	0	45	43.28	+4	14	25.23	1.3651	13.9
mar	3	2460006.75	0	50	9.87	+4	45	26.74	1.3599	13.9
mar	4	2460007.75	0	54	36.58	+5	16	22.15	1.3546	13.9
mar	5	2460008.75	0	59	3.46	+5	47	10.76	1.3493	13.9
mar	6	2460009.75	1	3	30.54	+6	17	51.82	1.3439	13.9
mar	7	2460010.75	1	7	57.86	+6	48	24.64	1.3385	14.0
mar	8	2460011.75	1	12	25.46	+7	18	48.49	1.3331	14.0
mar	9	2460012.75	1	16	53.38	+7	49	2.68	1.3276	14.0
mar	10	2460013.75	1	21	21.65	+8	19	6.49	1.3221	14.0
mar	11	2460014.75	1	25	50.32	+8	48	59.24	1.3165	14.0
mar	12	2460015.75	1	30	19.42	+9	18	40.22	1.3109	14.0
mar	13	2460016.75	1	34	48.99	+9	48	8.74	1.3053	14.0
mar	14	2460017.75	1	39	19.06	+10	17	24.09	1.2996	14.0
mar	15	2460018.75	1	43	49.67	+10	46	25.58	1.2939	14.0
mar	16	2460019.75	1	48	20.84	+11	15	12.49	1.2881	14.0
mar	17	2460020.75	1	52	52.60	+11	43	44.11	1.2823	14.0
mar	18	2460021.75	1	57	24.98	+12	11	59.70	1.2764	14.1
mar	19	2460022.75	2	1	58.00	+12	39	58.54	1.2705	14.1
mar	20	2460023.75	2	6	31.70	+13	7	39.88	1.2646	14.1
mar	21	2460024.75	2	11	6.08	+13	35	3.00	1.2586	14.1
mar	22	2460025.75	2	15	41.18	+14	2	7.16	1.2526	14.1
mar	23	2460026.75	2	20	17.02	+14	28	51.65	1.2466	14.1
mar	24	2460027.75	2	24	53.60	+14	55	15.72	1.2404	14.1
mar	25	2460028.75	2	29	30.96	+15	21	18.67	1.2343	14.1
mar	26	2460029.75	2	34	9.08	+15	46	59.76	1.2281	14.1
mar	27	2460030.75	2	38	48.00	+16	12	18.28	1.2219	14.2
mar	28	2460031.75	2	43	27.71	+16	37	13.51	1.2156	14.2
mar	29	2460032.75	2	48	8.23	+17	1	44.75	1.2093	14.2
mar	30	2460033.75	2	52	49.55	+17	25	51.29	1.2029	14.2
mar	31	2460034.75	2	57	31.68	+17	49	32.44	1.1965	14.2
abr	1	2460035.75	3	2	14.63	+18	12	47.50	1.1901	14.2
abr	2	2460036.75	3	6	58.39	+18	35	35.81	1.1836	14.2

## Venus, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	"	$\delta$ "	"	dis UA	hp h
abr	3	2460037.75	3	11	42.96	+18	57	56.70	1.1771	14.2
abr	4	2460038.75	3	16	28.34	+19	19	49.51	1.1706	14.3
abr	5	2460039.75	3	21	14.53	+19	41	13.61	1.1640	14.3
abr	6	2460040.75	3	26	1.52	+20	2	8.38	1.1573	14.3
abr	7	2460041.75	3	30	49.30	+20	22	33.19	1.1507	14.3
abr	8	2460042.75	3	35	37.86	+20	42	27.47	1.1440	14.3
abr	9	2460043.75	3	40	27.19	+21	1	50.62	1.1372	14.3
abr	10	2460044.75	3	45	17.28	+21	20	42.10	1.1304	14.3
abr	11	2460045.75	3	50	8.11	+21	39	1.35	1.1236	14.4
abr	12	2460046.75	3	54	59.65	+21	56	47.81	1.1167	14.4
abr	13	2460047.75	3	59	51.89	+22	14	0.97	1.1099	14.4
abr	14	2460048.75	4	4	44.78	+22	30	40.28	1.1029	14.4
abr	15	2460049.75	4	9	38.31	+22	46	45.23	1.0960	14.4
abr	16	2460050.75	4	14	32.44	+23	2	15.32	1.0890	14.4
abr	17	2460051.75	4	19	27.14	+23	17	10.05	1.0819	14.5
abr	18	2460052.75	4	24	22.36	+23	31	28.97	1.0748	14.5
abr	19	2460053.75	4	29	18.07	+23	45	11.62	1.0677	14.5
abr	20	2460054.75	4	34	14.22	+23	58	17.59	1.0606	14.5
abr	21	2460055.75	4	39	10.75	+24	10	46.49	1.0534	14.5
abr	22	2460056.75	4	44	7.63	+24	22	37.95	1.0462	14.5
abr	23	2460057.75	4	49	4.78	+24	33	51.63	1.0389	14.6
abr	24	2460058.75	4	54	2.15	+24	44	27.20	1.0316	14.6
abr	25	2460059.75	4	58	59.67	+24	54	24.37	1.0243	14.6
abr	26	2460060.75	5	3	57.28	+25	3	42.88	1.0170	14.6
abr	27	2460061.75	5	8	54.92	+25	12	22.48	1.0096	14.6
abr	28	2460062.75	5	13	52.51	+25	20	22.98	1.0022	14.6
abr	29	2460063.75	5	18	49.99	+25	27	44.18	0.9947	14.7
abr	30	2460064.75	5	23	47.28	+25	34	25.96	0.9872	14.7
may	1	2460065.75	5	28	44.32	+25	40	28.19	0.9797	14.7
may	2	2460066.75	5	33	41.03	+25	45	50.80	0.9722	14.7
may	3	2460067.75	5	38	37.34	+25	50	33.75	0.9646	14.7
may	4	2460068.75	5	43	33.18	+25	54	37.03	0.9570	14.7
may	5	2460069.75	5	48	28.48	+25	58	0.67	0.9494	14.8
may	6	2460070.75	5	53	23.16	+26	0	44.75	0.9417	14.8
may	7	2460071.75	5	58	17.15	+26	2	49.35	0.9340	14.8
may	8	2460072.75	6	3	10.37	+26	4	14.62	0.9263	14.8
may	9	2460073.75	6	8	2.76	+26	5	0.71	0.9186	14.8
may	10	2460074.75	6	12	54.23	+26	5	7.81	0.9108	14.8
may	11	2460075.75	6	17	44.71	+26	4	36.14	0.9031	14.8
may	12	2460076.75	6	22	34.13	+26	3	25.91	0.8953	14.9
may	13	2460077.75	6	27	22.41	+26	1	37.38	0.8875	14.9
may	14	2460078.75	6	32	9.48	+25	59	10.83	0.8796	14.9
may	15	2460079.75	6	36	55.27	+25	56	6.57	0.8718	14.9
may	16	2460080.75	6	41	39.69	+25	52	24.95	0.8639	14.9
may	17	2460081.75	6	46	22.68	+25	48	6.33	0.8560	14.9
may	18	2460082.75	6	51	4.17	+25	43	11.14	0.8481	14.9

## Venus, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\circ$	$\delta$ "	"	dis UA	hp h
may	19	2460083.75	6	55	44.06	+25	37	39.81	0.8401	15.0
may	20	2460084.75	7	0	22.29	+25	31	32.83	0.8322	15.0
may	21	2460085.75	7	4	58.76	+25	24	50.70	0.8242	15.0
may	22	2460086.75	7	9	33.42	+25	17	33.94	0.8162	15.0
may	23	2460087.75	7	14	6.16	+25	9	43.12	0.8082	15.0
may	24	2460088.75	7	18	36.92	+25	1	18.81	0.8002	15.0
may	25	2460089.75	7	23	5.62	+24	52	21.61	0.7921	15.0
may	26	2460090.75	7	27	32.17	+24	42	52.14	0.7841	15.0
may	27	2460091.75	7	31	56.52	+24	32	51.06	0.7760	15.0
may	28	2460092.75	7	36	18.57	+24	22	19.04	0.7680	15.0
may	29	2460093.75	7	40	38.26	+24	11	16.76	0.7599	15.0
may	30	2460094.75	7	44	55.53	+23	59	44.94	0.7518	15.1
may	31	2460095.75	7	49	10.29	+23	47	44.32	0.7437	15.1
jun	1	2460096.75	7	53	22.48	+23	35	15.65	0.7356	15.1
jun	2	2460097.75	7	57	32.04	+23	22	19.71	0.7275	15.1
jun	3	2460098.75	8	1	38.90	+23	8	57.29	0.7194	15.1
jun	4	2460099.75	8	5	42.99	+22	55	9.20	0.7113	15.1
jun	5	2460100.75	8	9	44.25	+22	40	56.26	0.7032	15.1
jun	6	2460101.75	8	13	42.62	+22	26	19.31	0.6950	15.1
jun	7	2460102.75	8	17	38.03	+22	11	19.17	0.6869	15.1
jun	8	2460103.75	8	21	30.42	+21	55	56.68	0.6788	15.1
jun	9	2460104.75	8	25	19.73	+21	40	12.66	0.6707	15.1
jun	10	2460105.75	8	29	5.90	+21	24	7.94	0.6626	15.1
jun	11	2460106.75	8	32	48.87	+21	7	43.39	0.6546	15.1
jun	12	2460107.75	8	36	28.57	+20	50	59.85	0.6465	15.1
jun	13	2460108.75	8	40	4.94	+20	33	58.22	0.6384	15.1
jun	14	2460109.75	8	43	37.91	+20	16	39.39	0.6304	15.0
jun	15	2460110.75	8	47	7.41	+19	59	4.30	0.6223	15.0
jun	16	2460111.75	8	50	33.35	+19	41	13.90	0.6143	15.0
jun	17	2460112.75	8	53	55.66	+19	23	9.16	0.6063	15.0
jun	18	2460113.75	8	57	14.25	+19	4	51.07	0.5983	15.0
jun	19	2460114.75	9	0	29.02	+18	46	20.64	0.5903	15.0
jun	20	2460115.75	9	3	39.90	+18	27	38.90	0.5824	15.0
jun	21	2460116.75	9	6	46.76	+18	8	46.88	0.5744	15.0
jun	22	2460117.75	9	9	49.53	+17	49	45.66	0.5665	15.0
jun	23	2460118.75	9	12	48.08	+17	30	36.31	0.5586	14.9
jun	24	2460119.75	9	15	42.32	+17	11	19.94	0.5508	14.9
jun	25	2460120.75	9	18	32.13	+16	51	57.67	0.5430	14.9
jun	26	2460121.75	9	21	17.39	+16	32	30.64	0.5352	14.9
jun	27	2460122.75	9	23	57.98	+16	13	0.02	0.5274	14.9
jun	28	2460123.75	9	26	33.78	+15	53	27.02	0.5197	14.8
jun	29	2460124.75	9	29	4.66	+15	33	52.84	0.5121	14.8
jun	30	2460125.75	9	31	30.48	+15	14	18.74	0.5044	14.8
jul	1	2460126.75	9	33	51.11	+14	54	46.00	0.4969	14.8
jul	2	2460127.75	9	36	6.39	+14	35	15.91	0.4893	14.7
jul	3	2460128.75	9	38	16.19	+14	15	49.81	0.4819	14.7

## Venus, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
jul	4	2460129.75	9	40	20.35	+13	56	29.02	0.4745	14.7
jul	5	2460130.75	9	42	18.72	+13	37	14.89	0.4671	14.6
jul	6	2460131.75	9	44	11.14	+13	18	8.78	0.4598	14.6
jul	7	2460132.75	9	45	57.46	+12	59	12.05	0.4526	14.6
jul	8	2460133.75	9	47	37.51	+12	40	26.11	0.4455	14.5
jul	9	2460134.75	9	49	11.12	+12	21	52.38	0.4385	14.5
jul	10	2460135.75	9	50	38.14	+12	3	32.34	0.4315	14.5
jul	11	2460136.75	9	51	58.36	+11	45	27.53	0.4246	14.4
jul	12	2460137.75	9	53	11.63	+11	27	39.54	0.4178	14.4
jul	13	2460138.75	9	54	17.73	+11	10	10.03	0.4111	14.3
jul	14	2460139.75	9	55	16.48	+10	53	0.70	0.4046	14.3
jul	15	2460140.75	9	56	7.70	+10	36	13.32	0.3981	14.2
jul	16	2460141.75	9	56	51.17	+10	19	49.70	0.3917	14.2
jul	17	2460142.75	9	57	26.70	+10	3	51.72	0.3855	14.1
jul	18	2460143.75	9	57	54.12	+9	48	21.29	0.3793	14.0
jul	19	2460144.75	9	58	13.22	+9	33	20.37	0.3733	14.0
jul	20	2460145.75	9	58	23.85	+9	18	50.95	0.3675	13.9
jul	21	2460146.75	9	58	25.84	+9	4	55.05	0.3618	13.9
jul	22	2460147.75	9	58	19.05	+8	51	34.72	0.3562	13.8
jul	23	2460148.75	9	58	3.36	+8	38	52.02	0.3508	13.7
jul	24	2460149.75	9	57	38.67	+8	26	48.98	0.3456	13.6
jul	25	2460150.75	9	57	4.90	+8	15	27.65	0.3406	13.6
jul	26	2460151.75	9	56	22.03	+8	4	50.02	0.3357	13.5
jul	27	2460152.75	9	55	30.06	+7	54	58.04	0.3310	13.4
jul	28	2460153.75	9	54	29.03	+7	45	53.56	0.3265	13.3
jul	29	2460154.75	9	53	19.05	+7	37	38.35	0.3223	13.2
jul	30	2460155.75	9	52	0.26	+7	30	14.03	0.3182	13.2
jul	31	2460156.75	9	50	32.89	+7	23	42.01	0.3144	13.1
ago	1	2460157.75	9	48	57.20	+7	18	3.52	0.3108	13.0
ago	2	2460158.75	9	47	13.56	+7	13	19.51	0.3075	12.9
ago	3	2460159.75	9	45	22.37	+7	9	30.64	0.3044	12.8
ago	4	2460160.75	9	43	24.13	+7	6	37.26	0.3016	12.7
ago	5	2460161.75	9	41	19.39	+7	4	39.41	0.2990	12.6
ago	6	2460162.75	9	39	8.79	+7	3	36.81	0.2967	12.5
ago	7	2460163.75	9	36	52.99	+7	3	28.87	0.2947	12.4
ago	8	2460164.75	9	34	32.73	+7	4	14.67	0.2930	12.3
ago	9	2460165.75	9	32	8.80	+7	5	52.98	0.2916	12.2
ago	10	2460166.75	9	29	42.01	+7	8	22.24	0.2904	12.1
ago	11	2460167.75	9	27	13.23	+7	11	40.57	0.2896	12.0
ago	12	2460168.75	9	24	43.33	+7	15	45.76	0.2890	11.9
ago	13	2460169.75	9	22	13.23	+7	20	35.35	0.2887	11.7
ago	14	2460170.75	9	19	43.81	+7	26	6.57	0.2888	11.6
ago	15	2460171.75	9	17	16.00	+7	32	16.44	0.2891	11.5
ago	16	2460172.75	9	14	50.66	+7	39	1.79	0.2897	11.4
ago	17	2460173.75	9	12	28.67	+7	46	19.26	0.2906	11.3
ago	18	2460174.75	9	10	10.86	+7	54	5.39	0.2918	11.2

## Venus, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
ago	19	2460175.75	9	7	58.01	+8	2	16.64	0.2933	11.1
ago	20	2460176.75	9	5	50.86	+8	10	49.41	0.2951	11.0
ago	21	2460177.75	9	3	50.10	+8	19	40.13	0.2971	10.9
ago	22	2460178.75	9	1	56.36	+8	28	45.24	0.2994	10.8
ago	23	2460179.75	9	0	10.18	+8	38	1.25	0.3020	10.7
ago	24	2460180.75	8	58	32.07	+8	47	24.76	0.3048	10.6
ago	25	2460181.75	8	57	2.45	+8	56	52.49	0.3078	10.5
ago	26	2460182.75	8	55	41.69	+9	6	21.29	0.3111	10.4
ago	27	2460183.75	8	54	30.09	+9	15	48.12	0.3146	10.4
ago	28	2460184.75	8	53	27.88	+9	25	10.11	0.3184	10.3
ago	29	2460185.75	8	52	35.26	+9	34	24.51	0.3224	10.2
ago	30	2460186.75	8	51	52.34	+9	43	28.73	0.3265	10.1
ago	31	2460187.75	8	51	19.19	+9	52	20.30	0.3309	10.0
sep	1	2460188.75	8	50	55.85	+10	0	56.95	0.3354	10.0
sep	2	2460189.75	8	50	42.29	+10	9	16.55	0.3401	9.9
sep	3	2460190.75	8	50	38.44	+10	17	17.17	0.3450	9.8
sep	4	2460191.75	8	50	44.20	+10	24	57.08	0.3501	9.8
sep	5	2460192.75	8	50	59.42	+10	32	14.73	0.3553	9.7
sep	6	2460193.75	8	51	23.93	+10	39	8.72	0.3607	9.7
sep	7	2460194.75	8	51	57.54	+10	45	37.80	0.3662	9.6
sep	8	2460195.75	8	52	40.02	+10	51	40.88	0.3718	9.5
sep	9	2460196.75	8	53	31.14	+10	57	16.95	0.3775	9.5
sep	10	2460197.75	8	54	30.67	+11	2	25.14	0.3834	9.4
sep	11	2460198.75	8	55	38.35	+11	7	4.67	0.3894	9.4
sep	12	2460199.75	8	56	53.93	+11	11	14.83	0.3954	9.4
sep	13	2460200.75	8	58	17.14	+11	14	55.02	0.4016	9.3
sep	14	2460201.75	8	59	47.73	+11	18	4.70	0.4079	9.3
sep	15	2460202.75	9	1	25.44	+11	20	43.38	0.4142	9.2
sep	16	2460203.75	9	3	10.01	+11	22	50.66	0.4207	9.2
sep	17	2460204.75	9	5	1.19	+11	24	26.18	0.4272	9.2
sep	18	2460205.75	9	6	58.74	+11	25	29.64	0.4338	9.1
sep	19	2460206.75	9	9	2.39	+11	26	0.77	0.4404	9.1
sep	20	2460207.75	9	11	11.93	+11	25	59.36	0.4472	9.1
sep	21	2460208.75	9	13	27.12	+11	25	25.23	0.4540	9.0
sep	22	2460209.75	9	15	47.73	+11	24	18.23	0.4608	9.0
sep	23	2460210.75	9	18	13.54	+11	22	38.24	0.4677	9.0
sep	24	2460211.75	9	20	44.35	+11	20	25.17	0.4747	9.0
sep	25	2460212.75	9	23	19.95	+11	17	38.93	0.4817	8.9
sep	26	2460213.75	9	26	0.14	+11	14	19.47	0.4887	8.9
sep	27	2460214.75	9	28	44.75	+11	10	26.73	0.4958	8.9
sep	28	2460215.75	9	31	33.57	+11	6	0.68	0.5030	8.9
sep	29	2460216.75	9	34	26.46	+11	1	1.29	0.5102	8.9
sep	30	2460217.75	9	37	23.22	+10	55	28.59	0.5174	8.8
oct	1	2460218.75	9	40	23.71	+10	49	22.67	0.5246	8.8
oct	2	2460219.75	9	43	27.75	+10	42	43.62	0.5319	8.8
oct	3	2460220.75	9	46	35.19	+10	35	31.64	0.5392	8.8

## Venus, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
oct	4	2460221.75	9	49	45.86	+10	27	46.94	0.5466	8.8
oct	5	2460222.75	9	52	59.63	+10	19	29.76	0.5539	8.8
oct	6	2460223.75	9	56	16.32	+10	10	40.39	0.5613	8.8
oct	7	2460224.75	9	59	35.82	+10	1	19.15	0.5687	8.8
oct	8	2460225.75	10	2	57.98	+9	51	26.36	0.5762	8.7
oct	9	2460226.75	10	6	22.66	+9	41	2.39	0.5836	8.7
oct	10	2460227.75	10	9	49.76	+9	30	7.62	0.5911	8.7
oct	11	2460228.75	10	13	19.14	+9	18	42.44	0.5985	8.7
oct	12	2460229.75	10	16	50.69	+9	6	47.27	0.6060	8.7
oct	13	2460230.75	10	20	24.32	+8	54	22.55	0.6135	8.7
oct	14	2460231.75	10	23	59.92	+8	41	28.74	0.6210	8.7
oct	15	2460232.75	10	27	37.39	+8	28	6.29	0.6285	8.7
oct	16	2460233.75	10	31	16.65	+8	14	15.70	0.6360	8.7
oct	17	2460234.75	10	34	57.61	+7	59	57.45	0.6435	8.7
oct	18	2460235.75	10	38	40.19	+7	45	12.07	0.6511	8.7
oct	19	2460236.75	10	42	24.31	+7	30	0.08	0.6586	8.7
oct	20	2460237.75	10	46	9.91	+7	14	21.99	0.6661	8.7
oct	21	2460238.75	10	49	56.92	+6	58	18.34	0.6737	8.7
oct	22	2460239.75	10	53	45.28	+6	41	49.68	0.6812	8.7
oct	23	2460240.75	10	57	34.93	+6	24	56.52	0.6887	8.7
oct	24	2460241.75	11	1	25.83	+6	7	39.41	0.6963	8.7
oct	25	2460242.75	11	5	17.92	+5	49	58.88	0.7038	8.7
oct	26	2460243.75	11	9	11.17	+5	31	55.44	0.7114	8.7
oct	27	2460244.75	11	13	5.54	+5	13	29.63	0.7189	8.7
oct	28	2460245.75	11	17	1.00	+4	54	42.01	0.7265	8.7
oct	29	2460246.75	11	20	57.52	+4	35	33.15	0.7340	8.7
oct	30	2460247.75	11	24	55.06	+4	16	3.63	0.7415	8.7
oct	31	2460248.75	11	28	53.60	+3	56	14.09	0.7491	8.7
nov	1	2460249.75	11	32	53.11	+3	36	5.17	0.7566	8.7
nov	2	2460250.75	11	36	53.55	+3	15	37.54	0.7641	8.7
nov	3	2460251.75	11	40	54.90	+2	54	51.89	0.7716	8.7
nov	4	2460252.75	11	44	57.13	+2	33	48.91	0.7791	8.7
nov	5	2460253.75	11	49	0.23	+2	12	29.30	0.7866	8.7
nov	6	2460254.75	11	53	4.18	+1	50	53.77	0.7941	8.7
nov	7	2460255.75	11	57	8.95	+1	29	3.05	0.8015	8.7
nov	8	2460256.75	12	1	14.54	+1	6	57.87	0.8090	8.7
nov	9	2460257.75	12	5	20.93	+0	44	38.94	0.8164	8.7
nov	10	2460258.75	12	9	28.11	+0	22	7.02	0.8238	8.7
nov	11	2460259.75	12	13	36.08	-0	0	37.15	0.8313	8.7
nov	12	2460260.75	12	17	44.82	-0	23	32.83	0.8387	8.7
nov	13	2460261.75	12	21	54.35	-0	46	39.27	0.8460	8.7
nov	14	2460262.75	12	26	4.64	-1	9	55.69	0.8534	8.7
nov	15	2460263.75	12	30	15.70	-1	33	21.35	0.8608	8.7
nov	16	2460264.75	12	34	27.54	-1	56	55.48	0.8681	8.7
nov	17	2460265.75	12	38	40.15	-2	20	37.31	0.8754	8.7
nov	18	2460266.75	12	42	53.53	-2	44	26.09	0.8827	8.7

## Venus, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
nov	19	2460267.75	12	47	7.70	-3	8	21.04	0.8900	8.7
nov	20	2460268.75	12	51	22.65	-3	32	21.43	0.8973	8.7
nov	21	2460269.75	12	55	38.42	-3	56	26.51	0.9046	8.7
nov	22	2460270.75	12	59	55.00	-4	20	35.55	0.9118	8.7
nov	23	2460271.75	13	4	12.41	-4	44	47.82	0.9190	8.7
nov	24	2460272.75	13	8	30.68	-5	9	2.60	0.9263	8.7
nov	25	2460273.75	13	12	49.82	-5	33	19.15	0.9334	8.8
nov	26	2460274.75	13	17	9.86	-5	57	36.73	0.9406	8.8
nov	27	2460275.75	13	21	30.80	-6	21	54.60	0.9478	8.8
nov	28	2460276.75	13	25	52.67	-6	46	11.97	0.9549	8.8
nov	29	2460277.75	13	30	15.48	-7	10	28.07	0.9620	8.8
nov	30	2460278.75	13	34	39.25	-7	34	42.09	0.9691	8.8
dic	1	2460279.75	13	39	3.99	-7	58	53.23	0.9762	8.8
dic	2	2460280.75	13	43	29.72	-8	23	0.68	0.9833	8.8
dic	3	2460281.75	13	47	56.45	-8	47	3.61	0.9903	8.8
dic	4	2460282.75	13	52	24.20	-9	11	1.20	0.9973	8.8
dic	5	2460283.75	13	56	52.99	-9	34	52.64	1.0043	8.8
dic	6	2460284.75	14	1	22.83	-9	58	37.08	1.0113	8.8
dic	7	2460285.75	14	5	53.73	-10	22	13.70	1.0182	8.9
dic	8	2460286.75	14	10	25.71	-10	45	41.67	1.0251	8.9
dic	9	2460287.75	14	14	58.79	-11	9	0.16	1.0320	8.9
dic	10	2460288.75	14	19	32.97	-11	32	8.34	1.0389	8.9
dic	11	2460289.75	14	24	8.28	-11	55	5.37	1.0457	8.9
dic	12	2460290.75	14	28	44.72	-12	17	50.42	1.0526	8.9
dic	13	2460291.75	14	33	22.30	-12	40	22.65	1.0593	8.9
dic	14	2460292.75	14	38	1.03	-13	2	41.24	1.0661	8.9
dic	15	2460293.75	14	42	40.91	-13	24	45.33	1.0728	8.9
dic	16	2460294.75	14	47	21.97	-13	46	34.10	1.0796	9.0
dic	17	2460295.75	14	52	4.19	-14	8	6.73	1.0863	9.0
dic	18	2460296.75	14	56	47.59	-14	29	22.40	1.0929	9.0
dic	19	2460297.75	15	1	32.19	-14	50	20.31	1.0996	9.0
dic	20	2460298.75	15	6	17.99	-15	10	59.68	1.1062	9.0
dic	21	2460299.75	15	11	5.01	-15	31	19.73	1.1128	9.0
dic	22	2460300.75	15	15	53.24	-15	51	19.69	1.1193	9.0
dic	23	2460301.75	15	20	42.71	-16	10	58.79	1.1258	9.0
dic	24	2460302.75	15	25	33.41	-16	30	16.28	1.1324	9.1
dic	25	2460303.75	15	30	25.35	-16	49	11.38	1.1388	9.1
dic	26	2460304.75	15	35	18.53	-17	7	43.34	1.1453	9.1
dic	27	2460305.75	15	40	12.95	-17	25	51.37	1.1517	9.1
dic	28	2460306.75	15	45	8.60	-17	43	34.72	1.1581	9.1
dic	29	2460307.75	15	50	5.48	-18	0	52.61	1.1645	9.1
dic	30	2460308.75	15	55	3.57	-18	17	44.29	1.1709	9.2
dic	31	2460309.75	16	0	2.87	-18	34	9.00	1.1772	16.0
ene	1	2460310.75	16	5	3.37	-18	50	6.00	1.1835	16.1
ene	2	2460311.75	16	10	5.05	-19	5	34.55	1.1897	16.2
ene	3	2460312.75	16	14	59.44	-19	20	8.98	1.1857	16.2
ene	4	2460313.75	16	31	12.88	-20	9	27.02	1.3322	16.5

## Marte, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	'	$\delta$ "	"	dis UA	hp h
ene	1	2459945.75	4	27	23.92	+24	35	2.07	0.6399	21.6
ene	2	2459946.75	4	26	44.76	+24	34	0.73	0.6458	21.5
ene	3	2459947.75	4	26	9.23	+24	33	3.22	0.6519	21.4
ene	4	2459948.75	4	25	37.33	+24	32	9.81	0.6582	21.3
ene	5	2459949.75	4	25	9.04	+24	31	20.74	0.6645	21.3
ene	6	2459950.75	4	24	44.34	+24	30	36.21	0.6710	21.2
ene	7	2459951.75	4	24	23.22	+24	29	56.39	0.6777	21.1
ene	8	2459952.75	4	24	5.65	+24	29	21.45	0.6845	21.0
ene	9	2459953.75	4	23	51.59	+24	28	51.49	0.6914	21.0
ene	10	2459954.75	4	23	41.03	+24	28	26.62	0.6984	20.9
ene	11	2459955.75	4	23	33.92	+24	28	6.93	0.7055	20.8
ene	12	2459956.75	4	23	30.23	+24	27	52.47	0.7128	20.8
ene	13	2459957.75	4	23	29.92	+24	27	43.29	0.7202	20.7
ene	14	2459958.75	4	23	32.95	+24	27	39.41	0.7277	20.6
ene	15	2459959.75	4	23	39.29	+24	27	40.85	0.7352	20.6
ene	16	2459960.75	4	23	48.89	+24	27	47.62	0.7429	20.5
ene	17	2459961.75	4	24	1.72	+24	27	59.69	0.7507	20.4
ene	18	2459962.75	4	24	17.72	+24	28	17.05	0.7587	20.4
ene	19	2459963.75	4	24	36.87	+24	28	39.67	0.7667	20.3
ene	20	2459964.75	4	24	59.11	+24	29	7.48	0.7747	20.3
ene	21	2459965.75	4	25	24.39	+24	29	40.41	0.7829	20.2
ene	22	2459966.75	4	25	52.67	+24	30	18.35	0.7912	20.1
ene	23	2459967.75	4	26	23.89	+24	31	1.16	0.7996	20.1
ene	24	2459968.75	4	26	58.01	+24	31	48.69	0.8080	20.0
ene	25	2459969.75	4	27	34.97	+24	32	40.78	0.8165	20.0
ene	26	2459970.75	4	28	14.71	+24	33	37.24	0.8251	19.9
ene	27	2459971.75	4	28	57.18	+24	34	37.89	0.8338	19.9
ene	28	2459972.75	4	29	42.32	+24	35	42.56	0.8425	19.8
ene	29	2459973.75	4	30	30.08	+24	36	51.02	0.8513	19.8
ene	30	2459974.75	4	31	20.39	+24	38	3.09	0.8602	19.7
ene	31	2459975.75	4	32	13.19	+24	39	18.55	0.8691	19.7
feb	1	2459976.75	4	33	8.42	+24	40	37.18	0.8781	19.6
feb	2	2459977.75	4	34	6.04	+24	41	58.76	0.8872	19.6
feb	3	2459978.75	4	35	5.98	+24	43	23.05	0.8963	19.5
feb	4	2459979.75	4	36	8.18	+24	44	49.84	0.9054	19.5
feb	5	2459980.75	4	37	12.59	+24	46	18.88	0.9146	19.4
feb	6	2459981.75	4	38	19.17	+24	47	49.95	0.9239	19.4
feb	7	2459982.75	4	39	27.86	+24	49	22.81	0.9332	19.3
feb	8	2459983.75	4	40	38.61	+24	50	57.25	0.9426	19.3
feb	9	2459984.75	4	41	51.38	+24	52	33.03	0.9520	19.2
feb	10	2459985.75	4	43	6.13	+24	54	9.93	0.9614	19.2
feb	11	2459986.75	4	44	22.81	+24	55	47.75	0.9709	19.1
feb	12	2459987.75	4	45	41.39	+24	57	26.28	0.9804	19.1
feb	13	2459988.75	4	47	1.82	+24	59	5.31	0.9900	19.1
feb	14	2459989.75	4	48	24.07	+25	0	44.66	0.9996	19.0
feb	15	2459990.75	4	49	48.11	+25	2	24.12	1.0092	19.0



## Marte, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
feb	16	2459991.75	4	51	13.89	+25	4	3.51	1.0189	18.9
feb	17	2459992.75	4	52	41.38	+25	5	42.62	1.0286	18.9
feb	18	2459993.75	4	54	10.55	+25	7	21.26	1.0383	18.8
feb	19	2459994.75	4	55	41.36	+25	8	59.20	1.0481	18.8
feb	20	2459995.75	4	57	13.76	+25	10	36.23	1.0579	18.8
feb	21	2459996.75	4	58	47.74	+25	12	12.12	1.0677	18.7
feb	22	2459997.75	5	0	23.26	+25	13	46.65	1.0775	18.7
feb	23	2459998.75	5	2	0.27	+25	15	19.61	1.0874	18.6
feb	24	2459999.75	5	3	38.76	+25	16	50.81	1.0973	18.6
feb	25	2460000.75	5	5	18.67	+25	18	20.03	1.1072	18.6
feb	26	2460001.75	5	6	59.97	+25	19	47.08	1.1171	18.5
feb	27	2460002.75	5	8	42.63	+25	21	11.78	1.1270	18.5
feb	28	2460003.75	5	10	26.61	+25	22	33.91	1.1369	18.5
mar	1	2460004.75	5	12	11.87	+25	23	53.30	1.1469	18.4
mar	2	2460005.75	5	13	58.37	+25	25	9.76	1.1569	18.4
mar	3	2460006.75	5	15	46.09	+25	26	23.08	1.1668	18.3
mar	4	2460007.75	5	17	34.99	+25	27	33.09	1.1768	18.3
mar	5	2460008.75	5	19	25.03	+25	28	39.61	1.1868	18.3
mar	6	2460009.75	5	21	16.19	+25	29	42.46	1.1968	18.2
mar	7	2460010.75	5	23	8.44	+25	30	41.47	1.2068	18.2
mar	8	2460011.75	5	25	1.76	+25	31	36.47	1.2168	18.2
mar	9	2460012.75	5	26	56.11	+25	32	27.29	1.2268	18.1
mar	10	2460013.75	5	28	51.47	+25	33	13.80	1.2369	18.1
mar	11	2460014.75	5	30	47.82	+25	33	55.84	1.2469	18.1
mar	12	2460015.75	5	32	45.14	+25	34	33.28	1.2569	18.0
mar	13	2460016.75	5	34	43.41	+25	35	5.98	1.2669	18.0
mar	14	2460017.75	5	36	42.61	+25	35	33.83	1.2769	18.0
mar	15	2460018.75	5	38	42.71	+25	35	56.70	1.2870	17.9
mar	16	2460019.75	5	40	43.70	+25	36	14.46	1.2970	17.9
mar	17	2460020.75	5	42	45.56	+25	36	27.00	1.3070	17.9
mar	18	2460021.75	5	44	48.25	+25	36	34.17	1.3170	17.8
mar	19	2460022.75	5	46	51.78	+25	36	35.84	1.3270	17.8
mar	20	2460023.75	5	48	56.11	+25	36	31.86	1.3371	17.8
mar	21	2460024.75	5	51	1.22	+25	36	22.11	1.3471	17.8
mar	22	2460025.75	5	53	7.11	+25	36	6.44	1.3570	17.7
mar	23	2460026.75	5	55	13.74	+25	35	44.75	1.3670	17.7
mar	24	2460027.75	5	57	21.11	+25	35	16.92	1.3770	17.7
mar	25	2460028.75	5	59	29.18	+25	34	42.85	1.3870	17.6
mar	26	2460029.75	6	1	37.93	+25	34	2.44	1.3969	17.6
mar	27	2460030.75	6	3	47.35	+25	33	15.60	1.4068	17.6
mar	28	2460031.75	6	5	57.41	+25	32	22.23	1.4168	17.5
mar	29	2460032.75	6	8	8.08	+25	31	22.24	1.4267	17.5
mar	30	2460033.75	6	10	19.34	+25	30	15.52	1.4365	17.5
mar	31	2460034.75	6	12	31.17	+25	29	1.99	1.4464	17.5
abr	1	2460035.75	6	14	43.55	+25	27	41.57	1.4563	17.4
abr	2	2460036.75	6	16	56.46	+25	26	14.15	1.4661	17.4

## Marte, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
abr	3	2460037.75	6	19	9.88	+25	24	39.67	1.4759	17.4
abr	4	2460038.75	6	21	23.79	+25	22	58.04	1.4857	17.3
abr	5	2460039.75	6	23	38.18	+25	21	9.18	1.4955	17.3
abr	6	2460040.75	6	25	53.03	+25	19	13.03	1.5052	17.3
abr	7	2460041.75	6	28	8.33	+25	17	9.53	1.5150	17.3
abr	8	2460042.75	6	30	24.06	+25	14	58.61	1.5247	17.2
abr	9	2460043.75	6	32	40.21	+25	12	40.24	1.5344	17.2
abr	10	2460044.75	6	34	56.77	+25	10	14.37	1.5440	17.2
abr	11	2460045.75	6	37	13.72	+25	7	40.95	1.5537	17.1
abr	12	2460046.75	6	39	31.06	+25	4	59.94	1.5633	17.1
abr	13	2460047.75	6	41	48.76	+25	2	11.31	1.5729	17.1
abr	14	2460048.75	6	44	6.82	+24	59	14.99	1.5825	17.1
abr	15	2460049.75	6	46	25.22	+24	56	10.93	1.5920	17.0
abr	16	2460050.75	6	48	43.96	+24	52	59.08	1.6016	17.0
abr	17	2460051.75	6	51	3.01	+24	49	39.37	1.6111	17.0
abr	18	2460052.75	6	53	22.38	+24	46	11.75	1.6205	17.0
abr	19	2460053.75	6	55	42.04	+24	42	36.18	1.6300	16.9
abr	20	2460054.75	6	58	2.00	+24	38	52.62	1.6394	16.9
abr	21	2460055.75	7	0	22.23	+24	35	1.04	1.6488	16.9
abr	22	2460056.75	7	2	42.73	+24	31	1.44	1.6581	16.8
abr	23	2460057.75	7	5	3.48	+24	26	53.79	1.6675	16.8
abr	24	2460058.75	7	7	24.45	+24	22	38.09	1.6768	16.8
abr	25	2460059.75	7	9	45.65	+24	18	14.31	1.6860	16.8
abr	26	2460060.75	7	12	7.04	+24	13	42.46	1.6952	16.7
abr	27	2460061.75	7	14	28.62	+24	9	2.52	1.7044	16.7
abr	28	2460062.75	7	16	50.38	+24	4	14.47	1.7136	16.7
abr	29	2460063.75	7	19	12.29	+23	59	18.30	1.7227	16.7
abr	30	2460064.75	7	21	34.35	+23	54	14.02	1.7318	16.6
may	1	2460065.75	7	23	56.54	+23	49	1.60	1.7408	16.6
may	2	2460066.75	7	26	18.85	+23	43	41.06	1.7498	16.6
may	3	2460067.75	7	28	41.28	+23	38	12.38	1.7588	16.6
may	4	2460068.75	7	31	3.82	+23	32	35.57	1.7678	16.5
may	5	2460069.75	7	33	26.45	+23	26	50.64	1.7767	16.5
may	6	2460070.75	7	35	49.17	+23	20	57.60	1.7855	16.5
may	7	2460071.75	7	38	11.98	+23	14	56.48	1.7944	16.5
may	8	2460072.75	7	40	34.86	+23	8	47.29	1.8032	16.4
may	9	2460073.75	7	42	57.80	+23	2	30.06	1.8119	16.4
may	10	2460074.75	7	45	20.81	+22	56	4.81	1.8206	16.4
may	11	2460075.75	7	47	43.87	+22	49	31.54	1.8293	16.3
may	12	2460076.75	7	50	6.97	+22	42	50.27	1.8380	16.3
may	13	2460077.75	7	52	30.11	+22	36	1.00	1.8466	16.3
may	14	2460078.75	7	54	53.29	+22	29	3.71	1.8551	16.3
may	15	2460079.75	7	57	16.50	+22	21	58.42	1.8637	16.2
may	16	2460080.75	7	59	39.74	+22	14	45.14	1.8721	16.2
may	17	2460081.75	8	2	3.00	+22	7	23.87	1.8806	16.2
may	18	2460082.75	8	4	26.28	+21	59	54.64	1.8890	16.2

## Marte, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
may	19	2460083.75	8	6	49.58	+21	52	17.49	1.8973	16.1
may	20	2460084.75	8	9	12.87	+21	44	32.46	1.9057	16.1
may	21	2460085.75	8	11	36.17	+21	36	39.59	1.9139	16.1
may	22	2460086.75	8	13	59.45	+21	28	38.91	1.9222	16.1
may	23	2460087.75	8	16	22.71	+21	20	30.49	1.9303	16.0
may	24	2460088.75	8	18	45.93	+21	12	14.35	1.9385	16.0
may	25	2460089.75	8	21	9.12	+21	3	50.55	1.9466	16.0
may	26	2460090.75	8	23	32.27	+20	55	19.12	1.9546	16.0
may	27	2460091.75	8	25	55.36	+20	46	40.11	1.9626	15.9
may	28	2460092.75	8	28	18.39	+20	37	53.55	1.9706	15.9
may	29	2460093.75	8	30	41.35	+20	28	59.49	1.9785	15.9
may	30	2460094.75	8	33	4.25	+20	19	57.98	1.9863	15.9
may	31	2460095.75	8	35	27.08	+20	10	49.06	1.9941	15.8
jun	1	2460096.75	8	37	49.83	+20	1	32.79	2.0019	15.8
jun	2	2460097.75	8	40	12.50	+19	52	9.20	2.0096	15.8
jun	3	2460098.75	8	42	35.09	+19	42	38.37	2.0173	15.7
jun	4	2460099.75	8	44	57.60	+19	33	0.35	2.0249	15.7
jun	5	2460100.75	8	47	20.03	+19	23	15.20	2.0325	15.7
jun	6	2460101.75	8	49	42.36	+19	13	22.98	2.0400	15.7
jun	7	2460102.75	8	52	4.61	+19	3	23.76	2.0475	15.6
jun	8	2460103.75	8	54	26.76	+18	53	17.57	2.0549	15.6
jun	9	2460104.75	8	56	48.82	+18	43	4.44	2.0623	15.6
jun	10	2460105.75	8	59	10.78	+18	32	44.42	2.0696	15.6
jun	11	2460106.75	9	1	32.65	+18	22	17.52	2.0769	15.5
jun	12	2460107.75	9	3	54.44	+18	11	43.79	2.0841	15.5
jun	13	2460108.75	9	6	16.13	+18	1	3.26	2.0913	15.5
jun	14	2460109.75	9	8	37.74	+17	50	15.98	2.0985	15.5
jun	15	2460110.75	9	10	59.27	+17	39	22.02	2.1056	15.4
jun	16	2460111.75	9	13	20.70	+17	28	21.44	2.1126	15.4
jun	17	2460112.75	9	15	42.05	+17	17	14.30	2.1196	15.4
jun	18	2460113.75	9	18	3.30	+17	6	0.67	2.1265	15.4
jun	19	2460114.75	9	20	24.45	+16	54	40.63	2.1334	15.3
jun	20	2460115.75	9	22	45.51	+16	43	14.26	2.1402	15.3
jun	21	2460116.75	9	25	6.47	+16	31	41.61	2.1470	15.3
jun	22	2460117.75	9	27	27.32	+16	20	2.77	2.1537	15.2
jun	23	2460118.75	9	29	48.06	+16	8	17.79	2.1604	15.2
jun	24	2460119.75	9	32	8.70	+15	56	26.75	2.1670	15.2
jun	25	2460120.75	9	34	29.23	+15	44	29.72	2.1736	15.2
jun	26	2460121.75	9	36	49.65	+15	32	26.76	2.1801	15.1
jun	27	2460122.75	9	39	9.96	+15	20	17.94	2.1865	15.1
jun	28	2460123.75	9	41	30.17	+15	8	3.33	2.1929	15.1
jun	29	2460124.75	9	43	50.27	+14	55	43.01	2.1993	15.1
jun	30	2460125.75	9	46	10.27	+14	43	17.04	2.2056	15.0
jul	1	2460126.75	9	48	30.16	+14	30	45.50	2.2118	15.0
jul	2	2460127.75	9	50	49.96	+14	18	8.48	2.2180	15.0
jul	3	2460128.75	9	53	9.66	+14	5	26.05	2.2241	15.0

## Marte, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
jul	4	2460129.75	9	55	29.25	+13	52	38.30	2.2302	14.9
jul	5	2460130.75	9	57	48.75	+13	39	45.30	2.2362	14.9
jul	6	2460131.75	10	0	8.15	+13	26	47.09	2.2422	14.9
jul	7	2460132.75	10	2	27.47	+13	13	43.74	2.2481	14.8
jul	8	2460133.75	10	4	46.69	+13	0	35.28	2.2539	14.8
jul	9	2460134.75	10	7	5.84	+12	47	21.76	2.2597	14.8
jul	10	2460135.75	10	9	24.91	+12	34	3.22	2.2655	14.8
jul	11	2460136.75	10	11	43.92	+12	20	39.72	2.2712	14.7
jul	12	2460137.75	10	14	2.86	+12	7	11.32	2.2768	14.7
jul	13	2460138.75	10	16	21.75	+11	53	38.11	2.2824	14.7
jul	14	2460139.75	10	18	40.57	+11	40	0.15	2.2880	14.7
jul	15	2460140.75	10	20	59.34	+11	26	17.52	2.2934	14.6
jul	16	2460141.75	10	23	18.06	+11	12	30.31	2.2988	14.6
jul	17	2460142.75	10	25	36.72	+10	58	38.60	2.3042	14.6
jul	18	2460143.75	10	27	55.33	+10	44	42.48	2.3095	14.5
jul	19	2460144.75	10	30	13.89	+10	30	42.02	2.3148	14.5
jul	20	2460145.75	10	32	32.40	+10	16	37.32	2.3199	14.5
jul	21	2460146.75	10	34	50.86	+10	2	28.44	2.3251	14.5
jul	22	2460147.75	10	37	9.28	+9	48	15.48	2.3301	14.4
jul	23	2460148.75	10	39	27.66	+9	33	58.51	2.3352	14.4
jul	24	2460149.75	10	41	46.00	+9	19	37.61	2.3401	14.4
jul	25	2460150.75	10	44	4.31	+9	5	12.85	2.3450	14.4
jul	26	2460151.75	10	46	22.59	+8	50	44.33	2.3499	14.3
jul	27	2460152.75	10	48	40.84	+8	36	12.12	2.3546	14.3
jul	28	2460153.75	10	50	59.08	+8	21	36.32	2.3594	14.3
jul	29	2460154.75	10	53	17.29	+8	6	56.99	2.3640	14.2
jul	30	2460155.75	10	55	35.49	+7	52	14.25	2.3686	14.2
jul	31	2460156.75	10	57	53.68	+7	37	28.18	2.3732	14.2
ago	1	2460157.75	11	0	11.86	+7	22	38.86	2.3777	14.2
ago	2	2460158.75	11	2	30.04	+7	7	46.39	2.3821	14.1
ago	3	2460159.75	11	4	48.22	+6	52	50.82	2.3865	14.1
ago	4	2460160.75	11	7	6.41	+6	37	52.21	2.3908	14.1
ago	5	2460161.75	11	9	24.62	+6	22	50.62	2.3951	14.1
ago	6	2460162.75	11	11	42.85	+6	7	46.09	2.3993	14.0
ago	7	2460163.75	11	14	1.12	+5	52	38.67	2.4034	14.0
ago	8	2460164.75	11	16	19.43	+5	37	28.45	2.4075	14.0
ago	9	2460165.75	11	18	37.80	+5	22	15.48	2.4116	13.9
ago	10	2460166.75	11	20	56.21	+5	6	59.85	2.4155	13.9
ago	11	2460167.75	11	23	14.69	+4	51	41.64	2.4195	13.9
ago	12	2460168.75	11	25	33.23	+4	36	20.95	2.4233	13.9
ago	13	2460169.75	11	27	51.84	+4	20	57.87	2.4271	13.8
ago	14	2460170.75	11	30	10.53	+4	5	32.48	2.4309	13.8
ago	15	2460171.75	11	32	29.28	+3	50	4.89	2.4346	13.8
ago	16	2460172.75	11	34	48.12	+3	34	35.18	2.4382	13.8
ago	17	2460173.75	11	37	7.04	+3	19	3.45	2.4418	13.7
ago	18	2460174.75	11	39	26.05	+3	3	29.78	2.4453	13.7

## Marte, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
ago	19	2460175.75	11	41	45.16	+2	47	54.28	2.4487	13.7
ago	20	2460176.75	11	44	4.36	+2	32	17.02	2.4521	13.6
ago	21	2460177.75	11	46	23.68	+2	16	38.10	2.4554	13.6
ago	22	2460178.75	11	48	43.10	+2	0	57.62	2.4587	13.6
ago	23	2460179.75	11	51	2.64	+1	45	15.66	2.4619	13.6
ago	24	2460180.75	11	53	22.30	+1	29	32.33	2.4650	13.5
ago	25	2460181.75	11	55	42.09	+1	13	47.71	2.4681	13.5
ago	26	2460182.75	11	58	2.02	+0	58	1.91	2.4712	13.5
ago	27	2460183.75	12	0	22.08	+0	42	15.04	2.4741	13.5
ago	28	2460184.75	12	2	42.29	+0	26	27.19	2.4770	13.4
ago	29	2460185.75	12	5	2.63	+0	10	38.48	2.4799	13.4
ago	30	2460186.75	12	7	23.13	-0	5	11.01	2.4827	13.4
ago	31	2460187.75	12	9	43.79	-0	21	1.19	2.4854	13.4
sep	1	2460188.75	12	12	4.62	-0	36	51.99	2.4881	13.3
sep	2	2460189.75	12	14	25.63	-0	52	43.34	2.4907	13.3
sep	3	2460190.75	12	16	46.83	-1	8	35.19	2.4933	13.3
sep	4	2460191.75	12	19	8.22	-1	24	27.46	2.4958	13.2
sep	5	2460192.75	12	21	29.83	-1	40	20.07	2.4983	13.2
sep	6	2460193.75	12	23	51.65	-1	56	12.94	2.5007	13.2
sep	7	2460194.75	12	26	13.70	-2	12	5.97	2.5030	13.2
sep	8	2460195.75	12	28	35.97	-2	27	59.05	2.5053	13.1
sep	9	2460196.75	12	30	58.47	-2	43	52.09	2.5075	13.1
sep	10	2460197.75	12	33	21.22	-2	59	44.97	2.5097	13.1
sep	11	2460198.75	12	35	44.21	-3	15	37.59	2.5118	13.1
sep	12	2460199.75	12	38	7.45	-3	31	29.84	2.5139	13.0
sep	13	2460200.75	12	40	30.94	-3	47	21.62	2.5158	13.0
sep	14	2460201.75	12	42	54.70	-4	3	12.80	2.5178	13.0
sep	15	2460202.75	12	45	18.73	-4	19	3.28	2.5197	13.0
sep	16	2460203.75	12	47	43.03	-4	34	52.95	2.5215	12.9
sep	17	2460204.75	12	50	7.61	-4	50	41.71	2.5232	12.9
sep	18	2460205.75	12	52	32.49	-5	6	29.43	2.5249	12.9
sep	19	2460206.75	12	54	57.65	-5	22	16.02	2.5266	12.9
sep	20	2460207.75	12	57	23.12	-5	38	1.35	2.5281	12.8
sep	21	2460208.75	12	59	48.90	-5	53	45.32	2.5297	12.8
sep	22	2460209.75	13	2	14.98	-6	9	27.79	2.5311	12.8
sep	23	2460210.75	13	4	41.39	-6	25	8.65	2.5325	12.8
sep	24	2460211.75	13	7	8.11	-6	40	47.77	2.5339	12.7
sep	25	2460212.75	13	9	35.16	-6	56	25.03	2.5352	12.7
sep	26	2460213.75	13	12	2.54	-7	12	0.30	2.5364	12.7
sep	27	2460214.75	13	14	30.26	-7	27	33.45	2.5376	12.7
sep	28	2460215.75	13	16	58.32	-7	43	4.39	2.5387	12.6
sep	29	2460216.75	13	19	26.74	-7	58	33.02	2.5398	12.6
sep	30	2460217.75	13	21	55.52	-8	13	59.24	2.5408	12.6
oct	1	2460218.75	13	24	24.68	-8	29	22.96	2.5418	12.6
oct	2	2460219.75	13	26	54.23	-8	44	44.09	2.5427	12.5
oct	3	2460220.75	13	29	24.17	-9	0	2.54	2.5435	12.5

## Marte, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
oct	4	2460221.75	13	31	54.52	-9	15	18.17	2.5443	12.5
oct	5	2460222.75	13	34	25.27	-9	30	30.89	2.5451	12.5
oct	6	2460223.75	13	36	56.44	-9	45	40.55	2.5458	12.4
oct	7	2460224.75	13	39	28.03	-10	0	47.04	2.5464	12.4
oct	8	2460225.75	13	42	0.04	-10	15	50.21	2.5470	12.4
oct	9	2460226.75	13	44	32.48	-10	30	49.93	2.5475	12.4
oct	10	2460227.75	13	47	5.36	-10	45	46.07	2.5480	12.3
oct	11	2460228.75	13	49	38.68	-11	0	38.50	2.5484	12.3
oct	12	2460229.75	13	52	12.46	-11	15	27.07	2.5488	12.3
oct	13	2460230.75	13	54	46.69	-11	30	11.65	2.5491	12.3
oct	14	2460231.75	13	57	21.37	-11	44	52.11	2.5493	12.3
oct	15	2460232.75	13	59	56.53	-11	59	28.30	2.5495	12.2
oct	16	2460233.75	14	2	32.16	-12	14	0.09	2.5497	12.2
oct	17	2460234.75	14	5	8.27	-12	28	27.35	2.5497	12.2
oct	18	2460235.75	14	7	44.86	-12	42	49.93	2.5498	12.2
oct	19	2460236.75	14	10	21.94	-12	57	7.68	2.5498	12.1
oct	20	2460237.75	14	12	59.51	-13	11	20.47	2.5497	12.1
oct	21	2460238.75	14	15	37.56	-13	25	28.13	2.5496	12.1
oct	22	2460239.75	14	18	16.12	-13	39	30.50	2.5494	12.1
oct	23	2460240.75	14	20	55.16	-13	53	27.45	2.5492	12.1
oct	24	2460241.75	14	23	34.71	-14	7	18.80	2.5489	12.0
oct	25	2460242.75	14	26	14.77	-14	21	4.42	2.5485	12.0
oct	26	2460243.75	14	28	55.34	-14	34	44.16	2.5482	12.0
oct	27	2460244.75	14	31	36.43	-14	48	17.90	2.5477	12.0
oct	28	2460245.75	14	34	18.05	-15	1	45.51	2.5472	12.0
oct	29	2460246.75	14	37	0.21	-15	15	6.88	2.5467	11.9
oct	30	2460247.75	14	39	42.91	-15	28	21.87	2.5461	11.9
oct	31	2460248.75	14	42	26.16	-15	41	30.35	2.5455	11.9
nov	1	2460249.75	14	45	9.97	-15	54	32.20	2.5448	11.9
nov	2	2460250.75	14	47	54.33	-16	7	27.25	2.5441	11.9
nov	3	2460251.75	14	50	39.25	-16	20	15.36	2.5433	11.8
nov	4	2460252.75	14	53	24.74	-16	32	56.37	2.5425	11.8
nov	5	2460253.75	14	56	10.79	-16	45	30.12	2.5416	11.8
nov	6	2460254.75	14	58	57.41	-16	57	56.45	2.5407	11.8
nov	7	2460255.75	15	1	44.60	-17	10	15.20	2.5398	11.8
nov	8	2460256.75	15	4	32.37	-17	22	26.22	2.5388	11.7
nov	9	2460257.75	15	7	20.72	-17	34	29.33	2.5377	11.7
nov	10	2460258.75	15	10	9.64	-17	46	24.39	2.5366	11.7
nov	11	2460259.75	15	12	59.15	-17	58	11.24	2.5354	11.7
nov	12	2460260.75	15	15	49.25	-18	9	49.71	2.5342	11.7
nov	13	2460261.75	15	18	39.93	-18	21	19.65	2.5330	11.6
nov	14	2460262.75	15	21	31.20	-18	32	40.92	2.5317	11.6
nov	15	2460263.75	15	24	23.05	-18	43	53.35	2.5304	11.6
nov	16	2460264.75	15	27	15.50	-18	54	56.82	2.5290	11.6
nov	17	2460265.75	15	30	8.53	-19	5	51.35	2.5275	11.6
nov	18	2460266.75	15	33	2.01	-19	16	38.08	2.5260	11.6

## Marte, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
nov	19	2460267.75	15	35	56.16	-19	27	11.22	2.5245	11.5
nov	20	2460268.75	15	38	50.91	-19	37	36.76	2.5230	11.5
nov	21	2460269.75	15	41	46.22	-19	47	52.56	2.5213	11.5
nov	22	2460270.75	15	44	42.09	-19	57	58.37	2.5197	11.5
nov	23	2460271.75	15	47	38.52	-20	7	54.01	2.5180	11.5
nov	24	2460272.75	15	50	35.53	-20	17	39.35	2.5163	11.4
nov	25	2460273.75	15	53	33.11	-20	27	14.24	2.5145	11.4
nov	26	2460274.75	15	56	31.26	-20	36	38.57	2.5127	11.4
nov	27	2460275.75	15	59	29.99	-20	45	52.18	2.5108	11.4
nov	28	2460276.75	16	2	29.28	-20	54	54.95	2.5089	11.4
nov	29	2460277.75	16	5	29.15	-21	3	46.73	2.5070	11.4
nov	30	2460278.75	16	8	29.57	-21	12	27.36	2.5050	11.4
dic	1	2460279.75	16	11	30.56	-21	20	56.71	2.5030	11.3
dic	2	2460280.75	16	14	32.10	-21	29	14.61	2.5009	11.3
dic	3	2460281.75	16	17	34.20	-21	37	20.90	2.4988	11.3
dic	4	2460282.75	16	20	36.84	-21	45	15.44	2.4967	11.3
dic	5	2460283.75	16	23	40.03	-21	52	58.06	2.4945	11.3
dic	6	2460284.75	16	26	43.75	-22	0	28.63	2.4923	11.3
dic	7	2460285.75	16	29	48.01	-22	7	46.99	2.4901	11.2
dic	8	2460286.75	16	32	52.80	-22	14	53.00	2.4878	11.2
dic	9	2460287.75	16	35	58.11	-22	21	46.51	2.4855	11.2
dic	10	2460288.75	16	39	3.94	-22	28	27.40	2.4832	11.2
dic	11	2460289.75	16	42	10.27	-22	34	55.53	2.4808	11.2
dic	12	2460290.75	16	45	17.11	-22	41	10.77	2.4783	11.2
dic	13	2460291.75	16	48	24.43	-22	47	12.99	2.4759	11.2
dic	14	2460292.75	16	51	32.23	-22	53	2.06	2.4734	11.2
dic	15	2460293.75	16	54	40.49	-22	58	37.85	2.4708	11.1
dic	16	2460294.75	16	57	49.21	-23	4	0.22	2.4683	11.1
dic	17	2460295.75	17	0	58.36	-23	9	9.04	2.4657	11.1
dic	18	2460296.75	17	4	7.94	-23	14	4.17	2.4630	11.1
dic	19	2460297.75	17	7	17.94	-23	18	45.50	2.4604	11.1
dic	20	2460298.75	17	10	28.34	-23	23	12.90	2.4577	11.1
dic	21	2460299.75	17	13	39.15	-23	27	26.28	2.4549	11.1
dic	22	2460300.75	17	16	50.35	-23	31	25.54	2.4522	11.0
dic	23	2460301.75	17	20	1.93	-23	35	10.59	2.4494	11.0
dic	24	2460302.75	17	23	13.89	-23	38	41.36	2.4466	11.0
dic	25	2460303.75	17	26	26.22	-23	41	57.75	2.4437	11.0
dic	26	2460304.75	17	29	38.90	-23	44	59.68	2.4409	11.0
dic	27	2460305.75	17	32	51.92	-23	47	47.08	2.4380	11.0
dic	28	2460306.75	17	36	5.27	-23	50	19.85	2.4350	11.0
dic	29	2460307.75	17	39	18.94	-23	52	37.91	2.4321	11.0
dic	30	2460308.75	17	42	32.91	-23	54	41.16	2.4291	11.0
dic	31	2460309.75	17	45	47.18	-23	56	29.53	2.4261	17.8
ene	1	2460310.75	17	49	1.73	-23	58	2.94	2.4230	17.8
ene	2	2460311.75	17	52	16.55	-23	59	21.31	2.4200	17.9
ene	3	2460312.75	17	55	26.59	-24	0	23.50	2.3968	17.9
ene	4	2460313.75	18	9	54.15	-24	1	48.93	2.6680	18.2

## Júpiter, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
ene	1	2459945.75	0	6	32.08	-0	41	35.82	5.0143	17.2
ene	2	2459946.75	0	6	58.68	-0	38	26.85	5.0300	17.1
ene	3	2459947.75	0	7	25.87	-0	35	14.23	5.0456	17.1
ene	4	2459948.75	0	7	53.63	-0	31	58.01	5.0612	17.0
ene	5	2459949.75	0	8	21.96	-0	28	38.27	5.0767	17.0
ene	6	2459950.75	0	8	50.85	-0	25	15.04	5.0922	16.9
ene	7	2459951.75	0	9	20.29	-0	21	48.39	5.1076	16.9
ene	8	2459952.75	0	9	50.27	-0	18	18.37	5.1229	16.8
ene	9	2459953.75	0	10	20.79	-0	14	45.04	5.1382	16.7
ene	10	2459954.75	0	10	51.84	-0	11	8.43	5.1535	16.7
ene	11	2459955.75	0	11	23.41	-0	7	28.60	5.1686	16.6
ene	12	2459956.75	0	11	55.50	-0	3	45.60	5.1837	16.6
ene	13	2459957.75	0	12	28.09	+0	0	0.55	5.1987	16.5
ene	14	2459958.75	0	13	1.20	+0	3	49.79	5.2136	16.5
ene	15	2459959.75	0	13	34.80	+0	7	42.10	5.2285	16.4
ene	16	2459960.75	0	14	8.90	+0	11	37.44	5.2433	16.3
ene	17	2459961.75	0	14	43.49	+0	15	35.77	5.2579	16.3
ene	18	2459962.75	0	15	18.57	+0	19	37.06	5.2725	16.2
ene	19	2459963.75	0	15	54.12	+0	23	41.25	5.2870	16.2
ene	20	2459964.75	0	16	30.15	+0	27	48.30	5.3014	16.1
ene	21	2459965.75	0	17	6.63	+0	31	58.14	5.3157	16.1
ene	22	2459966.75	0	17	43.57	+0	36	10.70	5.3299	16.0
ene	23	2459967.75	0	18	20.94	+0	40	25.91	5.3440	16.0
ene	24	2459968.75	0	18	58.76	+0	44	43.73	5.3579	15.9
ene	25	2459969.75	0	19	37.00	+0	49	4.09	5.3718	15.8
ene	26	2459970.75	0	20	15.66	+0	53	26.96	5.3855	15.8
ene	27	2459971.75	0	20	54.74	+0	57	52.29	5.3992	15.7
ene	28	2459972.75	0	21	34.23	+1	2	20.03	5.4127	15.7
ene	29	2459973.75	0	22	14.12	+1	6	50.14	5.4260	15.6
ene	30	2459974.75	0	22	54.41	+1	11	22.57	5.4393	15.6
ene	31	2459975.75	0	23	35.09	+1	15	57.25	5.4524	15.5
feb	1	2459976.75	0	24	16.15	+1	20	34.14	5.4654	15.5
feb	2	2459977.75	0	24	57.58	+1	25	13.18	5.4783	15.4
feb	3	2459978.75	0	25	39.38	+1	29	54.32	5.4910	15.4
feb	4	2459979.75	0	26	21.54	+1	34	37.49	5.5036	15.3
feb	5	2459980.75	0	27	4.05	+1	39	22.66	5.5160	15.2
feb	6	2459981.75	0	27	46.91	+1	44	9.77	5.5283	15.2
feb	7	2459982.75	0	28	30.11	+1	48	58.78	5.5405	15.1
feb	8	2459983.75	0	29	13.65	+1	53	49.64	5.5525	15.1
feb	9	2459984.75	0	29	57.51	+1	58	42.32	5.5644	15.0
feb	10	2459985.75	0	30	41.70	+2	3	36.78	5.5761	15.0
feb	11	2459986.75	0	31	26.21	+2	8	32.98	5.5877	14.9
feb	12	2459987.75	0	32	11.04	+2	13	30.91	5.5992	14.9
feb	13	2459988.75	0	32	56.19	+2	18	30.51	5.6104	14.8
feb	14	2459989.75	0	33	41.64	+2	23	31.76	5.6216	14.8
feb	15	2459990.75	0	34	27.39	+2	28	34.62	5.6325	14.7



## Júpiter, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
feb	16	2459991.75	0	35	13.44	+2	33	39.04	5.6433	14.7
feb	17	2459992.75	0	35	59.78	+2	38	44.98	5.6540	14.6
feb	18	2459993.75	0	36	46.40	+2	43	52.36	5.6644	14.6
feb	19	2459994.75	0	37	33.30	+2	49	1.14	5.6748	14.5
feb	20	2459995.75	0	38	20.46	+2	54	11.25	5.6849	14.4
feb	21	2459996.75	0	39	7.88	+2	59	22.64	5.6949	14.4
feb	22	2459997.75	0	39	55.56	+3	4	35.28	5.7047	14.3
feb	23	2459998.75	0	40	43.48	+3	9	49.12	5.7143	14.3
feb	24	2459999.75	0	41	31.66	+3	15	4.12	5.7238	14.2
feb	25	2460000.75	0	42	20.08	+3	20	20.25	5.7330	14.2
feb	26	2460001.75	0	43	8.73	+3	25	37.47	5.7421	14.1
feb	27	2460002.75	0	43	57.61	+3	30	55.71	5.7511	14.1
feb	28	2460003.75	0	44	46.72	+3	36	14.94	5.7598	14.0
mar	1	2460004.75	0	45	36.04	+3	41	35.11	5.7684	14.0
mar	2	2460005.75	0	46	25.58	+3	46	56.16	5.7768	13.9
mar	3	2460006.75	0	47	15.31	+3	52	18.05	5.7850	13.9
mar	4	2460007.75	0	48	5.25	+3	57	40.73	5.7930	13.8
mar	5	2460008.75	0	48	55.38	+4	3	4.16	5.8008	13.8
mar	6	2460009.75	0	49	45.69	+4	8	28.29	5.8085	13.7
mar	7	2460010.75	0	50	36.19	+4	13	53.09	5.8159	13.7
mar	8	2460011.75	0	51	26.87	+4	19	18.53	5.8232	13.6
mar	9	2460012.75	0	52	17.73	+4	24	44.57	5.8303	13.6
mar	10	2460013.75	0	53	8.76	+4	30	11.19	5.8372	13.5
mar	11	2460014.75	0	53	59.96	+4	35	38.36	5.8439	13.5
mar	12	2460015.75	0	54	51.33	+4	41	6.05	5.8504	13.4
mar	13	2460016.75	0	55	42.86	+4	46	34.24	5.8568	13.4
mar	14	2460017.75	0	56	34.55	+4	52	2.89	5.8629	13.3
mar	15	2460018.75	0	57	26.40	+4	57	31.98	5.8689	13.3
mar	16	2460019.75	0	58	18.39	+5	3	1.45	5.8746	13.2
mar	17	2460020.75	0	59	10.53	+5	8	31.25	5.8802	13.2
mar	18	2460021.75	1	0	2.80	+5	14	1.35	5.8856	13.1
mar	19	2460022.75	1	0	55.20	+5	19	31.68	5.8907	13.0
mar	20	2460023.75	1	1	47.73	+5	25	2.20	5.8957	13.0
mar	21	2460024.75	1	2	40.37	+5	30	32.87	5.9005	12.9
mar	22	2460025.75	1	3	33.14	+5	36	3.65	5.9051	12.9
mar	23	2460026.75	1	4	26.01	+5	41	34.52	5.9095	12.8
mar	24	2460027.75	1	5	19.00	+5	47	5.45	5.9136	12.8
mar	25	2460028.75	1	6	12.09	+5	52	36.39	5.9176	12.7
mar	26	2460029.75	1	7	5.28	+5	58	7.31	5.9214	12.7
mar	27	2460030.75	1	7	58.56	+6	3	38.17	5.9250	12.6
mar	28	2460031.75	1	8	51.93	+6	9	8.93	5.9283	12.6
mar	29	2460032.75	1	9	45.38	+6	14	39.54	5.9315	12.5
mar	30	2460033.75	1	10	38.91	+6	20	9.96	5.9345	12.5
mar	31	2460034.75	1	11	32.51	+6	25	40.14	5.9373	12.4
abr	1	2460035.75	1	12	26.18	+6	31	10.06	5.9398	12.4
abr	2	2460036.75	1	13	19.91	+6	36	39.67	5.9422	12.3

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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
abr	3	2460037.75	1	14	13.70	+6	42	8.94	5.9444	12.3
abr	4	2460038.75	1	15	7.54	+6	47	37.84	5.9464	12.2
abr	5	2460039.75	1	16	1.44	+6	53	6.35	5.9481	12.2
abr	6	2460040.75	1	16	55.38	+6	58	34.43	5.9497	12.1
abr	7	2460041.75	1	17	49.37	+7	4	2.08	5.9511	12.1
abr	8	2460042.75	1	18	43.41	+7	9	29.26	5.9523	12.0
abr	9	2460043.75	1	19	37.49	+7	14	55.95	5.9532	12.0
abr	10	2460044.75	1	20	31.61	+7	20	22.11	5.9540	11.9
abr	11	2460045.75	1	21	25.76	+7	25	47.65	5.9546	11.9
abr	12	2460046.75	1	22	19.93	+7	31	12.65	5.9549	11.8
abr	13	2460047.75	1	23	14.12	+7	36	37.28	5.9551	11.8
abr	14	2460048.75	1	24	8.33	+7	42	1.26	5.9551	11.7
abr	15	2460049.75	1	25	2.56	+7	47	24.51	5.9549	11.7
abr	16	2460050.75	1	25	56.80	+7	52	47.01	5.9544	11.6
abr	17	2460051.75	1	26	51.04	+7	58	8.74	5.9538	11.6
abr	18	2460052.75	1	27	45.28	+8	3	29.66	5.9530	11.5
abr	19	2460053.75	1	28	39.51	+8	8	49.76	5.9519	11.5
abr	20	2460054.75	1	29	33.73	+8	14	9.02	5.9507	11.4
abr	21	2460055.75	1	30	27.95	+8	19	27.40	5.9493	11.4
abr	22	2460056.75	1	31	22.15	+8	24	44.88	5.9476	11.3
abr	23	2460057.75	1	32	16.32	+8	30	1.43	5.9458	11.3
abr	24	2460058.75	1	33	10.47	+8	35	17.00	5.9438	11.2
abr	25	2460059.75	1	34	4.59	+8	40	31.57	5.9415	11.2
abr	26	2460060.75	1	34	58.66	+8	45	45.10	5.9391	11.1
abr	27	2460061.75	1	35	52.69	+8	50	57.54	5.9365	11.1
abr	28	2460062.75	1	36	46.68	+8	56	8.87	5.9336	11.0
abr	29	2460063.75	1	37	40.60	+9	1	19.05	5.9306	11.0
abr	30	2460064.75	1	38	34.47	+9	6	28.06	5.9274	10.9
may	1	2460065.75	1	39	28.28	+9	11	35.86	5.9240	10.9
may	2	2460066.75	1	40	22.02	+9	16	42.44	5.9204	10.8
may	3	2460067.75	1	41	15.69	+9	21	47.78	5.9166	10.8
may	4	2460068.75	1	42	9.30	+9	26	51.85	5.9127	10.7
may	5	2460069.75	1	43	2.83	+9	31	54.66	5.9085	10.7
may	6	2460070.75	1	43	56.28	+9	36	56.18	5.9041	10.6
may	7	2460071.75	1	44	49.66	+9	41	56.40	5.8996	10.6
may	8	2460072.75	1	45	42.96	+9	46	55.31	5.8949	10.5
may	9	2460073.75	1	46	36.16	+9	51	52.87	5.8899	10.5
may	10	2460074.75	1	47	29.27	+9	56	49.06	5.8848	10.4
may	11	2460075.75	1	48	22.28	+10	1	43.85	5.8796	10.4
may	12	2460076.75	1	49	15.19	+10	6	37.18	5.8741	10.3
may	13	2460077.75	1	50	7.98	+10	11	29.03	5.8684	10.3
may	14	2460078.75	1	51	0.65	+10	16	19.36	5.8626	10.2
may	15	2460079.75	1	51	53.21	+10	21	8.16	5.8565	10.2
may	16	2460080.75	1	52	45.64	+10	25	55.38	5.8503	10.1
may	17	2460081.75	1	53	37.94	+10	30	41.02	5.8439	10.1
may	18	2460082.75	1	54	30.11	+10	35	25.06	5.8374	10.0

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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
may	19	2460083.75	1	55	22.15	+10	40	7.47	5.8306	9.9
may	20	2460084.75	1	56	14.04	+10	44	48.22	5.8237	9.9
may	21	2460085.75	1	57	5.79	+10	49	27.30	5.8166	9.8
may	22	2460086.75	1	57	57.37	+10	54	4.67	5.8093	9.8
may	23	2460087.75	1	58	48.80	+10	58	40.29	5.8018	9.7
may	24	2460088.75	1	59	40.06	+11	3	14.14	5.7942	9.7
may	25	2460089.75	2	0	31.14	+11	7	46.17	5.7864	9.6
may	26	2460090.75	2	1	22.04	+11	12	16.38	5.7784	9.6
may	27	2460091.75	2	2	12.76	+11	16	44.72	5.7703	9.5
may	28	2460092.75	2	3	3.29	+11	21	11.18	5.7619	9.5
may	29	2460093.75	2	3	53.62	+11	25	35.73	5.7535	9.4
may	30	2460094.75	2	4	43.76	+11	29	58.36	5.7448	9.4
may	31	2460095.75	2	5	33.70	+11	34	19.06	5.7360	9.3
jun	1	2460096.75	2	6	23.43	+11	38	37.82	5.7270	9.3
jun	2	2460097.75	2	7	12.95	+11	42	54.62	5.7179	9.2
jun	3	2460098.75	2	8	2.27	+11	47	9.47	5.7086	9.2
jun	4	2460099.75	2	8	51.36	+11	51	22.35	5.6992	9.1
jun	5	2460100.75	2	9	40.24	+11	55	33.25	5.6896	9.1
jun	6	2460101.75	2	10	28.89	+11	59	42.14	5.6798	9.0
jun	7	2460102.75	2	11	17.30	+12	3	49.00	5.6699	9.0
jun	8	2460103.75	2	12	5.47	+12	7	53.79	5.6599	8.9
jun	9	2460104.75	2	12	53.39	+12	11	56.47	5.6497	8.9
jun	10	2460105.75	2	13	41.05	+12	15	57.01	5.6393	8.8
jun	11	2460106.75	2	14	28.45	+12	19	55.40	5.6288	8.8
jun	12	2460107.75	2	15	15.59	+12	23	51.61	5.6182	8.7
jun	13	2460108.75	2	16	2.46	+12	27	45.62	5.6074	8.7
jun	14	2460109.75	2	16	49.06	+12	31	37.43	5.5964	8.6
jun	15	2460110.75	2	17	35.38	+12	35	27.01	5.5853	8.5
jun	16	2460111.75	2	18	21.40	+12	39	14.35	5.5741	8.5
jun	17	2460112.75	2	19	7.14	+12	42	59.42	5.5628	8.4
jun	18	2460113.75	2	19	52.57	+12	46	42.20	5.5513	8.4
jun	19	2460114.75	2	20	37.69	+12	50	22.66	5.5396	8.3
jun	20	2460115.75	2	21	22.49	+12	54	0.76	5.5279	8.3
jun	21	2460116.75	2	22	6.97	+12	57	36.49	5.5160	8.2
jun	22	2460117.75	2	22	51.11	+13	1	9.82	5.5040	8.2
jun	23	2460118.75	2	23	34.91	+13	4	40.72	5.4918	8.1
jun	24	2460119.75	2	24	18.37	+13	8	9.17	5.4795	8.1
jun	25	2460120.75	2	25	1.48	+13	11	35.16	5.4672	8.0
jun	26	2460121.75	2	25	44.23	+13	14	58.66	5.4546	8.0
jun	27	2460122.75	2	26	26.63	+13	18	19.68	5.4420	7.9
jun	28	2460123.75	2	27	8.65	+13	21	38.19	5.4293	7.8
jun	29	2460124.75	2	27	50.31	+13	24	54.20	5.4164	7.8
jun	30	2460125.75	2	28	31.59	+13	28	7.69	5.4035	7.7
jul	1	2460126.75	2	29	12.49	+13	31	18.68	5.3904	7.7
jul	2	2460127.75	2	29	53.00	+13	34	27.15	5.3772	7.6
jul	3	2460128.75	2	30	33.12	+13	37	33.08	5.3640	7.6

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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
jul	4	2460129.75	2	31	12.84	+13	40	36.46	5.3506	7.5
jul	5	2460130.75	2	31	52.14	+13	43	37.25	5.3371	7.5
jul	6	2460131.75	2	32	31.03	+13	46	35.42	5.3235	7.4
jul	7	2460132.75	2	33	9.48	+13	49	30.93	5.3099	7.4
jul	8	2460133.75	2	33	47.51	+13	52	23.77	5.2961	7.3
jul	9	2460134.75	2	34	25.09	+13	55	13.92	5.2823	7.2
jul	10	2460135.75	2	35	2.23	+13	58	1.36	5.2683	7.2
jul	11	2460136.75	2	35	38.92	+14	0	46.08	5.2543	7.1
jul	12	2460137.75	2	36	15.15	+14	3	28.08	5.2402	7.1
jul	13	2460138.75	2	36	50.91	+14	6	7.32	5.2260	7.0
jul	14	2460139.75	2	37	26.20	+14	8	43.81	5.2117	7.0
jul	15	2460140.75	2	38	1.00	+14	11	17.50	5.1974	6.9
jul	16	2460141.75	2	38	35.31	+14	13	48.38	5.1830	6.9
jul	17	2460142.75	2	39	9.12	+14	16	16.43	5.1685	6.8
jul	18	2460143.75	2	39	42.41	+14	18	41.62	5.1539	6.7
jul	19	2460144.75	2	40	15.19	+14	21	3.92	5.1393	6.7
jul	20	2460145.75	2	40	47.43	+14	23	23.31	5.1247	6.6
jul	21	2460146.75	2	41	19.14	+14	25	39.77	5.1099	6.6
jul	22	2460147.75	2	41	50.31	+14	27	53.28	5.0951	6.5
jul	23	2460148.75	2	42	20.94	+14	30	3.84	5.0803	6.5
jul	24	2460149.75	2	42	51.01	+14	32	11.43	5.0654	6.4
jul	25	2460150.75	2	43	20.51	+14	34	16.04	5.0505	6.3
jul	26	2460151.75	2	43	49.46	+14	36	17.67	5.0355	6.3
jul	27	2460152.75	2	44	17.83	+14	38	16.31	5.0205	6.2
jul	28	2460153.75	2	44	45.63	+14	40	11.97	5.0054	6.2
jul	29	2460154.75	2	45	12.84	+14	42	4.65	4.9904	6.1
jul	30	2460155.75	2	45	39.46	+14	43	54.33	4.9753	6.1
jul	31	2460156.75	2	46	5.49	+14	45	41.01	4.9601	6.0
ago	1	2460157.75	2	46	30.90	+14	47	24.66	4.9450	5.9
ago	2	2460158.75	2	46	55.70	+14	49	5.25	4.9298	5.9
ago	3	2460159.75	2	47	19.87	+14	50	42.74	4.9146	5.8
ago	4	2460160.75	2	47	43.40	+14	52	17.12	4.8994	5.8
ago	5	2460161.75	2	48	6.30	+14	53	48.36	4.8842	5.7
ago	6	2460162.75	2	48	28.56	+14	55	16.45	4.8690	5.6
ago	7	2460163.75	2	48	50.17	+14	56	41.39	4.8538	5.6
ago	8	2460164.75	2	49	11.12	+14	58	3.17	4.8385	5.5
ago	9	2460165.75	2	49	31.40	+14	59	21.77	4.8233	5.5
ago	10	2460166.75	2	49	51.01	+15	0	37.18	4.8081	5.4
ago	11	2460167.75	2	50	9.94	+15	1	49.38	4.7929	5.3
ago	12	2460168.75	2	50	28.18	+15	2	58.36	4.7777	5.3
ago	13	2460169.75	2	50	45.72	+15	4	4.09	4.7625	5.2
ago	14	2460170.75	2	51	2.56	+15	5	6.55	4.7474	5.2
ago	15	2460171.75	2	51	18.68	+15	6	5.72	4.7323	5.1
ago	16	2460172.75	2	51	34.07	+15	7	1.58	4.7172	5.0
ago	17	2460173.75	2	51	48.74	+15	7	54.11	4.7021	5.0
ago	18	2460174.75	2	52	2.68	+15	8	43.31	4.6871	4.9

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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
ago	19	2460175.75	2	52	15.88	+15	9	29.15	4.6721	4.9
ago	20	2460176.75	2	52	28.34	+15	10	11.65	4.6572	4.8
ago	21	2460177.75	2	52	40.05	+15	10	50.79	4.6423	4.7
ago	22	2460178.75	2	52	51.02	+15	11	26.58	4.6275	4.7
ago	23	2460179.75	2	53	1.23	+15	11	59.02	4.6128	4.6
ago	24	2460180.75	2	53	10.68	+15	12	28.12	4.5981	4.5
ago	25	2460181.75	2	53	19.38	+15	12	53.88	4.5834	4.5
ago	26	2460182.75	2	53	27.32	+15	13	16.31	4.5689	4.4
ago	27	2460183.75	2	53	34.48	+15	13	35.40	4.5544	4.3
ago	28	2460184.75	2	53	40.88	+15	13	51.15	4.5400	4.3
ago	29	2460185.75	2	53	46.49	+15	14	3.54	4.5257	4.2
ago	30	2460186.75	2	53	51.32	+15	14	12.55	4.5115	4.2
ago	31	2460187.75	2	53	55.37	+15	14	18.17	4.4974	4.1
sep	1	2460188.75	2	53	58.63	+15	14	20.37	4.4833	4.0
sep	2	2460189.75	2	54	1.10	+15	14	19.16	4.4694	4.0
sep	3	2460190.75	2	54	2.78	+15	14	14.54	4.4556	3.9
sep	4	2460191.75	2	54	3.68	+15	14	6.51	4.4419	3.8
sep	5	2460192.75	2	54	3.78	+15	13	55.10	4.4283	3.8
sep	6	2460193.75	2	54	3.08	+15	13	40.28	4.4148	3.7
sep	7	2460194.75	2	54	1.59	+15	13	22.07	4.4014	3.6
sep	8	2460195.75	2	53	59.29	+15	13	0.46	4.3882	3.6
sep	9	2460196.75	2	53	56.19	+15	12	35.44	4.3751	3.5
sep	10	2460197.75	2	53	52.29	+15	12	7.02	4.3621	3.4
sep	11	2460198.75	2	53	47.58	+15	11	35.19	4.3493	3.4
sep	12	2460199.75	2	53	42.07	+15	10	59.95	4.3366	3.3
sep	13	2460200.75	2	53	35.76	+15	10	21.31	4.3241	3.2
sep	14	2460201.75	2	53	28.65	+15	9	39.28	4.3117	3.2
sep	15	2460202.75	2	53	20.74	+15	8	53.87	4.2995	3.1
sep	16	2460203.75	2	53	12.04	+15	8	5.11	4.2875	3.0
sep	17	2460204.75	2	53	2.55	+15	7	13.01	4.2756	3.0
sep	18	2460205.75	2	52	52.29	+15	6	17.61	4.2639	2.9
sep	19	2460206.75	2	52	41.25	+15	5	18.94	4.2524	2.8
sep	20	2460207.75	2	52	29.45	+15	4	17.05	4.2411	2.8
sep	21	2460208.75	2	52	16.88	+15	3	11.95	4.2299	2.7
sep	22	2460209.75	2	52	3.57	+15	2	3.71	4.2190	2.6
sep	23	2460210.75	2	51	49.51	+15	0	52.34	4.2082	2.5
sep	24	2460211.75	2	51	34.71	+14	59	37.88	4.1977	2.5
sep	25	2460212.75	2	51	19.17	+14	58	20.35	4.1873	2.4
sep	26	2460213.75	2	51	2.92	+14	56	59.78	4.1772	2.3
sep	27	2460214.75	2	50	45.95	+14	55	36.19	4.1673	2.3
sep	28	2460215.75	2	50	28.27	+14	54	9.61	4.1576	2.2
sep	29	2460216.75	2	50	9.90	+14	52	40.07	4.1481	2.1
sep	30	2460217.75	2	49	50.85	+14	51	7.62	4.1388	2.1
oct	1	2460218.75	2	49	31.13	+14	49	32.31	4.1298	2.0
oct	2	2460219.75	2	49	10.75	+14	47	54.19	4.1210	1.9
oct	3	2460220.75	2	48	49.73	+14	46	13.32	4.1124	1.8

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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
oct	4	2460221.75	2	48	28.07	+14	44	29.75	4.1041	1.8
oct	5	2460222.75	2	48	5.78	+14	42	43.52	4.0960	1.7
oct	6	2460223.75	2	47	42.89	+14	40	54.69	4.0882	1.6
oct	7	2460224.75	2	47	19.40	+14	39	3.30	4.0806	1.5
oct	8	2460225.75	2	46	55.32	+14	37	9.41	4.0733	1.5
oct	9	2460226.75	2	46	30.68	+14	35	13.08	4.0663	1.4
oct	10	2460227.75	2	46	5.48	+14	33	14.37	4.0595	1.3
oct	11	2460228.75	2	45	39.75	+14	31	13.36	4.0529	1.3
oct	12	2460229.75	2	45	13.50	+14	29	10.11	4.0467	1.2
oct	13	2460230.75	2	44	46.76	+14	27	4.71	4.0407	1.1
oct	14	2460231.75	2	44	19.54	+14	24	57.24	4.0350	1.0
oct	15	2460232.75	2	43	51.87	+14	22	47.81	4.0296	1.0
oct	16	2460233.75	2	43	23.77	+14	20	36.50	4.0244	0.9
oct	17	2460234.75	2	42	55.25	+14	18	23.43	4.0196	0.8
oct	18	2460235.75	2	42	26.36	+14	16	8.70	4.0150	0.7
oct	19	2460236.75	2	41	57.09	+14	13	52.41	4.0107	0.7
oct	20	2460237.75	2	41	27.49	+14	11	34.67	4.0067	0.6
oct	21	2460238.75	2	40	57.56	+14	9	15.56	4.0031	0.5
oct	22	2460239.75	2	40	27.33	+14	6	55.19	3.9997	0.4
oct	23	2460240.75	2	39	56.82	+14	4	33.65	3.9966	0.4
oct	24	2460241.75	2	39	26.06	+14	2	11.03	3.9938	0.3
oct	25	2460242.75	2	38	55.06	+13	59	47.42	3.9913	0.2
oct	26	2460243.75	2	38	23.86	+13	57	22.92	3.9891	0.2
oct	27	2460244.75	2	37	52.47	+13	54	57.64	3.9872	0.1
oct	28	2460245.75	2	37	20.93	+13	52	31.69	3.9857	0.0
oct	29	2460246.75	2	36	49.25	+13	50	5.20	3.9844	23.9
oct	30	2460247.75	2	36	17.47	+13	47	38.27	3.9834	23.9
oct	31	2460248.75	2	35	45.59	+13	45	11.02	3.9828	23.8
nov	1	2460249.75	2	35	13.66	+13	42	43.57	3.9824	23.7
nov	2	2460250.75	2	34	41.67	+13	40	16.01	3.9824	23.6
nov	3	2460251.75	2	34	9.67	+13	37	48.45	3.9827	23.6
nov	4	2460252.75	2	33	37.68	+13	35	21.00	3.9832	23.5
nov	5	2460253.75	2	33	5.71	+13	32	53.78	3.9841	23.4
nov	6	2460254.75	2	32	33.79	+13	30	26.89	3.9853	23.3
nov	7	2460255.75	2	32	1.95	+13	28	0.46	3.9869	23.3
nov	8	2460256.75	2	31	30.22	+13	25	34.60	3.9887	23.2
nov	9	2460257.75	2	30	58.61	+13	23	9.44	3.9908	23.1
nov	10	2460258.75	2	30	27.16	+13	20	45.11	3.9933	23.0
nov	11	2460259.75	2	29	55.89	+13	18	21.74	3.9960	23.0
nov	12	2460260.75	2	29	24.83	+13	15	59.46	3.9991	22.9
nov	13	2460261.75	2	28	54.00	+13	13	38.41	4.0025	22.8
nov	14	2460262.75	2	28	23.43	+13	11	18.72	4.0061	22.7
nov	15	2460263.75	2	27	53.14	+13	9	0.53	4.0101	22.7
nov	16	2460264.75	2	27	23.16	+13	6	43.95	4.0144	22.6
nov	17	2460265.75	2	26	53.51	+13	4	29.10	4.0190	22.5
nov	18	2460266.75	2	26	24.21	+13	2	16.10	4.0239	22.4

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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
nov	19	2460267.75	2	25	55.27	+13	0	5.03	4.0291	22.4
nov	20	2460268.75	2	25	26.73	+12	57	56.00	4.0345	22.3
nov	21	2460269.75	2	24	58.59	+12	55	49.11	4.0403	22.2
nov	22	2460270.75	2	24	30.89	+12	53	44.46	4.0464	22.1
nov	23	2460271.75	2	24	3.64	+12	51	42.14	4.0527	22.1
nov	24	2460272.75	2	23	36.87	+12	49	42.26	4.0593	22.0
nov	25	2460273.75	2	23	10.58	+12	47	44.92	4.0662	21.9
nov	26	2460274.75	2	22	44.81	+12	45	50.23	4.0734	21.9
nov	27	2460275.75	2	22	19.57	+12	43	58.28	4.0809	21.8
nov	28	2460276.75	2	21	54.87	+12	42	9.16	4.0886	21.7
nov	29	2460277.75	2	21	30.73	+12	40	22.94	4.0966	21.6
nov	30	2460278.75	2	21	7.16	+12	38	39.71	4.1048	21.6
dic	1	2460279.75	2	20	44.17	+12	36	59.53	4.1134	21.5
dic	2	2460280.75	2	20	21.79	+12	35	22.48	4.1221	21.4
dic	3	2460281.75	2	20	0.01	+12	33	48.63	4.1312	21.3
dic	4	2460282.75	2	19	38.87	+12	32	18.05	4.1404	21.3
dic	5	2460283.75	2	19	18.37	+12	30	50.81	4.1500	21.2
dic	6	2460284.75	2	18	58.53	+12	29	27.00	4.1597	21.1
dic	7	2460285.75	2	18	39.36	+12	28	6.67	4.1698	21.1
dic	8	2460286.75	2	18	20.87	+12	26	49.91	4.1800	21.0
dic	9	2460287.75	2	18	3.08	+12	25	36.79	4.1905	20.9
dic	10	2460288.75	2	17	46.00	+12	24	27.38	4.2012	20.9
dic	11	2460289.75	2	17	29.65	+12	23	21.75	4.2122	20.8
dic	12	2460290.75	2	17	14.03	+12	22	19.96	4.2233	20.7
dic	13	2460291.75	2	16	59.15	+12	21	22.07	4.2347	20.6
dic	14	2460292.75	2	16	45.02	+12	20	28.12	4.2463	20.6
dic	15	2460293.75	2	16	31.65	+12	19	38.16	4.2581	20.5
dic	16	2460294.75	2	16	19.04	+12	18	52.20	4.2700	20.4
dic	17	2460295.75	2	16	7.20	+12	18	10.28	4.2822	20.4
dic	18	2460296.75	2	15	56.13	+12	17	32.39	4.2946	20.3
dic	19	2460297.75	2	15	45.84	+12	16	58.57	4.3072	20.2
dic	20	2460298.75	2	15	36.34	+12	16	28.84	4.3199	20.2
dic	21	2460299.75	2	15	27.63	+12	16	3.22	4.3328	20.1
dic	22	2460300.75	2	15	19.71	+12	15	41.74	4.3459	20.0
dic	23	2460301.75	2	15	12.59	+12	15	24.41	4.3592	20.0
dic	24	2460302.75	2	15	6.28	+12	15	11.24	4.3726	19.9
dic	25	2460303.75	2	15	0.77	+12	15	2.25	4.3862	19.8
dic	26	2460304.75	2	14	56.06	+12	14	57.43	4.3999	19.8
dic	27	2460305.75	2	14	52.15	+12	14	56.78	4.4137	19.7
dic	28	2460306.75	2	14	49.04	+12	15	0.29	4.4278	19.6
dic	29	2460307.75	2	14	46.74	+12	15	7.94	4.4419	19.6
dic	30	2460308.75	2	14	45.23	+12	15	19.74	4.4562	19.5
dic	31	2460309.75	2	14	44.52	+12	15	35.66	4.4706	2.2
ene	1	2460310.75	2	14	44.62	+12	15	55.70	4.4851	2.2
ene	2	2460311.75	2	14	45.52	+12	16	19.85	4.4998	2.2
ene	3	2460312.75	2	14	48.96	+12	16	56.90	4.4788	2.2
ene	4	2460313.75	2	23	39.38	+13	8	34.59	4.9805	2.4

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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\circ$	$\delta$ -	"	dis UA	hp h
ene	1	2459945.75	21	40	52.29	-15	12	23.79	10.5453	14.8
ene	2	2459946.75	21	41	15.87	-15	10	24.72	10.5562	14.7
ene	3	2459947.75	21	41	39.65	-15	8	24.54	10.5670	14.7
ene	4	2459948.75	21	42	3.63	-15	6	23.29	10.5775	14.6
ene	5	2459949.75	21	42	27.80	-15	4	20.99	10.5878	14.5
ene	6	2459950.75	21	42	52.16	-15	2	17.67	10.5980	14.5
ene	7	2459951.75	21	43	16.70	-15	0	13.35	10.6079	14.4
ene	8	2459952.75	21	43	41.42	-14	58	8.05	10.6176	14.4
ene	9	2459953.75	21	44	6.31	-14	56	1.80	10.6271	14.3
ene	10	2459954.75	21	44	31.37	-14	53	54.61	10.6364	14.2
ene	11	2459955.75	21	44	56.59	-14	51	46.50	10.6454	14.2
ene	12	2459956.75	21	45	21.96	-14	49	37.47	10.6543	14.1
ene	13	2459957.75	21	45	47.50	-14	47	27.55	10.6629	14.1
ene	14	2459958.75	21	46	13.18	-14	45	16.73	10.6713	14.0
ene	15	2459959.75	21	46	39.02	-14	43	5.04	10.6794	14.0
ene	16	2459960.75	21	47	5.00	-14	40	52.49	10.6874	13.9
ene	17	2459961.75	21	47	31.12	-14	38	39.09	10.6951	13.8
ene	18	2459962.75	21	47	57.38	-14	36	24.87	10.7025	13.8
ene	19	2459963.75	21	48	23.77	-14	34	9.86	10.7098	13.7
ene	20	2459964.75	21	48	50.30	-14	31	54.10	10.7167	13.7
ene	21	2459965.75	21	49	16.94	-14	29	37.62	10.7235	13.6
ene	22	2459966.75	21	49	43.70	-14	27	20.47	10.7300	13.5
ene	23	2459967.75	21	50	10.56	-14	25	2.66	10.7363	13.5
ene	24	2459968.75	21	50	37.52	-14	22	44.22	10.7423	13.4
ene	25	2459969.75	21	51	4.57	-14	20	25.15	10.7481	13.4
ene	26	2459970.75	21	51	31.72	-14	18	5.47	10.7536	13.3
ene	27	2459971.75	21	51	58.96	-14	15	45.18	10.7589	13.3
ene	28	2459972.75	21	52	26.28	-14	13	24.33	10.7639	13.2
ene	29	2459973.75	21	52	53.69	-14	11	2.91	10.7687	13.1
ene	30	2459974.75	21	53	21.17	-14	8	40.98	10.7732	13.1
ene	31	2459975.75	21	53	48.73	-14	6	18.55	10.7775	13.0
feb	1	2459976.75	21	54	16.36	-14	3	55.66	10.7815	13.0
feb	2	2459977.75	21	54	44.04	-14	1	32.33	10.7853	12.9
feb	3	2459978.75	21	55	11.79	-13	59	8.60	10.7888	12.8
feb	4	2459979.75	21	55	39.58	-13	56	44.48	10.7921	12.8
feb	5	2459980.75	21	56	7.43	-13	54	20.01	10.7951	12.7
feb	6	2459981.75	21	56	35.31	-13	51	55.21	10.7979	12.7
feb	7	2459982.75	21	57	3.24	-13	49	30.09	10.8004	12.6
feb	8	2459983.75	21	57	31.19	-13	47	4.67	10.8026	12.6
feb	9	2459984.75	21	57	59.18	-13	44	38.97	10.8046	12.5
feb	10	2459985.75	21	58	27.20	-13	42	12.99	10.8064	12.4
feb	11	2459986.75	21	58	55.24	-13	39	46.76	10.8079	12.4
feb	12	2459987.75	21	59	23.30	-13	37	20.29	10.8091	12.3
feb	13	2459988.75	21	59	51.38	-13	34	53.61	10.8101	12.3
feb	14	2459989.75	22	0	19.47	-13	32	26.75	10.8108	12.2
feb	15	2459990.75	22	0	47.58	-13	29	59.76	10.8112	12.2



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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
feb	16	2459991.75	22	1	15.69	-13	27	32.73	10.8114	12.1
feb	17	2459992.75	22	1	43.79	-13	25	5.52	10.8114	12.0
feb	18	2459993.75	22	2	11.88	-13	22	38.08	10.8110	12.0
feb	19	2459994.75	22	2	39.97	-13	20	10.65	10.8105	11.9
feb	20	2459995.75	22	3	8.03	-13	17	43.27	10.8096	11.9
feb	21	2459996.75	22	3	36.07	-13	15	15.94	10.8085	11.8
feb	22	2459997.75	22	4	4.08	-13	12	48.65	10.8072	11.7
feb	23	2459998.75	22	4	32.06	-13	10	21.41	10.8055	11.7
feb	24	2459999.75	22	4	60.00	-13	7	54.25	10.8037	11.6
feb	25	2460000.75	22	5	27.90	-13	5	27.18	10.8015	11.6
feb	26	2460001.75	22	5	55.76	-13	3	0.25	10.7991	11.5
feb	27	2460002.75	22	6	23.58	-13	0	33.47	10.7965	11.5
feb	28	2460003.75	22	6	51.34	-12	58	6.89	10.7936	11.4
mar	1	2460004.75	22	7	19.05	-12	55	40.53	10.7905	11.3
mar	2	2460005.75	22	7	46.69	-12	53	14.43	10.7871	11.3
mar	3	2460006.75	22	8	14.27	-12	50	48.61	10.7834	11.2
mar	4	2460007.75	22	8	41.78	-12	48	23.10	10.7795	11.2
mar	5	2460008.75	22	9	9.21	-12	45	57.92	10.7754	11.1
mar	6	2460009.75	22	9	36.56	-12	43	33.10	10.7710	11.0
mar	7	2460010.75	22	10	3.83	-12	41	8.65	10.7664	11.0
mar	8	2460011.75	22	10	31.01	-12	38	44.59	10.7615	10.9
mar	9	2460012.75	22	10	58.11	-12	36	20.94	10.7563	10.9
mar	10	2460013.75	22	11	25.10	-12	33	57.71	10.7510	10.8
mar	11	2460014.75	22	11	52.01	-12	31	34.91	10.7454	10.8
mar	12	2460015.75	22	12	18.82	-12	29	12.57	10.7395	10.7
mar	13	2460016.75	22	12	45.52	-12	26	50.72	10.7334	10.6
mar	14	2460017.75	22	13	12.13	-12	24	29.38	10.7271	10.6
mar	15	2460018.75	22	13	38.62	-12	22	8.58	10.7206	10.5
mar	16	2460019.75	22	14	5.00	-12	19	48.36	10.7138	10.5
mar	17	2460020.75	22	14	31.26	-12	17	28.77	10.7067	10.4
mar	18	2460021.75	22	14	57.39	-12	15	9.83	10.6995	10.3
mar	19	2460022.75	22	15	23.39	-12	12	51.58	10.6920	10.3
mar	20	2460023.75	22	15	49.25	-12	10	34.05	10.6842	10.2
mar	21	2460024.75	22	16	14.96	-12	8	17.24	10.6763	10.2
mar	22	2460025.75	22	16	40.54	-12	6	1.17	10.6681	10.1
mar	23	2460026.75	22	17	5.96	-12	3	45.87	10.6597	10.1
mar	24	2460027.75	22	17	31.24	-12	1	31.34	10.6511	10.0
mar	25	2460028.75	22	17	56.36	-11	59	17.62	10.6422	9.9
mar	26	2460029.75	22	18	21.33	-11	57	4.75	10.6332	9.9
mar	27	2460030.75	22	18	46.14	-11	54	52.75	10.6239	9.8
mar	28	2460031.75	22	19	10.78	-11	52	41.66	10.6144	9.8
mar	29	2460032.75	22	19	35.25	-11	50	31.51	10.6047	9.7
mar	30	2460033.75	22	19	59.54	-11	48	22.33	10.5948	9.6
mar	31	2460034.75	22	20	23.66	-11	46	14.15	10.5847	9.6
abr	1	2460035.75	22	20	47.59	-11	44	6.99	10.5744	9.5
abr	2	2460036.75	22	21	11.33	-11	42	0.87	10.5639	9.5

## Saturno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
abr	3	2460037.75	22	21	34.88	-11	39	55.82	10.5532	9.4
abr	4	2460038.75	22	21	58.24	-11	37	51.84	10.5423	9.3
abr	5	2460039.75	22	22	21.40	-11	35	48.96	10.5312	9.3
abr	6	2460040.75	22	22	44.36	-11	33	47.19	10.5199	9.2
abr	7	2460041.75	22	23	7.13	-11	31	46.54	10.5085	9.2
abr	8	2460042.75	22	23	29.68	-11	29	47.02	10.4968	9.1
abr	9	2460043.75	22	23	52.04	-11	27	48.67	10.4850	9.1
abr	10	2460044.75	22	24	14.18	-11	25	51.51	10.4730	9.0
abr	11	2460045.75	22	24	36.11	-11	23	55.57	10.4608	8.9
abr	12	2460046.75	22	24	57.83	-11	22	0.89	10.4484	8.9
abr	13	2460047.75	22	25	19.32	-11	20	7.49	10.4359	8.8
abr	14	2460048.75	22	25	40.58	-11	18	15.43	10.4232	8.8
abr	15	2460049.75	22	26	1.60	-11	16	24.72	10.4103	8.7
abr	16	2460050.75	22	26	22.39	-11	14	35.39	10.3973	8.6
abr	17	2460051.75	22	26	42.93	-11	12	47.46	10.3841	8.6
abr	18	2460052.75	22	27	3.23	-11	11	0.95	10.3707	8.5
abr	19	2460053.75	22	27	23.28	-11	9	15.86	10.3572	8.5
abr	20	2460054.75	22	27	43.08	-11	7	32.22	10.3435	8.4
abr	21	2460055.75	22	28	2.63	-11	5	50.05	10.3297	8.3
abr	22	2460056.75	22	28	21.92	-11	4	9.36	10.3158	8.3
abr	23	2460057.75	22	28	40.95	-11	2	30.21	10.3017	8.2
abr	24	2460058.75	22	28	59.72	-11	0	52.61	10.2874	8.2
abr	25	2460059.75	22	29	18.22	-10	59	16.59	10.2731	8.1
abr	26	2460060.75	22	29	36.45	-10	57	42.19	10.2586	8.0
abr	27	2460061.75	22	29	54.41	-10	56	9.43	10.2439	8.0
abr	28	2460062.75	22	30	12.08	-10	54	38.33	10.2292	7.9
abr	29	2460063.75	22	30	29.47	-10	53	8.91	10.2143	7.8
abr	30	2460064.75	22	30	46.58	-10	51	41.19	10.1994	7.8
may	1	2460065.75	22	31	3.39	-10	50	15.17	10.1843	7.7
may	2	2460066.75	22	31	19.92	-10	48	50.88	10.1691	7.7
may	3	2460067.75	22	31	36.15	-10	47	28.31	10.1538	7.6
may	4	2460068.75	22	31	52.09	-10	46	7.48	10.1384	7.5
may	5	2460069.75	22	32	7.74	-10	44	48.41	10.1229	7.5
may	6	2460070.75	22	32	23.08	-10	43	31.09	10.1073	7.4
may	7	2460071.75	22	32	38.14	-10	42	15.56	10.0916	7.4
may	8	2460072.75	22	32	52.88	-10	41	1.83	10.0758	7.3
may	9	2460073.75	22	33	7.33	-10	39	49.95	10.0600	7.2
may	10	2460074.75	22	33	21.46	-10	38	39.93	10.0441	7.2
may	11	2460075.75	22	33	35.28	-10	37	31.81	10.0281	7.1
may	12	2460076.75	22	33	48.78	-10	36	25.61	10.0120	7.0
may	13	2460077.75	22	34	1.95	-10	35	21.37	9.9958	7.0
may	14	2460078.75	22	34	14.79	-10	34	19.07	9.9796	6.9
may	15	2460079.75	22	34	27.31	-10	33	18.74	9.9633	6.9
may	16	2460080.75	22	34	39.49	-10	32	20.39	9.9470	6.8
may	17	2460081.75	22	34	51.34	-10	31	24.01	9.9306	6.7
may	18	2460082.75	22	35	2.86	-10	30	29.63	9.9142	6.7

## Saturno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
may	19	2460083.75	22	35	14.05	-10	29	37.26	9.8977	6.6
may	20	2460084.75	22	35	24.90	-10	28	46.92	9.8812	6.6
may	21	2460085.75	22	35	35.40	-10	27	58.64	9.8646	6.5
may	22	2460086.75	22	35	45.57	-10	27	12.44	9.8481	6.4
may	23	2460087.75	22	35	55.38	-10	26	28.33	9.8314	6.4
may	24	2460088.75	22	36	4.85	-10	25	46.33	9.8148	6.3
may	25	2460089.75	22	36	13.96	-10	25	6.47	9.7982	6.2
may	26	2460090.75	22	36	22.72	-10	24	28.74	9.7815	6.2
may	27	2460091.75	22	36	31.13	-10	23	53.15	9.7648	6.1
may	28	2460092.75	22	36	39.17	-10	23	19.71	9.7482	6.0
may	29	2460093.75	22	36	46.86	-10	22	48.42	9.7315	6.0
may	30	2460094.75	22	36	54.19	-10	22	19.28	9.7148	5.9
may	31	2460095.75	22	37	1.16	-10	21	52.28	9.6982	5.9
jun	1	2460096.75	22	37	7.77	-10	21	27.43	9.6815	5.8
jun	2	2460097.75	22	37	14.02	-10	21	4.71	9.6649	5.7
jun	3	2460098.75	22	37	19.91	-10	20	44.15	9.6483	5.7
jun	4	2460099.75	22	37	25.45	-10	20	25.74	9.6317	5.6
jun	5	2460100.75	22	37	30.62	-10	20	9.50	9.6152	5.5
jun	6	2460101.75	22	37	35.43	-10	19	55.44	9.5987	5.5
jun	7	2460102.75	22	37	39.87	-10	19	43.60	9.5822	5.4
jun	8	2460103.75	22	37	43.94	-10	19	33.99	9.5658	5.3
jun	9	2460104.75	22	37	47.64	-10	19	26.60	9.5494	5.3
jun	10	2460105.75	22	37	50.96	-10	19	21.45	9.5331	5.2
jun	11	2460106.75	22	37	53.90	-10	19	18.52	9.5168	5.1
jun	12	2460107.75	22	37	56.47	-10	19	17.80	9.5006	5.1
jun	13	2460108.75	22	37	58.67	-10	19	19.29	9.4844	5.0
jun	14	2460109.75	22	38	0.49	-10	19	22.98	9.4683	5.0
jun	15	2460110.75	22	38	1.94	-10	19	28.88	9.4523	4.9
jun	16	2460111.75	22	38	3.02	-10	19	36.99	9.4364	4.8
jun	17	2460112.75	22	38	3.72	-10	19	47.30	9.4205	4.8
jun	18	2460113.75	22	38	4.05	-10	19	59.84	9.4048	4.7
jun	19	2460114.75	22	38	4.01	-10	20	14.59	9.3891	4.6
jun	20	2460115.75	22	38	3.59	-10	20	31.56	9.3735	4.6
jun	21	2460116.75	22	38	2.80	-10	20	50.74	9.3581	4.5
jun	22	2460117.75	22	38	1.63	-10	21	12.13	9.3427	4.4
jun	23	2460118.75	22	38	0.08	-10	21	35.71	9.3275	4.4
jun	24	2460119.75	22	37	58.17	-10	22	1.47	9.3123	4.3
jun	25	2460120.75	22	37	55.88	-10	22	29.39	9.2973	4.2
jun	26	2460121.75	22	37	53.22	-10	22	59.45	9.2825	4.2
jun	27	2460122.75	22	37	50.20	-10	23	31.63	9.2677	4.1
jun	28	2460123.75	22	37	46.81	-10	24	5.90	9.2531	4.0
jun	29	2460124.75	22	37	43.06	-10	24	42.24	9.2386	4.0
jun	30	2460125.75	22	37	38.96	-10	25	20.62	9.2243	3.9
jul	1	2460126.75	22	37	34.50	-10	26	1.05	9.2101	3.8
jul	2	2460127.75	22	37	29.69	-10	26	43.49	9.1960	3.8
jul	3	2460128.75	22	37	24.53	-10	27	27.96	9.1822	3.7

## Saturno, 2023

Eferérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
jul	4	2460129.75	22	37	19.02	-10	28	14.44	9.1684	3.6
jul	5	2460130.75	22	37	13.16	-10	29	2.94	9.1549	3.6
jul	6	2460131.75	22	37	6.94	-10	29	53.43	9.1415	3.5
jul	7	2460132.75	22	37	0.37	-10	30	45.90	9.1282	3.4
jul	8	2460133.75	22	36	53.45	-10	31	40.32	9.1152	3.4
jul	9	2460134.75	22	36	46.19	-10	32	36.65	9.1023	3.3
jul	10	2460135.75	22	36	38.60	-10	33	34.87	9.0896	3.2
jul	11	2460136.75	22	36	30.66	-10	34	34.93	9.0771	3.2
jul	12	2460137.75	22	36	22.40	-10	35	36.82	9.0648	3.1
jul	13	2460138.75	22	36	13.81	-10	36	40.52	9.0527	3.0
jul	14	2460139.75	22	36	4.90	-10	37	46.00	9.0408	2.9
jul	15	2460140.75	22	35	55.67	-10	38	53.24	9.0290	2.9
jul	16	2460141.75	22	35	46.12	-10	40	2.22	9.0175	2.8
jul	17	2460142.75	22	35	36.26	-10	41	12.92	9.0062	2.7
jul	18	2460143.75	22	35	26.09	-10	42	25.30	8.9952	2.7
jul	19	2460144.75	22	35	15.61	-10	43	39.33	8.9843	2.6
jul	20	2460145.75	22	35	4.84	-10	44	54.98	8.9737	2.5
jul	21	2460146.75	22	34	53.76	-10	46	12.19	8.9632	2.5
jul	22	2460147.75	22	34	42.40	-10	47	30.94	8.9531	2.4
jul	23	2460148.75	22	34	30.75	-10	48	51.17	8.9431	2.3
jul	24	2460149.75	22	34	18.83	-10	50	12.84	8.9334	2.3
jul	25	2460150.75	22	34	6.64	-10	51	35.89	8.9240	2.2
jul	26	2460151.75	22	33	54.18	-10	53	0.28	8.9147	2.1
jul	27	2460152.75	22	33	41.47	-10	54	25.96	8.9058	2.1
jul	28	2460153.75	22	33	28.51	-10	55	52.89	8.8970	2.0
jul	29	2460154.75	22	33	15.32	-10	57	21.04	8.8886	1.9
jul	30	2460155.75	22	33	1.88	-10	58	50.35	8.8803	1.8
jul	31	2460156.75	22	32	48.21	-11	0	20.82	8.8724	1.8
ago	1	2460157.75	22	32	34.32	-11	1	52.40	8.8647	1.7
ago	2	2460158.75	22	32	20.20	-11	3	25.08	8.8573	1.6
ago	3	2460159.75	22	32	5.86	-11	4	58.80	8.8501	1.6
ago	4	2460160.75	22	31	51.30	-11	6	33.51	8.8432	1.5
ago	5	2460161.75	22	31	36.55	-11	8	9.16	8.8365	1.4
ago	6	2460162.75	22	31	21.59	-11	9	45.69	8.8302	1.4
ago	7	2460163.75	22	31	6.45	-11	11	23.04	8.8241	1.3
ago	8	2460164.75	22	30	51.14	-11	13	1.17	8.8183	1.2
ago	9	2460165.75	22	30	35.65	-11	14	40.04	8.8127	1.1
ago	10	2460166.75	22	30	19.99	-11	16	19.59	8.8075	1.1
ago	11	2460167.75	22	30	4.19	-11	17	59.80	8.8025	1.0
ago	12	2460168.75	22	29	48.23	-11	19	40.61	8.7978	0.9
ago	13	2460169.75	22	29	32.13	-11	21	21.98	8.7934	0.9
ago	14	2460170.75	22	29	15.89	-11	23	3.86	8.7893	0.8
ago	15	2460171.75	22	28	59.53	-11	24	46.21	8.7855	0.7
ago	16	2460172.75	22	28	43.05	-11	26	28.96	8.7820	0.7
ago	17	2460173.75	22	28	26.45	-11	28	12.06	8.7788	0.6
ago	18	2460174.75	22	28	9.76	-11	29	55.44	8.7759	0.5

## Saturno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
ago	19	2460175.75	22	27	52.98	-11	31	39.06	8.7732	0.4
ago	20	2460176.75	22	27	36.11	-11	33	22.83	8.7709	0.4
ago	21	2460177.75	22	27	19.17	-11	35	6.71	8.7689	0.3
ago	22	2460178.75	22	27	2.18	-11	36	50.63	8.7671	0.2
ago	23	2460179.75	22	26	45.13	-11	38	34.52	8.7657	0.2
ago	24	2460180.75	22	26	28.04	-11	40	18.34	8.7646	0.1
ago	25	2460181.75	22	26	10.92	-11	42	2.03	8.7638	0.0
ago	26	2460182.75	22	25	53.78	-11	43	45.54	8.7632	24.0
ago	27	2460183.75	22	25	36.62	-11	45	28.84	8.7630	23.9
ago	28	2460184.75	22	25	19.45	-11	47	11.89	8.7631	23.8
ago	29	2460185.75	22	25	2.28	-11	48	54.65	8.7635	23.7
ago	30	2460186.75	22	24	45.12	-11	50	37.07	8.7642	23.7
ago	31	2460187.75	22	24	27.97	-11	52	19.10	8.7651	23.6
sep	1	2460188.75	22	24	10.84	-11	54	0.68	8.7664	23.5
sep	2	2460189.75	22	23	53.74	-11	55	41.74	8.7680	23.5
sep	3	2460190.75	22	23	36.69	-11	57	22.23	8.7699	23.4
sep	4	2460191.75	22	23	19.69	-11	59	2.10	8.7720	23.3
sep	5	2460192.75	22	23	2.75	-12	0	41.28	8.7745	23.2
sep	6	2460193.75	22	22	45.88	-12	2	19.76	8.7773	23.2
sep	7	2460194.75	22	22	29.10	-12	3	57.47	8.7804	23.1
sep	8	2460195.75	22	22	12.40	-12	5	34.39	8.7837	23.0
sep	9	2460196.75	22	21	55.80	-12	7	10.47	8.7874	23.0
sep	10	2460197.75	22	21	39.30	-12	8	45.67	8.7913	22.9
sep	11	2460198.75	22	21	22.91	-12	10	19.93	8.7956	22.8
sep	12	2460199.75	22	21	6.64	-12	11	53.22	8.8001	22.8
sep	13	2460200.75	22	20	50.51	-12	13	25.47	8.8050	22.7
sep	14	2460201.75	22	20	34.51	-12	14	56.63	8.8101	22.6
sep	15	2460202.75	22	20	18.66	-12	16	26.66	8.8155	22.5
sep	16	2460203.75	22	20	2.97	-12	17	55.49	8.8212	22.5
sep	17	2460204.75	22	19	47.44	-12	19	23.08	8.8272	22.4
sep	18	2460205.75	22	19	32.10	-12	20	49.37	8.8335	22.3
sep	19	2460206.75	22	19	16.94	-12	22	14.31	8.8400	22.3
sep	20	2460207.75	22	19	1.98	-12	23	37.86	8.8468	22.2
sep	21	2460208.75	22	18	47.22	-12	24	59.98	8.8539	22.1
sep	22	2460209.75	22	18	32.67	-12	26	20.64	8.8613	22.1
sep	23	2460210.75	22	18	18.35	-12	27	39.81	8.8690	22.0
sep	24	2460211.75	22	18	4.25	-12	28	57.47	8.8769	21.9
sep	25	2460212.75	22	17	50.37	-12	30	13.59	8.8850	21.8
sep	26	2460213.75	22	17	36.74	-12	31	28.14	8.8934	21.8
sep	27	2460214.75	22	17	23.34	-12	32	41.09	8.9021	21.7
sep	28	2460215.75	22	17	10.19	-12	33	52.40	8.9111	21.6
sep	29	2460216.75	22	16	57.29	-12	35	2.03	8.9202	21.6
sep	30	2460217.75	22	16	44.66	-12	36	9.94	8.9297	21.5
oct	1	2460218.75	22	16	32.29	-12	37	16.08	8.9394	21.4
oct	2	2460219.75	22	16	20.21	-12	38	20.43	8.9493	21.4
oct	3	2460220.75	22	16	8.41	-12	39	22.97	8.9594	21.3

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Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\circ$	$\delta$ -	"	dis UA	hp h
oct	4	2460221.75	22	15	56.91	-12	40	23.68	8.9698	21.2
oct	5	2460222.75	22	15	45.69	-12	41	22.54	8.9804	21.2
oct	6	2460223.75	22	15	34.78	-12	42	19.53	8.9913	21.1
oct	7	2460224.75	22	15	24.18	-12	43	14.63	9.0024	21.0
oct	8	2460225.75	22	15	13.88	-12	44	7.82	9.0137	20.9
oct	9	2460226.75	22	15	3.90	-12	44	59.07	9.0252	20.9
oct	10	2460227.75	22	14	54.24	-12	45	48.35	9.0369	20.8
oct	11	2460228.75	22	14	44.90	-12	46	35.64	9.0488	20.7
oct	12	2460229.75	22	14	35.90	-12	47	20.91	9.0610	20.7
oct	13	2460230.75	22	14	27.24	-12	48	4.12	9.0733	20.6
oct	14	2460231.75	22	14	18.92	-12	48	45.25	9.0859	20.5
oct	15	2460232.75	22	14	10.94	-12	49	24.27	9.0986	20.5
oct	16	2460233.75	22	14	3.33	-12	50	1.15	9.1115	20.4
oct	17	2460234.75	22	13	56.07	-12	50	35.88	9.1247	20.3
oct	18	2460235.75	22	13	49.18	-12	51	8.45	9.1379	20.3
oct	19	2460236.75	22	13	42.66	-12	51	38.84	9.1514	20.2
oct	20	2460237.75	22	13	36.51	-12	52	7.06	9.1651	20.1
oct	21	2460238.75	22	13	30.73	-12	52	33.09	9.1789	20.1
oct	22	2460239.75	22	13	25.32	-12	52	56.95	9.1928	20.0
oct	23	2460240.75	22	13	20.29	-12	53	18.63	9.2069	19.9
oct	24	2460241.75	22	13	15.63	-12	53	38.13	9.2212	19.9
oct	25	2460242.75	22	13	11.35	-12	53	55.42	9.2356	19.8
oct	26	2460243.75	22	13	7.45	-12	54	10.51	9.2502	19.7
oct	27	2460244.75	22	13	3.93	-12	54	23.35	9.2649	19.7
oct	28	2460245.75	22	13	0.79	-12	54	33.96	9.2797	19.6
oct	29	2460246.75	22	12	58.05	-12	54	42.30	9.2946	19.5
oct	30	2460247.75	22	12	55.70	-12	54	48.39	9.3097	19.5
oct	31	2460248.75	22	12	53.75	-12	54	52.24	9.3249	19.4
nov	1	2460249.75	22	12	52.19	-12	54	53.84	9.3402	19.3
nov	2	2460250.75	22	12	51.02	-12	54	53.20	9.3556	19.3
nov	3	2460251.75	22	12	50.25	-12	54	50.34	9.3711	19.2
nov	4	2460252.75	22	12	49.87	-12	54	45.25	9.3868	19.1
nov	5	2460253.75	22	12	49.89	-12	54	37.93	9.4025	19.1
nov	6	2460254.75	22	12	50.30	-12	54	28.37	9.4183	19.0
nov	7	2460255.75	22	12	51.11	-12	54	16.58	9.4342	18.9
nov	8	2460256.75	22	12	52.31	-12	54	2.53	9.4502	18.9
nov	9	2460257.75	22	12	53.92	-12	53	46.24	9.4662	18.8
nov	10	2460258.75	22	12	55.92	-12	53	27.68	9.4823	18.7
nov	11	2460259.75	22	12	58.33	-12	53	6.86	9.4985	18.7
nov	12	2460260.75	22	13	1.14	-12	52	43.77	9.5148	18.6
nov	13	2460261.75	22	13	4.35	-12	52	18.41	9.5311	18.5
nov	14	2460262.75	22	13	7.97	-12	51	50.78	9.5474	18.5
nov	15	2460263.75	22	13	11.99	-12	51	20.91	9.5638	18.4
nov	16	2460264.75	22	13	16.41	-12	50	48.79	9.5803	18.4
nov	17	2460265.75	22	13	21.23	-12	50	14.47	9.5967	18.3
nov	18	2460266.75	22	13	26.45	-12	49	37.94	9.6133	18.2

## Saturno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
nov	19	2460267.75	22	13	32.05	-12	48	59.24	9.6298	18.2
nov	20	2460268.75	22	13	38.05	-12	48	18.37	9.6463	18.1
nov	21	2460269.75	22	13	44.44	-12	47	35.35	9.6629	18.0
nov	22	2460270.75	22	13	51.21	-12	46	50.17	9.6795	18.0
nov	23	2460271.75	22	13	58.37	-12	46	2.83	9.6960	17.9
nov	24	2460272.75	22	14	5.91	-12	45	13.34	9.7126	17.8
nov	25	2460273.75	22	14	13.83	-12	44	21.70	9.7292	17.8
nov	26	2460274.75	22	14	22.14	-12	43	27.93	9.7457	17.7
nov	27	2460275.75	22	14	30.83	-12	42	32.05	9.7623	17.7
nov	28	2460276.75	22	14	39.90	-12	41	34.07	9.7788	17.6
nov	29	2460277.75	22	14	49.35	-12	40	34.03	9.7953	17.5
nov	30	2460278.75	22	14	59.16	-12	39	31.94	9.8118	17.5
dic	1	2460279.75	22	15	9.35	-12	38	27.83	9.8282	17.4
dic	2	2460280.75	22	15	19.89	-12	37	21.70	9.8446	17.3
dic	3	2460281.75	22	15	30.80	-12	36	13.56	9.8610	17.3
dic	4	2460282.75	22	15	42.07	-12	35	3.44	9.8773	17.2
dic	5	2460283.75	22	15	53.70	-12	33	51.33	9.8936	17.1
dic	6	2460284.75	22	16	5.68	-12	32	37.24	9.9098	17.1
dic	7	2460285.75	22	16	18.02	-12	31	21.17	9.9260	17.0
dic	8	2460286.75	22	16	30.71	-12	30	3.14	9.9421	17.0
dic	9	2460287.75	22	16	43.75	-12	28	43.16	9.9581	16.9
dic	10	2460288.75	22	16	57.14	-12	27	21.22	9.9741	16.8
dic	11	2460289.75	22	17	10.87	-12	25	57.35	9.9900	16.8
dic	12	2460290.75	22	17	24.95	-12	24	31.57	10.0058	16.7
dic	13	2460291.75	22	17	39.37	-12	23	3.90	10.0215	16.7
dic	14	2460292.75	22	17	54.12	-12	21	34.38	10.0371	16.6
dic	15	2460293.75	22	18	9.21	-12	20	3.03	10.0526	16.5
dic	16	2460294.75	22	18	24.61	-12	18	29.89	10.0680	16.5
dic	17	2460295.75	22	18	40.33	-12	16	54.98	10.0834	16.4
dic	18	2460296.75	22	18	56.37	-12	15	18.32	10.0986	16.3
dic	19	2460297.75	22	19	12.71	-12	13	39.92	10.1137	16.3
dic	20	2460298.75	22	19	29.37	-12	11	59.79	10.1286	16.2
dic	21	2460299.75	22	19	46.32	-12	10	17.94	10.1435	16.2
dic	22	2460300.75	22	20	3.58	-12	8	34.38	10.1582	16.1
dic	23	2460301.75	22	20	21.13	-12	6	49.15	10.1728	16.0
dic	24	2460302.75	22	20	38.98	-12	5	2.25	10.1873	16.0
dic	25	2460303.75	22	20	57.12	-12	3	13.73	10.2017	15.9
dic	26	2460304.75	22	21	15.55	-12	1	23.60	10.2159	15.9
dic	27	2460305.75	22	21	34.26	-11	59	31.91	10.2299	15.8
dic	28	2460306.75	22	21	53.24	-11	57	38.68	10.2438	15.7
dic	29	2460307.75	22	22	12.49	-11	55	43.93	10.2576	15.7
dic	30	2460308.75	22	22	32.01	-11	53	47.69	10.2712	15.6
dic	31	2460309.75	22	22	51.79	-11	51	49.96	10.2847	22.4
ene	1	2460310.75	22	23	11.82	-11	49	50.77	10.2980	22.4
ene	2	2460311.75	22	23	32.11	-11	47	50.12	10.3112	22.4
ene	3	2460312.75	22	23	53.77	-11	45	42.38	10.2511	22.4
ene	4	2460313.75	22	31	56.89	-10	54	51.89	11.2407	22.5

## Urano, 2023

Efermídes a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
ene	1	2459945.75	2	51	8.91	+16	2	9.30	19.0949	19.9
ene	2	2459946.75	2	51	4.60	+16	1	51.86	19.1091	19.9
ene	3	2459947.75	2	51	0.49	+16	1	35.27	19.1234	19.8
ene	4	2459948.75	2	50	56.57	+16	1	19.53	19.1380	19.7
ene	5	2459949.75	2	50	52.84	+16	1	4.66	19.1526	19.7
ene	6	2459950.75	2	50	49.30	+16	0	50.66	19.1675	19.6
ene	7	2459951.75	2	50	45.96	+16	0	37.52	19.1825	19.5
ene	8	2459952.75	2	50	42.81	+16	0	25.26	19.1976	19.5
ene	9	2459953.75	2	50	39.86	+16	0	13.87	19.2128	19.4
ene	10	2459954.75	2	50	37.10	+16	0	3.34	19.2283	19.3
ene	11	2459955.75	2	50	34.54	+15	59	53.69	19.2438	19.3
ene	12	2459956.75	2	50	32.18	+15	59	44.91	19.2594	19.2
ene	13	2459957.75	2	50	30.02	+15	59	37.01	19.2752	19.1
ene	14	2459958.75	2	50	28.06	+15	59	29.99	19.2911	19.1
ene	15	2459959.75	2	50	26.31	+15	59	23.87	19.3071	19.0
ene	16	2459960.75	2	50	24.77	+15	59	18.66	19.3233	18.9
ene	17	2459961.75	2	50	23.44	+15	59	14.37	19.3395	18.9
ene	18	2459962.75	2	50	22.31	+15	59	11.03	19.3558	18.8
ene	19	2459963.75	2	50	21.40	+15	59	8.63	19.3722	18.8
ene	20	2459964.75	2	50	20.71	+15	59	7.20	19.3887	18.7
ene	21	2459965.75	2	50	20.22	+15	59	6.71	19.4052	18.6
ene	22	2459966.75	2	50	19.94	+15	59	7.17	19.4219	18.6
ene	23	2459967.75	2	50	19.86	+15	59	8.56	19.4386	18.5
ene	24	2459968.75	2	50	19.99	+15	59	10.85	19.4554	18.4
ene	25	2459969.75	2	50	20.33	+15	59	14.05	19.4722	18.4
ene	26	2459970.75	2	50	20.88	+15	59	18.15	19.4891	18.3
ene	27	2459971.75	2	50	21.64	+15	59	23.17	19.5060	18.2
ene	28	2459972.75	2	50	22.61	+15	59	29.12	19.5230	18.2
ene	29	2459973.75	2	50	23.80	+15	59	36.00	19.5400	18.1
ene	30	2459974.75	2	50	25.20	+15	59	43.82	19.5570	18.0
ene	31	2459975.75	2	50	26.81	+15	59	52.57	19.5741	18.0
feb	1	2459976.75	2	50	28.63	+16	0	2.27	19.5911	17.9
feb	2	2459977.75	2	50	30.66	+16	0	12.89	19.6082	17.8
feb	3	2459978.75	2	50	32.90	+16	0	24.44	19.6253	17.8
feb	4	2459979.75	2	50	35.34	+16	0	36.91	19.6424	17.7
feb	5	2459980.75	2	50	37.99	+16	0	50.27	19.6595	17.6
feb	6	2459981.75	2	50	40.84	+16	1	4.54	19.6766	17.6
feb	7	2459982.75	2	50	43.90	+16	1	19.68	19.6937	17.5
feb	8	2459983.75	2	50	47.15	+16	1	35.71	19.7108	17.4
feb	9	2459984.75	2	50	50.61	+16	1	52.60	19.7278	17.4
feb	10	2459985.75	2	50	54.28	+16	2	10.37	19.7448	17.3
feb	11	2459986.75	2	50	58.14	+16	2	29.01	19.7618	17.2
feb	12	2459987.75	2	51	2.21	+16	2	48.52	19.7788	17.2
feb	13	2459988.75	2	51	6.49	+16	3	8.91	19.7957	17.1
feb	14	2459989.75	2	51	10.97	+16	3	30.18	19.8125	17.1
feb	15	2459990.75	2	51	15.65	+16	3	52.34	19.8294	17.0



## Urano, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
feb	16	2459991.75	2	51	20.53	+16	4	15.39	19.8461	16.9
feb	17	2459992.75	2	51	25.61	+16	4	39.32	19.8628	16.9
feb	18	2459993.75	2	51	30.89	+16	5	4.11	19.8795	16.8
feb	19	2459994.75	2	51	36.35	+16	5	29.74	19.8960	16.7
feb	20	2459995.75	2	51	42.01	+16	5	56.18	19.9125	16.7
feb	21	2459996.75	2	51	47.85	+16	6	23.42	19.9289	16.6
feb	22	2459997.75	2	51	53.88	+16	6	51.45	19.9452	16.5
feb	23	2459998.75	2	52	0.10	+16	7	20.26	19.9615	16.5
feb	24	2459999.75	2	52	6.51	+16	7	49.86	19.9776	16.4
feb	25	2460000.75	2	52	13.10	+16	8	20.25	19.9936	16.4
feb	26	2460001.75	2	52	19.89	+16	8	51.42	20.0096	16.3
feb	27	2460002.75	2	52	26.86	+16	9	23.38	20.0254	16.2
feb	28	2460003.75	2	52	34.01	+16	9	56.12	20.0411	16.2
mar	1	2460004.75	2	52	41.33	+16	10	29.62	20.0567	16.1
mar	2	2460005.75	2	52	48.84	+16	11	3.87	20.0721	16.0
mar	3	2460006.75	2	52	56.51	+16	11	38.85	20.0875	16.0
mar	4	2460007.75	2	53	4.36	+16	12	14.54	20.1027	15.9
mar	5	2460008.75	2	53	12.37	+16	12	50.94	20.1177	15.8
mar	6	2460009.75	2	53	20.55	+16	13	28.02	20.1327	15.8
mar	7	2460010.75	2	53	28.89	+16	14	5.77	20.1475	15.7
mar	8	2460011.75	2	53	37.39	+16	14	44.18	20.1621	15.7
mar	9	2460012.75	2	53	46.06	+16	15	23.24	20.1766	15.6
mar	10	2460013.75	2	53	54.89	+16	16	2.94	20.1909	15.5
mar	11	2460014.75	2	54	3.87	+16	16	43.28	20.2051	15.5
mar	12	2460015.75	2	54	13.02	+16	17	24.27	20.2192	15.4
mar	13	2460016.75	2	54	22.32	+16	18	5.89	20.2330	15.3
mar	14	2460017.75	2	54	31.78	+16	18	48.15	20.2467	15.3
mar	15	2460018.75	2	54	41.39	+16	19	31.05	20.2602	15.2
mar	16	2460019.75	2	54	51.16	+16	20	14.56	20.2736	15.1
mar	17	2460020.75	2	55	1.07	+16	20	58.69	20.2868	15.1
mar	18	2460021.75	2	55	11.12	+16	21	43.39	20.2997	15.0
mar	19	2460022.75	2	55	21.30	+16	22	28.65	20.3125	15.0
mar	20	2460023.75	2	55	31.63	+16	23	14.44	20.3251	14.9
mar	21	2460024.75	2	55	42.08	+16	24	0.74	20.3376	14.8
mar	22	2460025.75	2	55	52.67	+16	24	47.54	20.3498	14.8
mar	23	2460026.75	2	56	3.40	+16	25	34.83	20.3618	14.7
mar	24	2460027.75	2	56	14.25	+16	26	22.63	20.3736	14.6
mar	25	2460028.75	2	56	25.24	+16	27	10.92	20.3852	14.6
mar	26	2460029.75	2	56	36.35	+16	27	59.70	20.3966	14.5
mar	27	2460030.75	2	56	47.59	+16	28	48.96	20.4078	14.5
mar	28	2460031.75	2	56	58.95	+16	29	38.69	20.4188	14.4
mar	29	2460032.75	2	57	10.42	+16	30	28.86	20.4295	14.3
mar	30	2460033.75	2	57	22.01	+16	31	19.47	20.4401	14.3
mar	31	2460034.75	2	57	33.71	+16	32	10.49	20.4504	14.2
abr	1	2460035.75	2	57	45.51	+16	33	1.90	20.4605	14.1
abr	2	2460036.75	2	57	57.41	+16	33	53.68	20.4703	14.1

## Urano, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
abr	3	2460037.75	2	58	9.42	+16	34	45.82	20.4799	14.0
abr	4	2460038.75	2	58	21.52	+16	35	38.31	20.4893	14.0
abr	5	2460039.75	2	58	33.72	+16	36	31.12	20.4985	13.9
abr	6	2460040.75	2	58	46.02	+16	37	24.26	20.5074	13.8
abr	7	2460041.75	2	58	58.41	+16	38	17.71	20.5161	13.8
abr	8	2460042.75	2	59	10.89	+16	39	11.48	20.5246	13.7
abr	9	2460043.75	2	59	23.47	+16	40	5.56	20.5328	13.6
abr	10	2460044.75	2	59	36.14	+16	40	59.95	20.5408	13.6
abr	11	2460045.75	2	59	48.89	+16	41	54.65	20.5485	13.5
abr	12	2460046.75	3	0	1.73	+16	42	49.64	20.5560	13.5
abr	13	2460047.75	3	0	14.65	+16	43	44.91	20.5632	13.4
abr	14	2460048.75	3	0	27.63	+16	44	40.43	20.5702	13.3
abr	15	2460049.75	3	0	40.69	+16	45	36.19	20.5770	13.3
abr	16	2460050.75	3	0	53.82	+16	46	32.15	20.5834	13.2
abr	17	2460051.75	3	1	7.01	+16	47	28.29	20.5897	13.1
abr	18	2460052.75	3	1	20.26	+16	48	24.60	20.5956	13.1
abr	19	2460053.75	3	1	33.58	+16	49	21.07	20.6013	13.0
abr	20	2460054.75	3	1	46.96	+16	50	17.70	20.6068	13.0
abr	21	2460055.75	3	2	0.39	+16	51	14.49	20.6120	12.9
abr	22	2460056.75	3	2	13.89	+16	52	11.44	20.6169	12.8
abr	23	2460057.75	3	2	27.44	+16	53	8.54	20.6215	12.8
abr	24	2460058.75	3	2	41.04	+16	54	5.77	20.6259	12.7
abr	25	2460059.75	3	2	54.68	+16	55	3.12	20.6301	12.7
abr	26	2460060.75	3	3	8.37	+16	56	0.58	20.6339	12.6
abr	27	2460061.75	3	3	22.09	+16	56	58.12	20.6375	12.5
abr	28	2460062.75	3	3	35.85	+16	57	55.72	20.6408	12.5
abr	29	2460063.75	3	3	49.64	+16	58	53.37	20.6439	12.4
abr	30	2460064.75	3	4	3.46	+16	59	51.04	20.6467	12.3
may	1	2460065.75	3	4	17.30	+17	0	48.74	20.6492	12.3
may	2	2460066.75	3	4	31.17	+17	1	46.43	20.6515	12.2
may	3	2460067.75	3	4	45.06	+17	2	44.11	20.6535	12.2
may	4	2460068.75	3	4	58.97	+17	3	41.79	20.6552	12.1
may	5	2460069.75	3	5	12.90	+17	4	39.44	20.6566	12.0
may	6	2460070.75	3	5	26.86	+17	5	37.08	20.6578	12.0
may	7	2460071.75	3	5	40.83	+17	6	34.71	20.6587	11.9
may	8	2460072.75	3	5	54.82	+17	7	32.30	20.6594	11.8
may	9	2460073.75	3	6	8.84	+17	8	29.68	20.6598	11.8
may	10	2460074.75	3	6	22.75	+17	9	26.65	20.6599	11.7
may	11	2460075.75	3	6	36.76	+17	10	24.71	20.6597	11.7
may	12	2460076.75	3	6	50.76	+17	11	22.18	20.6593	11.6
may	13	2460077.75	3	7	4.75	+17	12	19.49	20.6586	11.5
may	14	2460078.75	3	7	18.73	+17	13	16.65	20.6576	11.5
may	15	2460079.75	3	7	32.70	+17	14	13.66	20.6564	11.4
may	16	2460080.75	3	7	46.66	+17	15	10.52	20.6549	11.4
may	17	2460081.75	3	8	0.60	+17	16	7.22	20.6531	11.3
may	18	2460082.75	3	8	14.53	+17	17	3.77	20.6510	11.2

## Urano, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
may	19	2460083.75	3	8	28.45	+17	18	0.16	20.6487	11.2
may	20	2460084.75	3	8	42.34	+17	18	56.39	20.6461	11.1
may	21	2460085.75	3	8	56.22	+17	19	52.45	20.6433	11.0
may	22	2460086.75	3	9	10.06	+17	20	48.33	20.6402	11.0
may	23	2460087.75	3	9	23.88	+17	21	44.02	20.6368	10.9
may	24	2460088.75	3	9	37.65	+17	22	39.49	20.6331	10.9
may	25	2460089.75	3	9	51.39	+17	23	34.73	20.6292	10.8
may	26	2460090.75	3	10	5.09	+17	24	29.72	20.6251	10.7
may	27	2460091.75	3	10	18.74	+17	25	24.44	20.6207	10.7
may	28	2460092.75	3	10	32.34	+17	26	18.89	20.6160	10.6
may	29	2460093.75	3	10	45.90	+17	27	13.06	20.6110	10.5
may	30	2460094.75	3	10	59.40	+17	28	6.92	20.6058	10.5
may	31	2460095.75	3	11	12.86	+17	29	0.48	20.6004	10.4
jun	1	2460096.75	3	11	26.26	+17	29	53.73	20.5947	10.4
jun	2	2460097.75	3	11	39.60	+17	30	46.68	20.5887	10.3
jun	3	2460098.75	3	11	52.89	+17	31	39.33	20.5825	10.2
jun	4	2460099.75	3	12	6.13	+17	32	31.68	20.5761	10.2
jun	5	2460100.75	3	12	19.30	+17	33	23.73	20.5694	10.1
jun	6	2460101.75	3	12	32.40	+17	34	15.47	20.5625	10.1
jun	7	2460102.75	3	12	45.44	+17	35	6.88	20.5553	10.0
jun	8	2460103.75	3	12	58.40	+17	35	57.93	20.5479	9.9
jun	9	2460104.75	3	13	11.28	+17	36	48.61	20.5402	9.9
jun	10	2460105.75	3	13	24.08	+17	37	38.89	20.5323	9.8
jun	11	2460106.75	3	13	36.79	+17	38	28.76	20.5242	9.7
jun	12	2460107.75	3	13	49.43	+17	39	18.22	20.5158	9.7
jun	13	2460108.75	3	14	1.98	+17	40	7.26	20.5072	9.6
jun	14	2460109.75	3	14	14.45	+17	40	55.89	20.4984	9.6
jun	15	2460110.75	3	14	26.83	+17	41	44.10	20.4893	9.5
jun	16	2460111.75	3	14	39.12	+17	42	31.89	20.4800	9.4
jun	17	2460112.75	3	14	51.32	+17	43	19.27	20.4705	9.4
jun	18	2460113.75	3	15	3.43	+17	44	6.21	20.4608	9.3
jun	19	2460114.75	3	15	15.43	+17	44	52.72	20.4508	9.2
jun	20	2460115.75	3	15	27.33	+17	45	38.77	20.4406	9.2
jun	21	2460116.75	3	15	39.12	+17	46	24.35	20.4302	9.1
jun	22	2460117.75	3	15	50.80	+17	47	9.45	20.4196	9.1
jun	23	2460118.75	3	16	2.36	+17	47	54.04	20.4088	9.0
jun	24	2460119.75	3	16	13.81	+17	48	38.13	20.3978	8.9
jun	25	2460120.75	3	16	25.14	+17	49	21.69	20.3866	8.9
jun	26	2460121.75	3	16	36.36	+17	50	4.72	20.3752	8.8
jun	27	2460122.75	3	16	47.45	+17	50	47.22	20.3636	8.7
jun	28	2460123.75	3	16	58.43	+17	51	29.19	20.3518	8.7
jun	29	2460124.75	3	17	9.28	+17	52	10.62	20.3398	8.6
jun	30	2460125.75	3	17	20.01	+17	52	51.53	20.3276	8.6
jul	1	2460126.75	3	17	30.62	+17	53	31.91	20.3152	8.5
jul	2	2460127.75	3	17	41.10	+17	54	11.77	20.3027	8.4
jul	3	2460128.75	3	17	51.46	+17	54	51.11	20.2900	8.4

## Urano, 2023

Efermídes a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
jul	4	2460129.75	3	18	1.67	+17	55	29.91	20.2771	8.3
jul	5	2460130.75	3	18	11.75	+17	56	8.15	20.2640	8.2
jul	6	2460131.75	3	18	21.69	+17	56	45.82	20.2507	8.2
jul	7	2460132.75	3	18	31.48	+17	57	22.89	20.2373	8.1
jul	8	2460133.75	3	18	41.12	+17	57	59.34	20.2238	8.1
jul	9	2460134.75	3	18	50.62	+17	58	35.18	20.2100	8.0
jul	10	2460135.75	3	18	59.97	+17	59	10.40	20.1961	7.9
jul	11	2460136.75	3	19	9.18	+17	59	45.00	20.1821	7.9
jul	12	2460137.75	3	19	18.24	+18	0	19.00	20.1679	7.8
jul	13	2460138.75	3	19	27.15	+18	0	52.39	20.1535	7.7
jul	14	2460139.75	3	19	35.91	+18	1	25.17	20.1390	7.7
jul	15	2460140.75	3	19	44.51	+18	1	57.34	20.1244	7.6
jul	16	2460141.75	3	19	52.95	+18	2	28.88	20.1096	7.5
jul	17	2460142.75	3	20	1.23	+18	2	59.79	20.0947	7.5
jul	18	2460143.75	3	20	9.34	+18	3	30.06	20.0797	7.4
jul	19	2460144.75	3	20	17.28	+18	3	59.66	20.0646	7.4
jul	20	2460145.75	3	20	25.06	+18	4	28.60	20.0493	7.3
jul	21	2460146.75	3	20	32.66	+18	4	56.86	20.0339	7.2
jul	22	2460147.75	3	20	40.09	+18	5	24.43	20.0184	7.2
jul	23	2460148.75	3	20	47.34	+18	5	51.30	20.0028	7.1
jul	24	2460149.75	3	20	54.43	+18	6	17.48	19.9871	7.0
jul	25	2460150.75	3	21	1.33	+18	6	42.96	19.9712	7.0
jul	26	2460151.75	3	21	8.06	+18	7	7.76	19.9553	6.9
jul	27	2460152.75	3	21	14.62	+18	7	31.86	19.9393	6.8
jul	28	2460153.75	3	21	21.00	+18	7	55.28	19.9232	6.8
jul	29	2460154.75	3	21	27.20	+18	8	18.03	19.9071	6.7
jul	30	2460155.75	3	21	33.23	+18	8	40.11	19.8908	6.7
jul	31	2460156.75	3	21	39.07	+18	9	1.52	19.8745	6.6
ago	1	2460157.75	3	21	44.72	+18	9	22.24	19.8581	6.5
ago	2	2460158.75	3	21	50.19	+18	9	42.25	19.8417	6.5
ago	3	2460159.75	3	21	55.46	+18	10	1.53	19.8251	6.4
ago	4	2460160.75	3	22	0.54	+18	10	20.08	19.8085	6.3
ago	5	2460161.75	3	22	5.43	+18	10	37.87	19.7919	6.3
ago	6	2460162.75	3	22	10.13	+18	10	54.91	19.7752	6.2
ago	7	2460163.75	3	22	14.63	+18	11	11.21	19.7585	6.1
ago	8	2460164.75	3	22	18.95	+18	11	26.79	19.7417	6.1
ago	9	2460165.75	3	22	23.08	+18	11	41.63	19.7249	6.0
ago	10	2460166.75	3	22	27.01	+18	11	55.76	19.7081	5.9
ago	11	2460167.75	3	22	30.75	+18	12	9.17	19.6912	5.9
ago	12	2460168.75	3	22	34.29	+18	12	21.85	19.6743	5.8
ago	13	2460169.75	3	22	37.62	+18	12	33.79	19.6574	5.8
ago	14	2460170.75	3	22	40.76	+18	12	44.99	19.6404	5.7
ago	15	2460171.75	3	22	43.70	+18	12	55.44	19.6235	5.6
ago	16	2460172.75	3	22	46.42	+18	13	5.13	19.6065	5.6
ago	17	2460173.75	3	22	48.95	+18	13	14.04	19.5896	5.5
ago	18	2460174.75	3	22	51.27	+18	13	22.19	19.5727	5.4

## Urano, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
ago	19	2460175.75	3	22	53.38	+18	13	29.56	19.5557	5.4
ago	20	2460176.75	3	22	55.29	+18	13	36.15	19.5388	5.3
ago	21	2460177.75	3	22	56.99	+18	13	41.97	19.5219	5.2
ago	22	2460178.75	3	22	58.50	+18	13	47.03	19.5051	5.2
ago	23	2460179.75	3	22	59.80	+18	13	51.33	19.4882	5.1
ago	24	2460180.75	3	23	0.90	+18	13	54.88	19.4714	5.0
ago	25	2460181.75	3	23	1.79	+18	13	57.70	19.4547	5.0
ago	26	2460182.75	3	23	2.49	+18	13	59.78	19.4379	4.9
ago	27	2460183.75	3	23	2.99	+18	14	1.14	19.4213	4.8
ago	28	2460184.75	3	23	3.28	+18	14	1.77	19.4047	4.8
ago	29	2460185.75	3	23	3.36	+18	14	1.66	19.3881	4.7
ago	30	2460186.75	3	23	3.23	+18	14	0.79	19.3716	4.6
ago	31	2460187.75	3	23	2.90	+18	13	59.15	19.3552	4.6
sep	1	2460188.75	3	23	2.36	+18	13	56.72	19.3388	4.5
sep	2	2460189.75	3	23	1.61	+18	13	53.52	19.3226	4.4
sep	3	2460190.75	3	23	0.67	+18	13	49.56	19.3064	4.4
sep	4	2460191.75	3	22	59.52	+18	13	44.84	19.2902	4.3
sep	5	2460192.75	3	22	58.18	+18	13	39.38	19.2742	4.2
sep	6	2460193.75	3	22	56.63	+18	13	33.19	19.2583	4.2
sep	7	2460194.75	3	22	54.89	+18	13	26.28	19.2425	4.1
sep	8	2460195.75	3	22	52.95	+18	13	18.65	19.2267	4.0
sep	9	2460196.75	3	22	50.80	+18	13	10.29	19.2111	4.0
sep	10	2460197.75	3	22	48.46	+18	13	1.19	19.1956	3.9
sep	11	2460198.75	3	22	45.91	+18	12	51.37	19.1802	3.8
sep	12	2460199.75	3	22	43.16	+18	12	40.81	19.1650	3.8
sep	13	2460200.75	3	22	40.21	+18	12	29.50	19.1499	3.7
sep	14	2460201.75	3	22	37.07	+18	12	17.46	19.1349	3.6
sep	15	2460202.75	3	22	33.72	+18	12	4.68	19.1200	3.6
sep	16	2460203.75	3	22	30.19	+18	11	51.16	19.1053	3.5
sep	17	2460204.75	3	22	26.46	+18	11	36.92	19.0907	3.4
sep	18	2460205.75	3	22	22.54	+18	11	21.97	19.0763	3.4
sep	19	2460206.75	3	22	18.44	+18	11	6.31	19.0621	3.3
sep	20	2460207.75	3	22	14.15	+18	10	49.98	19.0480	3.2
sep	21	2460208.75	3	22	9.68	+18	10	32.97	19.0341	3.2
sep	22	2460209.75	3	22	5.03	+18	10	15.31	19.0203	3.1
sep	23	2460210.75	3	22	0.21	+18	9	57.01	19.0067	3.0
sep	24	2460211.75	3	21	55.20	+18	9	38.06	18.9933	3.0
sep	25	2460212.75	3	21	50.02	+18	9	18.47	18.9801	2.9
sep	26	2460213.75	3	21	44.65	+18	8	58.23	18.9671	2.8
sep	27	2460214.75	3	21	39.11	+18	8	37.34	18.9543	2.8
sep	28	2460215.75	3	21	33.40	+18	8	15.78	18.9417	2.7
sep	29	2460216.75	3	21	27.51	+18	7	53.56	18.9292	2.6
sep	30	2460217.75	3	21	21.46	+18	7	30.70	18.9170	2.6
oct	1	2460218.75	3	21	15.25	+18	7	7.21	18.9050	2.5
oct	2	2460219.75	3	21	8.89	+18	6	43.12	18.8932	2.4
oct	3	2460220.75	3	21	2.36	+18	6	18.45	18.8816	2.4

## Urano, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
oct	4	2460221.75	3	20	55.69	+18	5	53.20	18.8702	2.3
oct	5	2460222.75	3	20	48.85	+18	5	27.39	18.8590	2.2
oct	6	2460223.75	3	20	41.87	+18	5	1.02	18.8481	2.2
oct	7	2460224.75	3	20	34.74	+18	4	34.10	18.8374	2.1
oct	8	2460225.75	3	20	27.46	+18	4	6.62	18.8269	2.0
oct	9	2460226.75	3	20	20.03	+18	3	38.59	18.8167	2.0
oct	10	2460227.75	3	20	12.46	+18	3	10.01	18.8067	1.9
oct	11	2460228.75	3	20	4.74	+18	2	40.90	18.7970	1.8
oct	12	2460229.75	3	19	56.90	+18	2	11.25	18.7875	1.8
oct	13	2460230.75	3	19	48.92	+18	1	41.08	18.7782	1.7
oct	14	2460231.75	3	19	40.81	+18	1	10.40	18.7693	1.6
oct	15	2460232.75	3	19	32.58	+18	0	39.24	18.7605	1.6
oct	16	2460233.75	3	19	24.23	+18	0	7.61	18.7521	1.5
oct	17	2460234.75	3	19	15.77	+17	59	35.53	18.7439	1.4
oct	18	2460235.75	3	19	7.19	+17	59	3.03	18.7360	1.4
oct	19	2460236.75	3	18	58.52	+17	58	30.13	18.7283	1.3
oct	20	2460237.75	3	18	49.74	+17	57	56.85	18.7210	1.2
oct	21	2460238.75	3	18	40.85	+17	57	23.19	18.7139	1.2
oct	22	2460239.75	3	18	31.87	+17	56	49.16	18.7071	1.1
oct	23	2460240.75	3	18	22.79	+17	56	14.78	18.7005	1.0
oct	24	2460241.75	3	18	13.62	+17	55	40.03	18.6943	0.9
oct	25	2460242.75	3	18	4.36	+17	55	4.91	18.6883	0.9
oct	26	2460243.75	3	17	55.01	+17	54	29.45	18.6826	0.8
oct	27	2460244.75	3	17	45.59	+17	53	53.65	18.6772	0.7
oct	28	2460245.75	3	17	36.09	+17	53	17.53	18.6721	0.7
oct	29	2460246.75	3	17	26.53	+17	52	41.13	18.6673	0.6
oct	30	2460247.75	3	17	16.90	+17	52	4.47	18.6628	0.5
oct	31	2460248.75	3	17	7.22	+17	51	27.57	18.6586	0.5
nov	1	2460249.75	3	16	57.48	+17	50	50.46	18.6547	0.4
nov	2	2460250.75	3	16	47.69	+17	50	13.14	18.6511	0.3
nov	3	2460251.75	3	16	37.84	+17	49	35.61	18.6478	0.3
nov	4	2460252.75	3	16	27.95	+17	48	57.90	18.6448	0.2
nov	5	2460253.75	3	16	18.01	+17	48	20.01	18.6421	0.1
nov	6	2460254.75	3	16	8.02	+17	47	41.94	18.6396	0.1
nov	7	2460255.75	3	15	58.01	+17	47	3.71	18.6376	24.0
nov	8	2460256.75	3	15	47.96	+17	46	25.33	18.6358	23.9
nov	9	2460257.75	3	15	37.88	+17	45	46.83	18.6343	23.9
nov	10	2460258.75	3	15	27.79	+17	45	8.20	18.6331	23.8
nov	11	2460259.75	3	15	17.68	+17	44	29.49	18.6323	23.7
nov	12	2460260.75	3	15	7.56	+17	43	50.72	18.6317	23.6
nov	13	2460261.75	3	14	57.44	+17	43	11.90	18.6315	23.6
nov	14	2460262.75	3	14	47.32	+17	42	33.08	18.6316	23.5
nov	15	2460263.75	3	14	37.21	+17	41	54.28	18.6320	23.4
nov	16	2460264.75	3	14	27.11	+17	41	15.51	18.6327	23.4
nov	17	2460265.75	3	14	17.02	+17	40	36.80	18.6337	23.3
nov	18	2460266.75	3	14	6.95	+17	39	58.16	18.6350	23.2

## Urano, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
nov	19	2460267.75	3	13	56.90	+17	39	19.60	18.6367	23.2
nov	20	2460268.75	3	13	46.86	+17	38	41.11	18.6386	23.1
nov	21	2460269.75	3	13	36.86	+17	38	2.71	18.6409	23.0
nov	22	2460270.75	3	13	26.89	+17	37	24.40	18.6435	23.0
nov	23	2460271.75	3	13	16.95	+17	36	46.20	18.6463	22.9
nov	24	2460272.75	3	13	7.07	+17	36	8.15	18.6495	22.8
nov	25	2460273.75	3	12	57.23	+17	35	30.26	18.6530	22.8
nov	26	2460274.75	3	12	47.45	+17	34	52.56	18.6568	22.7
nov	27	2460275.75	3	12	37.73	+17	34	15.09	18.6609	22.6
nov	28	2460276.75	3	12	28.07	+17	33	37.86	18.6653	22.6
nov	29	2460277.75	3	12	18.48	+17	33	0.89	18.6700	22.5
nov	30	2460278.75	3	12	8.95	+17	32	24.19	18.6750	22.4
dic	1	2460279.75	3	11	59.50	+17	31	47.76	18.6803	22.3
dic	2	2460280.75	3	11	50.12	+17	31	11.63	18.6859	22.3
dic	3	2460281.75	3	11	40.81	+17	30	35.79	18.6918	22.2
dic	4	2460282.75	3	11	31.59	+17	30	0.26	18.6979	22.1
dic	5	2460283.75	3	11	22.45	+17	29	25.04	18.7044	22.1
dic	6	2460284.75	3	11	13.41	+17	28	50.17	18.7112	22.0
dic	7	2460285.75	3	11	4.46	+17	28	15.65	18.7182	21.9
dic	8	2460286.75	3	10	55.62	+17	27	41.50	18.7255	21.9
dic	9	2460287.75	3	10	46.88	+17	27	7.76	18.7331	21.8
dic	10	2460288.75	3	10	38.25	+17	26	34.44	18.7410	21.7
dic	11	2460289.75	3	10	29.74	+17	26	1.57	18.7492	21.7
dic	12	2460290.75	3	10	21.35	+17	25	29.18	18.7576	21.6
dic	13	2460291.75	3	10	13.08	+17	24	57.29	18.7664	21.5
dic	14	2460292.75	3	10	4.95	+17	24	25.92	18.7753	21.5
dic	15	2460293.75	3	9	56.93	+17	23	55.07	18.7846	21.4
dic	16	2460294.75	3	9	49.05	+17	23	24.76	18.7941	21.3
dic	17	2460295.75	3	9	41.30	+17	22	54.98	18.8039	21.3
dic	18	2460296.75	3	9	33.69	+17	22	25.73	18.8139	21.2
dic	19	2460297.75	3	9	26.21	+17	21	57.02	18.8242	21.1
dic	20	2460298.75	3	9	18.88	+17	21	28.86	18.8347	21.1
dic	21	2460299.75	3	9	11.70	+17	21	1.28	18.8454	21.0
dic	22	2460300.75	3	9	4.67	+17	20	34.29	18.8564	20.9
dic	23	2460301.75	3	8	57.80	+17	20	7.92	18.8677	20.9
dic	24	2460302.75	3	8	51.09	+17	19	42.19	18.8791	20.8
dic	25	2460303.75	3	8	44.55	+17	19	17.12	18.8908	20.7
dic	26	2460304.75	3	8	38.17	+17	18	52.72	18.9028	20.6
dic	27	2460305.75	3	8	31.95	+17	18	29.01	18.9149	20.6
dic	28	2460306.75	3	8	25.90	+17	18	5.97	18.9272	20.5
dic	29	2460307.75	3	8	20.02	+17	17	43.62	18.9398	20.4
dic	30	2460308.75	3	8	14.31	+17	17	21.96	18.9526	20.4
dic	31	2460309.75	3	8	8.77	+17	17	0.99	18.9656	3.1
ene	1	2460310.75	3	8	3.40	+17	16	40.72	18.9787	3.1
ene	2	2460311.75	3	7	58.21	+17	16	21.15	18.9921	3.1
ene	3	2460312.75	3	7	55.18	+17	16	10.37	18.9051	3.1
ene	4	2460313.75	3	14	9.95	+17	44	2.43	20.2511	3.2

## Neptuno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\circ$	$\delta$ -	"	dis UA	hp h
ene	1	2459945.75	23	35	42.53	-3	55	4.81	30.1962	16.7
ene	2	2459946.75	23	35	46.08	-3	54	39.85	30.2127	16.6
ene	3	2459947.75	23	35	49.76	-3	54	14.14	30.2291	16.6
ene	4	2459948.75	23	35	53.56	-3	53	47.68	30.2454	16.5
ene	5	2459949.75	23	35	57.47	-3	53	20.48	30.2616	16.4
ene	6	2459950.75	23	36	1.50	-3	52	52.57	30.2776	16.4
ene	7	2459951.75	23	36	5.64	-3	52	23.94	30.2936	16.3
ene	8	2459952.75	23	36	9.90	-3	51	54.62	30.3094	16.2
ene	9	2459953.75	23	36	14.26	-3	51	24.61	30.3252	16.2
ene	10	2459954.75	23	36	18.73	-3	50	53.92	30.3407	16.1
ene	11	2459955.75	23	36	23.31	-3	50	22.57	30.3562	16.0
ene	12	2459956.75	23	36	28.00	-3	49	50.54	30.3715	16.0
ene	13	2459957.75	23	36	32.79	-3	49	17.86	30.3867	15.9
ene	14	2459958.75	23	36	37.69	-3	48	44.51	30.4017	15.9
ene	15	2459959.75	23	36	42.69	-3	48	10.49	30.4166	15.8
ene	16	2459960.75	23	36	47.80	-3	47	35.81	30.4313	15.7
ene	17	2459961.75	23	36	53.02	-3	47	0.46	30.4459	15.7
ene	18	2459962.75	23	36	58.34	-3	46	24.45	30.4603	15.6
ene	19	2459963.75	23	37	3.77	-3	45	47.80	30.4745	15.5
ene	20	2459964.75	23	37	9.30	-3	45	10.51	30.4886	15.5
ene	21	2459965.75	23	37	14.93	-3	44	32.61	30.5025	15.4
ene	22	2459966.75	23	37	20.65	-3	43	54.14	30.5162	15.3
ene	23	2459967.75	23	37	26.46	-3	43	15.11	30.5297	15.3
ene	24	2459968.75	23	37	32.36	-3	42	35.53	30.5430	15.2
ene	25	2459969.75	23	37	38.35	-3	41	55.41	30.5562	15.1
ene	26	2459970.75	23	37	44.43	-3	41	14.74	30.5691	15.1
ene	27	2459971.75	23	37	50.60	-3	40	33.53	30.5818	15.0
ene	28	2459972.75	23	37	56.86	-3	39	51.77	30.5944	15.0
ene	29	2459973.75	23	38	3.20	-3	39	9.47	30.6067	14.9
ene	30	2459974.75	23	38	9.63	-3	38	26.65	30.6188	14.8
ene	31	2459975.75	23	38	16.14	-3	37	43.31	30.6307	14.8
feb	1	2459976.75	23	38	22.74	-3	36	59.47	30.6424	14.7
feb	2	2459977.75	23	38	29.41	-3	36	15.16	30.6538	14.6
feb	3	2459978.75	23	38	36.17	-3	35	30.38	30.6651	14.6
feb	4	2459979.75	23	38	42.99	-3	34	45.16	30.6761	14.5
feb	5	2459980.75	23	38	49.89	-3	33	59.50	30.6869	14.4
feb	6	2459981.75	23	38	56.86	-3	33	13.43	30.6974	14.4
feb	7	2459982.75	23	39	3.90	-3	32	26.95	30.7077	14.3
feb	8	2459983.75	23	39	11.00	-3	31	40.08	30.7178	14.2
feb	9	2459984.75	23	39	18.17	-3	30	52.81	30.7277	14.2
feb	10	2459985.75	23	39	25.40	-3	30	5.15	30.7373	14.1
feb	11	2459986.75	23	39	32.70	-3	29	17.11	30.7466	14.1
feb	12	2459987.75	23	39	40.07	-3	28	28.68	30.7557	14.0
feb	13	2459988.75	23	39	47.49	-3	27	39.87	30.7646	13.9
feb	14	2459989.75	23	39	54.98	-3	26	50.70	30.7732	13.9
feb	15	2459990.75	23	40	2.53	-3	26	1.16	30.7815	13.8



## Neptuno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
feb	16	2459991.75	23	40	10.14	-3	25	11.28	30.7896	13.7
feb	17	2459992.75	23	40	17.81	-3	24	21.08	30.7975	13.7
feb	18	2459993.75	23	40	25.53	-3	23	30.58	30.8050	13.6
feb	19	2459994.75	23	40	33.29	-3	22	39.82	30.8123	13.5
feb	20	2459995.75	23	40	41.09	-3	21	48.82	30.8194	13.5
feb	21	2459996.75	23	40	48.94	-3	20	57.57	30.8262	13.4
feb	22	2459997.75	23	40	56.83	-3	20	6.10	30.8327	13.4
feb	23	2459998.75	23	41	4.76	-3	19	14.39	30.8389	13.3
feb	24	2459999.75	23	41	12.74	-3	18	22.44	30.8448	13.2
feb	25	2460000.75	23	41	20.75	-3	17	30.27	30.8505	13.2
feb	26	2460001.75	23	41	28.80	-3	16	37.88	30.8559	13.1
feb	27	2460002.75	23	41	36.89	-3	15	45.30	30.8611	13.0
feb	28	2460003.75	23	41	45.01	-3	14	52.53	30.8659	13.0
mar	1	2460004.75	23	41	53.17	-3	13	59.59	30.8705	12.9
mar	2	2460005.75	23	42	1.35	-3	13	6.52	30.8748	12.9
mar	3	2460006.75	23	42	9.56	-3	12	13.32	30.8788	12.8
mar	4	2460007.75	23	42	17.79	-3	11	20.00	30.8825	12.7
mar	5	2460008.75	23	42	26.04	-3	10	26.60	30.8860	12.7
mar	6	2460009.75	23	42	34.31	-3	9	33.11	30.8891	12.6
mar	7	2460010.75	23	42	42.60	-3	8	39.56	30.8920	12.5
mar	8	2460011.75	23	42	50.91	-3	7	45.94	30.8946	12.5
mar	9	2460012.75	23	42	59.22	-3	6	52.26	30.8969	12.4
mar	10	2460013.75	23	43	7.56	-3	5	58.52	30.8990	12.3
mar	11	2460014.75	23	43	15.90	-3	5	4.74	30.9007	12.3
mar	12	2460015.75	23	43	24.27	-3	4	10.91	30.9022	12.2
mar	13	2460016.75	23	43	32.64	-3	3	17.05	30.9033	12.2
mar	14	2460017.75	23	43	41.02	-3	2	23.19	30.9042	12.1
mar	15	2460018.75	23	43	49.42	-3	1	29.43	30.9049	12.0
mar	16	2460019.75	23	43	57.80	-3	0	35.70	30.9052	12.0
mar	17	2460020.75	23	44	6.18	-2	59	41.71	30.9052	11.9
mar	18	2460021.75	23	44	14.57	-2	58	47.80	30.9050	11.8
mar	19	2460022.75	23	44	22.96	-2	57	54.02	30.9044	11.8
mar	20	2460023.75	23	44	31.34	-2	57	0.36	30.9036	11.7
mar	21	2460024.75	23	44	39.70	-2	56	6.81	30.9025	11.6
mar	22	2460025.75	23	44	48.06	-2	55	13.38	30.9011	11.6
mar	23	2460026.75	23	44	56.40	-2	54	20.05	30.8994	11.5
mar	24	2460027.75	23	45	4.74	-2	53	26.83	30.8975	11.5
mar	25	2460028.75	23	45	13.06	-2	52	33.72	30.8952	11.4
mar	26	2460029.75	23	45	21.37	-2	51	40.75	30.8927	11.3
mar	27	2460030.75	23	45	29.66	-2	50	47.92	30.8899	11.3
mar	28	2460031.75	23	45	37.94	-2	49	55.25	30.8868	11.2
mar	29	2460032.75	23	45	46.19	-2	49	2.77	30.8834	11.1
mar	30	2460033.75	23	45	54.42	-2	48	10.49	30.8798	11.1
mar	31	2460034.75	23	46	2.62	-2	47	18.43	30.8758	11.0
abr	1	2460035.75	23	46	10.79	-2	46	26.60	30.8716	10.9
abr	2	2460036.75	23	46	18.92	-2	45	35.02	30.8672	10.9

## Neptuno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
abr	3	2460037.75	23	46	27.03	-2	44	43.70	30.8624	10.8
abr	4	2460038.75	23	46	35.10	-2	43	52.63	30.8574	10.8
abr	5	2460039.75	23	46	43.13	-2	43	1.84	30.8522	10.7
abr	6	2460040.75	23	46	51.13	-2	42	11.32	30.8466	10.6
abr	7	2460041.75	23	46	59.09	-2	41	21.06	30.8408	10.6
abr	8	2460042.75	23	47	7.01	-2	40	31.09	30.8348	10.5
abr	9	2460043.75	23	47	14.90	-2	39	41.39	30.8284	10.4
abr	10	2460044.75	23	47	22.75	-2	38	51.98	30.8219	10.4
abr	11	2460045.75	23	47	30.56	-2	38	2.87	30.8150	10.3
abr	12	2460046.75	23	47	38.32	-2	37	14.09	30.8079	10.3
abr	13	2460047.75	23	47	46.03	-2	36	25.65	30.8006	10.2
abr	14	2460048.75	23	47	53.70	-2	35	37.58	30.7930	10.1
abr	15	2460049.75	23	48	1.31	-2	34	49.89	30.7851	10.1
abr	16	2460050.75	23	48	8.86	-2	34	2.61	30.7770	10.0
abr	17	2460051.75	23	48	16.36	-2	33	15.74	30.7687	9.9
abr	18	2460052.75	23	48	23.80	-2	32	29.28	30.7601	9.9
abr	19	2460053.75	23	48	31.18	-2	31	43.24	30.7512	9.8
abr	20	2460054.75	23	48	38.50	-2	30	57.60	30.7422	9.7
abr	21	2460055.75	23	48	45.76	-2	30	12.38	30.7328	9.7
abr	22	2460056.75	23	48	52.96	-2	29	27.58	30.7233	9.6
abr	23	2460057.75	23	49	0.10	-2	28	43.21	30.7135	9.6
abr	24	2460058.75	23	49	7.18	-2	27	59.30	30.7035	9.5
abr	25	2460059.75	23	49	14.19	-2	27	15.86	30.6933	9.4
abr	26	2460060.75	23	49	21.13	-2	26	32.91	30.6829	9.4
abr	27	2460061.75	23	49	27.99	-2	25	50.46	30.6722	9.3
abr	28	2460062.75	23	49	34.79	-2	25	8.53	30.6613	9.2
abr	29	2460063.75	23	49	41.50	-2	24	27.13	30.6502	9.2
abr	30	2460064.75	23	49	48.14	-2	23	46.26	30.6389	9.1
may	1	2460065.75	23	49	54.70	-2	23	5.93	30.6274	9.0
may	2	2460066.75	23	50	1.18	-2	22	26.14	30.6157	9.0
may	3	2460067.75	23	50	7.59	-2	21	46.90	30.6038	8.9
may	4	2460068.75	23	50	13.91	-2	21	8.21	30.5918	8.8
may	5	2460069.75	23	50	20.15	-2	20	30.05	30.5795	8.8
may	6	2460070.75	23	50	26.32	-2	19	52.44	30.5670	8.7
may	7	2460071.75	23	50	32.40	-2	19	15.38	30.5543	8.7
may	8	2460072.75	23	50	38.41	-2	18	38.87	30.5415	8.6
may	9	2460073.75	23	50	44.33	-2	18	2.94	30.5285	8.5
may	10	2460074.75	23	50	50.16	-2	17	27.60	30.5153	8.5
may	11	2460075.75	23	50	55.90	-2	16	52.87	30.5019	8.4
may	12	2460076.75	23	51	1.55	-2	16	18.78	30.4884	8.3
may	13	2460077.75	23	51	7.11	-2	15	45.32	30.4747	8.3
may	14	2460078.75	23	51	12.57	-2	15	12.52	30.4609	8.2
may	15	2460079.75	23	51	17.93	-2	14	40.37	30.4468	8.1
may	16	2460080.75	23	51	23.19	-2	14	8.87	30.4327	8.1
may	17	2460081.75	23	51	28.36	-2	13	38.01	30.4183	8.0
may	18	2460082.75	23	51	33.44	-2	13	7.79	30.4039	8.0

## Neptuno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
may	19	2460083.75	23	51	38.42	-2	12	38.21	30.3893	7.9
may	20	2460084.75	23	51	43.30	-2	12	9.29	30.3745	7.8
may	21	2460085.75	23	51	48.08	-2	11	41.03	30.3596	7.8
may	22	2460086.75	23	51	52.77	-2	11	13.46	30.3446	7.7
may	23	2460087.75	23	51	57.35	-2	10	46.57	30.3295	7.6
may	24	2460088.75	23	52	1.82	-2	10	20.39	30.3142	7.6
may	25	2460089.75	23	52	6.19	-2	9	54.93	30.2989	7.5
may	26	2460090.75	23	52	10.45	-2	9	30.19	30.2834	7.4
may	27	2460091.75	23	52	14.60	-2	9	6.18	30.2678	7.4
may	28	2460092.75	23	52	18.64	-2	8	42.90	30.2521	7.3
may	29	2460093.75	23	52	22.57	-2	8	20.36	30.2363	7.2
may	30	2460094.75	23	52	26.39	-2	7	58.54	30.2204	7.2
may	31	2460095.75	23	52	30.11	-2	7	37.45	30.2045	7.1
jun	1	2460096.75	23	52	33.71	-2	7	17.07	30.1884	7.0
jun	2	2460097.75	23	52	37.21	-2	6	57.41	30.1723	7.0
jun	3	2460098.75	23	52	40.60	-2	6	38.47	30.1561	6.9
jun	4	2460099.75	23	52	43.88	-2	6	20.24	30.1398	6.9
jun	5	2460100.75	23	52	47.05	-2	6	2.73	30.1234	6.8
jun	6	2460101.75	23	52	50.11	-2	5	45.96	30.1070	6.7
jun	7	2460102.75	23	52	53.06	-2	5	29.95	30.0905	6.7
jun	8	2460103.75	23	52	55.88	-2	5	14.71	30.0740	6.6
jun	9	2460104.75	23	52	58.59	-2	5	0.26	30.0574	6.5
jun	10	2460105.75	23	53	1.18	-2	4	46.59	30.0408	6.5
jun	11	2460106.75	23	53	3.65	-2	4	33.71	30.0241	6.4
jun	12	2460107.75	23	53	6.01	-2	4	21.60	30.0074	6.3
jun	13	2460108.75	23	53	8.24	-2	4	10.26	29.9907	6.3
jun	14	2460109.75	23	53	10.36	-2	3	59.67	29.9739	6.2
jun	15	2460110.75	23	53	12.37	-2	3	49.84	29.9571	6.1
jun	16	2460111.75	23	53	14.26	-2	3	40.78	29.9403	6.1
jun	17	2460112.75	23	53	16.03	-2	3	32.47	29.9234	6.0
jun	18	2460113.75	23	53	17.68	-2	3	24.95	29.9066	5.9
jun	19	2460114.75	23	53	19.22	-2	3	18.20	29.8897	5.9
jun	20	2460115.75	23	53	20.63	-2	3	12.24	29.8729	5.8
jun	21	2460116.75	23	53	21.92	-2	3	7.08	29.8561	5.7
jun	22	2460117.75	23	53	23.09	-2	3	2.72	29.8392	5.7
jun	23	2460118.75	23	53	24.14	-2	2	59.16	29.8224	5.6
jun	24	2460119.75	23	53	25.06	-2	2	56.40	29.8056	5.6
jun	25	2460120.75	23	53	25.86	-2	2	54.43	29.7888	5.5
jun	26	2460121.75	23	53	26.54	-2	2	53.25	29.7721	5.4
jun	27	2460122.75	23	53	27.10	-2	2	52.85	29.7554	5.4
jun	28	2460123.75	23	53	27.54	-2	2	53.22	29.7387	5.3
jun	29	2460124.75	23	53	27.87	-2	2	54.35	29.7221	5.2
jun	30	2460125.75	23	53	28.08	-2	2	56.22	29.7056	5.2
jul	1	2460126.75	23	53	28.17	-2	2	58.84	29.6890	5.1
jul	2	2460127.75	23	53	28.15	-2	3	2.20	29.6726	5.0
jul	3	2460128.75	23	53	28.01	-2	3	6.31	29.6562	5.0

## Neptuno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
jul	4	2460129.75	23	53	27.75	-2	3	11.19	29.6398	4.9
jul	5	2460130.75	23	53	27.37	-2	3	16.84	29.6236	4.8
jul	6	2460131.75	23	53	26.87	-2	3	23.28	29.6074	4.8
jul	7	2460132.75	23	53	26.25	-2	3	30.50	29.5913	4.7
jul	8	2460133.75	23	53	25.50	-2	3	38.49	29.5752	4.6
jul	9	2460134.75	23	53	24.64	-2	3	47.25	29.5593	4.6
jul	10	2460135.75	23	53	23.66	-2	3	56.76	29.5435	4.5
jul	11	2460136.75	23	53	22.56	-2	4	7.00	29.5277	4.4
jul	12	2460137.75	23	53	21.36	-2	4	17.96	29.5121	4.4
jul	13	2460138.75	23	53	20.03	-2	4	29.64	29.4965	4.3
jul	14	2460139.75	23	53	18.60	-2	4	42.05	29.4811	4.2
jul	15	2460140.75	23	53	17.05	-2	4	55.17	29.4658	4.2
jul	16	2460141.75	23	53	15.39	-2	5	9.02	29.4506	4.1
jul	17	2460142.75	23	53	13.61	-2	5	23.59	29.4355	4.0
jul	18	2460143.75	23	53	11.72	-2	5	38.89	29.4206	4.0
jul	19	2460144.75	23	53	9.72	-2	5	54.91	29.4057	3.9
jul	20	2460145.75	23	53	7.60	-2	6	11.65	29.3911	3.8
jul	21	2460146.75	23	53	5.37	-2	6	29.10	29.3766	3.8
jul	22	2460147.75	23	53	3.03	-2	6	47.26	29.3622	3.7
jul	23	2460148.75	23	53	0.58	-2	7	6.10	29.3480	3.6
jul	24	2460149.75	23	52	58.02	-2	7	25.63	29.3339	3.6
jul	25	2460150.75	23	52	55.35	-2	7	45.81	29.3200	3.5
jul	26	2460151.75	23	52	52.59	-2	8	6.63	29.3063	3.4
jul	27	2460152.75	23	52	49.72	-2	8	28.08	29.2927	3.4
jul	28	2460153.75	23	52	46.75	-2	8	50.15	29.2793	3.3
jul	29	2460154.75	23	52	43.68	-2	9	12.83	29.2661	3.2
jul	30	2460155.75	23	52	40.52	-2	9	36.11	29.2530	3.2
jul	31	2460156.75	23	52	37.26	-2	9	59.99	29.2402	3.1
ago	1	2460157.75	23	52	33.90	-2	10	24.49	29.2275	3.0
ago	2	2460158.75	23	52	30.44	-2	10	49.61	29.2150	3.0
ago	3	2460159.75	23	52	26.88	-2	11	15.35	29.2027	2.9
ago	4	2460160.75	23	52	23.23	-2	11	41.70	29.1906	2.8
ago	5	2460161.75	23	52	19.47	-2	12	8.63	29.1788	2.8
ago	6	2460162.75	23	52	15.63	-2	12	36.13	29.1671	2.7
ago	7	2460163.75	23	52	11.69	-2	13	4.17	29.1556	2.6
ago	8	2460164.75	23	52	7.67	-2	13	32.75	29.1443	2.6
ago	9	2460165.75	23	52	3.56	-2	14	1.83	29.1333	2.5
ago	10	2460166.75	23	51	59.37	-2	14	31.43	29.1225	2.4
ago	11	2460167.75	23	51	55.10	-2	15	1.53	29.1119	2.4
ago	12	2460168.75	23	51	50.74	-2	15	32.14	29.1015	2.3
ago	13	2460169.75	23	51	46.30	-2	16	3.24	29.0914	2.2
ago	14	2460170.75	23	51	41.78	-2	16	34.83	29.0814	2.2
ago	15	2460171.75	23	51	37.18	-2	17	6.91	29.0718	2.1
ago	16	2460172.75	23	51	32.50	-2	17	39.47	29.0623	2.0
ago	17	2460173.75	23	51	27.74	-2	18	12.48	29.0532	2.0
ago	18	2460174.75	23	51	22.91	-2	18	45.95	29.0442	1.9

## Neptuno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ -	"	dis UA	hp h
ago	19	2460175.75	23	51	18.00	-2	19	19.84	29.0355	1.8
ago	20	2460176.75	23	51	13.03	-2	19	54.15	29.0271	1.8
ago	21	2460177.75	23	51	7.99	-2	20	28.85	29.0189	1.7
ago	22	2460178.75	23	51	2.88	-2	21	3.91	29.0110	1.6
ago	23	2460179.75	23	50	57.71	-2	21	39.32	29.0033	1.6
ago	24	2460180.75	23	50	52.49	-2	22	15.06	28.9959	1.5
ago	25	2460181.75	23	50	47.21	-2	22	51.12	28.9888	1.4
ago	26	2460182.75	23	50	41.88	-2	23	27.48	28.9819	1.4
ago	27	2460183.75	23	50	36.49	-2	24	4.15	28.9753	1.3
ago	28	2460184.75	23	50	31.05	-2	24	41.11	28.9690	1.2
ago	29	2460185.75	23	50	25.55	-2	25	18.36	28.9630	1.2
ago	30	2460186.75	23	50	20.01	-2	25	55.92	28.9572	1.1
ago	31	2460187.75	23	50	14.41	-2	26	33.76	28.9517	1.0
sep	1	2460188.75	23	50	8.76	-2	27	11.87	28.9465	1.0
sep	2	2460189.75	23	50	3.07	-2	27	50.21	28.9415	0.9
sep	3	2460190.75	23	49	57.34	-2	28	28.77	28.9369	0.8
sep	4	2460191.75	23	49	51.57	-2	29	7.51	28.9325	0.8
sep	5	2460192.75	23	49	45.77	-2	29	46.42	28.9284	0.7
sep	6	2460193.75	23	49	39.93	-2	30	25.49	28.9246	0.6
sep	7	2460194.75	23	49	34.07	-2	31	4.71	28.9211	0.6
sep	8	2460195.75	23	49	28.17	-2	31	44.07	28.9178	0.5
sep	9	2460196.75	23	49	22.25	-2	32	23.57	28.9149	0.4
sep	10	2460197.75	23	49	16.30	-2	33	3.20	28.9122	0.4
sep	11	2460198.75	23	49	10.32	-2	33	42.94	28.9099	0.3
sep	12	2460199.75	23	49	4.32	-2	34	22.78	28.9078	0.2
sep	13	2460200.75	23	48	58.30	-2	35	2.72	28.9061	0.2
sep	14	2460201.75	23	48	52.26	-2	35	42.72	28.9046	0.1
sep	15	2460202.75	23	48	46.21	-2	36	22.77	28.9035	0.0
sep	16	2460203.75	23	48	40.14	-2	37	2.85	28.9026	24.0
sep	17	2460204.75	23	48	34.06	-2	37	42.94	28.9021	23.9
sep	18	2460205.75	23	48	27.98	-2	38	23.00	28.9018	23.8
sep	19	2460206.75	23	48	21.89	-2	39	3.02	28.9018	23.7
sep	20	2460207.75	23	48	15.81	-2	39	42.98	28.9022	23.7
sep	21	2460208.75	23	48	9.73	-2	40	22.86	28.9028	23.6
sep	22	2460209.75	23	48	3.66	-2	41	2.65	28.9038	23.5
sep	23	2460210.75	23	47	57.59	-2	41	42.33	28.9050	23.5
sep	24	2460211.75	23	47	51.54	-2	42	21.90	28.9066	23.4
sep	25	2460212.75	23	47	45.49	-2	43	1.36	28.9084	23.3
sep	26	2460213.75	23	47	39.45	-2	43	40.71	28.9105	23.3
sep	27	2460214.75	23	47	33.42	-2	44	19.93	28.9130	23.2
sep	28	2460215.75	23	47	27.41	-2	44	59.02	28.9157	23.1
sep	29	2460216.75	23	47	21.41	-2	45	37.93	28.9187	23.1
sep	30	2460217.75	23	47	15.43	-2	46	16.66	28.9221	23.0
oct	1	2460218.75	23	47	9.48	-2	46	55.16	28.9257	22.9
oct	2	2460219.75	23	47	3.56	-2	47	33.42	28.9296	22.9
oct	3	2460220.75	23	46	57.67	-2	48	11.42	28.9338	22.8

## Neptuno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
oct	4	2460221.75	23	46	51.82	-2	48	49.15	28.9383	22.7
oct	5	2460222.75	23	46	46.00	-2	49	26.61	28.9431	22.7
oct	6	2460223.75	23	46	40.21	-2	50	3.80	28.9481	22.6
oct	7	2460224.75	23	46	34.46	-2	50	40.70	28.9535	22.5
oct	8	2460225.75	23	46	28.75	-2	51	17.30	28.9591	22.5
oct	9	2460226.75	23	46	23.08	-2	51	53.60	28.9651	22.4
oct	10	2460227.75	23	46	17.45	-2	52	29.57	28.9713	22.3
oct	11	2460228.75	23	46	11.86	-2	53	5.21	28.9778	22.3
oct	12	2460229.75	23	46	6.32	-2	53	40.50	28.9846	22.2
oct	13	2460230.75	23	46	0.83	-2	54	15.40	28.9917	22.1
oct	14	2460231.75	23	45	55.40	-2	54	49.91	28.9990	22.1
oct	15	2460232.75	23	45	50.02	-2	55	23.99	29.0066	22.0
oct	16	2460233.75	23	45	44.70	-2	55	57.64	29.0145	21.9
oct	17	2460234.75	23	45	39.45	-2	56	30.82	29.0227	21.9
oct	18	2460235.75	23	45	34.27	-2	57	3.52	29.0311	21.8
oct	19	2460236.75	23	45	29.15	-2	57	35.73	29.0398	21.7
oct	20	2460237.75	23	45	24.10	-2	58	7.45	29.0488	21.7
oct	21	2460238.75	23	45	19.12	-2	58	38.67	29.0580	21.6
oct	22	2460239.75	23	45	14.21	-2	59	9.39	29.0675	21.5
oct	23	2460240.75	23	45	9.38	-2	59	39.60	29.0772	21.5
oct	24	2460241.75	23	45	4.61	-3	0	9.31	29.0872	21.4
oct	25	2460242.75	23	44	59.92	-3	0	38.50	29.0974	21.3
oct	26	2460243.75	23	44	55.30	-3	1	7.15	29.1079	21.3
oct	27	2460244.75	23	44	50.77	-3	1	35.24	29.1186	21.2
oct	28	2460245.75	23	44	46.31	-3	2	2.75	29.1296	21.1
oct	29	2460246.75	23	44	41.95	-3	2	29.65	29.1407	21.1
oct	30	2460247.75	23	44	37.67	-3	2	55.93	29.1522	21.0
oct	31	2460248.75	23	44	33.48	-3	3	21.59	29.1638	20.9
nov	1	2460249.75	23	44	29.39	-3	3	46.62	29.1756	20.9
nov	2	2460250.75	23	44	25.39	-3	4	11.03	29.1877	20.8
nov	3	2460251.75	23	44	21.47	-3	4	34.80	29.2000	20.7
nov	4	2460252.75	23	44	17.66	-3	4	57.94	29.2125	20.7
nov	5	2460253.75	23	44	13.93	-3	5	20.44	29.2253	20.6
nov	6	2460254.75	23	44	10.30	-3	5	42.30	29.2382	20.5
nov	7	2460255.75	23	44	6.77	-3	6	3.49	29.2513	20.5
nov	8	2460256.75	23	44	3.33	-3	6	24.02	29.2647	20.4
nov	9	2460257.75	23	43	60.00	-3	6	43.86	29.2782	20.3
nov	10	2460258.75	23	43	56.76	-3	7	2.99	29.2919	20.3
nov	11	2460259.75	23	43	53.64	-3	7	21.41	29.3058	20.2
nov	12	2460260.75	23	43	50.62	-3	7	39.09	29.3199	20.1
nov	13	2460261.75	23	43	47.72	-3	7	56.02	29.3342	20.1
nov	14	2460262.75	23	43	44.93	-3	8	12.19	29.3486	20.0
nov	15	2460263.75	23	43	42.25	-3	8	27.59	29.3632	19.9
nov	16	2460264.75	23	43	39.69	-3	8	42.22	29.3780	19.9
nov	17	2460265.75	23	43	37.24	-3	8	56.09	29.3929	19.8
nov	18	2460266.75	23	43	34.91	-3	9	9.19	29.4080	19.7

## Neptuno, 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
nov	19	2460267.75	23	43	32.68	-3	9	21.54	29.4232	19.7
nov	20	2460268.75	23	43	30.58	-3	9	33.14	29.4386	19.6
nov	21	2460269.75	23	43	28.58	-3	9	43.98	29.4541	19.5
nov	22	2460270.75	23	43	26.70	-3	9	54.05	29.4697	19.5
nov	23	2460271.75	23	43	24.94	-3	10	3.33	29.4855	19.4
nov	24	2460272.75	23	43	23.30	-3	10	11.82	29.5014	19.3
nov	25	2460273.75	23	43	21.78	-3	10	19.50	29.5174	19.3
nov	26	2460274.75	23	43	20.39	-3	10	26.35	29.5335	19.2
nov	27	2460275.75	23	43	19.12	-3	10	32.37	29.5498	19.1
nov	28	2460276.75	23	43	17.97	-3	10	37.58	29.5661	19.1
nov	29	2460277.75	23	43	16.95	-3	10	41.96	29.5826	19.0
nov	30	2460278.75	23	43	16.05	-3	10	45.54	29.5991	18.9
dic	1	2460279.75	23	43	15.28	-3	10	48.31	29.6157	18.9
dic	2	2460280.75	23	43	14.63	-3	10	50.28	29.6324	18.8
dic	3	2460281.75	23	43	14.10	-3	10	51.45	29.6492	18.7
dic	4	2460282.75	23	43	13.69	-3	10	51.81	29.6661	18.7
dic	5	2460283.75	23	43	13.41	-3	10	51.36	29.6830	18.6
dic	6	2460284.75	23	43	13.25	-3	10	50.10	29.7000	18.5
dic	7	2460285.75	23	43	13.22	-3	10	48.00	29.7170	18.5
dic	8	2460286.75	23	43	13.32	-3	10	45.08	29.7342	18.4
dic	9	2460287.75	23	43	13.54	-3	10	41.31	29.7513	18.3
dic	10	2460288.75	23	43	13.90	-3	10	36.68	29.7685	18.3
dic	11	2460289.75	23	43	14.39	-3	10	31.20	29.7858	18.2
dic	12	2460290.75	23	43	15.01	-3	10	24.87	29.8030	18.1
dic	13	2460291.75	23	43	15.76	-3	10	17.67	29.8203	18.1
dic	14	2460292.75	23	43	16.64	-3	10	9.63	29.8376	18.0
dic	15	2460293.75	23	43	17.66	-3	10	0.76	29.8550	17.9
dic	16	2460294.75	23	43	18.79	-3	9	51.08	29.8723	17.9
dic	17	2460295.75	23	43	20.06	-3	9	40.59	29.8897	17.8
dic	18	2460296.75	23	43	21.44	-3	9	29.30	29.9070	17.8
dic	19	2460297.75	23	43	22.95	-3	9	17.20	29.9244	17.7
dic	20	2460298.75	23	43	24.59	-3	9	4.30	29.9417	17.6
dic	21	2460299.75	23	43	26.35	-3	8	50.58	29.9590	17.6
dic	22	2460300.75	23	43	28.24	-3	8	36.03	29.9763	17.5
dic	23	2460301.75	23	43	30.26	-3	8	20.65	29.9935	17.4
dic	24	2460302.75	23	43	32.41	-3	8	4.44	30.0108	17.4
dic	25	2460303.75	23	43	34.69	-3	7	47.42	30.0279	17.3
dic	26	2460304.75	23	43	37.09	-3	7	29.59	30.0451	17.2
dic	27	2460305.75	23	43	39.62	-3	7	10.97	30.0622	17.2
dic	28	2460306.75	23	43	42.27	-3	6	51.57	30.0792	17.1
dic	29	2460307.75	23	43	45.04	-3	6	31.40	30.0962	17.0
dic	30	2460308.75	23	43	47.93	-3	6	10.47	30.1131	17.0
dic	31	2460309.75	23	43	50.94	-3	5	48.78	30.1300	23.7
ene	1	2460310.75	23	43	54.06	-3	5	26.34	30.1467	23.7
ene	2	2460311.75	23	43	57.31	-3	5	3.14	30.1634	23.7
ene	3	2460312.75	23	44	2.78	-3	4	25.87	30.0854	23.7
ene	4	2460313.75	23	47	16.98	-2	41	24.11	31.3033	23.8

## Plutón (planeta enano), 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	$\circ$	$\delta$ '	"	dis UA	hp h
ene	1	2459945.75	20	0	54.13	-22	50	3.86	35.6153	13.1
ene	2	2459946.75	20	1	2.26	-22	49	44.88	35.6209	13.0
ene	3	2459947.75	20	1	10.42	-22	49	25.84	35.6263	13.0
ene	4	2459948.75	20	1	18.62	-22	49	6.76	35.6313	12.9
ene	5	2459949.75	20	1	26.85	-22	48	47.64	35.6361	12.9
ene	6	2459950.75	20	1	35.11	-22	48	28.50	35.6406	12.8
ene	7	2459951.75	20	1	43.39	-22	48	9.35	35.6448	12.7
ene	8	2459952.75	20	1	51.69	-22	47	50.19	35.6487	12.7
ene	9	2459953.75	20	2	0.02	-22	47	31.03	35.6524	12.6
ene	10	2459954.75	20	2	8.35	-22	47	11.86	35.6557	12.5
ene	11	2459955.75	20	2	16.71	-22	46	52.70	35.6587	12.5
ene	12	2459956.75	20	2	25.08	-22	46	33.53	35.6615	12.4
ene	13	2459957.75	20	2	33.46	-22	46	14.36	35.6640	12.3
ene	14	2459958.75	20	2	41.85	-22	45	55.19	35.6662	12.3
ene	15	2459959.75	20	2	50.25	-22	45	36.02	35.6680	12.2
ene	16	2459960.75	20	2	58.66	-22	45	16.85	35.6696	12.2
ene	17	2459961.75	20	3	7.08	-22	44	57.71	35.6709	12.1
ene	18	2459962.75	20	3	15.50	-22	44	38.60	35.6719	12.0
ene	19	2459963.75	20	3	23.93	-22	44	19.47	35.6726	12.0
ene	20	2459964.75	20	3	32.36	-22	44	0.35	35.6730	11.9
ene	21	2459965.75	20	3	40.80	-22	43	41.31	35.6732	11.8
ene	22	2459966.75	20	3	49.23	-22	43	22.36	35.6730	11.8
ene	23	2459967.75	20	3	57.64	-22	43	3.52	35.6725	11.7
ene	24	2459968.75	20	4	6.05	-22	42	44.77	35.6717	11.7
ene	25	2459969.75	20	4	14.43	-22	42	26.10	35.6707	11.6
ene	26	2459970.75	20	4	22.80	-22	42	7.49	35.6693	11.5
ene	27	2459971.75	20	4	31.16	-22	41	48.94	35.6677	11.5
ene	28	2459972.75	20	4	39.49	-22	41	30.47	35.6657	11.4
ene	29	2459973.75	20	4	47.82	-22	41	12.08	35.6635	11.3
ene	30	2459974.75	20	4	56.12	-22	40	53.78	35.6610	11.3
ene	31	2459975.75	20	5	4.40	-22	40	35.59	35.6582	11.2
feb	1	2459976.75	20	5	12.66	-22	40	17.53	35.6551	11.1
feb	2	2459977.75	20	5	20.89	-22	39	59.60	35.6517	11.1
feb	3	2459978.75	20	5	29.10	-22	39	41.82	35.6481	11.0
feb	4	2459979.75	20	5	37.27	-22	39	24.19	35.6441	11.0
feb	5	2459980.75	20	5	45.41	-22	39	6.71	35.6399	10.9
feb	6	2459981.75	20	5	53.51	-22	38	49.40	35.6354	10.8
feb	7	2459982.75	20	6	1.57	-22	38	32.24	35.6306	10.8
feb	8	2459983.75	20	6	9.60	-22	38	15.23	35.6256	10.7
feb	9	2459984.75	20	6	17.58	-22	37	58.38	35.6203	10.6
feb	10	2459985.75	20	6	25.51	-22	37	41.69	35.6147	10.6
feb	11	2459986.75	20	6	33.41	-22	37	25.14	35.6088	10.5
feb	12	2459987.75	20	6	41.26	-22	37	8.75	35.6027	10.4
feb	13	2459988.75	20	6	49.07	-22	36	52.52	35.5963	10.4
feb	14	2459989.75	20	6	56.83	-22	36	36.47	35.5896	10.3
feb	15	2459990.75	20	7	4.55	-22	36	20.60	35.5827	10.3



## Plutón (planeta enano), 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
feb	16	2459991.75	20	7	12.22	-22	36	4.94	35.5755	10.2
feb	17	2459992.75	20	7	19.83	-22	35	49.50	35.5680	10.1
feb	18	2459993.75	20	7	27.39	-22	35	34.30	35.5603	10.1
feb	19	2459994.75	20	7	34.89	-22	35	19.35	35.5524	10.0
feb	20	2459995.75	20	7	42.32	-22	35	4.64	35.5442	9.9
feb	21	2459996.75	20	7	49.69	-22	34	50.16	35.5357	9.9
feb	22	2459997.75	20	7	56.99	-22	34	35.91	35.5270	9.8
feb	23	2459998.75	20	8	4.22	-22	34	21.86	35.5180	9.7
feb	24	2459999.75	20	8	11.38	-22	34	8.04	35.5088	9.7
feb	25	2460000.75	20	8	18.48	-22	33	54.44	35.4994	9.6
feb	26	2460001.75	20	8	25.51	-22	33	41.08	35.4897	9.6
feb	27	2460002.75	20	8	32.47	-22	33	27.97	35.4799	9.5
feb	28	2460003.75	20	8	39.36	-22	33	15.13	35.4697	9.4
mar	1	2460004.75	20	8	46.18	-22	33	2.57	35.4594	9.4
mar	2	2460005.75	20	8	52.92	-22	32	50.29	35.4488	9.3
mar	3	2460006.75	20	8	59.58	-22	32	38.31	35.4381	9.2
mar	4	2460007.75	20	9	6.16	-22	32	26.63	35.4271	9.2
mar	5	2460008.75	20	9	12.66	-22	32	15.24	35.4159	9.1
mar	6	2460009.75	20	9	19.07	-22	32	4.16	35.4045	9.0
mar	7	2460010.75	20	9	25.40	-22	31	53.37	35.3929	9.0
mar	8	2460011.75	20	9	31.64	-22	31	42.87	35.3811	8.9
mar	9	2460012.75	20	9	37.79	-22	31	32.66	35.3691	8.9
mar	10	2460013.75	20	9	43.85	-22	31	22.73	35.3569	8.8
mar	11	2460014.75	20	9	49.83	-22	31	13.09	35.3445	8.7
mar	12	2460015.75	20	9	55.72	-22	31	3.74	35.3319	8.7
mar	13	2460016.75	20	10	1.52	-22	30	54.68	35.3192	8.6
mar	14	2460017.75	20	10	7.24	-22	30	45.94	35.3063	8.5
mar	15	2460018.75	20	10	12.86	-22	30	37.52	35.2932	8.5
mar	16	2460019.75	20	10	18.40	-22	30	29.45	35.2799	8.4
mar	17	2460020.75	20	10	23.83	-22	30	21.73	35.2665	8.3
mar	18	2460021.75	20	10	29.16	-22	30	14.37	35.2529	8.3
mar	19	2460022.75	20	10	34.40	-22	30	7.38	35.2391	8.2
mar	20	2460023.75	20	10	39.52	-22	30	0.73	35.2252	8.1
mar	21	2460024.75	20	10	44.54	-22	29	54.43	35.2112	8.1
mar	22	2460025.75	20	10	49.46	-22	29	48.46	35.1970	8.0
mar	23	2460026.75	20	10	54.27	-22	29	42.81	35.1826	8.0
mar	24	2460027.75	20	10	58.97	-22	29	37.49	35.1681	7.9
mar	25	2460028.75	20	11	3.58	-22	29	32.50	35.1535	7.8
mar	26	2460029.75	20	11	8.08	-22	29	27.87	35.1388	7.8
mar	27	2460030.75	20	11	12.47	-22	29	23.60	35.1240	7.7
mar	28	2460031.75	20	11	16.76	-22	29	19.70	35.1090	7.6
mar	29	2460032.75	20	11	20.94	-22	29	16.18	35.0939	7.6
mar	30	2460033.75	20	11	25.01	-22	29	13.05	35.0787	7.5
mar	31	2460034.75	20	11	28.96	-22	29	10.31	35.0634	7.4
abr	1	2460035.75	20	11	32.81	-22	29	7.95	35.0481	7.4
abr	2	2460036.75	20	11	36.53	-22	29	5.97	35.0326	7.3

## Plutón (planeta enano), 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
abr	3	2460037.75	20	11	40.14	-22	29	4.38	35.0170	7.2
abr	4	2460038.75	20	11	43.64	-22	29	3.16	35.0014	7.2
abr	5	2460039.75	20	11	47.02	-22	29	2.30	34.9856	7.1
abr	6	2460040.75	20	11	50.28	-22	29	1.80	34.9698	7.0
abr	7	2460041.75	20	11	53.43	-22	29	1.66	34.9540	7.0
abr	8	2460042.75	20	11	56.47	-22	29	1.87	34.9380	6.9
abr	9	2460043.75	20	11	59.39	-22	29	2.44	34.9220	6.9
abr	10	2460044.75	20	12	2.20	-22	29	3.38	34.9060	6.8
abr	11	2460045.75	20	12	4.90	-22	29	4.71	34.8899	6.7
abr	12	2460046.75	20	12	7.48	-22	29	6.43	34.8737	6.7
abr	13	2460047.75	20	12	9.95	-22	29	8.56	34.8575	6.6
abr	14	2460048.75	20	12	12.29	-22	29	11.09	34.8413	6.5
abr	15	2460049.75	20	12	14.51	-22	29	14.04	34.8250	6.5
abr	16	2460050.75	20	12	16.61	-22	29	17.39	34.8087	6.4
abr	17	2460051.75	20	12	18.58	-22	29	21.12	34.7924	6.3
abr	18	2460052.75	20	12	20.42	-22	29	25.23	34.7761	6.3
abr	19	2460053.75	20	12	22.14	-22	29	29.69	34.7597	6.2
abr	20	2460054.75	20	12	23.75	-22	29	34.52	34.7434	6.1
abr	21	2460055.75	20	12	25.23	-22	29	39.70	34.7270	6.1
abr	22	2460056.75	20	12	26.60	-22	29	45.26	34.7107	6.0
abr	23	2460057.75	20	12	27.85	-22	29	51.19	34.6943	5.9
abr	24	2460058.75	20	12	28.98	-22	29	57.52	34.6780	5.9
abr	25	2460059.75	20	12	29.99	-22	30	4.24	34.6617	5.8
abr	26	2460060.75	20	12	30.87	-22	30	11.35	34.6454	5.7
abr	27	2460061.75	20	12	31.64	-22	30	18.87	34.6291	5.7
abr	28	2460062.75	20	12	32.28	-22	30	26.77	34.6129	5.6
abr	29	2460063.75	20	12	32.79	-22	30	35.07	34.5967	5.5
abr	30	2460064.75	20	12	33.18	-22	30	43.74	34.5806	5.5
may	1	2460065.75	20	12	33.45	-22	30	52.78	34.5645	5.4
may	2	2460066.75	20	12	33.60	-22	31	2.19	34.5484	5.4
may	3	2460067.75	20	12	33.63	-22	31	11.94	34.5324	5.3
may	4	2460068.75	20	12	33.53	-22	31	22.03	34.5165	5.2
may	5	2460069.75	20	12	33.32	-22	31	32.46	34.5007	5.2
may	6	2460070.75	20	12	33.00	-22	31	43.23	34.4849	5.1
may	7	2460071.75	20	12	32.56	-22	31	54.33	34.4692	5.0
may	8	2460072.75	20	12	32.01	-22	32	5.79	34.4535	5.0
may	9	2460073.75	20	12	31.34	-22	32	17.61	34.4380	4.9
may	10	2460074.75	20	12	30.56	-22	32	29.79	34.4225	4.8
may	11	2460075.75	20	12	29.66	-22	32	42.35	34.4071	4.8
may	12	2460076.75	20	12	28.63	-22	32	55.28	34.3919	4.7
may	13	2460077.75	20	12	27.49	-22	33	8.56	34.3767	4.6
may	14	2460078.75	20	12	26.23	-22	33	22.18	34.3616	4.6
may	15	2460079.75	20	12	24.85	-22	33	36.13	34.3467	4.5
may	16	2460080.75	20	12	23.35	-22	33	50.38	34.3319	4.4
may	17	2460081.75	20	12	21.74	-22	34	4.94	34.3171	4.4
may	18	2460082.75	20	12	20.02	-22	34	19.79	34.3026	4.3

## Plutón (planeta enano), 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ "	"	dis UA	hp h
may	19	2460083.75	20	12	18.19	-22	34	34.94	34.2881	4.2
may	20	2460084.75	20	12	16.25	-22	34	50.40	34.2738	4.2
may	21	2460085.75	20	12	14.20	-22	35	6.17	34.2596	4.1
may	22	2460086.75	20	12	12.05	-22	35	22.26	34.2456	4.0
may	23	2460087.75	20	12	9.79	-22	35	38.66	34.2317	4.0
may	24	2460088.75	20	12	7.42	-22	35	55.38	34.2179	3.9
may	25	2460089.75	20	12	4.94	-22	36	12.41	34.2044	3.8
may	26	2460090.75	20	12	2.35	-22	36	29.74	34.1909	3.8
may	27	2460091.75	20	11	59.66	-22	36	47.36	34.1777	3.7
may	28	2460092.75	20	11	56.86	-22	37	5.25	34.1646	3.6
may	29	2460093.75	20	11	53.95	-22	37	23.41	34.1517	3.6
may	30	2460094.75	20	11	50.95	-22	37	41.82	34.1390	3.5
may	31	2460095.75	20	11	47.85	-22	38	0.46	34.1264	3.4
jun	1	2460096.75	20	11	44.65	-22	38	19.34	34.1141	3.4
jun	2	2460097.75	20	11	41.35	-22	38	38.44	34.1019	3.3
jun	3	2460098.75	20	11	37.97	-22	38	57.76	34.0899	3.2
jun	4	2460099.75	20	11	34.50	-22	39	17.31	34.0781	3.2
jun	5	2460100.75	20	11	30.94	-22	39	37.10	34.0666	3.1
jun	6	2460101.75	20	11	27.29	-22	39	57.13	34.0552	3.0
jun	7	2460102.75	20	11	23.54	-22	40	17.41	34.0440	3.0
jun	8	2460103.75	20	11	19.71	-22	40	37.93	34.0330	2.9
jun	9	2460104.75	20	11	15.78	-22	40	58.68	34.0222	2.8
jun	10	2460105.75	20	11	11.76	-22	41	19.65	34.0117	2.8
jun	11	2460106.75	20	11	7.66	-22	41	40.80	34.0014	2.7
jun	12	2460107.75	20	11	3.47	-22	42	2.12	33.9912	2.6
jun	13	2460108.75	20	10	59.19	-22	42	23.60	33.9814	2.6
jun	14	2460109.75	20	10	54.84	-22	42	45.24	33.9717	2.5
jun	15	2460110.75	20	10	50.41	-22	43	7.03	33.9623	2.4
jun	16	2460111.75	20	10	45.91	-22	43	28.98	33.9531	2.4
jun	17	2460112.75	20	10	41.34	-22	43	51.08	33.9441	2.3
jun	18	2460113.75	20	10	36.69	-22	44	13.35	33.9354	2.2
jun	19	2460114.75	20	10	31.98	-22	44	35.77	33.9270	2.2
jun	20	2460115.75	20	10	27.19	-22	44	58.36	33.9187	2.1
jun	21	2460116.75	20	10	22.34	-22	45	21.09	33.9108	2.0
jun	22	2460117.75	20	10	17.41	-22	45	43.96	33.9031	2.0
jun	23	2460118.75	20	10	12.42	-22	46	6.97	33.8956	1.9
jun	24	2460119.75	20	10	7.36	-22	46	30.08	33.8884	1.8
jun	25	2460120.75	20	10	2.24	-22	46	53.29	33.8815	1.8
jun	26	2460121.75	20	9	57.07	-22	47	16.59	33.8748	1.7
jun	27	2460122.75	20	9	51.83	-22	47	39.96	33.8684	1.6
jun	28	2460123.75	20	9	46.54	-22	48	3.39	33.8622	1.6
jun	29	2460124.75	20	9	41.21	-22	48	26.87	33.8563	1.5
jun	30	2460125.75	20	9	35.82	-22	48	50.39	33.8507	1.4
jul	1	2460126.75	20	9	30.39	-22	49	13.96	33.8454	1.4
jul	2	2460127.75	20	9	24.93	-22	49	37.58	33.8403	1.3
jul	3	2460128.75	20	9	19.41	-22	50	1.27	33.8355	1.2

## Plutón (planeta enano), 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
jul	4	2460129.75	20	9	13.86	-22	50	25.01	33.8310	1.2
jul	5	2460130.75	20	9	8.27	-22	50	48.82	33.8267	1.1
jul	6	2460131.75	20	9	2.63	-22	51	12.69	33.8228	1.0
jul	7	2460132.75	20	8	56.95	-22	51	36.58	33.8191	1.0
jul	8	2460133.75	20	8	51.23	-22	52	0.48	33.8157	0.9
jul	9	2460134.75	20	8	45.47	-22	52	24.37	33.8125	0.8
jul	10	2460135.75	20	8	39.68	-22	52	48.24	33.8097	0.8
jul	11	2460136.75	20	8	33.87	-22	53	12.07	33.8071	0.7
jul	12	2460137.75	20	8	28.03	-22	53	35.86	33.8049	0.6
jul	13	2460138.75	20	8	22.17	-22	53	59.62	33.8029	0.6
jul	14	2460139.75	20	8	16.30	-22	54	23.35	33.8012	0.5
jul	15	2460140.75	20	8	10.40	-22	54	47.05	33.7998	0.4
jul	16	2460141.75	20	8	4.49	-22	55	10.72	33.7986	0.3
jul	17	2460142.75	20	7	58.56	-22	55	34.35	33.7978	0.3
jul	18	2460143.75	20	7	52.62	-22	55	57.95	33.7973	0.2
jul	19	2460144.75	20	7	46.66	-22	56	21.49	33.7970	0.1
jul	20	2460145.75	20	7	40.70	-22	56	44.98	33.7971	0.1
jul	21	2460146.75	20	7	34.72	-22	57	8.39	33.7974	0.0
jul	22	2460147.75	20	7	28.74	-22	57	31.71	33.7981	23.9
jul	23	2460148.75	20	7	22.76	-22	57	54.93	33.7990	23.9
jul	24	2460149.75	20	7	16.77	-22	58	18.03	33.8002	23.8
jul	25	2460150.75	20	7	10.79	-22	58	41.00	33.8018	23.7
jul	26	2460151.75	20	7	4.82	-22	59	3.84	33.8036	23.7
jul	27	2460152.75	20	6	58.85	-22	59	26.53	33.8057	23.6
jul	28	2460153.75	20	6	52.91	-22	59	49.08	33.8081	23.5
jul	29	2460154.75	20	6	46.97	-23	0	11.49	33.8107	23.5
jul	30	2460155.75	20	6	41.06	-23	0	33.76	33.8137	23.4
jul	31	2460156.75	20	6	35.17	-23	0	55.91	33.8170	23.3
ago	1	2460157.75	20	6	29.29	-23	1	17.94	33.8205	23.3
ago	2	2460158.75	20	6	23.43	-23	1	39.84	33.8243	23.2
ago	3	2460159.75	20	6	17.58	-23	2	1.59	33.8284	23.1
ago	4	2460160.75	20	6	11.75	-23	2	23.18	33.8328	23.1
ago	5	2460161.75	20	6	5.95	-23	2	44.57	33.8375	23.0
ago	6	2460162.75	20	6	0.18	-23	3	5.76	33.8425	22.9
ago	7	2460163.75	20	5	54.43	-23	3	26.73	33.8477	22.9
ago	8	2460164.75	20	5	48.72	-23	3	47.49	33.8533	22.8
ago	9	2460165.75	20	5	43.05	-23	4	8.03	33.8591	22.7
ago	10	2460166.75	20	5	37.42	-23	4	28.37	33.8652	22.7
ago	11	2460167.75	20	5	31.84	-23	4	48.50	33.8715	22.6
ago	12	2460168.75	20	5	26.29	-23	5	8.44	33.8782	22.5
ago	13	2460169.75	20	5	20.79	-23	5	28.16	33.8851	22.5
ago	14	2460170.75	20	5	15.33	-23	5	47.68	33.8923	22.4
ago	15	2460171.75	20	5	9.92	-23	6	6.99	33.8998	22.3
ago	16	2460172.75	20	5	4.56	-23	6	26.06	33.9075	22.3
ago	17	2460173.75	20	4	59.24	-23	6	44.91	33.9155	22.2
ago	18	2460174.75	20	4	53.98	-23	7	3.50	33.9238	22.1

## Plutón (planeta enano), 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
ago	19	2460175.75	20	4	48.78	-23	7	21.83	33.9323	22.1
ago	20	2460176.75	20	4	43.63	-23	7	39.89	33.9411	22.0
ago	21	2460177.75	20	4	38.54	-23	7	57.66	33.9502	21.9
ago	22	2460178.75	20	4	33.51	-23	8	15.15	33.9595	21.9
ago	23	2460179.75	20	4	28.56	-23	8	32.34	33.9690	21.8
ago	24	2460180.75	20	4	23.67	-23	8	49.24	33.9788	21.7
ago	25	2460181.75	20	4	18.86	-23	9	5.85	33.9889	21.7
ago	26	2460182.75	20	4	14.12	-23	9	22.17	33.9992	21.6
ago	27	2460183.75	20	4	9.45	-23	9	38.22	34.0097	21.5
ago	28	2460184.75	20	4	4.86	-23	9	54.00	34.0205	21.5
ago	29	2460185.75	20	4	0.35	-23	10	9.52	34.0315	21.4
ago	30	2460186.75	20	3	55.90	-23	10	24.75	34.0428	21.3
ago	31	2460187.75	20	3	51.53	-23	10	39.70	34.0542	21.3
sep	1	2460188.75	20	3	47.23	-23	10	54.33	34.0659	21.2
sep	2	2460189.75	20	3	43.01	-23	11	8.63	34.0779	21.1
sep	3	2460190.75	20	3	38.88	-23	11	22.58	34.0900	21.1
sep	4	2460191.75	20	3	34.83	-23	11	36.19	34.1023	21.0
sep	5	2460192.75	20	3	30.87	-23	11	49.46	34.1149	20.9
sep	6	2460193.75	20	3	27.01	-23	12	2.41	34.1277	20.9
sep	7	2460194.75	20	3	23.23	-23	12	15.03	34.1407	20.8
sep	8	2460195.75	20	3	19.55	-23	12	27.33	34.1539	20.7
sep	9	2460196.75	20	3	15.97	-23	12	39.32	34.1673	20.7
sep	10	2460197.75	20	3	12.47	-23	12	51.00	34.1809	20.6
sep	11	2460198.75	20	3	9.07	-23	13	2.35	34.1947	20.5
sep	12	2460199.75	20	3	5.77	-23	13	13.38	34.2086	20.5
sep	13	2460200.75	20	3	2.56	-23	13	24.07	34.2228	20.4
sep	14	2460201.75	20	2	59.45	-23	13	34.42	34.2371	20.3
sep	15	2460202.75	20	2	56.44	-23	13	44.42	34.2517	20.3
sep	16	2460203.75	20	2	53.53	-23	13	54.05	34.2664	20.2
sep	17	2460204.75	20	2	50.72	-23	14	3.31	34.2812	20.1
sep	18	2460205.75	20	2	48.02	-23	14	12.19	34.2963	20.1
sep	19	2460206.75	20	2	45.43	-23	14	20.69	34.3114	20.0
sep	20	2460207.75	20	2	42.96	-23	14	28.82	34.3268	19.9
sep	21	2460208.75	20	2	40.59	-23	14	36.59	34.3423	19.9
sep	22	2460209.75	20	2	38.34	-23	14	43.99	34.3579	19.8
sep	23	2460210.75	20	2	36.21	-23	14	51.04	34.3737	19.7
sep	24	2460211.75	20	2	34.18	-23	14	57.75	34.3896	19.7
sep	25	2460212.75	20	2	32.27	-23	15	4.12	34.4057	19.6
sep	26	2460213.75	20	2	30.47	-23	15	10.15	34.4218	19.5
sep	27	2460214.75	20	2	28.77	-23	15	15.83	34.4381	19.5
sep	28	2460215.75	20	2	27.19	-23	15	21.15	34.4546	19.4
sep	29	2460216.75	20	2	25.72	-23	15	26.09	34.4711	19.3
sep	30	2460217.75	20	2	24.36	-23	15	30.63	34.4877	19.3
oct	1	2460218.75	20	2	23.13	-23	15	34.77	34.5045	19.2
oct	2	2460219.75	20	2	22.01	-23	15	38.53	34.5213	19.1
oct	3	2460220.75	20	2	21.02	-23	15	41.90	34.5383	19.1

## Plutón (planeta enano), 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
oct	4	2460221.75	20	2	20.15	-23	15	44.91	34.5553	19.0
oct	5	2460222.75	20	2	19.40	-23	15	47.56	34.5724	18.9
oct	6	2460223.75	20	2	18.77	-23	15	49.86	34.5897	18.9
oct	7	2460224.75	20	2	18.26	-23	15	51.81	34.6069	18.8
oct	8	2460225.75	20	2	17.87	-23	15	53.42	34.6243	18.7
oct	9	2460226.75	20	2	17.60	-23	15	54.67	34.6417	18.7
oct	10	2460227.75	20	2	17.45	-23	15	55.56	34.6592	18.6
oct	11	2460228.75	20	2	17.43	-23	15	56.09	34.6768	18.5
oct	12	2460229.75	20	2	17.52	-23	15	56.25	34.6944	18.5
oct	13	2460230.75	20	2	17.73	-23	15	56.03	34.7120	18.4
oct	14	2460231.75	20	2	18.07	-23	15	55.43	34.7297	18.3
oct	15	2460232.75	20	2	18.53	-23	15	54.43	34.7475	18.3
oct	16	2460233.75	20	2	19.12	-23	15	53.06	34.7653	18.2
oct	17	2460234.75	20	2	19.84	-23	15	51.30	34.7830	18.1
oct	18	2460235.75	20	2	20.69	-23	15	49.16	34.8009	18.1
oct	19	2460236.75	20	2	21.67	-23	15	46.66	34.8187	18.0
oct	20	2460237.75	20	2	22.77	-23	15	43.82	34.8365	17.9
oct	21	2460238.75	20	2	24.00	-23	15	40.63	34.8544	17.9
oct	22	2460239.75	20	2	25.35	-23	15	37.11	34.8722	17.8
oct	23	2460240.75	20	2	26.82	-23	15	33.26	34.8901	17.8
oct	24	2460241.75	20	2	28.42	-23	15	29.08	34.9079	17.7
oct	25	2460242.75	20	2	30.13	-23	15	24.55	34.9257	17.6
oct	26	2460243.75	20	2	31.96	-23	15	19.66	34.9435	17.6
oct	27	2460244.75	20	2	33.91	-23	15	14.41	34.9613	17.5
oct	28	2460245.75	20	2	35.99	-23	15	8.78	34.9791	17.4
oct	29	2460246.75	20	2	38.19	-23	15	2.79	34.9968	17.4
oct	30	2460247.75	20	2	40.52	-23	14	56.43	35.0144	17.3
oct	31	2460248.75	20	2	42.97	-23	14	49.73	35.0321	17.2
nov	1	2460249.75	20	2	45.55	-23	14	42.70	35.0496	17.2
nov	2	2460250.75	20	2	48.24	-23	14	35.36	35.0672	17.1
nov	3	2460251.75	20	2	51.06	-23	14	27.71	35.0846	17.0
nov	4	2460252.75	20	2	54.00	-23	14	19.75	35.1021	17.0
nov	5	2460253.75	20	2	57.05	-23	14	11.48	35.1194	16.9
nov	6	2460254.75	20	3	0.22	-23	14	2.90	35.1367	16.8
nov	7	2460255.75	20	3	3.51	-23	13	54.01	35.1539	16.8
nov	8	2460256.75	20	3	6.91	-23	13	44.80	35.1710	16.7
nov	9	2460257.75	20	3	10.42	-23	13	35.26	35.1880	16.6
nov	10	2460258.75	20	3	14.05	-23	13	25.39	35.2049	16.6
nov	11	2460259.75	20	3	17.80	-23	13	15.20	35.2217	16.5
nov	12	2460260.75	20	3	21.66	-23	13	4.67	35.2385	16.5
nov	13	2460261.75	20	3	25.65	-23	12	53.82	35.2551	16.4
nov	14	2460262.75	20	3	29.74	-23	12	42.66	35.2716	16.3
nov	15	2460263.75	20	3	33.96	-23	12	31.20	35.2880	16.3
nov	16	2460264.75	20	3	38.29	-23	12	19.45	35.3042	16.2
nov	17	2460265.75	20	3	42.73	-23	12	7.43	35.3204	16.1
nov	18	2460266.75	20	3	47.28	-23	11	55.15	35.3364	16.1

## Plutón (planeta enano), 2023

Efemérides a las 0<sup>h</sup> del meridiano 90° W.G.

mes	día	dj	h	$\alpha$ m	s	°	$\delta$ '	"	dis UA	hp h
nov	19	2460267.75	20	3	51.94	-23	11	42.61	35.3522	16.0
nov	20	2460268.75	20	3	56.70	-23	11	29.81	35.3680	15.9
nov	21	2460269.75	20	4	1.56	-23	11	16.76	35.3835	15.9
nov	22	2460270.75	20	4	6.51	-23	11	3.43	35.3990	15.8
nov	23	2460271.75	20	4	11.58	-23	10	49.81	35.4142	15.7
nov	24	2460272.75	20	4	16.74	-23	10	35.91	35.4294	15.7
nov	25	2460273.75	20	4	22.00	-23	10	21.73	35.4443	15.6
nov	26	2460274.75	20	4	27.37	-23	10	7.27	35.4591	15.5
nov	27	2460275.75	20	4	32.84	-23	9	52.56	35.4737	15.5
nov	28	2460276.75	20	4	38.41	-23	9	37.60	35.4881	15.4
nov	29	2460277.75	20	4	44.07	-23	9	22.41	35.5024	15.4
nov	30	2460278.75	20	4	49.84	-23	9	7.02	35.5165	15.3
dic	1	2460279.75	20	4	55.69	-23	8	51.41	35.5304	15.2
dic	2	2460280.75	20	5	1.63	-23	8	35.60	35.5441	15.2
dic	3	2460281.75	20	5	7.66	-23	8	19.58	35.5576	15.1
dic	4	2460282.75	20	5	13.78	-23	8	3.35	35.5709	15.0
dic	5	2460283.75	20	5	19.98	-23	7	46.91	35.5840	15.0
dic	6	2460284.75	20	5	26.27	-23	7	30.25	35.5969	14.9
dic	7	2460285.75	20	5	32.64	-23	7	13.38	35.6096	14.8
dic	8	2460286.75	20	5	39.09	-23	6	56.28	35.6221	14.8
dic	9	2460287.75	20	5	45.62	-23	6	38.98	35.6344	14.7
dic	10	2460288.75	20	5	52.24	-23	6	21.46	35.6464	14.7
dic	11	2460289.75	20	5	58.95	-23	6	3.74	35.6583	14.6
dic	12	2460290.75	20	6	5.73	-23	5	45.83	35.6699	14.5
dic	13	2460291.75	20	6	12.59	-23	5	27.74	35.6812	14.5
dic	14	2460292.75	20	6	19.53	-23	5	9.51	35.6924	14.4
dic	15	2460293.75	20	6	26.54	-23	4	51.13	35.7033	14.3
dic	16	2460294.75	20	6	33.62	-23	4	32.63	35.7139	14.3
dic	17	2460295.75	20	6	40.76	-23	4	14.00	35.7243	14.2
dic	18	2460296.75	20	6	47.97	-23	3	55.23	35.7345	14.1
dic	19	2460297.75	20	6	55.23	-23	3	36.32	35.7444	14.1
dic	20	2460298.75	20	7	2.56	-23	3	17.26	35.7541	14.0
dic	21	2460299.75	20	7	9.94	-23	2	58.05	35.7635	14.0
dic	22	2460300.75	20	7	17.38	-23	2	38.68	35.7726	13.9
dic	23	2460301.75	20	7	24.89	-23	2	19.18	35.7815	13.8
dic	24	2460302.75	20	7	32.45	-23	1	59.55	35.7902	13.8
dic	25	2460303.75	20	7	40.07	-23	1	39.81	35.7985	13.7
dic	26	2460304.75	20	7	47.75	-23	1	19.98	35.8067	13.6
dic	27	2460305.75	20	7	55.47	-23	1	0.08	35.8145	13.6
dic	28	2460306.75	20	8	3.25	-23	0	40.10	35.8221	13.5
dic	29	2460307.75	20	8	11.06	-23	0	20.06	35.8294	13.4
dic	30	2460308.75	20	8	18.92	-22	59	59.96	35.8364	13.4
dic	31	2460309.75	20	8	26.82	-22	59	39.79	35.8432	20.1
ene	1	2460310.75	20	8	34.76	-22	59	19.57	35.8497	20.1
ene	2	2460311.75	20	8	42.50	-22	58	59.46	35.7933	20.1

## Satélite de los planetas, 2023

Planeta	Satélite	Periodo orbital (días)	Semi eje mayor (10 <sup>3</sup> km)	Excentricidad de la órbita	Inclinación de la órbita		Razón de Ms a Mp	Radio (km)	Albedo
Tie	1 Luna	27.321661	384.400	0.0549018	2.28.58	p	1.23000371E-02	1737.40	0.11 0.07
Mar	1 Fobos	0.31891011	9.376	0.01510	1.075	p	1.6720E-08	7.81	irr 0.07
Mar	2 Deimos	1.26244080	23.458	0.00020	1.788	p	2.4300E-09	10.35	irr
Júp	1 Io	1.76914	421.800	0.00410	0.036	p	4.7040E-05	1821.35	irr 0.62
Júp	2 Europa	3.55118	671.100	0.00940	0.466	p	2.5280E-05	1562.00	irr 0.68
Júp	3 Ganimedes	7.15455	1070.400	0.00130	0.177	p	7.8050E-05	2632.30	0.44
Júp	4 Calixto	16.88902	1882.700	0.00740	0.192	p	5.6670E-05	2409.30	0.19
Júp	5 Amaltea	0.49818	181.400	0.00320	0.380	p	1.1000E-09	92.09	irr 0.09
Júp	6 Himalia	250.56000	11461.000	0.16230	27.496	p	2.2000E-09	85.00	0.04
Júp	7 Elara	259.64000	11471.000	0.21740	26.627	p	4.5800E-10	40.00	0.04
Júp	8 Pasifae	743.63000	23624.000	0.40900	151.431	p	1.5800E-10	18.00	0.04
Júp	9 Sinope	758.90000	23939.000	0.24950	158.109	p	3.9500E-11	14.00	0.04
Júp	10 Lisistea	259.20000	11717.000	0.11240	28.302	p	3.3100E-11	12.00	0.04
Júp	11 Carmé	734.14000	23404.000	0.25330	164.907	p	6.9400E-11	15.00	0.04
Júp	12 Ananque	629.77000	21276.000	0.24350	148.889	p	1.5800E-11	10.00	0.04
Júp	13 Leda	240.92000	11165.000	0.16360	27.457	p	5.7600E-12	5.00	0.04
Júp	14 Tebe	0.67500	221.900	0.01760	1.080	p	7.8900E-10	50.52	irr 0.05
Júp	15 Adrastea	0.29800	129.000	0.00180	0.054	p	3.9500E-12	8.52	irr 0.10
Júp	16 Metis	0.29500	128.000	0.00120	0.019	p	6.3100E-11	23.70	irr 0.06
Júp	17 Calirre	736.00000	24596.240	0.20600	143.000	e		4.30	0.04
Júp	18 Temixto	130.00000	7450.000	0.20000	46.000	e		4.00	0.04
Júp	19 Megaclito	734.10000	23439.080	0.52770	151.700	e		2.70	0.04
Júp	20 Taiguet	650.10000	21671.850	0.24600	163.545	e		2.50	0.04
Júp	21 Caldena	591.70000	20299.460	0.15530	165.620	e		1.90	0.04
Júp	22 Harpalika	617.30000	20917.720	0.20030	149.288	e		2.20	0.04
Júp	23 Kalica	767.00000	24135.610	0.31770	165.792	e		2.60	0.04
Júp	24 Iocasta	606.30000	20642.860	0.26860	149.906	e		2.60	0.04
Júp	25 Erinoma	661.10000	21867.750	0.34650	160.909	e		1.60	0.04
Júp	26 Isunoa	704.90000	22804.700	0.28090	165.039	e		1.90	0.04
Júp	27 Praxiodica	624.60000	21098.100	0.14580	146.353	e		3.40	0.04
Júp	28 Autonoa	778.00000	24413.090	0.45860	153.056	e		2.00	0.04
Júp	29 Tiona	610.00000	20769.900	0.28830	148.286	e		2.00	0.04
Júp	30 Hermipe	624.60000	21047.990	0.24790	149.785	e		2.00	0.04
Júp	31 Gitna	679.30000	22274.410	0.31120	164.343	e		1.50	0.04
Júp	32 Euridome	752.40000	23830.940	0.32550	150.430	e		1.50	0.04
Júp	33 Euanda	620.90000	20983.140	0.14270	146.030	e		1.50	0.04
Júp	36 Esponda	690.30000	22548.240	0.51890	155.220	e		1.00	0.04
Júp	37 Kala	679.40000	22300.640	0.32500	164.794	e		1.00	0.04
Júp	39 Egémoma	715.00000	23006.330	0.24940	152.330	e		1.50	0.04
Júp	41 Oda	747.00000	23743.830	0.40510	159.408	e		2.00	0.04
Júp	43 Arca	748.70000	23765.120	0.22370	163.254	e		1.50	0.04
Júp	45 Élica	601.40000	20540.270	0.13750	154.587	e		2.00	0.04
Júp	46 Carpo	455.07000	17056.040	0.29490	55.147	e		1.50	0.04
Júp	47 Euquelade	735.27000	23485.28	0.28280	164.000	e		2.00	0.04
Júp	53 Dia	287.00000	12118.000	0.21100	28.230			1.00	0.04
Sat	1 Mimas	0.94242	185.539	0.01960	1.574	p	6.6100E-08	198.62	irr 0.60
Sat	2 Encélado	1.37022	238.042	0.00000	0.003	p	1.9000E-07	252.15	irr 1.00
Sat	3 Tetis	1.88780	294.672	0.00010	1.091	p	1.0900E-06	531.05	irr 0.80
Sat	4 Dione	2.73692	377.415	0.00220	0.026	p	1.9300E-06	560.45	irr 0.60
Sat	5 Rea	4.51750	527.068	0.00020	0.333	p	4.0600E-06	763.50	irr 0.60
Sat	6 Titán	15.94545	1221.865	0.02880	0.306	p	2.3660E-04	2574.73	0.20



## Satélite de los planetas, 2023

Planeta	Satélite	Periodo orbital (días)	Semi eje mayor (10 <sup>3</sup> km)	Excentricidad de la órbita	Inclinación de la órbita	Razón de Ms a Mp	Radio (km)	Albedo		
Sat 7	Hiperión	21.27666	1500.933	0.02320	0.615	p	1.0000E-08	145.69	irr	0.25
Sat 8	Iapetos	79.33112	3560.854	0.02930	8.298	p	3.1770E-06	734.84	irr	0.20
Sat 9	Febe	546.41400	r 12893.240	0.17560	173.730	e	1.4540E-08	106.67	irr	0.08
Sat 10	Jano	0.69500	151.460	0.00680	0.163	p	3.3380E-09	91.28	irr	0.71
Sat 11	Epimeteo	0.69400	151.410	0.00980	0.351	p	9.2630E-10	58.75	irr	0.73
Sat 12	Elena	2.74000	377.400	0.00000	0.212	p	4.4800E-11	18.63	irr	1.67
Sat 13	Telesto	1.88800	294.660	0.00100	1.158	p	1.2650E-11	13.25	irr	1.00
Sat 14	Calipso	1.88800	294.660	0.00100	1.473	p	6.3250E-12	12.09	irr	0.70
Sat 15	Atlas	0.60200	137.670	0.00120	0.003	p	1.1610E-11	17.05	irr	0.40
Sat 16	Prometeo	0.61300	139.380	0.00220	0.008	p	2.8060E-10	51.11	irr	0.60
Sat 17	Pandora	0.62900	141.720	0.00420	0.050	p	2.4120E-10	43.08	irr	0.50
Sat 18	Pan	0.57500	133.585	0.00000	0.000	p	8.7070E-12	14.98	irr	0.50
Sat 19	Aimir	1315.13000	r 23128.000	0.33380	173.496	p		10.00		0.08
Sat 20	Paalia	686.95000	15204.000	0.33250	46.230	p		13.00		0.08
Sat 21	Tarrus	926.35000	18243.000	0.52820	33.725	p		7.00		0.08
Sat 22	Ijira	451.42000	11408.000	0.27210	47.483	p		6.00		0.08
Sat 24	Quivio	449.22000	11384.000	0.33250	46.766	p		8.00		0.08
Sat 26	Alborer	783.46000	16393.000	0.47970	34.059	p		16.00		0.08
Sat 29	Sarmac	895.51000	18182.000	0.28010	45.809	p		21.00		0.08
Ura 1	Ariel	2.52038	190.900	0.00120	0.041	p	1.5600E-05	578.90	irr	0.39
Ura 2	Umbriel	4.14418	266.000	0.00390	0.128	p	1.3500E-05	584.70		0.21
Ura 3	Titania	8.70587	436.300	0.00110	0.079	p	4.0600E-05	788.90		0.27
Ura 4	Oberón	13.46323	583.500	0.00140	0.068	p	3.4700E-05	761.40		0.23
Ura 5	Miranda	1.41348	129.900	0.00130	4.338	p	8.0000E-06	235.88	irr	0.32
Ura 7	Ofelia	0.37640	53.800	0.00990	0.104	p	6.2100E-10	21.40		0.07
Ura 8	Bianca	0.43458	59.200	0.00090	0.193	p	1.0700E-09	25.70		0.07
Ura 9	Crésida	0.46357	61.800	0.00040	0.006	p	3.9500E-09	39.80		0.07
Ura 10	Desdémona	0.47365	62.700	0.00010	0.113	p	2.0500E-09	32.00		0.07
Ura 11	Julieta	0.49307	64.400	0.00070	0.065	p	6.4200E-09	46.80		0.07
Ura 12	Porcia	0.51320	66.100	0.00010	0.059	p	1.9200E-08	67.60		0.07
Ura 13	Rosalinda	0.55846	69.900	0.00010	0.279	p	2.9300E-09	36.00		0.07
Ura 14	Belinda	0.62353	75.300	0.00010	0.031	p	4.1100E-09	40.30		0.07
Ura 15	Pucle	0.76183	86.000	0.18000	0.319	p	3.3300E-08	81.00		0.07
Ura 16	Calibán	579.73000	r 7231.000	0.52000	141.530	e	8.4500E-09	36.00		0.04
Ura 17	Sícorax	1288.33000	r 12179.000		159.420	e	6.1900E-08	75.00		0.04
Nep 1	Tritón	5.87685	r 354.759	0.00000	156.865	p	2.0890E-04	1353.00		0.72
Nep 2	Nereida	360.13000	5513.818	0.75070	7.090	p	3.0100E-07	170.00		0.16
Nep 5	Despina	0.33466	52.526	0.00014	0.070	p	2.0500E-08	74.00		0.09
Nep 6	Galatea	0.42875	61.953	0.00012	0.050	p	3.6600E-08	79.00		0.08
Nep 7	Larisa	0.55465	73.548	0.00139	0.200	p	4.8300E-08	96.00		0.09
Nep 8	Proteo	1.12200	117.646	0.00050	0.075	p	4.9140E-07	209.23	irr	0.10
Plu 1	Caronte	6.38723	19.571	0.00000	96.145	t	1.1650E-01	606.00		0.37

r movimiento retrogrado

irr forma irregular

p inclinación de la órbita relativa al ecuador del planeta

e inclinación de la órbita relativa a la eclíptica

t inclinación de la órbita relativa al ecuador terrestre

Ms masa del satélite

Mp masa del planeta

## Parámetros orbitales y físicos, 2023

### Parámetros de las órbitas de los planetas

(a las 0h del meridiano 90° W.G. del 7 de enero del 2017)

Planetas	Semieje mayor en UA	Revolución en años trópicos	Excentricidad	Inclinación °	Aplanamiento geométrico ( $\times 10^{-3}$ )
Mercurio	0.3870983	0.251	0.2056272	7.00400	0
Venus	0.7233267	0.615	0.0067404	3.39442	0
Tierra	0.9999985	1.000	0.0167015	0.00217	3.354
Marte	1.5237182	1.881	0.0935073	1.82839	6.772
Júpiter	5.202041	11.862	0.0489192	1.30373	5.000
Saturno	9.558687	29.458	0.0530788	2.48732	64.874
Urano	19.10948	84.013	0.0508390	0.77193	97.462
Neptuno	29.96013	164.749	0.0064668	1.77232	22.927

### Parámetros físicos de la Luna y los planetas

	radio	masa	densidad	período de rotación	semidiámetro mínimo
	km	kg	g/cm <sup>3</sup>	días	"
Luna	1737.4	$7.3458 \times 10^{22}$	3.34	+ 27.32166	2010.7
Mercurio	2439.7	$3.3010 \times 10^{23}$	5.43	+ 58.6462	12.3
Venus	6051.8	$4.8673 \times 10^{24}$	5.24	- 243.0185	63.0
Tierra	6378.1	$5.9721 \times 10^{24}$	5.513	+ 0.99726963	
Marte	3396.2	$6.4169 \times 10^{23}$	3.93	+ 1.02595676	25.1
Júpiter	71492.0	$1.8981 \times 10^{27}$	1.33	+ 0.41354	49.9
Saturno	60268.0	$5.6831 \times 10^{26}$	0.69	+ 0.44401	20.7
Urano	25559.0	$8.6890 \times 10^{25}$	1.27	- 0.71833	4.1
Neptuno	24764.0	$1.0241 \times 10^{26}$	1.64	+ 0.67125	2.4
Plutón	1195.0	$1.3041 \times 10^{22}$	1.82	- 6.3872	0.11

\* Movimiento de rotación retrógrado

## Sistema de constantes y parámetros, 2023

Unión Astronómica Internacional (IAU 1976)

### Tiempos y épocas de referencia

#### Duración del año en 1990

Año	d	d	h	m	s
Trópico (equinoccio a equinoccio)	365.242190	365	05	48	45.19
Sidereal (estrella fija a estrella fija)	365.256363	365	06	09	10
Anomalístico (perihelio a perihelio)	365.259636	365	06	13	53
Eclípsar (nodo lunar a nodo lunar)	346.620078	346	14	52	52
Juliano	365.25	365	06	00	00

#### Duración del mes

Sinódico (luna nueva a luna nueva)	29.53059	29	12	44	03
Trópico (equinoccio a equinoccio)	27.32158	27	07	43	05
Sidereal (estrella fija a estrella fija)	27.32166	27	07	43	12
Anomalístico (perigeo a perigeo)	27.55455	27	13	18	33
Draconítico (nodo a nodo)	27.21222	27	05	36	

#### Duración del día

	Día sidereal medio			segundos siderales	
	d	h	m	s	s
Un día del tiempo solar medio	1.00273790935	24	03	56.555367	86636.555367
	Día solar medio			segundos solares	
	d	h	m	s	s
Un día del tiempo sidereal medio	0.99726956633	23	56	04.09054	86164.09054

### Épocas de referencia para los años Juliano (J) y Beseliano (B)

Año Juliano	DJ
J1900.0	2415020.0
J1950.0	2433282.5
J2000.0	2451545.0
J2050.0	2469807.5
J2100.0	2488070.0
B1850.0	2396758.203
B1900.0	2415020.313
B1950.0	2433282.423
B1975.0	2442413.478
B2000.0	2451544.533
B2025.0	2460675.588
B2050.0	2469806.643
B2100.0	2488068.753
1900 enero 0.5	2415020.0
1925 enero 0.5	2424151.0
1950 enero 0.5	2433282.0
2000 enero 0.5	2451544.0
2050 enero 0.5	2469807.0
2100 enero 0.5	2488069.0

## Sistema de constantes y parámetros, 2023

Unión Astronómica Internacional (IAU 1976)

### Parámetros del Sol, la Tierra y la Luna

Sol	
Radio	$6.96 \times 10^8$ m
Semidiámetro a la distancia media	$15' 59.63'' = 959.63''$
Masa	$1.9891 \times 10^{33}$ g
Densidad media	1.41 g cm <sup>-3</sup>
Gravedad superficial	29,398 cm s <sup>-2</sup>
Inclinación del ecuador solar (respecto de la eclíptica)	7° 15'
Longitud del Nodo Ascendente (T en siglos desde J2000.0)	75° 46' + 84' T
Periodo sinódico de rotación (f: latitud en el Sol)	$(26.90 + 5.2 \text{ sen} 2f)$ días
Periodo sideral de rotación (para longitudes heliográficas)	25.38 días
Apex	$a = 18\text{h } 10' \quad \delta = +37^\circ$
Rapidez en el sistema local de reposo	$1.94 \times 10^4$ m/s, (0.0112 au/d)

### Tierra

Órbita	
Paralaje solar	8.794148''
Constante de Aberración (J2000)	20.49552''
Tiempo luz a 1 AU	499.004782 s
Unidad astronómica de longitud (AU)	$1.49597870 \times 10^{11}$ m
Proporciones entre las masas:	
Sol/Tierra	332946.0
Sol/(Tierra más Luna)	328900.5
Tierra/Luna	0.0123002
Excentricidad media	0.016708617
Oblicuidad media de la Eclíptica	23° 26' 21.448''
Variación anual en rotación en la Eclíptica	0.4704''
Distancia media de la Tierra al Sol	1.0000010178 UA
Rapidez orbital media	29.7859 km/s
Aceleración centrípeta media	0.00594 m/s <sup>2</sup>

### Período de rotación respecto a estrellas fijas:

En tiempo solar medio	24 h 0 m 0.0084 s
En tiempo sideral medio	23 h 56 m 4.0989 s
Variación de la rotación	$15.04106717866910 \text{ ''/s} = 7.29211510 \times 10^{-5} \text{ rad s}^{-1}$

### Precesión (" / año)

(T dado en siglos desde J2000)

Precesión general en longitud	$50.290966'' + 0.0222226'' T$
Precesión lunisolar en longitud	$50.387784'' + 0.0049263'' T$
Precesión planetaria	$-0.0188626'' - 0.0476128'' T$



## Nomenclatura de las estrellas brillantes, 2023

Nombres de estrellas				Nombres de estrellas			
Propios	Clasificación Bayer		NBSC	Propios	Clasificación Bayer		NBSC
Acamar	θ	Eri	897	Algomeyla	β	CMi	2845
Achernar	α	Eri	472	Algomeysa	α	CMi	2943
Achird	η	Cas	219	Algorab	δ	Crv	4757
Acrux	α	Cru	4730	Alhajoth	α	Aur	1708
Acubens	α	Cnc	3572	Al Hammam	ζ	Peg	8634
Adhafera	ζ	Leo	4031	Alhena	γ	Gem	2421
Adhara	ε	CMA	2618	Alioth	ε	UMa	4905
Adhil	ξ	And	390	Al Kaffal Jidmah	γ	Cet	804
Adib	α	Dra	5291	Alkaid	η	UMa	5191
Agena	β	Cen	5267	Al Kalbal Asad	α	Leo	3982
Ain	ε	Tau	1409	Alkalurops	μ	Boo	5733
Ain al Rami	ν	Sgr	7116	Al Kaphrab	χ	UMa	4518
Ak	α	UMa	4301	Alkes	α	Crt	4287
Akrab	β	Sco	5984	Alkhiba	α	Crv	4623
Aladfar	η	Lyr	7298	Al Kirdah	ξ	Cep	8417
Alamak	γ	And	603	Almaak	γ	And	603
Al Anchatal Nahr	τ	Eri	850	Almaaz	ε	Aur	1605
Al Anf	ε	Peg	8308	Al Minliar al Asad	κ	Leo	3731
Al Anz	ε	Aur	1605	Al Minliar al Shuja	σ	Hya	3418
Alaraph	α	Vir	5056	Almuredin	ε	Vir	4932
Alaraph	β	Vir	4540	Alnair	α	Gru	8425
Alascha	λ	Sco	6527	Al Nasl	γ	Sgr	6746
Al Athfar	μ	Lyr	6903	Alnath	α	Ari	617
Al Atik	ο	Per	1131	Alnilam	ε	Ori	1903
Al Baldah	π	Sgr	7264	Alnitak	ζ	Ori	1948
Al Bali	ε	Aqr	7950	Al Niyat	σ	Sco	6084
Albireo	β	Cyg	7417	Al Niyat	τ	Sco	6165
Al Chiba	α	Crv	4623	Alphard	α	Hya	3748
Alcor	80	UMa	5062	Alphecca	α	CrB	5793
Alcyone	ν	Tau	1165	Alpheratz	α	And	15
Aldebarán	α	Tau	1457	Alphirk	β	Cep	8238
Alderamin	α	Cep	8162	Alrai	γ	Cep	8974
Aldhafara	ζ	Leo	4031	Alrami	α	Sgr	7348
Al Dhiba	ι	Dra	5744	Al Rescha	α	Psc	595
Aldhibah	ζ	Dra	6396	Alruccabah	α	UMi	424
Al Dihi	ι	Dra	5744	Al Rukbahal Daj	ω	Cyg	7851
Aldib	δ	Dra	7310	Alsafi	σ	Dra	7462
Al Dibah	ζ	Dra	6396	Alsah	α	Sge	7479
Alfard	α	Hya	3748	Al Sanamal Nakah	β	Cas	21
Alfecca	α	CrA	7254	Alsciaukat	31	Lyn	3275
Alfirk	β	Cep	8238	Alshain	β	Aql	7602
Alga	θ	Ser	7141	Alshat	ν	Cap	7773
Algebar	β	Ori	1713	Alshemali	μ	leo	3905
Algedi Prima	α	Cap	7747	Al Sheratain	β	Ari	553
Algedi Secunda	α	Cap	7754	Al Suhail	λ	Vel	3634
Algeiba	γ	Leo	4057	Al Suhailal Muhlif	γ	Vel	3206
Algenib	γ	Peg	39	Altair	α	Aql	7557
Algenib	α	Per	1017	Altais	δ	Dra	7310
Algenubi	ε	Leo	3873	AlTarf	β	Cnc	3249
Algieba	γ	Leo	4058	Alterf	λ	Leo	3773
Algol	β	Per	936	Aludra	η	CMA	2827

## Nomenclatura de las estrellas brillantes, 2023

Nombres de estrellas				Nombres de estrellas			
Propios	Clasificación Bayer		NBSC	Propios	Clasificación Bayer		NBSC
Alula Australia	ξ	UMa	4374	Cebalrai	β	Oph	6603
Alula Borealis	ν	UMa	4377	Ceginus	γ	Boo	5435
Alwaid	β	Dra	6536	Celaeno	16	Tau	1140
Al Wazor	δ	CMa	2693	Chara	β	CVn	4785
Alya	θ	Ser	7141	Chertan	θ	Leo	4359
Alzirr	ξ	Gem	2484	Cor Caroli	α	CVn	4915
Ancha	θ	Aqr	8499	Cor Tauri	α	Tau	1457
Angetenar	τ	Eri	850	Cursa	β	Eri	1666
Ankaa	α	Phe	99	Dabih Major	β	Cap	7776
Anser	α	Vul	7405	Demon Star	β	per	936
Antares	α	Sco	6134	Deneb	α	Cyg	7924
Arcturus	α	Boo	5340	Deneb	ε	Aql	7176
Arich	γ	Vir	4825	Deneb	ε	Del	7852
Arietis	α	Ari	617	Deneb	η	Cet	334
Arkab Posterior	β	Sgr	7343	Deneb	ζ	Aql	7235
Arkab Prior	β	Sgr	7337	Deneb Algedi	δ	Cap	8322
Arneb	α	Lep	1865	Denebkaitos	ι	Cet	74
Arnai	γ	Cep	8974	Denebola	β	Leo	4534
Ascella	ζ	Sgr	7194	Dhur	δ	Leo	4357
Asellus Australis	δ	Cnc	3461	Diadem	α	Com	4968
Asellus Borealis	γ	Cnc	3449	Diphda	β	Cet	188
Asellus Primus	θ	Boo	5404	Dschubba	δ	Sco	5953
Asellus Secundus	ι	Boo	5350	Dubhe	α	UMa	4301
Asellus Tertius	κ	Boo	5329	Ed Asich	ι	Dra	5744
Asmidiske	ι	Car	3699	El Acola	ξ	UMa	4374
Asmidiske	ξ	Pup	3045	Elacrab	β	Sco	5984
Asuia	ψ	Dra	6636	El Kaprah	κ	UMa	3594
Atik	ο	Per	1131	El Karidab	δ	Sgr	6859
Atlas	27	Tau	1178	El Khereb	τ	Peg	8880
Atria	α	Tri	544	Elkhiffa Australis	α	Lib	5530
Auva	δ	Vir	4910	Elkhiffa Borealis	β	Lib	5685
Avior	ε	Car	3307	El Koprah	χ	UMa	4518
Azelfafage	π	Cyg	8301	El Nath	β	Tau	1791
Azha	η	Eri	874	El Phekrab	μ	UMa	4069
Baham	θ	Peg	8450	Enif	ε	Peg	8308
Baten Kaitos	ζ	Cet	539	Erakis	μ	Cep	8316
Becrux	β	Cru	4853	Etamin	γ	Dra	6705
Beid	ο	Eri	1298	Fomalhaut	α	Psa	8728
Bellatrix	γ	Ori	1790	Fornacis	α	For	963
Benetnash	η	UMa	5191	Fumal Samakah	β	Psc	8773
Betelgeuse	α	Ori	2061	Furud	ζ	CMa	2282
Botein	δ	Ari	951	Gacrux	γ	Cru	4763
Brachiu	γ	Sco	1809	Gemma	α	CrB	5793
Bunda	ξ	Agr	8264	Genam	ξ	Dra	6688
Caja	ω	Her	6117	Gianfar	λ	Dra	4434
Calx	μ	Gem	2298	Giedi Prima	α	Cap	7747
Canopus	α	Car	2326	Giedi Secunda	α	Cap	7754
Capella	α	Aur	1708	Gienah	γ	Crv	4662
Castor	α	Gem	2890	Gienah	ε	Cyg	7949
Castula	υ	Cas	253	Gildun	δ	UMi	6789
Castula	υ	Cas	265	Gomeisa	β	CMi	2845

## Nomenclatura de las estrellas brillantes, 2023

Nombres de estrellas				Nombres de estrellas			
Propios	Clasificación Bayer		NBSC	Propios	Clasificación Bayer		NBSC
Gorgonea Quarta	ω	Per	947	Merope	23	Tau	1156
Gorgonea Tertia	ρ	Per	921	Mesartim	γ	Ari	545
Hadar	β	Cen	5267	Minelauva	β	Vir	4540
Haedus	ζ	Aur	1612	Minkar	ε	Crv	4630
Hamal	α	Ari	617	Mintaka	δ	Ori	1852
Hassaleh	ι	Aur	1577	Mira	ο	Cet	681
Hatysa	ι	Ori	1895	Mirach	β	And	337
Head of Hydrus	α	Hyi	691	Miram	η	Per	834
Heka	λ	Ori	1879	Mirphak	α	Per	2294
Hércules	β	Gem	2990	Mirza	β	CMA	2286
Heze	ζ	Vir	5107	Misam	κ	Per	941
Hoedus II	ν	Aur	1641	Mizar	ζ	UMa	5055
Homam	ζ	Peg	8634	Mufrid	η	Boo	5235
Hyadum I	γ	Tau	1346	Muscida	ο	UMa	3323
Hyadum II	δ	Tau	1373	Muscida	π	UMa	3403
Isis	γ	CMA	2657	Naos	ζ	Pup	3165
Izar	ε	Boo	5506	Nashira	γ	Cap	8278
Jabbah	ν	Sco	6027	Nicolaus	α	Del	7906
Jed	δ	Oph	6056	Nihal	β	Lep	1829
Jugum	γ	Lyr	7178	Nodus I	ζ	Dra	6396
Kaffaljdhma	γ	Cet	804	Nunki	σ	Sgr	7121
Kaus Australis	ε	Sgr	6879	Nusakan	β	CrB	5747
Kaus Borealis	λ	Sgr	6913	Oculus Boreus	ε	Tau	1409
Keid	ο	Eri	1325	Peacock	α	Pav	7790
Kitalphar	α	Equ	8131	Phact	α	Col	1956
Kocab	β	UMi	5563	Phad	γ	UMa	4554
Kornephoros	β	Her	6148	Pherkad	γ	UMi	5735
Kraz	β	Crv	4786	Pherkad Minor	λ	UMi	5714
Ksora	δ	Cas	403	Pleione	28	Tau	1180
Kuma	ν	Dra	6555	Polaris	α	UMi	424
Lesath	υ	Sco	6508	Pullux	β	Gem	2990
Maasym	λ	Her	6526	Praecipua	46	LMi	4247
Maia	20	Tau	1149	Praepes	η	Gem	2216
Maiaplacidus	β	Car	3685	Praesaepe	ε	Cnc	3429
Marfak	θ	Cas	343	Prima Giedi	α	Cap	7747
Marfak	κ	Her	6008	Procyon	α	CMi	2943
Marfak	μ	Cas	321	Propus	ι	Gem	2821
Marfic	λ	Oph	6149	Rana	δ	Eri	1136
Markab	α	Peg	8781	Rasalgethi	α	Her	6406
Matar	η	Peg	8650	Rasalhague	α	Oph	6556
Mebsuta	ε	Gem	2473	Ras Elased Austral	ε	Leo	3873
Megrez	δ	UMa	4660	Regulus	α	Leo	3982
Mekbuda	ζ	Gem	2650	Rigel	β	Ori	1713
Menchib	ξ	Per	1228	Rigil Kent	α	Cen	5459
Menkalinan	β	Aur	2088	Rijilal Awwa	μ	Vir	5487
Menkar	α	Cet	911	Rotanev	β	Del	7882
Menkar	λ	Cet	896	Ruchbah	ε	Cas	542
Menkent	θ	Cen	5288	Saad el Sund	β	Aqr	8232
Merak	β	UMa	4295	Sabik	η	Oph	6378
Meres	β	Boo	5602	Sadalachbia	γ	Aqr	8518
Meridiana	β	CrA	7259	Sadalbari	μ	Peg	8684



## Nomenclatura de las estrellas brillantes, 2023

Nombres de estrellas				Nombres de estrellas			
Propios	Clasificación Bayer		NBSC	Propios	Clasificación Bayer		NBSC
Sadalmelik	$\alpha$	Aqr	8414	Talitha	$\iota$	UMa	3569
Sadir	$\gamma$	Cyg	7796	Tarazed	$\gamma$	Aql	7525
Saidak	80	UMa	5062	Tayeta	19	Tau	1845
Saiph	$\kappa$	Ori	2004	Tegmen	$\zeta$	Cnc	3208
Saiph	$\eta$	Ori	1788	Terebellum	$\beta$	Sgr	7604
Sargas	$\theta$	Sco	6553	Theemim	$\upsilon$	Eri	1464
Sarin	$\delta$	Her	6410	Thuban	$\alpha$	Dra	5291
Sartan	$\alpha$	Cnc	3572	Torcularis Septentr.	$\circ$	Psc	510
Sceptrum	53	Eri	1481	Tyl	$\epsilon$	Dra	7582
Scheat	$\beta$	Peg	8775	Unukalhai	$\alpha$	Ser	5854
Scheat	$\delta$	Aqr	8709	Vega	$\alpha$	Lyr	7001
Segin	$\epsilon$	Cas	542	Vindemiatrix	$\epsilon$	Vir	4932
Shaula	$\lambda$	Sco	6527	Wasat	$\delta$	Gem	2777
Schedir	$\alpha$	Cas	168	Wazn	$\beta$	Col	2040
Sheliak	$\beta$	Lyr	7106	Yed Posterior	$\epsilon$	Oph	5985
Sirius	$\alpha$	CMa	2491	Zaniah	$\eta$	Vir	4689
Situla	$\kappa$	Aqr	8610	Zaurak	$\gamma$	Eri	1231
Spica	$\alpha$	Vir	5056	Zibal	$\zeta$	Eri	984
Subra	$\circ$	Leo	3852	Zuben Elakrab	$\gamma$	Lib	5787
Superba	$\lambda$	CVn	4846	Zuben Elakribi	$\delta$	Lib	5586
Syrma	$\iota$	Vir	5338	Zuben Hakrabi	$\zeta$	Lib	5848
Tabit	$\pi$	Ori	1543	Zuben Hakrabi	$\upsilon$	Lib	5794
Tabit	$\upsilon$	Ori	1855				

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
171	9088	85 Peg	2210	105	η Scl	3903	239	AZ Phe	5586	352	τ Psc
154	9089	30 Psc	2224	106	48 Psc	3949	242	ρ Phe	5594	353	34 Cet
154	9089	YY Psc	2355	114	GN And	4129	246	V357 And	5688	354	V761 Cas
183	9091	ζ Scl	2353	117	12 Cet	4147	248	20 Cet	5661	359	AI Scl
186	9092	31 Psc	2388	119	BB Phe	4084	252	λ <sup>1</sup> Tuc	5742	360	φ Psc
194	9093	32 Psc	2474	121	13 Cas	4292	253	υ <sup>1</sup> Cas	5737	361	ζ Psc
194	9093	c Psc	2505	123	λ Cas	4267	254	66 Psc	5743	362	ζ Psc
274	9097	V639 Cas	2472	125	λ <sup>1</sup> Phe	4257	255	21 Cet	5778	364	87 Psc
301	9098	2 Cet	2484	126	β <sup>1</sup> Tuc	4200	257	BQ Tuc	5926	365	V762 Cas
302	9099	V398 Cep	2487	127	β <sup>2</sup> Tuc	4288	258	36 And	5799	366	37 Cet
330	9100	9 Cas	2599	130	κ Cas	4366	262	k Psc	5824	367	88 Psc
355	9103	3 Cet	2568	131	52 Psc	4427	264	γ Cas	5833	368	38 Cet
418	9110	V567 Cas	2548	132	51 Psc	4422	265	υ <sup>2</sup> Cas	5862	370	v Phe
443	3	33 Psc	2707	137	16 Cas	4371	267	φ <sup>3</sup> Cet	5951	373	39 Cet
476	4	86 Peg	2629	139	θ Tuc	4436	269	μ And	5896	377	κ Tuc
518	5	V640 Cas	2762	142	13 Cet	4293	270	λ <sup>2</sup> Tuc	6061	378	f Psc
531	7	10 Cas	2787	143	14 Cet	4463	271	η And	6242	382	φ Cas
664	14	AP Psc	2802	147	λ <sup>2</sup> Phe	4510	274	h Psc	6193	383	υ Psc
677	15	α And	2865	149	PY And	4587	279	φ <sup>4</sup> Cet	6312	384	35 Cas
696	18	CF Cet	2852	151	BG Cet	4577	280	α Scl	6226	385	42 Cet
746	21	β Cas	2920	153	ζ Cas	4655	284	WW Psc	6315	389	l Psc
729	22	87 Peg	2912	154	π And	4770	288	ξ Scl	6411	390	ξ And
761	24	κ <sup>1</sup> Scl	2903	155	53 Psc	4903	290	39 And	6429	393	43 Cet
765	25	ε Phe	3031	163	ε And	4889	291	σ Psc	6514	395	47 And
813	26	34 Psc	3092	165	δ And	4852	293	σ Scl	6692	399	ψ Cas
841	27	22 And	3093	166	54 Psc	4906	294	ε Psc	6539	401	44 Cet
814	30	γ <sup>3</sup> Oct	3138	167	55 Psc	4914	296	25 Cet	6537	402	θ Cet
910	33	6 Cet	3179	168	α Cas	4979	301	26 Cet	6686	403	δ Cas
930	34	κ <sup>2</sup> Scl	3142	170	Z Scl	5074	307	73 Psc	6670	412	46 Cet
950	35	θ Scl	3231	175	32 And	5081	308	72 Psc	6706	413	ρ Psc
1067	39	γ Peg	3300	179	ξ Cas	5131	310	ψ <sup>1</sup> Psc	6732	414	94 Psc
1086	41	23 And	3245	180	μ Phe	5132	311	ψ <sup>1</sup> Psc	6813	417	ω And
1168	45	x Peg	3277	183	ξ Phe	5141	313	77 Psc	6748	421	47 Cet
1158	46	AD Cet	3414	184	π Cas	5121	315	27 Cet	6759	423	R Scl
1170	48	AE Cet	3356	185	λ <sup>1</sup> Scl	5164	317	28 Cet	11767	424	α UMi
1196	50	UU Psc	3330	187	ρ Tuc	5204	319	75 Psc	7078	427	38 Cas
1319	59	36 Psc	3419	188	β Cet	5336	321	μ Cas	6867	429	γ Phe
1366	63	θ And	3405	191	η Phe	5165	322	β Phe	6999	430	49 And
1415	65	AO Cas	3572	192	21 Cas	5193	323	AW Scl	6888	431	WZ Scl
1473	68	σ And	3504	193	o Cas	5317	324	41 And	6981	432	97 Psc
1501	70	26 And	3455	194	φ <sup>1</sup> Cet	5319	327	78 Psc	6960	433	48 Cet
1562	74	ι Cet	3456	195	λ <sup>2</sup> Scl	5310	328	ψ <sup>2</sup> Psc	7007	434	μ Psc
1599	77	ζ Tuc	3559	203	18 Cet	5296	329	30 Cet	6952	435	AW Phe
1645	80	d Psc	3721	208	23 Cas	5346	330	e Psc	7097	437	η Psc
1686	82	ρ And	3632	211	57 Psc	5300	331	υ Phe	7083	440	δ Phe
1647	83	π Tuc	3675	213	58 Psc	5268	332	ι Tuc	7294	442	x Cas
1708	84	ι Scl	3685	214	59 Psc	5364	334	η Cet	7321	446	KK And
1728	85	T Cet	3693	215	ζ And	5434	335	φ And	7345	451	49 Cet
1772	86	42 Psc	3697	216	60 Psc	5518	336	31 Cas	7493	454	OP And
1803	88	BE Cet	3730	217	61 Psc	5447	337	β And	7436	455	101 Psc
1830	89	AV Scl	3821	219	η Cas	5348	338	ζ Phe	7650	456	40 Cas
1901	90	R And	3801	223	v Cas	5454	339	ψ <sup>3</sup> Psc	7513	458	υ And
1921	91	V746 Cas	3786	224	δ Psc	5493	340	44 And	7450	459	50 Cet
1960	93	12 Cas	3810	225	64 Psc	5542	343	θ Cas	7463	462	τ Scl
2006	97	44 Psc	3881	226	v And	5589	345	RU Cas	7535	463	π Psc
2021	98	β Hyi	3885	230	65 Psc	5485	346	32 Cet	7607	464	υ Per
2081	99	α Phe	3919	234	GO And	5510	347	33 Cet	7651	465	GY And
2072	100	κ Phe	3909	235	φ <sup>2</sup> Cet	5550	348	45 And	7719	469	x And
2100	101	10 Cet	3781	236	λ Hyi	5544	349	g Psc	7588	472	α Eri
2219	103	TV Psc	3965	238	V526 Cas	5571	351	x Psc	7740	475	105 Psc

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
7818	477	τ And	9440	594	π For	11072	695	κ For	12486	794	ι Eri
7965	478	V557 Cas	9487	595	α Psc	11279	696	V554 Per	12777	799	13 Per
8016	480	42 Cas	9487	596	113 Psc	11313	699	65 And	12777	799	θ Per
7939	481	V772 Cas	9570	599	ε Tri	11249	702	ξ Ari	12768	800	14 Per
7751	487	p Eri	9459	602	x Phe	11261	704	71 Cet	12719	801	35 Ari
7884	489	v Psc	9640	603	γ <sup>1</sup> And	11001	705	δ Hyi	12484	802	ζ Hor
8046	491	44 Cas	9640	604	γ <sup>2</sup> And	11569	707	ι Cas	12706	804	86 Cet
7981	493	107 Psc	9621	605	10 Ari	11345	708	ρ Cet	12706	804	γ Cet
8068	496	φ Per	9589	607	60 Cet	11465	709	66 And	12394	806	ε Hyi
7955	497	π Scl	9631	610	61 Cet	11348	710	AB Cet	12784	808	36 Ari
8115	499	V773 Cas	9677	612	v For	11432	712	11 Tri	12803	809	o Ari
7978	506	q <sup>1</sup> Eri	9836	613	κ Ari	11258	714	λ Hor	12803	809	37 Ari
8159	508	109 Psc	9809	614	WZ Psc	11095	715	κ Hyi	12653	810	ι Hor
8102	509	τ Cet	9859	615	11 Ari	11486	717	12 Tri	12770	811	π Cet
8198	510	o Psc	9884	617	α Ari	11484	718	73 Cet	12770	811	89 Cet
8209	514	ε Scl	9990	618	V472 Per	11484	718	ξ <sup>2</sup> Cet	12832	812	38 Ari
8271	515	VY Psc	9977	620	58 And	11548	720	13 Tri	12832	812	UV Ari
7879	516	τ <sup>1</sup> Hyi	10064	622	β Tri	11407	721	κ Eri	12828	813	μ Cet
8241	520	q <sup>2</sup> Eri	10053	623	14 Ari	11293	722	TZ Hor	12828	813	87 Cet
8387	522	4 Ari	10227	627	5 Per	11477	724	φ For	13133	815	RZ Cas
8544	530	1 Ari	10176	628	59 And	11678	729	26 Ari	12843	818	τ <sup>1</sup> Eri
8497	531	x Cet	10180	629	59 And	11678	729	UU Ari	12843	818	1 Eri
8704	533	V436 Per	10155	631	15 Ari	11698	731	27 Ari	13061	824	39 Ari
8714	536	2 Per	10203	633	16 Ari	11644	733	TY For	13178	825	V480 Per
8645	539	ζ Cet	10220	634	5 Tri	11784	736	14 Tri	13108	828	40 Ari
8593	541	BD Phe	10212	635	64 Cet	11791	739	75 Cet	13367	829	SU Cas
8886	542	ε Cas	10234	639	63 Cet	11783	740	σ Cet	13121	830	VZ Ari
8814	543	55 And	10438	640	55 Cas	11783	740	76 Cet	13064	832	Z Eri
8796	544	α Tri	10280	642	TZ Tri	11843	741	29 Ari	12871	833	γ Hor
8832	545	γ <sup>1</sup> Ari	10340	643	60 And	11867	744	λ <sup>1</sup> For	13268	834	η Per
8778	547	BK Cet	10366	645	6 Per	11918	749	ω For	13268	834	15 Per
9009	548	ω Cas	10306	646	η Ari	12086	750	15 Tri	13040	835	η <sup>1</sup> For
8833	549	ξ Psc	10328	648	19 Ari	12002	752	77 Cet	13165	836	42 Ari
8366	550	τ <sup>2</sup> Hyi	10324	649	ξ <sup>1</sup> Cet	12093	754	78 Cet	13165	836	π Ari
8903	553	β Ari	10305	650	66 Cet	12093	754	v Cet	12876	837	ζ Hyi
8837	555	ψ Phe	10320	652	μ For	12193	758	R Tri	13209	838	41 Ari
9021	557	56 And	10633	654	V551 Per	12107	759	80 Cet	13254	840	16 Per
8882	558	φ Phe	10559	655	7 Tri	12153	763	31 Ari	13147	841	β For
8993	559	7 Ari	10540	656	20 Ari	12184	764	30 Ari	13328	843	17 Per
9110	563	ι Ari	10535	657	21 Ari	12189	765	30 Ari	13197	844	γ <sup>1</sup> For
9061	565	56 Cet	10644	660	δ Tri	12122	767	ι <sup>1</sup> For	13202	845	γ <sup>2</sup> For
9007	566	x Eri	10718	661	8 Per	12247	771	81 Cet	13327	847	σ Ari
9222	568	3 Per	10729	662	x Per	12186	772	λ <sup>2</sup> For	13327	847	43 Ari
9153	569	λ Ari	10687	663	W And	12332	773	32 Ari	13225	848	η <sup>2</sup> For
8928	570	η <sup>2</sup> Hyi	10670	664	γ Tri	12332	773	v Ari	13288	850	τ <sup>2</sup> Eri
9480	575	48 Cas	10642	666	67 Cet	11757	776	μ Hyi	13288	850	2 Eri
9598	580	50 Cas	10418	667	π <sup>1</sup> Hyi	12288	777	ι <sup>2</sup> For	13265	851	η <sup>3</sup> For
9727	581	47 Cas	10732	669	θ Ari	12225	778	η Hor	13141	852	v Hor
9353	582	112 Psc	10819	670	62 And	12387	779	δ Cet	13531	854	18 Per
9326	583	57 Cet	10602	674	φ Eri	12387	779	82 Cet	13531	854	τ Per
9347	585	v Cet	10793	675	10 Tri	12387	779	δ Cet	13531	854	τ Per
9347	585	59 Cet	10513	678	π <sup>2</sup> Hyi	12390	781	ε Cet	13490	855	20 Per
9564	586	52 Cas	10826	681	o Cet	12390	781	83 Cet	13402	857	EP Eri
9372	587	AR Cet	10944	682	63 And	12489	782	33 Ari	13473	863	ψ For
9573	589	53 Cas	11060	685	9 Per	12692	785	11 Per	13654	867	45 Ari
9505	590	g Per	11060	685	V474 Per	12623	788	12 Per	13654	867	RZ Ari
9505	590	4 Per	11021	689	69 Cet	12413	789	s Eri	13502	868	R Hor
9236	591	α Hyi	11174	690	V440 Per	12530	790	84 Cet	13702	869	46 Ari
9763	592	49 Cas	11046	691	70 Cet	12640	793	μ Ari	13702	869	ρ Ari
8991	593	o Hyi	11220	694	64 And	12640	793	34 Ari	13244	872	v Hyi

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Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
13775	873	LT Per	14668	941	27 Per	16319	1032	V805 Cas	17529	1135	41 Per
13775	873	21 Per	14668	941	κ Per	16228	1035	CS Cam	17378	1136	6 Eri
13701	874	3 Eri	14677	944	55 Ari	16083	1038	2 Tau	17378	1136	6 Eri
13701	874	η Eri	14817	947	ω Per	16083	1038	ξ Tau	17378	1136	23 Eri
13756	877	EH Cet	14817	947	28 Per	16083	1038	ξ Tau	17489	1140	16 Tau
13834	878	47 Ari	14838	951	57 Ari	16281	1040	CE Cam	17499	1142	17 Tau
13879	879	π Per	14838	951	δ Ari	15987	1042	x <sup>1</sup> For	17351	1143	h Eri
13879	879	22 Per	14893	954	56 Ari	16244	1044	34 Per	17527	1144	18 Tau
13905	882	24 Per	14893	954	SX Ari	16181	1048	66 Ari	17531	1145	19 Tau
13782	883	4 Eri	14915	958	EL Cet	16335	1052	σ Per	17531	1145	q Tau
13914	887	48 Ari	14954	962	94 Cet	16335	1052	35 Per	17457	1146	24 Eri
13914	887	ε Ari	14879	963	α For	16112	1054	x <sup>2</sup> For	17959	1148	γ Cam
13914	888	48 Ari	15110	972	58 Ari	16156	1058	x <sup>3</sup> For	17573	1149	20 Tau
13914	888	ε Ari	15110	972	ζ Ari	16322	1061	4 Tau	17506	1150	25 Eri
13835	889	6 Eri	15204	976	V423 Per	16322	1061	s Tau	17579	1151	21 Tau
13954	896	91 Cet	14930	977	TW Hor	16470	1063	V396 Per	17588	1152	22 Tau
13954	896	λ Cet	15241	978	V573 Per	16369	1066	5 Tau	17563	1153	u Tau
13847	897	θ <sup>2</sup> Eri	14521	981	BN Hyi	16369	1066	f Tau	17563	1153	29 Tau
13847	897	θ <sup>1</sup> Eri	15338	982	30 Per	16499	1069	36 Per	17884	1155	BE Cam
13847	898	θ <sup>2</sup> Eri	15197	984	ζ Eri	16341	1070	v Eri	17608	1156	23 Tau
13847	898	θ <sup>1</sup> Eri	15197	984	13 Eri	16341	1070	17 Eri	17608	1156	V971 Tau
13951	899	5 Eri	15520	985	BK Cam	16516	1072	KP Per	17593	1162	π Eri
13942	901	ζ For	15404	987	29 Per	16591	1078	IW Per	17593	1162	26 Eri
14040	904	7 Eri	15244	988	14 Eri	16511	1079	t Tau	17593	1162	π Eri
14040	904	CV Eri	15444	989	31 Per	16511	1079	6 Tau	17702	1165	η Tau
14109	905	49 Ari	15383	992	95 Cet	16339	1081	TU Hor	17702	1165	25 Tau
14060	907	8 Eri	15382	994	15 Eri	16245	1083	κ Ret	17846	1170	V376 Per
14060	907	ρ <sup>1</sup> Eri	15514	995	59 Ari	16537	1084	18 Eri	17618	1171	σ For
13884	909	β Hor	15457	996	κ <sup>1</sup> Cet	16537	1084	ε Eri	17651	1173	27 Eri
14143	910	93 Cet	15457	996	κ <sup>1</sup> Cet	16537	1084	ε Eri	17651	1173	τ <sup>6</sup> Eri
14135	911	α Cet	15457	996	96 Cet	16664	1086	7 Tau	17771	1174	30 Tau
14135	911	92 Cet	15557	1000	60 Ari	16826	1087	ψ Per	17771	1174	e Tau
14135	911	α Cet	15648	1002	32 Per	16826	1087	ψ Per	17440	1175	β Ret
14086	914	ε For	15648	1002	1 Per	16826	1087	37 Per	17886	1177	42 Per
14328	915	γ Per	15474	1003	τ <sup>4</sup> Eri	16611	1088	τ <sup>5</sup> Eri	17886	1177	V467 Per
14328	915	γ Per	15474	1003	16 Eri	16611	1088	19 Eri	17886	1177	n Per
14328	915	23 Per	15474	1003	τ <sup>4</sup> Eri	16846	1099	V711 Tau	17847	1178	27 Tau
14168	917	9 Eri	15479	1004	AI For	16803	1100	20 Eri	17851	1180	BU Tau
14168	917	ρ <sup>2</sup> Eri	15627	1005	τ <sup>1</sup> Ari	16803	1100	EG Eri	17851	1180	28 Tau
14382	918	k Per	15627	1005	61 Ari	16852	1101	10 Tau	17717	1181	τ <sup>7</sup> Eri
14146	919	τ <sup>3</sup> Eri	15627	1005	τ <sup>1</sup> Ari	17296	1105	BD Cam	17717	1181	28 Eri
14146	919	11 Eri	15330	1006	ζ <sup>1</sup> Ret	16870	1106	y Eri	17738	1184	ρ For
14354	921	25 Per	15619	1007	97 Cet	17027	1111	21 Eri	18033	1194	V766 Tau
14354	921	ρ Per	15619	1007	κ <sup>2</sup> Cet	17007	1114	τ For	17874	1195	g Eri
14354	921	ρ Per	15510	1008	e Eri	17103	1115	12 Tau	18089	1199	31 Tau
14293	925	10 Eri	15510	1008	82 Eri	17181	1118	11 Tau	18141	1202	30 Eri
14293	925	ρ <sup>3</sup> Eri	15890	1009	CQ Cam	17167	1121	22 Eri	18246	1203	ζ Per
14376	927	52 Ari	15371	1010	ζ <sup>2</sup> Ret	17167	1121	FY Eri	18246	1203	44 Per
14376	927	52 Ari	15770	1011	V575 Per	17358	1122	δ Per	17678	1208	γ Hyi
14376	928	52 Ari	15696	1012	62 Ari	17358	1122	δ Per	18350	1209	X Per
14376	928	52 Ari	15737	1015	63 Ari	17358	1122	39 Per	18453	1210	43 Per
14240	934	μ Hor	15737	1015	τ <sup>2</sup> Ari	17313	1123	o Per	18255	1211	32 Eri
14576	936	β Per	15863	1017	33 Per	17313	1123	40 Per	18255	1212	32 Eri
14576	936	β Per	15863	1017	α Per	17309	1126	13 Tau	18216	1213	τ <sup>8</sup> Eri
14576	936	26 Per	15861	1022	64 Ari	17448	1131	o Per	18216	1213	τ <sup>8</sup> Eri
14632	937	ι Per	15201	1025	ι Hyi	17448	1131	38 Per	18216	1213	33 Eri
14514	938	53 Ari	15870	1027	65 Ari	17448	1131	o Per	18213	1214	i Eri
14514	938	UW Ari	15988	1029	V576 Per	17408	1132	14 Tau	18339	1217	DO Eri
14131	939	θ Hyi	15900	1030	o Tau	17304	1134	δ For	18471	1218	32 Tau
14586	940	54 Ari	15900	1030	1 Tau	17529	1135	v Per	18532	1220	45 Per

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Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
18532	1220	ε Per	19811	1306	f Per	20542	1380	δ <sup>2</sup> Tau	21248	1453	50 Eri
18532	1220	ε Per	19811	1306	52 Per	20522	1381	66 Tau	21476	1454	58 Per
18485	1221	V817 Tau	19719	1309	46 Tau	20522	1381	r Tau	20297	1456	v Men
18485	1221	33 Tau	19740	1311	47 Tau	20507	1383	42 Eri	21421	1457	87 Tau
18547	1223	V386 Per	19725	1312	GY Eri	20507	1383	ξ Eri	21421	1457	α Tau
18455	1225	DL Eri	19777	1318	39 Eri	20635	1387	κ <sup>1</sup> Tau	21421	1457	α Tau
18614	1228	ξ Per	19877	1319	48 Tau	20635	1387	65 Tau	21402	1458	88 Tau
18614	1228	ξ Per	19860	1320	μ Tau	20641	1388	67 Tau	21402	1458	d Tau
18614	1228	46 Per	19860	1320	49 Tau	20641	1388	κ <sup>2</sup> Tau	21444	1463	v Eri
18543	1231	γ Eri	19855	1321	V891 Tau	20648	1389	68 Tau	21444	1463	48 Eri
18543	1231	γ Eri	19859	1322	V774 Tau	20648	1389	V776 Tau	21444	1463	v Eri
18543	1231	34 Eri	20070	1324	b Per	20648	1389	δ <sup>3</sup> Tau	21393	1464	52 Eri
18724	1239	35 Tau	20070	1324	b Per	20661	1391	70 Tau	21393	1464	υ <sup>2</sup> Eri
18724	1239	λ Tau	19849	1325	40 Eri	20711	1392	υ Tau	21281	1465	α Dor
18724	1239	λ Tau	19849	1325	o <sup>2</sup> Eri	20711	1392	69 Tau	21281	1465	α Dor
18673	1240	36 Eri	19747	1326	α Hor	20711	1392	υ Tau	21730	1466	2 Cam
18673	1240	τ <sup>9</sup> Eri	19990	1329	ω <sup>2</sup> Tau	20535	1393	d Eri	21727	1467	3 Cam
18673	1240	τ <sup>9</sup> Eri	19990	1329	ω Tau	20535	1393	υ <sup>3</sup> Eri	21604	1471	HU Tau
18788	1244	35 Eri	19990	1329	50 Tau	20535	1393	43 Eri	21588	1472	89 Tau
18597	1247	δ Ret	20087	1331	51 Tau	20713	1394	71 Tau	21589	1473	c Tau
18691	1250	XY Dor	19780	1336	α Ret	20713	1394	V777 Tau	21589	1473	90 Tau
18907	1251	38 Tau	19893	1338	γ Dor	20384	1395	η Ret	21547	1474	51 Eri
18907	1251	v Tau	19893	1338	γ Dor	20732	1396	π Tau	21547	1474	c Eri
19009	1252	36 Tau	20171	1339	V102 Tau	20732	1396	73 Tau	21673	1478	91 Tau
18957	1253	40 Tau	20171	1339	53 Tau	20715	1397	V114 Tau	21673	1478	σ <sup>1</sup> Tau
18957	1253	V113 Tau	20186	1341	56 Tau	20789	1399	72 Tau	21683	1479	σ <sup>2</sup> Tau
19038	1256	37 Tau	20186	1341	V724 Tau	20877	1407	75 Tau	21683	1479	92 Tau
19167	1261	λ Per	20252	1343	54 Per	20873	1408	76 Tau	21594	1481	53 Eri
19167	1261	47 Per	20075	1345	GZ Eri	20889	1409	ε Tau	21594	1481	l Eri
19076	1262	39 Tau	20205	1346	γ Tau	20889	1409	74 Tau	21735	1484	93 Tau
18744	1264	γ Ret	20205	1346	54 Tau	20885	1411	θ <sup>1</sup> Tau	21479	1492	R Dor
18744	1264	γ Ret	20042	1347	υ <sup>4</sup> Eri	20885	1411	77 Tau	21928	1494	59 Per
18772	1266	ι Ret	20042	1347	41 Eri	20894	1412	78 Tau	21763	1496	54 Eri
19171	1268	GS Tau	20250	1348	φ Tau	20894	1412	θ <sup>2</sup> Tau	21763	1496	DM Eri
19171	1268	41 Tau	20250	1348	52 Tau	20894	1412	θ <sup>2</sup> Tau	21881	1497	94 Tau
19205	1269	ψ Tau	20354	1350	V469 Per	20901	1414	b Tau	21881	1497	τ Tau
19205	1269	42 Tau	20354	1350	53 Per	20901	1414	79 Tau	21961	1499	95 Tau
19343	1273	48 Per	20354	1350	d Per	21148	1417	l Cam	21770	1502	α Cae
19343	1273	c Per	20219	1351	V483 Tau	21148	1417	DL Cam	21861	1503	β Cae
19343	1273	MX Per	20219	1351	h Tau	20963	1420	V114 Tau	21986	1505	55 Eri
19302	1277	49 Per	20219	1351	57 Tau	20995	1422	80 Tau	21986	1505	DW Eri
19335	1278	V582 Per	19921	1355	ε Ret	20922	1423	DU Eri	21986	1506	55 Eri
19335	1278	50 Per	20261	1356	58 Tau	20049	1426	δ Men	21986	1506	DW Eri
19388	1283	43 Tau	20261	1356	V696 Tau	21039	1428	81 Tau	22024	1508	56 Eri
19388	1283	ω <sup>1</sup> Tau	19917	1357	TT Ret	20856	1429	RV Cae	22024	1508	DX Eri
19513	1287	IM Tau	20263	1362	EK Eri	21036	1430	83 Tau	22287	1511	4 Cam
19513	1287	44 Tau	20271	1363	EM Eri	21137	1432	85 Tau	21914	1516	λ πc
19513	1287	p Tau	20400	1368	60 Tau	21242	1434	57 Per	22109	1520	μ Eri
19398	1288	GU Eri	20400	1368	V775 Tau	21242	1434	m Per	22109	1520	57 Eri
20860	1289	V408 Cep	20430	1369	x Tau	21139	1437	45 Eri	22040	1530	κ Dor
19483	1290	37 Eri	20430	1369	59 Tau	21192	1441	DZ Eri	22263	1532	58 Eri
19554	1292	45 Tau	20020	1372	θ Ret	21060	1443	δ Cae	22453	1533	1 Aur
19672	1297	V113 Tau	20455	1373	δ <sup>1</sup> Tau	21273	1444	ρ Tau	22441	1537	96 Tau
19587	1298	o <sup>1</sup> Eri	20455	1373	61 Tau	21273	1444	86 Tau	22325	1538	59 Eri
19587	1298	38 Eri	20493	1375	V114 Tau	21273	1444	ρ Tau	22280	1539	ζ Cae
19587	1298	o <sup>1</sup> Eri	20484	1376	63 Tau	21278	1449	EH Eri	21949	1541	μ Men
19571	1300	GW Eri	20579	1377	55 Per	21278	1449	46 Eri	22783	1542	9 Cam
19515	1302	δ Hor	20533	1378	62 Tau	21296	1451	DV Eri	22783	1542	α Cam
19812	1303	51 Per	20591	1379	56 Per	21296	1451	47 Eri	22449	1543	π <sup>3</sup> Ori
19812	1303	μ Per	20542	1380	64 Tau	21248	1453	υ <sup>1</sup> Eri	22449	1543	1 Ori

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
22509	1544	2 Ori	23743	1623	BM Cam	24645	1707	R Aur	25428	1791	β Tau
22509	1544	π <sup>2</sup> Ori	23743	1623	12 Cam	24608	1708	13 Aur	25428	1791	112 Tau
22565	1547	97 Tau	22871	1629	η Men	24608	1708	α Aur	25194	1793	SW Col
22565	1547	V480 Tau	23474	1634	1 Lep	24512	1711	108 Tau	25410	1798	113 Tau
22565	1547	i Tau	23783	1637	9 Aur	24575	1712	AE Aur	25098	1801	κ πc
22479	1549	60 Eri	23783	1637	V398 Aur	24436	1713	β Ori	25769	1802	17 Cam
22678	1551	2 Aur	23607	1638	V103 Ori	24436	1713	19 Ori	25541	1805	24 Aur
22549	1552	3 Ori	23607	1638	11 Ori	24436	1713	β Ori	25 541	1805	φ Aur
22549	1552	π <sup>4</sup> Ori	23767	1641	10 Aur	23148	1716	ξ Men	25499	1808	115 Tau
22854	1555	5 Cam	23767	1641	η Aur	24555	1718	18 Ori	25539	1810	o Tau
22667	1556	o <sup>1</sup> Ori	24254	1643	BN Cam	24836	1719	DV Cam	25539	1810	114 Tau
22667	1556	o <sup>1</sup> Ori	23680	1648	W Ori	24836	1719	15 Cam	25473	1811	ψ Ori
22667	1556	4 Ori	23482	1649	η <sup>1</sup> πc	24738	1722	PU Aur	25473	1811	ψ <sup>2</sup> Ori
22701	1560	61 Eri	23595	1652	γ <sup>1</sup> Cae	24727	1726	16 Aur	25473	1811	ψ Ori
22701	1560	ω Eri	23596	1653	γ <sup>2</sup> Cae	24740	1728	17 Aur	25473	1811	30 Ori
22730	1562	5 Ori	23596	1653	X Cae	24740	1728	AR Aur	25555	1814	116 Tau
22531	1563	ι πc	23685	1654	ε Lep	24813	1729	λ Aur	25583	1816	117 Tau
22534	1564	ι πc	23685	1654	2 Lep	24813	1729	15 Aur	25303	1818	θ πc
22797	1567	π05 Ori	23835	1656	104 Tau	24799	1732	IQ Aur	25695	1821	118 Tau
22797	1567	π <sup>5</sup> Ori	23835	1656	m Tau	24832	1734	18 Aur	25973	1828	18 Cam
22797	1567	8 Ori	23794	1657	EN Eri	24674	1735	20 Ori	25606	1829	β Lep
23040	1568	7 Cam	23794	1657	66 Eri	24674	1735	τ Ori	25606	1829	9 Lep
22833	1569	6 Ori	23871	1658	106 Tau	24822	1739	n Tau	25737	1834	31 Ori
22833	1569	g Ori	23871	1658	l Tau	24822	1739	109 Tau	25737	1834	CI Ori
22845	1570	π <sup>1</sup> Ori	23900	1659	103 Tau	24879	1740	19 Aur	25429	1836	λ Dor
22845	1570	7 Ori	23883	1660	105 Tau	24659	1743	o Col	25785	1837	CK Ori
23015	1577	ι Aur	23883	1660	V115 Tau	24372	1744	θ Dor	25813	1839	32 Ori
23015	1577	3 Aur	23852	1662	13 Ori	24817	1746	21 Ori	25861	1842	33 Ori
22957	1580	o <sup>2</sup> Ori	23649	1663	η <sup>2</sup> πc	25048	1749	20 Aur	25861	1842	n <sup>1</sup> Ori
22957	1580	9 Ori	23879	1664	14 Ori	25048	1749	ρ Aur	25984	1843	x Aur
22881	1581	R Eri	23879	1664	i Ori	25197	1751	16 Cam	25984	1843	25 Aur
22958	1582	b Eri	23875	1666	β Eri	24827	1754	TX Lep	25945	1845	119 Tau
22958	1582	62 Eri	23875	1666	67 Eri	24845	1756	λ Lep	25945	1845	CE Tau
23068	1586	99 Tau	24019	1670	V115 Tau	24845	1756	6 Lep	25853	1849	10 Lep
23216	1588	8 Cam	23983	1672	16 Ori	24873	1757	7 Lep	25930	1852	δ Ori
23088	1590	k Tau	23983	1672	h Ori	24873	1757	v Lep	25930	1852	δ Ori
23088	1590	98 Tau	23941	1673	68 Eri	25011	1761	V136 Ori	25930	1852	34 Ori
23179	1592	4 Aur	23693	1674	ζ Dor	25044	1765	22 Ori	25923	1855	υ Ori
23261	1599	5 Aur	24010	1676	15 Ori	25044	1765	o Ori	25923	1855	36 Ori
23123	1601	10 Ori	23467	1677	β Men	24829	1767	ζ πc	26408	1857	19 Cam
23123	1601	π <sup>6</sup> Ori	24348	1678	14 Cam	25192	1768	22 Aur	26064	1858	120 Tau
23268	1602	6 Aur	23972	1679	λ Eri	25142	1770	23 Ori	26064	1858	V960 Tau
23522	1603	10 Cam	23972	1679	69 Eri	25292	1773	σ Aur	25859	1862	ε Col
23522	1603	β Cam	23972	1679	λ Eri	25292	1773	21 Aur	26093	1864	35 Ori
23416	1605	ε Aur	24340	1689	μ Aur	25216	1774	110 Tau	25985	1865	11 Lep
23416	1605	ε Aur	24340	1689	11 Aur	25278	1780	V111 Tau	25985	1865	α Lep
23416	1605	7 Aur	24196	1690	V108 Ori	25278	1780	111 Tau	26063	1868	VV Ori
23203	1607	R Lep	24169	1693	RX Lep	25202	1783	8 Lep	26126	1872	38 Ori
23221	1608	63 Eri	23840	1695	WZ Dor	25247	1784	29 Ori	26126	1872	n <sup>2</sup> Ori
23231	1611	64 Eri	24244	1696	ι Lep	25247	1784	e Ori	26248	1875	121 Tau
23231	1611	S Eri	24244	1696	3 Lep	25282	1787	p Ori	26176	1876	37 Ori
23453	1612	8 Aur	24331	1698	ρ Ori	25282	1787	27 Ori	26176	1876	φ <sup>1</sup> Ori
23453	1612	ζ Aur	24331	1698	17 Ori	25281	1788	η Ori	26207	1879	λ Ori
23453	1612	ζ Aur	24305	1702	μ Lep	25281	1788	28 Ori	26207	1879	39 Ori
23364	1617	ψ Eri	24305	1702	μ Lep	25281	1788	η Ori	26207	1880	λ Ori
23364	1617	65 Eri	24305	1702	5 Lep	25302	1789	V108 Ori	26207	1880	39 Ori
23497	1620	ι Tau	24327	1705	κ Lep	25302	1789	25 Ori	26233	1890	V104 Ori
23497	1620	102 Tau	24327	1705	4 Lep	25302	1789	ψ <sup>1</sup> Ori	26237	1892	c Ori
23734	1622	BV Cam	24504	1706	KW Aur	25336	1790	24 Ori	26237	1892	42 Ori
23734	1622	11 Cam	24504	1706	14 Aur	25336	1790	γ Ori	26220	1893	41 Ori

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
26220	1893	V101 Ori	27196	1971	27 Aur	28358	2077	δ Aur	29388	2176	41 Aur
26220	1893	θ <sup>1</sup> Ori	26868	1973	WZ Col	28358	2077	33 Aur	29034	2177	θ Col
26220	1893	θ <sup>1</sup> Ori	27181	1977	Y Tau	28237	2084	139 Tau	29064	2181	π <sup>2</sup> Col
26220	1894	41 Ori	27072	1983	γ Lep	28103	2085	η Lep	29379	2185	5 Gem
26220	1894	V101 Ori	27072	1983	13 Lep	28103	2085	16 Lep	29416	2190	TV Gem
26220	1894	θ <sup>1</sup> Ori	27265	1985	129 Tau	28010	2087	ξ Col	29433	2193	68 Ori
26220	1894	θ <sup>1</sup> Ori	27316	1989	131 Tau	28360	2088	β Aur	28909	2194	η <sup>1</sup> Dor
26221	1895	41 Ori	27338	1990	130 Tau	28360	2088	34 Aur	29323	2195	V653 Mon
26221	1895	θ <sup>1</sup> Ori	26264	1991	ι Men	28360	2088	β Aur	29450	2197	6 Gem
26224	1896	41 Ori	26264	1991	ι Men	28404	2091	35 Aur	29450	2197	BU Gem
26224	1896	θ <sup>1</sup> Ori	27592	1992	29 Cam	28404	2091	π Aur	29434	2198	f <sup>1</sup> Ori
26235	1897	θ <sup>2</sup> Ori	27364	1993	133 Tau	28404	2091	π Aur	29434	2198	69 Ori
26235	1897	43 Ori	27483	1995	29 Aur	28098	2092	σ Col	29426	2199	ξ Ori
26241	1899	44 Ori	27483	1995	τ Aur	28380	2095	37 Aur	29426	2199	70 Ori
26241	1899	ι Ori	27204	1996	μ Col	28380	2095	θ Aur	29730	2201	40 Cam
26263	1900	V137 Ori	27288	1998	ζ Lep	28380	2095	θ Aur	29401	2202	V638 Mon
26268	1901	45 Ori	27288	1998	14 Lep	28271	2100	V100 Ori	29263	2203	AF Col
26311	1903	ε Ori	27386	1999	52 Ori	28271	2100	59 Ori	29276	2212	δ πc
26311	1903	46 Ori	27341	2001	V103 Ori	28499	2101	V444 Aur	29276	2212	δ πc
26311	1903	ε Ori	27468	2002	132 Tau	28499	2101	36 Aur	29488	2213	IP CMa
26382	1905	122 Tau	27366	2004	κ Ori	28296	2103	60 Ori	29919	2215	UW Lyn
26366	1907	40 Ori	27366	2004	53 Ori	28199	2106	γ Col	29919	2215	1 Lyn
26366	1907	φ <sup>2</sup> Ori	27731	2006	30 Cam	28321	2107	V474 Mon	29655	2216	η Gem
26451	1910	ζ Tau	27511	2010	134 Tau	28321	2107	1 Mon	29655	2216	η Gem
26451	1910	123 Tau	27639	2011	31 Aur	28325	2108	2 Mon	29655	2216	7 Gem
26451	1910	ζ Tau	27639	2011	υ Aur	28677	2119	38 Aur	29696	2219	44 Aur
26536	1914	26 Aur	27673	2012	32 Aur	28328	2120	η Col	29696	2219	κ Aur
26069	1922	β Dor	27673	2012	ν Aur	28614	2124	61 Ori	29650	2220	71 Ori
26069	1922	β Dor	27100	2015	δ Dor	28614	2124	μ Ori	29134	2221	ν Dor
26606	1924	V433 Aur	27581	2016	135 Tau	27566	2125	κ Men	29704	2223	f <sup>2</sup> Ori
26412	1926	v <sup>1</sup> Col	27661	2018	V440 Aur	28574	2128	3 Mon	29704	2223	72 Ori
26300	1927	YX πc	27321	2020	β πc	28691	2130	64 Ori	29651	2227	5 Mon
26640	1928	125 Tau	26394	2022	π Men	28823	2132	39 Aur	29651	2227	γ Mon
26549	1931	σ Ori	27971	2027	31 Cam	28734	2134	1 Gem	29884	2228	42 Aur
26549	1931	48 Ori	27971	2027	TU Cam	28716	2135	x <sup>2</sup> Ori	29736	2229	73 Ori
26594	1934	47 Ori	27949	2029	ξ Aur	28716	2135	x <sup>2</sup> Ori	29789	2230	8 Gem
26594	1934	ω Ori	27949	2029	30 Aur	28716	2135	62 Ori	30060	2238	UZ Lyn
26594	1934	ω Ori	27658	2031	55 Ori	28744	2142	V696 Mon	30060	2238	2 Lyn
26460	1935	v <sup>2</sup> Col	27743	2033	V809 Tau	28946	2143	40 Aur	29949	2239	43 Aur
26563	1937	d Ori	27743	2033	137 Tau	28812	2144	63 Ori	29840	2240	9 Gem
26563	1937	49 Ori	27830	2034	136 Tau	28814	2145	66 Ori	29840	2240	PX Gem
26718	1939	NO Aur	27654	2035	δ Lep	28930	2146	V394 Aur	29800	2241	74 Ori
26942	1941	24 Cam	27654	2035	15 Lep	28816	2148	SS Lep	29800	2241	k Ori
27046	1943	23 Cam	27750	2037	56 Ori	28816	2148	17 Lep	29353	2245	η <sup>2</sup> Dor
26777	1946	126 Tau	27628	2040	β Col	28756	2149	72 Col	29850	2247	75 Ori
26727	1948	ζ Ori	27530	2042	γ πc	28596	2151	SW πc	29850	2247	1 Ori
26727	1948	50 Ori	27913	2047	54 Ori	29246	2152	37 Cam	29885	2255	6 Mon
26727	1949	ζ Ori	27913	2047	x <sup>1</sup> Ori	28910	2155	θ Lep	29807	2256	κ Col
26727	1949	50 Ori	27965	2052	57 Ori	28910	2155	18 Lep	30272	2257	4 Lyn
25918	1953	γ Men	28162	2054	V403 Aur	28874	2156	S Lep	30019	2258	V115 Ori
26634	1956	α Col	27810	2056	λ Col	29038	2159	v Ori	29271	2261	α Men
26728	1957	V105 Ori	27810	2056	λ Col	29038	2159	67 Ori	30247	2264	45 Aur
26964	1961	V731 Tau	25776	2059	31 Men	28973	2161	XZ Lep	30073	2273	7 Mon
26885	1963	51 Ori	25776	2059	TZ Men	29490	2165	36 Cam	30122	2282	ζ CMa
26885	1963	b Ori	27989	2061	58 Ori	28984	2166	YY Lep	30122	2282	1 CMa
26169	1964	WX Men	27989	2061	α Ori	29048	2168	19 Lep	30214	2284	FR CMa
26865	1968	12 Lep	27989	2061	α Ori	28957	2171	π <sup>1</sup> Col	30343	2286	μ Gem
27249	1969	26 Cam	27369	2062	λ Men	29225	2173	3 Gem	30343	2286	13 Gem
26953	1970	V119 Ori	28041	2063	U Ori	29225	2173	PU Gem	30343	2286	μ Gem
27196	1971	o Aur	27534	2064	ε Dor	29388	2175	41 Aur	30520	2289	ψ <sup>1</sup> Aur

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
30520	2289	$\psi^1$ Aur	31681	2421	24 Gem	32921	2529	d Gem	33856	2646	$\sigma$ CMa
30520	2289	46 Aur	31681	2421	$\gamma$ Gem	32838	2534	V592 Mon	33971	2648	19 Mon
30651	2291	RR Lyn	31646	2422	V640 Mon	32759	2538	$\kappa$ CMa	33971	2648	V637 Mon
30679	2293	5 Lyn	31564	2423	6 CMa	32759	2538	$\kappa$ CMa	34088	2650	43 Gem
30324	2294	$\beta$ CMa	31564	2423	$\nu^1$ CMa	32759	2538	13 CMa	34088	2650	$\zeta$ Gem
30324	2294	$\beta$ CMa	31737	2425	53 Aur	33041	2539	OX Aur	34088	2650	$\zeta$ Gem
30324	2294	2 CMa	31832	2427	$\psi^2$ Aur	33041	2539	59 Aur	33977	2653	$\sigma^2$ CMa
30277	2296	$\delta$ Col	31832	2427	50 Aur	33018	2540	$\theta$ Gem	33977	2653	24 CMa
30419	2298	8 Mon	31592	2429	7 CMa	33018	2540	34 Gem	33977	2653	$\sigma^2$ CMa
30419	2298	$\epsilon$ Mon	31592	2429	$\nu^2$ CMa	33064	2541	60 Aur	34045	2657	$\gamma$ CMa
30422	2299	$\epsilon$ Mon	31697	2432	V731 Mon	32810	2545	HZ CMa	34045	2657	23 CMa
30422	2299	8 Mon	31852	2438	54 Aur	33133	2547	61 Aur	34182	2659	44 Gem
30407	2301	V721 Mon	31766	2442	V689 Mon	33133	2547	$\psi^8$ Aur	34081	2666	C Pup
30426	2306	IU CMa	31700	2443	$\nu^3$ CMa	32607	2550	$\alpha$ $\pi$ c	34234	2670	V569 Mon
30564	2308	BL Ori	31700	2443	8 CMa	32768	2553	$\tau$ Pup	34356	2671	R Gem
30541	2310	T Mon	31685	2451	$\nu$ Pup	33269	2557	V352 Aur	34059	2672	H Pup
30342	2320	$\nu$ $\pi$ c	32019	2453	25 Gem	31897	2559	$\zeta$ Men	34000	2674	V450 Car
30438	2326	$\alpha$ Car	31978	2456	S Mon	33449	2560	15 Lyn	34301	2678	FN CMa
30369	2330	16 Gem	31978	2456	15 Mon	33202	2564	e Gem	34248	2680	IL CMa
31039	2331	6 Lyn	32173	2459	55 Aur	33202	2564	38 Gem	34105	2683	V386 Car
30827	2332	RT Aur	32173	2459	$\psi^4$ Aur	33040	2567	KX CMa	34440	2684	45 Gem
30827	2332	48 Aur	32104	2466	26 Gem	33377	2568	$\psi^9$ Aur	33384	2689	$\theta$ Men
30972	2338	47 Aur	32438	2470	12 Lyn	33277	2569	37 Gem	34360	2690	FV CMa
30883	2343	$\nu$ Gem	32246	2473	27 Gem	33092	2571	EY CMa	34444	2693	$\delta$ CMa
30883	2343	18 Gem	32246	2473	$\epsilon$ Gem	33092	2571	15 CMa	34444	2693	25 CMa
30772	2344	10 Mon	32489	2477	13 Lyn	33160	2574	$\theta$ CMa	34752	2696	63 Aur
30591	2348	G Pup	32249	2478	30 Gem	33160	2574	14 CMa	34693	2697	46 Gem
30321	2352	$\pi^1$ Dor	32311	2480	28 Gem	33152	2580	$\sigma^1$ CMa	34693	2697	$\tau$ Gem
30867	2356	$\beta$ Mon	32480	2483	56 Aur	33152	2580	16 CMa	34722	2700	47 Gem
30867	2356	11 Mon	32480	2483	$\psi^5$ Aur	33152	2580	$\sigma^1$ CMa	34622	2701	20 Mon
30867	2357	$\beta$ Mon	32362	2484	$\xi$ Gem	33165	2583	EZ CMa	34495	2702	A Pup
30867	2357	11 Mon	32362	2484	31 Gem	33485	2585	$\psi^1$ Aur	34912	2703	UY Lyn
30867	2358	$\beta$ Mon	32562	2487	57 Aur	33485	2585	16 Lyn	34579	2704	LZ CMa
30867	2358	11 Mon	32562	2487	$\psi^6$ Aur	33248	2588	17 CMa	34819	2706	48 Gem
30788	2361	$\lambda$ CMa	32404	2489	32 Gem	33302	2590	$\pi$ CMa	34724	2707	21 Mon
30840	2364	IY CMa	32864	2490	42 Cam	33302	2590	19 CMa	34724	2707	V571 Mon
31105	2371	19 Gem	32349	2491	$\eta$ CMa	33189	2591	NP Pup	34769	2714	22 Mon
31173	2372	WW Aur	32349	2491	$\alpha$ CMa	33345	2593	$\mu$ CMa	34769	2714	$\delta$ Mon
31359	2376	BQ Lyn	32292	2492	10 CMa	33345	2593	18 CMa	35146	2715	18 Lyn
31359	2376	7 Lyn	32292	2492	FT CMa	33347	2596	$\iota$ CMa	34909	2717	51 Gem
30565	2377	$\pi^2$ Dor	32463	2494	16 Mon	33347	2596	20 CMa	34909	2717	BQ Gem
31159	2382	12 Mon	32385	2501	HP CMa	33347	2596	$\iota$ CMa	34798	2718	26 CMa
31216	2385	13 Mon	32533	2503	17 Mon	33614	2600	62 Aur	34798	2718	MM CMa
31125	2387	4 CMa	32492	2504	11 CMa	33595	2601	39 Gem	34814	2724	HN CMa
31125	2387	$\xi^1$ CMa	32578	2506	18 Mon	32912	2602	$\iota$ Vol	35025	2725	52 Gem
31125	2387	$\xi^1$ CMa	32504	2509	12 CMa	33447	2603	HH CMa	34817	2726	V363 Pup
31205	2392	HR CMa	32504	2509	HK CMa	33650	2605	40 Gem	34802	2727	E Pup
31099	2393	SX Col	32434	2510	V339 Pup	37391	2609	OV Cep	34924	2734	GY CMa
31676	2394	8 Lyn	33104	2511	43 Cam	33715	2615	41 Gem	34473	2735	$\gamma^1$ Vol
31434	2398	49 Aur	32740	2512	IS Gem	33579	2618	$\epsilon$ CMa	34481	2736	$\gamma^2$ Vol
31665	2402	11 Lyn	32844	2516	$\psi^7$ Aur	33579	2618	21 CMa	35152	2738	53 Gem
31385	2404	14 Mon	32844	2516	58 Aur	33558	2619	t Pup	34834	2740	I Pup
31579	2405	UU Aur	32682	2517	V715 Mon	33721	2628	FU CMa	34834	2740	QW Pup
31068	2410	AE $\pi$ c	32537	2518	x Pup	33927	2630	42 Gem	34937	2741	GG CMa
31137	2412	$\mu$ $\pi$ c	32753	2519	33 Gem	33927	2630	$\omega$ Gem	36547	2742	VZ Cam
31416	2414	$\xi^2$ CMa	32753	2519	OV Gem	33927	2630	$\omega$ Gem	35080	2744	24 Mon
31416	2414	5 CMa	33048	2520	14 Lyn	33929	2631	NP Gem	34981	2745	27 CMa
31771	2419	51 Aur	32814	2525	35 Gem	33804	2640	LS CMa	34981	2745	EW CMa
31789	2420	$\psi^3$ Aur	32531	2526	V448 Car	33856	2646	$\sigma$ CMa	34899	2746	OU Pup
31789	2420	52 Aur	32921	2529	36 Gem	33856	2646	22 CMa	34899	2746	1 Pup



## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
34922	2748	1 Pup	36186	2853	NR CMa	37949	2975	51 Cam	38835	3102	11 Pup
34922	2748	L02 Pup	36284	2854	γ CMi	37934	2977	BC Cam	38835	3102	j Pup
35037	2749	ω CMa	36284	2854	4 CMi	37934	2977	49 Cam	38945	3103	BU CMi
35037	2749	28 CMa	36168	2855	FY CMa	37704	2983	76 Gem	39261	3109	AX Cam
35037	2749	ω CMa	36393	2857	64 Gem	37704	2983	c Gem	39261	3109	53 Cam
35341	2753	64 Aur	36429	2861	b Gem	37740	2985	κ Gem	38962	3110	14 CMi
35029	2761	PR Pup	36429	2861	65 Gem	37740	2985	77 Gem	38872	3116	N Pup
35350	2763	54 Gem	36425	2864	6 CMi	37705	2989	AZ CMi	38827	3117	x Car
35350	2763	λ Gem	36363	2875	y Pup	37826	2990	β Gem	38827	3117	x Car
35210	2764	145 CMa	36377	2878	σ Pup	37826	2990	78 Gem	39348	3119	AE Lyn
35735	2772	47 Cam	36377	2878	σ Pup	37811	2991	79 Gem	39348	3119	54 Cam
35264	2773	π Pup	36641	2880	δ <sup>1</sup> CMi	37648	2993	1 Pup	38917	3121	O Pup
35264	2773	π Pup	36641	2880	7 CMi	37677	2996	3 Pup	39079	3122	27 Mon
35550	2777	δ Gem	36760	2886	68 Gem	37677	2996	1 Pup	39023	3123	12 Pup
35550	2777	55 Gem	36723	2887	δ <sup>2</sup> CMi	37908	3003	g Gem	39191	3124	ω <sup>1</sup> Cnc
35412	2781	29 CMa	36723	2887	8 CMi	37908	3003	81 Gem	39191	3124	2 Cnc
35412	2781	UW CMa	36608	2889	PS Pup	37751	3004	V390 Pup	38834	3126	V341 Car
35415	2782	30 CMa	36850	2890	66 Gem	37921	3008	11 CMi	39177	3128	3 Cnc
35415	2782	τ CMa	36850	2890	α Gem	37842	3009	PV Pup	38957	3129	V Pup
35415	2782	τ CMa	36850	2890	66 Gem	37842	3009	2 Pup	39263	3132	ω <sup>2</sup> Cnc
35783	2783	19 Lyn	36850	2891	66 Gem	37843	3010	2 Pup	39263	3132	4 Cnc
35785	2784	19 Lyn	36850	2891	α Gem	38016	3013	π Gem	39236	3134	5 Cnc
35363	2787	NV Pup	36850	2891	66 Gem	38016	3013	80 Gem	39172	3135	V695 Mon
35487	2788	R CMa	36965	2898	CC Lyn	37891	3015	4 Pup	39211	3141	28 Mon
35406	2790	v <sup>2</sup> Pup	36812	2901	δ <sup>3</sup> CMi	37819	3017	c Pup	39211	3141	V645 Mon
35406	2790	NW Pup	36812	2901	9 CMi	38106	3021	82 Gem	38994	3147	V374 Car
35393	2791	F Pup	36773	2902	KQ Pup	37915	3022	V392 Pup	39424	3149	x Gem
35710	2793	65 Aur	36962	2905	69 Gem	37504	3024	ζ Vol	39153	3151	PY Pup
35699	2795	56 Gem	36962	2905	υ Gem	38031	3026	QY Pup	39070	3153	V460 Car
35611	2800	HQ CMa	36728	2907	V376 Pup	38048	3029	5 Pup	39225	3157	V461 Car
35626	2802	MZ CMa	36778	2911	OW Pup	37982	3032	OX Pup	39360	3162	V336 Pup
35228	2803	δ Vol	36778	2911	z Pup	38070	3034	o Pup	39567	3163	8 Cnc
35907	2805	66 Aur	36039	2919	ε Men	38070	3034	o Pup	39429	3165	ζ Pup
35846	2808	57 Gem	36981	2921	V378 Pup	38074	3041	T Pup	39722	3167	28 Lyn
35842	2810	58 Gem	37204	2924	70 Gem	38211	3044	6 Pup	39524	3168	14 Pup
35941	2816	59 Gem	37088	2927	25 Mon	38170	3045	ξ Pup	39659	3169	9 Cnc
35933	2817	OT Gem	37036	2928	PT Pup	38170	3045	7 Pup	39659	3169	μ <sup>1</sup> Cnc
36145	2818	21 Lyn	37406	2929	23 Lyn	38089	3046	Q Pup	39659	3169	BL Cnc
35795	2819	NO CMa	37265	2930	71 Gem	38167	3049	V397 Pup	39487	3170	MZ Pup
35987	2820	1 CMi	37265	2930	o Gem	38164	3055	P Pup	39847	3173	27 Lyn
36046	2821	60 Gem	37096	2937	f Pup	38159	3058	QS Pup	39780	3176	μ Cnc
36046	2821	ι Gem	37300	2938	f Gem	38373	3059	13 CMi	39780	3176	10 Cnc
35951	2825	FW CMa	37300	2938	74 Gem	38373	3059	ζ CMi	39780	3176	μ <sup>2</sup> Cnc
35904	2827	η CMa	37279	2943	α CMi	38406	3061	BC CMi	39584	3179	MX Vel
35904	2827	η CMa	37279	2943	10 CMi	38372	3063	8 Pup	39874	3184	12 Cnc
35904	2827	31 CMa	37173	2944	PU Pup	38382	3064	9 Pup	39757	3185	ρ Pup
36041	2828	2 CMi	37173	2944	m Pup	38623	3065	25 Lyn	39757	3185	ρ Pup
36041	2828	ε CMi	37609	2946	24 Lyn	38639	3066	26 Lyn	39757	3185	15 Pup
36156	2837	61 Gem	37174	2957	MY Pup	38538	3067	φ Gem	39530	3186	V375 Car
35960	2842	V368 Pup	37297	2961	n <sup>1</sup> Pup	38538	3067	83 Gem	39863	3188	ζ Mon
35960	2843	V368 Pup	37322	2963	d <sup>2</sup> Pup	38427	3073	10 Pup	39863	3188	29 Mon
36188	2845	3 CMi	37329	2964	d <sup>3</sup> Pup	38370	3078	QU Pup	40023	3191	14 Cnc
36188	2845	β CMi	37521	2967	NZ Gem	38414	3080	a Pup	40023	3191	ψ Cnc
36188	2845	β CMi	37447	2970	26 Mon	38455	3084	b Pup	39906	3192	16 Pup
36238	2846	63 Gem	37447	2970	α Mon	38455	3084	QZ Pup	39866	3195	PQ Pup
36439	2849	22 Lyn	37248	2971	V390 Car	38722	3086	85 Gem	40035	3202	18 Pup
36265	2851	5 CMi	37629	2973	75 Gem	38438	3088	V372 Car	39919	3203	NN Vel
36265	2851	η CMi	37629	2973	σ Gem	38518	3090	J Pup	39953	3207	γ <sup>2</sup> Vel
36366	2852	62 Gem	37629	2973	σ Gem	38848	3095	1 Cnc	39953	3207	γ <sup>2</sup> Vel
36366	2852	ρ Gem	37415	2974	R Pup	38792	3099	PX Pup	39953	3207	γ Vel

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
40167	3208	16 Cnc	41400	3319	BP Cnc	42515	3438	β Pyx	43409	3518	γ Pyx
40167	3208	ζ <sup>2</sup> Cnc	41375	3321	2 Hya	42540	3439	NY Vel	43584	3519	51 Cnc
40167	3208	ζ <sup>1</sup> Cnc	41375	3321	LM Hya	42459	3440	HW Vel	43584	3519	σ <sup>1</sup> Cnc
40167	3209	16 Cnc	41250	3322	V438 Pup	42662	3441	9 Hya	43347	3520	g Vel
40167	3209	ζ <sup>2</sup> Cnc	41704	3323	o UMa	42504	3442	NZ Vel	43575	3521	BO Cnc
40167	3209	ζ <sup>1</sup> Cnc	41704	3323	1 UMa	42570	3445	b Vel	43575	3521	53 Cnc
40167	3210	16 Cnc	41361	3327	NO Pup	42536	3447	o Vel	43587	3522	ρ <sup>1</sup> Cnc
40167	3210	ζ <sup>2</sup> Cnc	41361	3328	NO Pup	42536	3447	o Vel	43587	3522	55 Cnc
40167	3210	ζ <sup>1</sup> Cnc	41574	3329	28 Cnc	42806	3449	43 Cnc	43496	3523	15 Hya
40084	3211	19 Pup	41574	3329	CX Cnc	42806	3449	γ Cnc	42794	3524	RS Cha
39970	3213	IS Vel	41578	3333	29 Cnc	42795	3450	45 Cnc	43413	3527	f Vel
40240	3215	15 Cnc	41003	3334	η Vol	42624	3452	n Vel	43413	3527	KX Vel
40240	3215	BM Cnc	41475	3335	VV Pyx	42799	3454	η Hya	43685	3528	CY Lyn
39794	3223	ε Vol	41564	3337	LO Hya	42799	3454	7 Hya	43903	3531	6 UMa
40091	3225	NS Pup	40888	3340	θ Cha	42799	3454	η Hya	43721	3532	57 Cnc
40091	3225	h <sup>1</sup> Pup	41515	3343	XY Pyx	42679	3456	LN Vel	43834	3540	ρ <sup>2</sup> Cnc
40259	3229	20 Pup	41312	3347	β Vol	42568	3457	V343 Car	43834	3540	58 Cnc
40155	3232	AH Vel	41483	3350	GU Vel	42568	3457	d Car	43811	3541	X Cnc
40646	3235	29 Lyn	41483	3350	F Vel	42835	3459	F Hya	43813	3547	16 Hya
40274	3237	MX Pup	42080	3354	2 UMa	42425	3460	θ Vol	43813	3547	ζ Hya
40274	3237	r Pup	41816	3355	30 Cnc	42911	3461	δ Cnc	43851	3550	60 Cnc
40321	3240	OS Pup	41816	3355	υ <sup>1</sup> Cnc	42911	3461	47 Cnc	43822	3552	17 Hya
40326	3243	h <sup>2</sup> Pup	41822	3357	31 Cnc	42712	3462	HX Vel	43822	3553	17 Hya
40285	3244	NO Vel	41822	3357	θ Cnc	42954	3464	46 Cnc	43932	3555	σ <sup>2</sup> Cnc
40534	3248	R Cnc	41726	3364	AB Pyx	42917	3465	b Cnc	43932	3555	59 Cnc
40526	3249	β Cnc	41975	3365	32 Lyn	42917	3465	BI Cnc	43825	3556	δ Pyx
40526	3249	17 Cnc	41909	3366	η Cnc	42917	3465	49 Cnc	43970	3561	o Cnc
40875	3254	30 Lyn	41909	3366	33 Cnc	42715	3466	KT Vel	43970	3561	62 Cnc
40604	3257	21 Pup	41940	3369	32 Cnc	42726	3467	HY Vel	43807	3562	IY Vel
40843	3262	x Cnc	41940	3369	υ <sup>2</sup> Cnc	42828	3468	α Pyx	44031	3563	61 Cnc
40843	3262	18 Cnc	41904	3372	34 Cnc	42931	3469	10 Hya	44001	3565	o Cnc
40766	3265	HQ Hya	42090	3377	33 Lyn	42951	3472	MX Hya	44001	3565	63 Cnc
40881	3268	19 Cnc	41939	3385	VX Pyx	43100	3474	48 Cnc	43763	3568	V473 Car
40881	3268	λ Cnc	42133	3387	35 Cnc	43100	3474	ι Cnc	44127	3569	9 UMa
40706	3270	q Pup	42438	3391	3 UMa	43103	3475	48 Cnc	44127	3569	ι UMa
41075	3275	31 Lyn	42438	3391	π <sup>1</sup> UMa	43103	3475	ι Cnc	43783	3571	c Car
40945	3282	w Pup	42146	3398	3 Hya	42834	3476	D Vel	44066	3572	α Cnc
41117	3284	20 Cnc	42146	3398	HV Hya	42884	3477	d Vel	44066	3572	65 Cnc
41117	3284	d <sup>1</sup> Cnc	42527	3403	π <sup>2</sup> UMa	43121	3481	50 Cnc	43878	3574	H Vel
41067	3289	22 Pup	42527	3403	4 UMa	43109	3482	ε Hya	44154	3575	64 Cnc
41163	3290	21 Cnc	42265	3406	36 Cnc	43109	3482	11 Hya	44154	3575	σ <sup>3</sup> Cnc
41039	3294	B Vel	42265	3406	c Cnc	43109	3482	ε Hya	44390	3576	8 UMa
41107	3296	V436 Pup	42088	3407	C Vel	43067	3484	D Hya	44390	3576	ρ UMa
41211	3297	1 Hya	42313	3410	4 Hya	43067	3484	12 Hya	44126	3577	FZ Cnc
41319	3299	25 Cnc	42313	3410	δ Hya	42913	3485	δ Vel	44248	3579	10 UMa
41319	3299	d <sup>2</sup> Cnc	42353	3412	37 Cnc	43023	3487	a Vel	43937	3582	V376 Car
40817	3301	κ <sup>1</sup> Vol	42177	3413	HV Vel	43114	3490	AI Pyx	43937	3582	b <sup>1</sup> Car
40834	3302	κ <sup>2</sup> Vol	42134	3414	e <sup>2</sup> Car	43234	3492	ρ Hya	44307	3587	66 Cnc
41377	3304	φ <sup>1</sup> Cnc	42129	3415	e <sup>1</sup> Car	43234	3492	13 Hya	44093	3588	FZ Vel
41377	3304	22 Cnc	42402	3418	σ Hya	43082	3494	OP Vel	44342	3589	67 Cnc
41037	3307	ε Car	42402	3418	5 Hya	43105	3498	V344 Car	44191	3591	w Vel
41404	3310	23 Cnc	42334	3420	η Pyx	43105	3498	f Car	44213	3593	IU Vel
41404	3310	φ <sup>2</sup> Cnc	42604	3422	34 Lyn	43305	3500	14 Hya	44471	3594	κ UMa
41404	3311	23 Cnc	42312	3426	e Vel	43305	3500	KX Hya	44471	3594	12 UMa
41404	3311	φ <sup>2</sup> Cnc	42516	3427	39 Cnc	42637	3502	η Cha	44405	3595	69 Cnc
41389	3312	24 Cnc	42556	3429	41 Cnc	43644	3505	5 UMa	44405	3595	v Cnc
41389	3313	24 Cnc	42556	3429	ε Cnc	43644	3505	b UMa	44143	3598	b <sup>2</sup> Car
41307	3314	C Hya	42509	3431	a Hya	43531	3508	35 Lyn	44299	3600	IZ Vel
40702	3318	α Cha	42509	3431	6 Hya	43454	3510	54 Cnc	44512	3601	70 Cnc
41400	3319	27 Cnc	42483	3433	ζ Pyx	43354	3517	HZ Vel	44337	3605	OY Vel

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
44857	3609	11 UMa	45915	3698	CG UMa	47080	3815	11 LMi	48341	3899	6 Sex
44857	3609	o <sup>1</sup> UMa	45556	3699	i Car	47080	3815	SV LMi	48390	3900	g Leo
44659	3613	18 Hya	45631	3703	K Vel	46806	3816	R Car	48390	3900	22 Leo
44659	3613	ω Hya	45860	3705	40 Lyn	47096	3818	7 Leo	47956	3902	v Cha
44511	3614	c Vel	45860	3705	α Lyn	46950	3819	L Vel	48356	3903	u <sup>1</sup> Hya
44382	3615	α Vol	45751	3706	26 Hya	46974	3825	h Car	48356	3903	39 Hya
45038	3616	13 UMa	45675	3708	LR Vel	47189	3826	8 Leo	48455	3905	μ Leo
45038	3616	o <sup>2</sup> UMa	45811	3709	27 Hya	47205	3827	10 Leo	48455	3905	24 Leo
44738	3618	NS Hya	45615	3713	V478 Car	47300	3829	42 Lyn	48414	3906	7 Sex
44901	3619	15 UMa	45902	3718	θ Pyx	47145	3831	IM Vel	48437	3909	8 Sex
44901	3619	f UMa	46247	3722	EZ UMa	47249	3832	34 Hya	48437	3909	γ Sex
44818	3621	72 Cnc	45999	3724	KU Hya	47310	3834	2 Sex	48374	3912	m Vel
44818	3621	τ Cnc	45856	3728	k Car	47175	3836	M Vel	48682	3917	SY UMa
44798	3623	κ Cnc	46146	3731	κ Leo	47654	3839	27 UMa	48682	3917	31 UMa
44798	3623	76 Cnc	46146	3731	1 Leo	47267	3842	y Vel	48469	3920	QZ Vel
44798	3623	κ Cnc	46026	3733	λ Pyx	47431	3845	i Hya	48527	3924	V335 Vel
45075	3624	τ UMa	45941	3734	κ Vel	47431	3845	35 Hya	48833	3928	19 LMi
45075	3624	14 UMa	46221	3738	28 Hya	47427	3846	OW Hya	48883	3937	27 Leo
44892	3626	75 Cnc	46365	3744	29 Hya	47427	3846	37 Hya	48883	3937	v Leo
44946	3627	ξ Cnc	46390	3748	α Hya	47452	3849	38 Hya	48774	3940	φ Vel
44946	3627	77 Cnc	46390	3748	30 Hya	47452	3849	κ Hya	48799	3941	IV Vel
44824	3628	κ Pyx	46371	3749	G Hya	47544	3850	DR Leo	48990	3945	12 Sex
44883	3630	19 Hya	46283	3753	I Vel	47570	3851	43 Lyn	48943	3946	OY Hya
44816	3634	λ Vel	46454	3754	2 Leo	47508	3852	14 Leo	48926	3947	η Ant
44816	3634	λ Vel	46454	3754	ω Leo	47508	3852	o Leo	48782	3949	V492 Car
45058	3639	RS Cnc	46457	3755	3 Leo	47550	3853	13 Leo	49029	3950	29 Leo
45033	3640	79 Cnc	46733	3757	23 UMa	47391	3856	m Car	49029	3950	π Leo
44961	3641	20 Hya	46733	3757	h UMa	47631	3857	13 LMi	49081	3951	20 LMi
44626	3642	V345 Car	46509	3759	τ <sup>1</sup> Hya	47522	3858	I Hya	49220	3952	EO Leo
45001	3644	ε Pyx	46509	3759	31 Hya	46928	3860	ζ Cha	49329	3961	13 Sex
45333	3648	16 UMa	46652	3764	7 LMi	46928	3860	ζ Cha	49402	3970	40 Hya
45333	3648	c UMa	46515	3765	ε Ant	47701	3861	f Leo	49402	3970	u <sup>2</sup> Hya
45170	3650	τ <sup>1</sup> Cnc	47013	3768	22 UMa	47701	3861	15 Leo	49530	3973	14 Sex
45170	3650	81 Cnc	46735	3769	8 LMi	47911	3865	28 UMa	49593	3974	21 LMi
45290	3652	36 Lyn	46977	3771	d UMa	47723	3866	16 Leo	49583	3975	η Leo
45085	3654	GX Vel	46977	3771	24 UMa	47723	3866	ψ Leo	49583	3975	30 Leo
45184	3655	21 Hya	46977	3771	DK UMa	47965	3870	CS UMa	49477	3978	R Vel
45184	3655	KW Hya	46750	3773	4 Leo	47758	3871	θ Ant	49637	3980	31 Leo
45080	3659	V357 Car	46750	3773	λ Leo	47694	3872	IP Vel	49641	3981	α Sex
45080	3659	a Car	46853	3775	25 UMa	47908	3873	17 Leo	49641	3981	15 Sex
45455	3660	17 UMa	46853	3775	θ UMa	47908	3873	ε Leo	49669	3982	α Leo
45189	3661	KL Vel	46774	3779	6 Leo	47717	3875	O Vel	49669	3982	32 Leo
45493	3662	DD UMa	46657	3780	ζ <sup>1</sup> Ant	47959	3877	18 Leo	49065	3983	μ Cha
45493	3662	18 UMa	46657	3781	ζ <sup>1</sup> Ant	48029	3880	19 Leo	49812	3989	17 Sex
45493	3662	e UMa	46771	3782	ξ Leo	48036	3882	R Leo	49712	3990	Q Vel
45101	3663	i Car	46771	3782	5 Leo	47893	3883	V487 Car	49841	3994	41 Hya
45336	3665	22 Hya	46651	3786	ψ Vel	47854	3884	1 Car	49841	3994	λ Hya
45336	3665	θ Hya	46776	3787	32 Hya	47854	3884	1 Car	49865	3996	18 Sex
45410	3669	π Cnc	46776	3787	τ <sup>2</sup> Hya	48319	3888	υ UMa	49929	3998	34 Leo
45410	3669	82 Cnc	46734	3789	ζ <sup>2</sup> Ant	48319	3888	υ UMa	49751	3999	S Car
45410	3669	π <sup>2</sup> Cnc	46904	3791	9 LMi	48319	3888	29 UMa	50027	4004	19 Sex
45344	3674	z Vel	46620	3793	V482 Car	48218	3889	DG Leo	49926	4007	V368 Car
43908	3678	ζ Oct	46107	3795	i Cha	48218	3889	20 Leo	50222	4008	U UMa
45527	3681	23 Hya	46810	3798	S Ant	48002	3890	υ Car	49934	4009	QY Car
45439	3682	l Vel	47006	3799	26 UMa	48002	3891	υ Car	50218	4014	22 LMi
45526	3683	24 Hya	46952	3800	10 LMi	48273	3893	4 Sex	50070	4017	LW Vel
45448	3684	k Vel	46952	3800	SU LMi	48402	3894	φ UMa	50191	4023	q Vel
45238	3685	β Car	46701	3803	N Vel	48402	3894	30 UMa	50303	4024	23 LMi
45688	3690	38 Lyn	46701	3803	N Vel	48324	3896	23 Leo	50448	4026	32 UMa
45496	3696	g Car	46982	3814	33 Hya	48224	3898	u Vel	50316	4027	24 LMi

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
50319	4030	35 Leo	51624	4133	ρ Leo	52943	4232	v Hya	54539	4335	52 UMa
50335	4031	ζ Leo	51624	4133	ρ Leo	52633	4234	δ <sup>2</sup> Cha	54463	4337	x Car
50335	4031	36 Leo	51624	4133	47 Leo	53043	4235	43 UMa	54463	4337	V382 Car
50372	4033	33 UMa	51685	4137	34 LMi	53064	4236	42 UMa	54461	4338	V371 Car
50372	4033	λ UMa	51576	4140	p Car	52980	4237	41 Sex	54682	4343	β Crt
50333	4035	37 Leo	51576	4140	PP Car	53261	4246	44 UMa	54682	4343	11 Crt
50099	4037	ω Car	51814	4141	37 UMa	53229	4247	46 LMi	54751	4352	V533 Car
50384	4039	39 Leo	51635	4143	t Vel	53295	4248	45 UMa	54849	4356	p <sup>5</sup> Leo
50414	4042	22 Sex	51718	4145	44 Hya	53295	4248	ω UMa	54849	4356	69 Leo
50414	4042	ε Sex	51775	4146	48 Leo	53154	4250	V524 Car	54872	4357	68 Leo
50332	4045	GY Vel	51676	4147	V369 Car	53252	4251	b <sup>3</sup> Hya	54872	4357	δ Leo
50685	4047	EN UMa	51802	4148	49 Leo	53273	4253	p <sup>1</sup> Leo	54879	4359	70 Leo
50456	4049	AG Ant	51802	4148	TX Leo	53355	4254	48 LMi	54879	4359	θ Leo
50371	4050	V337 Car	51914	4150	35 LMi	53253	4257	u Car	54951	4362	FN Leo
50371	4050	q Car	51821	4153	U Ant	53426	4258	46 UMa	54951	4362	72 Leo
50564	4054	40 Leo	51905	4156	φ <sup>2</sup> Hya	53417	4259	54 Leo	55016	4365	n Leo
50583	4057	41 Leo	51849	4159	r Car	53417	4260	54 Leo	55016	4365	73 Leo
50583	4057	γ <sup>2</sup> Leo	52009	4163	U Hya	53379	4263	KQ Vel	55084	4368	φ Leo
50583	4057	γ <sup>1</sup> Leo	51912	4164	t <sup>1</sup> Car	53423	4265	55 Leo	55084	4368	74 Leo
50583	4058	41 Leo	52098	4166	37 LMi	53449	4267	VY Leo	55106	4369	SV Crt
50583	4058	γ <sup>2</sup> Leo	51986	4167	p Vel	53449	4267	56 Leo	55137	4371	75 Leo
50583	4058	γ <sup>1</sup> Leo	52139	4168	38 LMi	53492	4270	50 LMi	55203	4374	53 UMa
50555	4063	GZ Vel	52004	4169	V370 Car	53394	4271	T Car	55203	4374	ξ UMa
50684	4064	RS Sex	52085	4171	φ <sup>3</sup> Hya	53502	4273	ι Ant	55203	4374	ξ UMa
50684	4064	23 Sex	52085	4171	φ Hya	53530	4274	IW Vel	55203	4375	53 UMa
50801	4069	μ UMa	52043	4173	V514 Car	53589	4276	U Car	55203	4375	ξ UMa
50801	4069	34 UMa	51839	4174	γ Cha	53721	4277	47 UMa	55203	4375	ξ UMa
50755	4070	42 Leo	52353	4178	38 UMa	53740	4287	7 Crt	55219	4377	v UMa
50933	4072	ET UMa	52154	4180	x Vel	53740	4287	a Crt	55219	4377	54 UMa
50676	4074	J Vel	52316	4182	33 Sex	53838	4288	49 UMa	55140	4379	V535 Car
50860	4075	27 LMi	52366	4184	RX LMi	53807	4291	58 Leo	55266	4380	55 UMa
50851	4077	43 Leo	52221	4185	V364 Car	53773	4293	i Vel	55249	4381	76 Leo
50799	4080	r Vel	52478	4187	39 UMa	53824	4294	59 Leo	55282	4382	δ Crt
50935	4081	28 LMi	52308	4188	V429 Car	53824	4294	c Leo	55282	4382	12 Crt
50885	4082	SS Sex	52422	4189	40 LMi	53910	4295	β UMa	55434	4386	σ Leo
50885	4082	25 Sex	52457	4192	41 LMi	53910	4295	48 UMa	55434	4386	77 Leo
51008	4088	44 Leo	52452	4193	35 Sex	53907	4299	61 Leo	55425	4390	π Cen
51008	4088	DE Leo	52577	4195	VY UMa	53907	4299	p <sup>2</sup> Leo	55560	4392	56 UMa
51056	4090	30 LMi	52370	4196	V518 Car	53954	4300	60 Leo	55598	4395	λ Crt
51069	4094	42 Hya	52405	4198	V519 Car	53954	4300	b Leo	55598	4395	13 Crt
51069	4094	μ Hya	52419	4199	θ Car	54061	4301	50 UMa	55642	4399	78 Leo
51233	4100	31 LMi	52468	4200	w Car	54061	4301	a UMa	55642	4399	ι Leo
51233	4100	β LMi	52468	4200	V520 Car	54049	4306	62 Leo	55650	4400	79 Leo
51213	4101	CX Leo	52584	4201	36 Sex	54049	4306	p <sup>3</sup> Leo	55687	4402	14 Crt
51213	4101	45 Leo	52685	4202	41 UMa	54136	4309	51 UMa	55687	4402	ε Crt
51172	4104	α Ant	52638	4203	42 LMi	54182	4310	63 Leo	55705	4405	γ Crt
51401	4106	35 UMa	52340	4206	DR Cha	54182	4310	x Leo	55705	4405	15 Crt
51192	4110	V399 Car	52686	4208	51 Leo	53702	4312	η Oct	55765	4408	81 Leo
51459	4112	36 UMa	52686	4208	m Leo	54204	4314	x <sup>1</sup> Hya	55791	4410	80 Leo
51420	4113	32 LMi	52689	4209	k Leo	54255	4317	x <sup>2</sup> Hya	55846	4414	83 Leo
51232	4114	s Car	52689	4209	52 Leo	54255	4317	x <sup>2</sup> Hya	55874	4416	16 Crt
51362	4116	δ Sex	52737	4214	b <sup>1</sup> Hya	54336	4319	65 Leo	55874	4416	κ Crt
51362	4116	29 Sex	52727	4216	μ Vel	54336	4319	p <sup>4</sup> Leo	55945	4418	τ Leo
51376	4118	δ Ant	52882	4223	43 LMi	54388	4322	64 Leo	55945	4418	84 Leo
51437	4119	β Sex	52911	4227	l Leo	54301	4325	z Car	55953	4420	QT Hya
51437	4119	30 Sex	52911	4227	53 Leo	54360	4327	V815 Cen	56034	4422	57 UMa
51437	4119	β Sex	52827	4228	V522 Car	54540	4330	EP UMa	56080	4426	85 Leo
51556	4124	33 LMi	52913	4229	40 Sex	54487	4332	67 Leo	56135	4430	EE UMa
51585	4127	46 Leo	52959	4230	44 LMi	54522	4333	CO UMa	56148	4431	58 UMa
51585	4127	ES Leo	52595	4231	δ <sup>1</sup> Cha	54539	4335	ψ UMa	56127	4432	87 Leo

## Número de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
56127	4432	e Leo	57632	4534	94 Leo	59608	4650	12 Vir	60904	4752	17 Com
56146	4433	86 Leo	57632	4534	$\beta$ Leo	59654	4652	D Cen	60904	4752	AI Com
56211	4434	$\lambda$ Dra	57632	4534	$\beta$ Leo	59678	4653	DL Cru	60941	4753	18 Com
56211	4434	1 Dra	57669	4537	j Cen	59747	4656	$\delta$ Cru	60979	4755	V928 Cen
56242	4437	88 Leo	57757	4540	5 Vir	59747	4656	$\delta$ Cru	60957	4756	20 Com
56201	4438	V809 Cen	57757	4540	$\beta$ Vir	59774	4660	69 UMa	60965	4757	7 Crv
56243	4441	o <sup>1</sup> Cen	57803	4546	B Cen	59774	4660	$\delta$ UMa	60965	4757	$\delta$ Crv
56243	4441	o <sup>1</sup> Cen	57936	4552	$\beta$ Hya	59803	4662	$\gamma$ Crv	60978	4760	74 UMa
56250	4442	o <sup>2</sup> Cen	57936	4552	$\beta$ Hya	59803	4662	4 Crv	60988	4761	7 CVn
56250	4442	o <sup>2</sup> Cen	58001	4554	$\gamma$ UMa	59819	4663	6 Com	60992	4762	75 UMa
56280	4443	17 Crt	58001	4554	64 UMa	59796	4665	DK Dra	61084	4763	$\gamma$ Cru
56280	4444	17 Crt	58110	4559	6 Vir	59831	4666	2 CVn	60998	4765	CQ Dra
56343	4450	$\xi$ Hya	58112	4560	65 UMa	59847	4667	7 Com	60998	4765	4 Dra
56445	4455	89 Leo	58112	4560	DN UMa	59929	4671	$\epsilon$ $\mu$ s	61071	4766	UU Com
56473	4456	90 Leo	58117	4561	65 UMa	59929	4671	$\epsilon$ $\mu$ s	61071	4766	21 Com
56480	4460	A Cen	58159	4564	95 Leo	60000	4674	$\beta$ Cha	61136	4768	BG Cru
56583	4461	2 Dra	58159	4564	o Leo	60009	4679	$\zeta$ Cru	61136	4768	35 Cru
56518	4463	V763 Cen	58181	4566	66 UMa	60030	4681	13 Vir	61199	4773	$\gamma$ $\mu$ s
56518	4463	c <sup>1</sup> Cen	58188	4567	$\eta$ Crt	60059	4682	F Cen	61174	4775	$\eta$ Crv
56573	4466	c <sup>2</sup> Cen	58188	4567	30 Crt	60066	4684	FM Com	61174	4775	8 Crv
56561	4467	$\lambda$ Cen	58272	4571	LV Hya	60087	4685	8 Com	61246	4777	20 Vir
56633	4468	21 Crt	58484	4583	$\epsilon$ Cha	60098	4688	9 Com	61295	4780	22 Com
56633	4468	$\theta$ Crt	58510	4585	7 Vir	60129	4689	$\eta$ Vir	61318	4781	21 Vir
56647	4471	91 Leo	58510	4585	b Vir	60129	4689	15 Vir	61318	4781	q Vir
56647	4471	v Leo	58545	4586	FR Cam	60122	4690	3 CVn	61317	4785	8 CVn
56700	4476	c <sup>3</sup> Cen	58590	4589	8 Vir	60172	4695	c Vir	61317	4785	$\beta$ CVn
56770	4477	59 UMa	58590	4589	$\pi$ Vir	60172	4695	16 Vir	61359	4786	$\beta$ Crv
56675	4479	$\pi$ Cha	58587	4590	TY Crv	60189	4696	5 Crv	61359	4786	9 Crv
56789	4480	60 UMa	58587	4590	31 Crt	60189	4696	$\zeta$ Crv	61281	4787	$\kappa$ Dra
56779	4483	$\omega$ Vir	58684	4594	67 UMa	60202	4697	11 Com	61281	4787	$\kappa$ Dra
56779	4483	$\omega$ Vir	58684	4594	DP UMa	60260	4700	$\epsilon$ Cru	61281	4787	5 Dra
56779	4483	1 Vir	58758	4599	$\theta$ <sup>1</sup> Cru	60212	4701	70 UMa	61394	4789	23 Com
56802	4488	$\iota$ Crt	58858	4602	2 Com	60320	4703	$\zeta$ <sup>2</sup> $\mu$ s	61415	4791	24 Com
56802	4488	24 Crt	58867	4603	$\theta$ <sup>2</sup> Cru	60329	4704	$\zeta$ <sup>1</sup> $\mu$ s	61418	4792	24 Com
56899	4491	VX Crt	58867	4603	$\theta$ <sup>2</sup> Cru	60351	4707	12 Com	61384	4795	6 Dra
56862	4492	GT $\mu$ s	58905	4605	$\kappa$ Cha	60353	4708	17 Vir	61496	4797	TU Crv
56922	4494	o Hya	58948	4608	9 Vir	60425	4711	6 Crv	61585	4798	a $\mu$ s
56975	4495	92 Leo	58948	4608	o Vir	60449	4712	x <sup>1</sup> Cen	61585	4798	a $\mu$ s
56997	4496	61 UMa	59072	4616	$\eta$ Cru	60467	4715	AI CVn	61558	4799	25 Vir
56970	4497	V914 Cen	59173	4618	V863 Cen	60467	4715	4 CVn	61558	4799	f Vir
57029	4501	62 UMa	59184	4620	E Cen	60485	4716	5 CVn	61532	4800	T UMa
57111	4504	3 Dra	59196	4621	$\delta$ Cen	60514	4717	GN Com	61571	4801	25 Com
57175	4511	V810 Cen	59196	4621	$\delta$ Cen	60514	4717	13 Com	61622	4802	$\tau$ Cen
57283	4514	27 Crt	59199	4623	a Crv	60610	4724	x <sup>2</sup> Cen	61703	4806	KY $\mu$ s
57283	4514	$\zeta$ Crt	59199	4623	1 Crv	60584	4726	71 UMa	61658	4807	FW Vir
57328	4515	2 Vir	59229	4624	V788 Cen	60646	4728	6 CVn	61667	4808	R Vir
57328	4515	$\xi$ Vir	59232	4625	V817 Cen	60718	4730	$\alpha$ <sup>1</sup> Cru	61692	4811	9 CVn
57380	4517	v Vir	59285	4626	10 Vir	60718	4730	$\alpha$ <sup>2</sup> Cru	61740	4813	26 Vir
57380	4517	3 Vir	59309	4629	11 Vir	60718	4731	$\alpha$ <sup>1</sup> Cru	61740	4813	x Vir
57380	4517	v Vir	59316	4630	2 Crv	60718	4731	$\alpha$ <sup>2</sup> Cru	61796	4814	FH $\mu$ s
57399	4518	x UMa	59316	4630	$\epsilon$ Crv	60710	4732	G Cen	61724	4815	26 Com
57399	4518	63 UMa	59352	4632	3 Com	60697	4733	14 Com	61748	4816	AX CVn
57363	4520	$\lambda$ $\mu$ s	59394	4635	3 Crv	60742	4737	$\gamma$ Com	61789	4817	1 Cen
57512	4526	V918 Cen	59449	4638	$\rho$ Cen	60742	4737	15 Com	61932	4819	$\gamma$ Cen
57565	4527	93 Leo	59468	4640	4 Com	60746	4738	16 Com	61981	4820	R $\mu$ s
57565	4527	DQ Leo	59458	4641	68 UMa	60781	4739	BL Cru	61910	4821	VV Crv
57562	4528	4 Vir	59501	4643	5 Com	60823	4743	$\sigma$ Cen	61910	4822	VV Crv
57581	4530	$\mu$ $\mu$ s	59551	4645	S $\mu$ s	60795	4745	73 UMa	61966	4823	CH Cru
57581	4530	$\mu$ $\mu$ s	59504	4646	CO Cam	60813	4746	FT Vir	61966	4823	39 Cru
57613	4532	II Hya	59588	4647	V335 Hya	60855	4748	u Cen	61937	4824	GG Vir

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
61937	4824	27 Vir	63210	4913	H Cen	64792	5011	59 Vir	66607	5115	DY Cha
61941	4825	γ Vir	63210	4913	V945 Cen	64792	5011	e Vir	66458	5127	25 CVn
61941	4825	29 Vir	63121	4914	12 CVn	64852	5015	σ Vir	66657	5132	ε Cen
61941	4826	γ Vir	63121	4914	α <sup>1</sup> CVn	64852	5015	60 Vir	66657	5132	ε Cen
61941	4826	29 Vir	63125	4915	α <sup>2</sup> CVn	64844	5017	20 CVn	66666	5134	V744 Cen
61960	4828	ρ Vir	63125	4915	12 CVn	64844	5017	AO CVn	66645	5135	V765 Cen
61960	4828	30 Vir	63125	4915	α <sup>2</sup> CVn	64924	5019	61 Vir	66821	5141	Q Cen
61960	4828	ρ Vir	63076	4916	8 Dra	64962	5020	γ Hya	66634	5142	82 UMa
61968	4829	d <sup>1</sup> Vir	63355	4920	36 Com	64962	5020	46 Hya	66727	5144	1 Boo
61968	4829	31 Vir	63414	4921	k Vir	64906	5023	21 CVn	66825	5147	T Cen
62027	4830	BZ Cru	63414	4921	44 Vir	64906	5023	BK CVn	66763	5149	2 Boo
62012	4831	w Cen	63613	4923	δ μs	65112	5026	V964 Cen	66803	5150	m Vir
61936	4833	76 UMa	63462	4924	37 Com	65109	5028	ι Cen	66803	5150	82 Vir
62268	4842	ι Cru	63494	4925	46 Vir	65072	5032	23 CVn	66700	5153	CQ UMa
62322	4844	β μs	63432	4928	9 Dra	65271	5035	J Cen	66738	5154	83 UMa
62207	4845	10 CVn	63533	4929	38 Com	65241	5040	64 Vir	66738	5154	IQ UMa
62223	4846	Y CVn	63688	4930	LS μs	65387	5041	m Cen	67036	5158	V827 Cen
62267	4847	32 Vir	63503	4931	78 UMa	65468	5042	ι μs	66936	5159	84 Vir
62267	4847	FM Vir	63608	4932	ε Vir	65301	5044	63 Vir	67057	5165	83 Vir
62267	4847	d <sup>2</sup> Vir	63608	4932	47 Vir	65323	5047	65 Vir	67153	5168	1 Cen
62325	4849	33 Vir	63724	4933	ξ <sup>1</sup> Cen	65420	5050	66 Vir	67153	5168	i Cen
62356	4851	27 Com	63750	4937	48 Vir	65628	5051	ι μs	67139	5170	85 Vir
62434	4853	β Cru	63820	4938	V789 Cen	65376	5052	CL CVn	67261	5171	V766 Cen
62434	4853	β Cru	63945	4940	f Cen	65378	5054	79 UMa	67234	5172	M Cen
62376	4854	EP Vir	64004	4942	ξ <sup>2</sup> Cen	65378	5054	ζ UMa	67172	5173	86 Vir
62394	4855	34 Vir	63901	4943	14 CVn	65378	5055	79 UMa	67244	5174	z Cen
62443	4858	35 Vir	63948	4946	39 Com	65378	5055	ζ UMa	67288	5181	87 Vir
62478	4861	28 Com	63950	4949	40 Com	65474	5056	α Vir	67239	5182	3 Boo
62423	4863	7 Dra	63950	4949	FS Com	65474	5056	67 Vir	67275	5185	ι Boo
62541	4865	29 Com	64094	4952	θ μs	65474	5056	α Vir	67275	5185	4 Boo
62516	4866	11 CVn	64094	4952	θ μs	65477	5062	80 UMa	67231	5187	84 UMa
62576	4869	30 Com	64022	4954	41 Com	65581	5064	68 Vir	67231	5187	CR UMa
63031	4870	ι Oct	64078	4955	49 Vir	65581	5064	i Vir	67464	5190	v Cen
62683	4874	p Cen	64122	4957	g Vir	65755	5066	EZ μs	67464	5190	v Cen
62732	4876	DS Cru	64166	4958	45 Hya	65639	5068	69 Vir	67301	5191	η UMa
62757	4878	37 Vir	64166	4958	ψ Hya	65810	5071	K Cen	67301	5191	85 UMa
62763	4883	31 Com	64224	4961	50 Vir	65721	5072	70 Vir	67457	5192	2 Cen
62807	4884	32 Com	64238	4963	51 Vir	65835	5080	R Hya	67457	5192	V806 Cen
62867	4888	e Cen	64238	4963	θ Vir	65790	5081	71 Vir	67472	5193	μ Cen
62896	4889	n Cen	64320	4965	V824 Cen	66121	5082	S Cha	67472	5193	μ Cen
62931	4890	κ Cru	64217	4967	15 CVn	66753	5084	κ Oct	67494	5196	89 Vir
62875	4891	38 Vir	64241	4968	42 Com	65892	5088	72 Vir	67410	5199	R CVn
62886	4894	35 Com	64241	4968	α Com	65936	5089	d Cen	67459	5200	υ Boo
62986	4895	S Cru	64241	4969	42 Com	66015	5094	73 Vir	67459	5200	5 Boo
63007	4897	λ Cru	64241	4969	α Com	66015	5094	HX Vir	67480	5201	e Boo
63007	4897	λ Cru	64246	4971	17 CVn	66006	5095	1 Vir	67480	5201	6 Boo
63003	4898	μ <sup>1</sup> Cru	64425	4975	V831 Cen	66006	5095	74 Vir	67669	5210	V983 Cen
63005	4899	μ <sup>2</sup> Cru	64407	4981	53 Vir	66091	5099	75 Vir	67669	5210	3 Cen
63005	4899	μ <sup>2</sup> Cru	64394	4983	β Com	66098	5100	76 Vir	67669	5211	V983 Cen
62933	4900	41 Vir	64394	4983	43 Com	66098	5100	h Vir	67669	5211	3 Cen
62985	4902	ψ Vir	64520	4990	54 Vir	66100	5101	S Vir	67665	5219	AW CVn
62985	4902	40 Vir	64520	4990	LM Vir	66200	5105	78 Vir	67786	5221	h Cen
62985	4902	ψ Vir	64661	4993	η μs	66200	5105	o Vir	67786	5221	4 Cen
62956	4905	ε UMa	64661	4993	η μs	66200	5105	CW Vir	67819	5222	y Cen
62956	4905	ε UMa	64577	4995	55 Vir	66249	5107	ζ Vir	67861	5223	V767 Cen
62956	4905	77 UMa	64607	4998	LN Vir	66249	5107	79 Vir	67787	5225	7 Boo
63024	4909	TU CVn	64725	5001	57 Vir	66198	5109	81 UMa	67627	5226	i Dra
63090	4910	δ Vir	64692	5004	19 CVn	66257	5110	BH CVn	67627	5226	10 Dra
63090	4910	43 Vir	64769	5005	DK Vir	66320	5111	80 Vir	67627	5226	CU Dra
63159	4912	LN Hya	64803	5006	r Cen	66234	5112	24 CVn	68002	5231	ζ Cen

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
67929	5232	p Vir	69701	5338	99 Vir	71683	5459	$\alpha^1$ Cen	72487	5533	38 Boo
67929	5232	90 Vir	69701	5338	$\iota$ Vir	71681	5460	$\alpha^2$ Cen	72631	5535	11 Lib
67927	5235	$\eta$ Boo	70638	5339	$\delta$ Oct	71908	5463	$\alpha$ Cir	72524	5538	39 Boo
67927	5235	8 Boo	69673	5340	16 Boo	71908	5463	$\alpha$ Cir	72965	5539	$\zeta$ Cir
67848	5238	86 UMa	69673	5340	$\alpha$ Boo	71618	5468	33 Boo	73223	5540	R Aps
68092	5244	92 Vir	69713	5350	21 Boo	71860	5469	$\alpha$ Lup	72800	5543	V101 Cen
68103	5247	9 Boo	69713	5350	$\iota$ Boo	71860	5469	$\alpha$ Lup	72659	5544	$\xi$ Boo
68245	5248	$\varphi$ Cen	69713	5350	$\iota$ Boo	72370	5470	$\alpha$ Aps	72659	5544	37 Boo
68282	5249	$\nu^1$ Cen	69732	5351	19 Boo	71762	5475	29 Boo	72659	5544	$\xi$ Boo
68269	5250	47 Hya	69732	5351	$\lambda$ Boo	71762	5475	$\pi^2$ Boo	73771	5545	$\pi^2$ Oct
68276	5255	10 Boo	69829	5352	CY Boo	71762	5475	$\pi^1$ Boo	72929	5548	12 Lib
68390	5257	48 Hya	69996	5354	$\iota$ Lup	71762	5476	29 Boo	73129	5551	$\theta$ Cir
68523	5260	$\nu^2$ Cen	69929	5355	CS Vir	71762	5476	$\pi^2$ Boo	73129	5551	$\theta$ Cir
68815	5261	$\theta$ Aps	70069	5358	$\nu$ Cen	71762	5476	$\pi^1$ Boo	72848	5553	DE Boo
68815	5261	$\theta$ Aps	69974	5359	100 Vir	71795	5477	$\zeta$ Boo	72934	5554	$\xi^1$ Lib
68478	5263	11 Boo	69974	5359	$\lambda$ Vir	71795	5477	30 Boo	72934	5554	13 Lib
68520	5264	$\tau$ Vir	69879	5361	A Boo	71795	5478	$\zeta$ Boo	73095	5556	c Lup
68520	5264	93 Vir	69989	5365	18 Boo	71795	5478	30 Boo	74296	5557	$\omega$ Oct
68702	5267	$\beta$ Cen	70012	5366	$\nu$ Vir	71832	5480	31 Boo	72607	5563	$\beta$ UMi
68702	5267	$\beta$ Cen	70012	5366	102 Vir	71837	5481	32 Boo	72607	5563	7 UMi
68673	5269	V828 Cen	70090	5367	$\psi$ Cen	71974	5484	4 Lib	73133	5564	15 Lib
68842	5278	V992 Cen	70027	5370	20 Boo	72010	5485	$c^1$ Cen	73133	5564	$\xi^2$ Lib
68862	5285	x Cen	70270	5375	HX Lup	71957	5487	$\mu$ Vir	73165	5570	16 Lib
68862	5285	x Cen	70300	5378	V761 Cen	71957	5487	107 Vir	73273	5571	$\beta$ Lup
68895	5287	$\pi$ Hya	70300	5378	a Cen	72121	5488	BU Cir	73334	5576	$\kappa$ Cen
68895	5287	49 Hya	70306	5381	51 Hya	72104	5489	$c^2$ Cen	73284	5577	59 Hya
68933	5288	5 Cen	70306	5381	k Hya	71995	5490	W Boo	73249	5578	17 Lib
68933	5288	$\theta$ Cen	70336	5383	2 Lib	71995	5490	34 Boo	73310	5582	18 Lib
68940	5290	95 Vir	70574	5395	$\tau^1$ Lup	75736	5491	BP Oct	73473	5586	$\delta$ Lib
68756	5291	$\alpha$ Dra	70574	5395	$\tau^1$ Lup	71876	5492	DL Dra	73473	5586	19 Lib
68756	5291	11 Dra	70576	5396	$\tau^2$ Lup	72290	5495	b Lup	73473	5586	$\delta$ Lib
69122	5292	V883 Cen	70497	5404	$\theta$ Boo	72197	5497	54 Hya	73369	5588	40 Boo
69174	5296	V869 Cen	70497	5404	23 Boo	72197	5497	m Hya	73199	5589	RR UMi
69127	5298	96 Vir	70602	5405	22 Boo	72438	5500	CO Cir	73566	5591	60 Hya
69038	5299	BY Boo	70602	5405	f Boo	72154	5501	108 Vir	73776	5593	$\eta$ Cir
69068	5300	CF Boo	70680	5406	104 Vir	72125	5502	o Boo	73454	5597	BX Boo
69068	5300	13 Boo	70753	5407	52 Hya	72125	5502	35 Boo	73568	5600	$\omega$ Boo
69269	5301	ET Vir	70753	5407	1 Hya	72194	5503	5 Lib	73568	5600	41 Boo
69896	5303	$\eta$ Aps	70755	5409	105 Vir	72105	5505	36 Boo	73620	5601	110 Vir
69226	5304	12 Boo	70755	5409	$\varphi$ Vir	72105	5505	$\epsilon$ Boo	73555	5602	$\beta$ Boo
69226	5304	d Boo	70794	5410	106 Vir	72105	5506	36 Boo	73555	5602	42 Boo
68956	5305	3 UMi	70791	5420	g Boo	72105	5506	$\epsilon$ Boo	73714	5603	$\gamma$ Sco
69491	5311	V716 Cen	70791	5420	24 Boo	72220	5511	109 Vir	73714	5603	$\sigma$ Lib
69415	5312	50 Hya	71116	5421	V Cen	72208	5512	EK Hya	73714	5603	20 Lib
69389	5313	CU Vir	71121	5425	$\sigma$ Lup	72323	5514	55 Hya	73714	5603	$\sigma$ Lib
69427	5315	$\kappa$ Vir	71121	5425	$\sigma$ Lup	72357	5516	56 Hya	73764	5604	GM Lup
69427	5315	98 Vir	71053	5429	$\rho$ Boo	72378	5517	57 Hya	73807	5605	$\pi$ Lup
69618	5316	V795 Cen	71053	5429	25 Boo	72432	5519	V768 Cen	73807	5606	$\pi$ Lup
69112	5321	4 UMi	70692	5430	5 UMi	72489	5523	$\mu$ Lib	73745	5616	$\psi$ Boo
69536	5323	14 Boo	71115	5434	26 Boo	72489	5523	7 Lib	73745	5616	43 Boo
69754	5326	R Cen	71075	5435	$\gamma$ Boo	73540	5525	$\pi^1$ Oct	73695	5618	44 Boo
69481	5328	17 Boo	71075	5435	27 Boo	72571	5526	58 Hya	73695	5618	i Boo
69481	5328	$\kappa^1$ Boo	71075	5435	$\gamma$ Boo	72571	5526	E Hya	73695	5618	i Boo
69483	5329	$\kappa^2$ Boo	71040	5437	ER Dra	72773	5527	AX Cir	73937	5619	HZ Lup
69483	5329	17 Boo	71352	5440	$\eta$ Cen	72683	5528	o Lup	73945	5622	21 Lib
69483	5329	$\kappa^2$ Boo	71168	5441	CP Boo	72603	5530	$\alpha^1$ Lib	73945	5622	v Lib
69612	5330	15 Boo	71284	5447	$\sigma$ Boo	72603	5530	8 Lib	74066	5624	HR Lup
69614	5331	FS Vir	71284	5447	28 Boo	72622	5531	9 Lib	74117	5626	$\lambda$ Lup
70248	5336	$\epsilon$ Aps	71280	5452	CH Boo	72622	5531	$\alpha^2$ Lib	73841	5627	47 Boo
70248	5336	$\epsilon$ Aps	71536	5453	$\rho$ Lup	72487	5533	h Boo	73841	5627	k Boo

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
73996	5634	45 Boo	75312	5727	$\eta$ CrB	76337	5795	15 Ser	77336	5870	$\upsilon$ Ser
73996	5634	c Boo	75312	5727	2 CrB	76552	5797	$\omega$ Lup	77645	5873	V360 Nor
74087	5638	46 Boo	75312	5728	$\eta$ CrB	76427	5799	14 Ser	77450	5879	35 Ser
74087	5638	b Boo	75312	5728	2 CrB	76307	5800	$\mu$ CrB	77450	5879	$\kappa$ Ser
74582	5644	X TrA	76996	5729	$\rho$ Oct	76307	5800	6 CrB	77442	5880	R CrB
74376	5646	$\kappa^1$ Lup	76013	5730	$\kappa^1$ Aps	76425	5802	16 Ser	77516	5881	$\mu$ Ser
74380	5647	$\kappa^2$ Lup	76013	5730	$\kappa^1$ Aps	76424	5804	$\tau^5$ Ser	77516	5881	32 Ser
74395	5649	$\zeta$ Lup	75411	5733	$\mu^1$ Boo	76424	5804	18 Ser	77634	5883	x Lup
74449	5651	e Lup	75411	5733	51 Boo	76600	5812	$\tau$ Lib	77634	5883	5 Lup
74392	5652	$\tau^1$ Lib	75415	5734	$\mu^2$ Boo	76600	5812	40 Lib	77635	5885	1 Sco
74392	5652	24 Lib	75415	5734	51 Boo	76628	5814	41 Lib	77635	5885	b Sco
74386	5654	FL Ser	75097	5735	$\gamma$ UMi	76705	5820	3 Lup	77578	5888	$\omega$ Ser
74493	5656	$\tau^2$ Lib	75530	5739	9 Ser	76705	5820	$\psi^1$ Lup	77578	5888	34 Ser
74493	5656	25 Lib	75530	5739	$\tau^1$ Ser	76534	5823	54 Boo	77512	5889	10 CrB
74500	5657	23 Lib	75730	5743	32 Lib	76534	5823	$\phi$ Boo	77512	5889	$\delta$ CrB
74604	5660	1 Lup	75730	5743	$\zeta^1$ Lib	76742	5824	42 Lib	77512	5889	$\delta$ CrB
74604	5660	i Lup	75458	5744	$\iota$ Dra	76829	5825	g Lup	77982	5891	$\kappa$ TrA
74600	5662	26 Lib	75458	5744	12 Dra	76008	5826	15 UMi	77622	5892	$\epsilon$ Ser
74778	5664	$\delta$ Cir	75761	5746	10 Ser	76008	5826	$\theta$ UMi	77622	5892	37 Ser
74778	5664	$\delta$ Cir	75695	5747	3 CrB	76669	5833	$\zeta^1$ CrB	77615	5894	R Ser
74837	5666	e Cir	75695	5747	$\beta$ CrB	76669	5833	7 CrB	77660	5895	36 Ser
74824	5670	$\beta$ Cir	75695	5747	$\beta$ CrB	76669	5833	$\zeta^2$ CrB	77660	5895	b Ser
74946	5671	$\gamma$ TrA	75944	5750	$\zeta^3$ Lib	76669	5834	$\zeta^1$ CrB	77952	5897	$\beta$ TrA
74649	5675	3 Ser	75944	5750	34 Lib	76669	5834	7 CrB	77661	5899	$\rho$ Ser
74596	5676	x Boo	75973	5763	52 Boo	76669	5834	$\zeta^2$ CrB	77655	5901	11 CrB
74596	5676	48 Boo	75973	5763	$\nu^1$ Boo	76939	5837	h Lup	77655	5901	$\kappa$ CrB
74689	5679	4 Ser	76126	5764	35 Lib	76880	5838	43 Lib	77811	5902	45 Lib
74666	5681	49 Boo	76126	5764	$\zeta^4$ Lib	76880	5838	$\kappa$ Lib	77811	5902	$\lambda$ Lib
74666	5681	$\delta$ Boo	76126	5764	$\zeta$ Lib	76945	5839	4 Lup	77055	5903	16 UMi
74911	5683	$\mu$ Lup	76069	5770	12 Ser	76945	5839	$\psi^2$ Lup	77055	5903	$\zeta$ UMi
74785	5685	$\beta$ Lib	76069	5770	$\tau^2$ Ser	76810	5840	19 Ser	77840	5904	2 Sco
74785	5685	27 Lib	76440	5771	$\epsilon$ TrA	76810	5840	$\tau^6$ Ser	77859	5907	V104 Sco
74857	5686	2 Lup	76133	5772	11 Ser	76852	5842	$\iota$ Ser	77853	5908	46 Lib
74857	5686	f Lup	76041	5774	53 Boo	76852	5842	21 Ser	77853	5908	$\theta$ Lib
74950	5687	GG Lup	76041	5774	$\nu^2$ Boo	76866	5843	x Ser	77801	5911	39 Ser
74975	5694	MQ Ser	76259	5775	36 Lib	76866	5843	20 Ser	77909	5912	V927 Sco
74975	5694	5 Ser	76297	5776	$\gamma$ Lup	76866	5843	x Ser	77909	5912	3 Sco
75141	5695	$\delta$ Lup	76297	5776	$\gamma$ Lup	76878	5845	22 Ser	77760	5914	x Her
75206	5698	$\nu^1$ Lup	76219	5777	37 Lib	76878	5845	$\tau^7$ Ser	77760	5914	1 Her
75181	5699	$\nu^2$ Lup	76127	5778	$\theta$ CrB	77060	5848	44 Lib	77939	5915	47 Lib
75110	5701	28 Lib	76127	5778	4 CrB	77060	5848	$\eta$ Lib	77984	5917	4 Sco
75118	5703	o Lib	76127	5778	$\theta$ CrB	76952	5849	$\gamma$ CrB	77910	5919	FP Ser
75118	5703	29 Lib	76243	5780	IU Lib	76952	5849	8 CrB	77910	5919	40 Ser
75323	5704	$\gamma$ Cir	76371	5781	d Lup	76952	5849	$\gamma$ CrB	78105	5925	$\xi^1$ Lup
75323	5704	$\gamma$ Cir	76371	5781	KT Lup	77052	5853	23 Ser	78106	5926	$\xi^2$ Lup
75177	5705	$\varphi^1$ Lup	76750	5782	$\kappa^2$ Aps	77052	5853	$\psi$ Ser	78104	5928	5 Sco
75264	5708	$\epsilon$ Lup	76333	5787	38 Lib	77070	5854	a Ser	78104	5928	$\rho$ Sco
75049	5709	1 CrB	76333	5787	$\gamma$ Lib	77070	5854	24 Ser	77907	5932	2 Her
75049	5709	o CrB	76276	5788	$\delta$ Ser	77048	5855	9 CrB	78072	5933	41 Ser
75119	5710	6 Ser	76276	5788	$\delta$ Ser	77048	5855	$\pi$ CrB	78072	5933	$\gamma$ Ser
75304	5712	$\varphi^2$ Lup	76276	5788	13 Ser	76957	5857	BP Boo	78012	5936	12 CrB
74793	5714	11 UMi	76276	5789	$\delta$ Ser	77111	5858	26 Ser	78012	5936	$\lambda$ CrB
75230	5717	7 Ser	76276	5789	$\delta$ Ser	77111	5858	$\tau^8$ Ser	77986	5938	4 Her
75178	5718	50 Boo	76276	5789	13 Ser	77227	5863	25 Ser	77986	5938	V839 Her
75439	5719	$\upsilon$ Lup	76267	5793	a CrB	77227	5863	PT Ser	78476	5939	S TrA
75342	5721	8 Ser	76267	5793	a CrB	77233	5867	$\beta$ Ser	78132	5940	$\phi$ Ser
75379	5723	$\epsilon$ Lib	76267	5793	5 CrB	77233	5867	28 Ser	78207	5941	48 Lib
75379	5723	31 Lib	76470	5794	$\upsilon$ Lib	77257	5868	$\lambda$ Ser	78207	5941	FX Lib
75501	5724	k Lup	76470	5794	39 Lib	77257	5868	27 Ser	78246	5942	V913 Sco
75665	5725	LX TrA	76337	5795	$\tau^3$ Ser	77336	5870	31 Ser	78265	5944	$\pi$ Sco



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Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
78265	5944	$\pi$ Sco	79374	6027	$\nu$ Sco	80197	6107	20 CrB	81305	6164	V918 Sco
78265	5944	6 Sco	79374	6027	14 Sco	80197	6107	$\nu^1$ CrB	81266	6165	$\tau$ Sco
78159	5947	$\varepsilon$ CrB	79404	6028	13 Sco	80214	6108	21 CrB	81266	6165	23 Sco
78159	5947	13 CrB	79404	6028	$c^2$ Sco	80214	6108	$\nu^2$ CrB	81126	6168	35 Her
78384	5948	$\eta$ Lup	79399	6029	$c^1$ Sco	80645	6109	$\iota$ TrA	81126	6168	$\sigma$ Her
78401	5953	7 Sco	79399	6029	12 Sco	80351	6111	21 Her	81300	6171	12 Oph
78401	5953	$\delta$ Sco	79664	6030	$\delta$ TrA	80351	6111	$\omicron$ Her	81300	6171	V213 Oph
78400	5954	49 Lib	79375	6031	$\psi$ Sco	80473	6112	5 Oph	81710	6172	$\eta^1$ TrA
78322	5958	T CrB	79375	6031	15 Sco	80473	6112	$\rho$ Oph	81472	6174	V100 Sco
78436	5959	50 Lib	79387	6033	16 Sco	80473	6113	5 Oph	81377	6175	$\zeta$ Oph
78180	5960	CL Dra	79332	6035	$q$ Her	80473	6113	$\rho$ Oph	81377	6175	$\zeta$ Oph
78662	5961	$\iota^1$ Nor	79349	6039	LQ Her	80582	6115	$\varepsilon$ Nor	81377	6175	13 Oph
78639	5962	$\eta$ Nor	79349	6039	10 Her	79822	6116	$\eta$ UMi	81337	6176	V773 Her
78481	5966	5 Her	79530	6042	V105 Sco	79822	6116	21 UMi	81290	6184	16 Dra
78481	5966	$r$ Her	79653	6045	$\theta$ Nor	80463	6117	24 Her	81292	6185	17 Dra
78459	5968	15 CrB	79488	6047	9 Her	80463	6117	$\omega$ Her	81292	6186	17 Dra
78459	5968	$\rho$ CrB	79540	6048	$x$ Sco	80463	6117	$\omega$ Her	81634	6194	36 Her
78493	5971	$\iota$ CrB	79540	6048	17 Sco	80569	6118	$x$ Oph	81641	6195	37 Her
78493	5971	14 CrB	79754	6055	V368 Nor	80569	6118	$x$ Oph	81497	6200	42 Her
78554	5972	$\pi$ Ser	79593	6056	$\delta$ Oph	80569	6118	7 Oph	82129	6204	LP TrA
78554	5972	44 Ser	79593	6056	1 Oph	80488	6119	U Her	81734	6205	14 Oph
78685	5976	43 Ser	79790	6058	$\gamma^1$ Nor	80788	6120	V378 Nor	81693	6212	40 Her
78727	5977	$\xi$ Sco	79672	6060	18 Sco	80460	6123	25 Her	81693	6212	$\zeta$ Her
78727	5978	$\xi$ Sco	79932	6062	S Nor	80375	6127	DQ Dra	81729	6213	39 Her
78914	5980	$\delta$ Nor	79607	6063	TZ CrB	80620	6128	V210 Oph	82273	6217	$\alpha$ TrA
78592	5982	$\upsilon$ Her	79607	6063	$\sigma$ CrB	80628	6129	3 Oph	81833	6220	44 Her
78592	5982	6 Her	79607	6063	17 CrB	80628	6129	$\upsilon$ Oph	81833	6220	$\eta$ Her
78820	5984	8 Sco	79607	6064	TZ CrB	80782	6131	QU Nor	81660	6223	$g$ Dra
78820	5984	$\beta^1$ Sco	79607	6064	$\sigma$ CrB	80331	6132	$\eta$ Dra	81660	6223	18 Dra
78821	5985	8 Sco	79607	6064	17 CrB	80331	6132	14 Dra	82037	6224	16 Oph
78821	5985	$\beta^2$ Sco	79666	6065	16 Her	80763	6134	$\alpha$ Sco	82140	6225	25 Sco
78527	5986	13 Dra	79881	6070	$d$ Sco	80763	6134	21 Sco	82073	6228	$i$ Her
78527	5986	$\theta$ Dra	79963	6071	$\lambda$ Nor	80763	6134	$\alpha$ Sco	82073	6228	43 Her
78918	5987	$\theta$ Lup	80000	6072	$\gamma^2$ Nor	83255	6139	CW Oct	82363	6229	$\eta$ Ara
78877	5988	V929 Sco	79757	6074	$\upsilon$ CrB	80815	6141	$i$ Sco	82162	6232	19 Oph
78933	5993	9 Sco	79757	6074	18 CrB	80815	6141	22 Sco	82216	6234	1 Her
78933	5993	$\omega^1$ Sco	79882	6075	$\varepsilon$ Oph	80945	6142	V105 Sco	82216	6234	V776 Her
79153	5994	$\iota^2$ Nor	79882	6075	2 Oph	80704	6146	30 Her	82216	6234	45 Her
78990	5997	$\omega^2$ Sco	79280	6079	19 UMi	80704	6146	$g$ Her	82339	6240	V101 Oph
78990	5997	10 Sco	80079	6081	$\omicron$ Sco	80704	6146	$g$ Her	82396	6241	$\varepsilon$ Sco
79080	5999	V856 Sco	80079	6081	19 Sco	80894	6147	$\phi$ Oph	82396	6241	26 Sco
79005	6002	11 Sco	79420	6082	20 UMi	80894	6147	8 Oph	82172	6242	V636 Her
79007	6004	45 Ser	80112	6084	$\sigma$ Sco	80816	6148	27 Her	82369	6243	20 Oph
79043	6008	7 Her	80112	6084	20 Sco	80816	6148	$\beta$ Her	82493	6245	V973 Sco
79043	6008	$\kappa$ Her	80112	6084	$\sigma$ Sco	80883	6149	10 Oph	82514	6247	$\mu^1$ Sco
79045	6009	7 Her	79804	6086	AT Dra	80883	6149	$\lambda$ Oph	82514	6247	$\mu^1$ Sco
79072	6010	47 Ser	79992	6092	22 Her	81252	6151	$\theta$ TrA	82543	6249	V919 Sco
79072	6010	FS Ser	79992	6092	$\tau$ Her	80843	6152	$s$ Her	82402	6250	47 Her
79102	6013	8 Her	79992	6092	$\tau$ Her	80975	6153	$\omega$ Oph	82402	6250	$k$ Her
79119	6018	16 CrB	80179	6093	50 Ser	80975	6153	$\omega$ Oph	82545	6252	$\mu^2$ Sco
79119	6018	$\tau$ CrB	80179	6093	$\sigma$ Ser	80975	6153	9 Oph	82321	6254	52 Her
79497	6019	$\zeta$ Nor	80170	6095	20 Her	81122	6155	$\mu$ Nor	82321	6254	V637 Her
80047	6020	$\delta^1$ Aps	80170	6095	$\gamma$ Her	81122	6155	$\mu$ Nor	82480	6255	21 Oph
80047	6020	$\delta^1$ Aps	80170	6095	$\gamma$ Her	80809	6156	34 Her	82650	6257	V106 Sco
80057	6021	$\delta^2$ Aps	80686	6098	$\zeta$ TrA	81007	6158	28 Her	82422	6258	50 Her
79490	6022	V367 Nor	81065	6102	$\gamma$ Aps	81007	6158	$n$ Her	82669	6261	V900 Sco
79101	6023	$\phi$ Her	80181	6103	19 CrB	81008	6159	$h$ Her	82671	6262	$\zeta^1$ Sco
79101	6023	$\phi$ Her	80181	6103	$\xi$ CrB	81008	6159	29 Her	82671	6262	$\zeta^1$ Sco
79101	6023	11 Her	80343	6104	$\psi$ Oph	80650	6161	15 Dra	82526	6268	49 Her
79509	6024	$\kappa$ Nor	80343	6104	4 Oph	81852	6163	$\beta$ Aps	82526	6268	V823 Her

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
82504	6270	51 Her	84401	6397	V107 Sco	85340	6486	44 Oph	86414	6588	85 Her
82729	6271	ζ Sco	84405	6401	36 Oph	85423	6492	d Oph	86414	6588	ι Her
82868	6274	V846 Ara	84405	6402	36 Oph	85423	6492	45 Oph	86736	6595	58 Oph
83150	6276	MX TrA	84345	6406	64 Her	85302	6495	V640 Her	86201	6596	ω Dra
82587	6279	53 Her	84345	6406	α <sup>1</sup> Her	85355	6498	49 Oph	86201	6596	28 Dra
82730	6280	23 Oph	84345	6406	α Her	85355	6498	σ Oph	86667	6602	83 Her
82673	6281	ι Oph	84345	6406	α <sup>2</sup> Her	85727	6500	δ Ara	86742	6603	60 Oph
82673	6281	25 Oph	84345	6407	64 Her	85751	6505	V862 Ara	86742	6603	β Oph
82911	6283	V861 Sco	84345	6407	α <sup>1</sup> Her	85696	6508	34 Sco	86731	6608	84 Her
83081	6285	ζ Ara	84345	6407	α Her	85696	6508	υ Sco	86831	6609	61 Oph
82960	6288	27 Sco	84345	6407	α <sup>2</sup> Her	85379	6509	x Her	86809	6611	V624 Her
82798	6290	V644 Her	84379	6410	65 Her	85379	6509	77 Her	87073	6615	ι Sco
82925	6291	24 Oph	84379	6410	δ Her	85792	6510	α Ara	87072	6616	X Sgr
82780	6292	56 Her	84979	6411	ι Aps	85792	6510	α Ara	87072	6616	3 Sgr
82802	6293	54 Her	84479	6412	V236 Oph	85755	6519	c Oph	87163	6621	V389 Sgr
83153	6295	ε <sup>1</sup> Ara	84500	6414	U Oph	85755	6519	51 Oph	87314	6622	V539 Ara
83000	6299	27 Oph	84514	6415	41 Oph	85839	6522	V949 Sco	86974	6623	μ Her
83000	6299	κ Oph	84969	6417	ζ Aps	85693	6526	76 Her	86974	6623	86 Her
83000	6299	κ Oph	84380	6418	67 Her	85693	6526	λ Her	86946	6626	V826 Her
83323	6304	V828 Ara	84380	6418	π Her	85927	6527	λ Sco	87108	6629	62 Oph
82987	6305	57 Her	84650	6422	V107 Sco	85927	6527	λ Sco	87108	6629	γ Oph
83196	6310	26 Oph	84626	6424	o Oph	85927	6527	35 Sco	87294	6631	ι Sco
83431	6314	ε <sup>2</sup> Ara	84626	6424	39 Oph	85790	6533	78 Her	86614	6636	ψ <sup>1</sup> Dra
82860	6315	h Dra	84625	6425	39 Oph	86011	6535	V103 Sco	86614	6636	31 Dra
82860	6315	19 Dra	84625	6425	o Oph	85670	6536	β Dra	86620	6637	ψ <sup>1</sup> Dra
83262	6318	30 Oph	85760	6429	NO Aps	85670	6536	23 Dra	86620	6637	31 Dra
82898	6319	20 Dra	84573	6431	u Her	86092	6537	σ Ara	87194	6644	87 Her
83331	6321	29 Oph	84573	6431	u Her	85934	6543	V642 Her	87460	6647	V957 Sco
82080	6322	ε UMi	84573	6431	68 Her	86060	6545	V212 Oph	87212	6656	30 Dra
82080	6322	22 UMi	84671	6433	e Oph	86060	6545	52 Oph	87495	6661	Y Oph
82080	6322	ε UMi	84704	6434	V211 Oph	85998	6548	f Oph	87616	6662	V906 Sco
83207	6324	ε Her	84606	6436	e Her	85998	6548	53 Oph	87624	6663	V951 Sco
83207	6324	58 Her	84606	6436	69 Her	86305	6549	π Ara	87280	6664	88 Her
83308	6326	V451 Her	84893	6445	40 Oph	86228	6553	θ Sco	87280	6664	V744 Her
83491	6327	V923 Sco	84893	6445	ξ Oph	85819	6554	24 Dra	87280	6664	z Her
83313	6332	59 Her	84880	6446	53 Ser	85819	6554	v <sup>1</sup> Dra	87706	6672	63 Oph
83313	6332	d Her	84880	6446	v Ser	85829	6555	v <sup>2</sup> Dra	87655	6676	V238 Oph
83574	6334	k Sco	84496	6448	VW Dra	85829	6555	25 Dra	87563	6677	f Her
83574	6334	V107 Sco	85020	6450	V975 Sco	86032	6556	55 Oph	87563	6677	90 Her
83462	6346	V931 Her	85079	6451	ι Ara	86032	6556	α Oph	87812	6684	V205 Oph
83462	6346	61 Her	85079	6451	ι Ara	86263	6561	ξ Ser	87747	6685	89 Her
83706	6347	V107 Sco	84833	6452	V656 Her	86263	6561	55 Ser	87747	6685	V441 Her
83601	6349	V221 Oph	84970	6453	θ Oph	85805	6566	27 Dra	87585	6688	32 Dra
83613	6355	60 Her	84970	6453	θ Oph	85805	6566	f Dra	87585	6688	ξ Dra
83608	6369	21 Dra	84970	6453	42 Oph	86284	6567	μ Oph	87808	6695	θ Her
83608	6369	μ Dra	84887	6457	70 Her	86284	6567	57 Oph	87808	6695	91 Her
83608	6370	21 Dra	84862	6458	72 Her	86486	6569	λ Ara	88048	6698	64 Oph
83608	6370	μ Dra	84862	6458	w Her	86254	6571	79 Her	88048	6698	v Oph
84105	6374	V854 Ara	85084	6459	43 Oph	86036	6573	26 Dra	88116	6700	4 Sgr
83838	6377	c Her	85258	6461	β Ara	86182	6574	82 Her	87234	6701	35 Dra
84012	6378	η Oph	85267	6462	γ Ara	86182	6574	y Her	87850	6702	OP Her
84012	6378	35 Oph	84835	6464	74 Her	86628	6576	V626 Ara	87933	6703	ξ Her
84143	6380	η Sco	85312	6468	κ Ara	86670	6580	κ Sco	87933	6703	92 Her
84311	6384	V829 Ara	84949	6469	V819 Her	86670	6580	κ Sco	87933	6703	ξ Her
84054	6391	V620 Her	85157	6480	73 Her	86565	6581	o Ser	87833	6705	33 Dra
84054	6391	63 Her	85112	6484	ρ Her	86565	6581	56 Ser	87833	6705	γ Dra
84332	6392	V915 Sco	85112	6484	75 Her	86565	6581	o Ser	87998	6707	94 Her
84177	6393	37 Oph	85112	6485	ρ Her	86929	6582	η Pav	87998	6707	v Her
83895	6396	22 Dra	85112	6485	75 Her	86796	6585	μ Ara	87998	6707	v Her
83895	6396	ζ Dra	85340	6486	b Oph	86414	6588	ι Her	88148	6709	V212 Oph

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
88175	6710	ζ Ser	89341	6812	13 Sgr	90830	6934	δ <sup>1</sup> Tel	92175	7063	β Sct
88175	6710	57 Ser	89172	6815	104 Her	90642	6935	c Ser	92202	7066	R Sct
88149	6712	66 Oph	89172	6815	V669 Her	90642	6935	60 Ser	92382	7068	η <sup>2</sup> CrA
88149	6712	V204 Oph	89369	6816	14 Sgr	90853	6938	δ <sup>2</sup> Tel	92161	7069	111 Her
88128	6713	93 Her	89605	6819	QV Tel	90344	6945	42 Dra	92609	7074	λ Pav
88192	6714	67 Oph	89439	6822	15 Sgr	90836	6947	U Sgr	92609	7074	λ Pav
88258	6715	6 Sgr	89440	6823	16 Sgr	90982	6951	θ CrA	92390	7078	29 Sgr
88030	6718	V771 Her	89470	6825	V438 Sgr	90968	6952	κ <sup>2</sup> CrA	92133	7084	CX Dra
88172	6720	V974 Her	90133	6829	φ Oct	90969	6953	κ <sup>1</sup> CrA	92646	7087	κ Tel
92824	6721	x Oct	89642	6832	η Sgr	90844	6957	61 Ser	92480	7088	30 Sgr
88290	6723	68 Oph	89642	6832	η Sgr	90858	6958	MV Ser	92442	7089	S Sct
88380	6724	7 Sgr	89637	6833	RS Sgr	90913	6959	V450 Sct	92398	7100	v <sup>1</sup> Lyr
87728	6725	34 Dra	89527	6834	V239 Oph	91004	6961	24 Sgr	92398	7100	8 Lyr
87728	6725	ψ <sup>2</sup> Dra	89348	6850	36 Dra	91066	6965	25 Sgr	92524	7101	8 Aql
88267	6729	95 Her	90098	6855	ξ Pav	90971	6967	V239 Oph	92405	7102	9 Lyr
88267	6730	95 Her	89931	6859	19 Sgr	91132	6969	V419 Sgr	92405	7102	v <sup>2</sup> Lyr
88404	6733	τ Oph	89931	6859	δ Sgr	90970	6971	V532 Lyr	92405	7102	v Lyr
88404	6733	69 Oph	89773	6860	105 Her	91117	6973	α Sct	92649	7105	V440 Sgr
88404	6734	τ Oph	89980	6861	V402 Sgr	90905	6978	d Dra	92420	7106	β Lyr
88404	6734	69 Oph	89968	6863	Y Sgr	90905	6978	45 Dra	92420	7106	β Lyr
88469	6736	9 Sgr	89448	6865	37 Dra	91792	6982	ζ Pav	92420	7106	10 Lyr
88331	6738	V820 Her	89918	6866	74 Oph	91494	6991	V718 CrA	93015	7107	κ Pav
88331	6738	96 Her	89861	6868	106 Her	91322	6993	e Ser	93015	7107	κ Pav
88346	6741	97 Her	89962	6869	58 Ser	91262	7001	3 Lyr	92593	7109	V822 Her
88567	6742	γ <sup>1</sup> Sgr	89962	6869	η Ser	91262	7001	α Lyr	92614	7113	112 Her
88567	6742	W Sgr	90074	6870	V405 Sgr	91262	7001	a Lyr	92747	7114	33 Sgr
88714	6743	θ Ara	89826	6872	1 Lyr	91389	7002	X Oph	92761	7116	v <sup>1</sup> Sgr
88866	6745	π Pav	89826	6872	κ Lyr	91250	7003	V533 Lyr	92761	7116	32 Sgr
88635	6746	10 Sgr	89977	6873	NW Ser	91373	7009	XY Lyr	92845	7120	v <sup>2</sup> Sgr
88635	6746	γ <sup>2</sup> Sgr	89925	6876	108 Her	91689	7011	26 Sgr	92845	7120	35 Sgr
88635	6746	γ Sgr	89935	6877	107 Her	91726	7020	δ Sct	92855	7121	34 Sgr
88522	6747	V986 Oph	89935	6877	t Her	91726	7020	δ Sct	92855	7121	σ Sgr
88601	6752	V239 Oph	90185	6879	20 Sgr	91875	7021	λ CrA	92112	7124	50 Dra
88601	6752	70 Oph	90185	6879	ε Sgr	91781	7023	V387 Sgr	92512	7125	o Dra
88528	6754	V831 Her	90135	6884	ζ Sct	91845	7032	ε Sct	92512	7125	o Dra
89042	6761	ι Pav	90260	6888	18 Sgr	92294	7036	θ Pav	92512	7125	47 Dra
88657	6765	98 Her	90139	6895	109 Her	92041	7039	27 Sgr	93163	7127	ω Pav
88765	6770	71 Oph	90289	6896	21 Sgr	92041	7039	φ Sgr	92989	7129	V686 CrA
88771	6771	72 Oph	90422	6897	α Tel	91975	7040	4 Aql	92728	7131	δ <sup>1</sup> Lyr
88905	6773	V379 Sgr	90313	6902	V229 Oph	92079	7045	V440 Sgr	92728	7131	11 Lyr
88745	6775	b Her	90191	6903	μ Lyr	92111	7046	28 Sgr	92818	7133	113 Her
88745	6775	99 Her	90191	6903	2 Lyr	91755	7049	c Dra	93148	7134	λ Tel
88794	6779	o Her	90568	6905	ζ Tel	91755	7049	46 Dra	92791	7139	12 Lyr
88794	6779	o Her	90496	6913	22 Sgr	92226	7050	μ CrA	92791	7139	δ <sup>2</sup> Lyr
88794	6779	103 Her	90496	6913	λ Sgr	91919	7051	4 Lyr	92791	7139	δ <sup>2</sup> Lyr
88818	6781	100 Her	90797	6916	v Pav	91919	7051	ε <sup>1</sup> Lyr	92946	7141	θ <sup>1</sup> Ser
88817	6782	100 Her	90797	6916	v Pav	91919	7052	4 Lyr	92946	7141	63 Ser
89112	6783	ε Tel	90441	6918	d Ser	91919	7052	ε <sup>1</sup> Lyr	92951	7142	θ <sup>2</sup> Ser
88886	6787	102 Her	90441	6918	59 Ser	91926	7053	ε <sup>2</sup> Lyr	92951	7142	63 Ser
85822	6789	23 UMi	90441	6918	d Ser	91926	7053	5 Lyr	93057	7145	ξ <sup>1</sup> Sgr
85822	6789	δ UMi	89908	6920	43 Dra	91926	7054	ε <sup>2</sup> Lyr	93057	7145	36 Sgr
88899	6794	101 Her	89908	6920	φ Dra	91926	7054	5 Lyr	92934	7147	V828 Her
88964	6795	73 Oph	89908	6920	φ Dra	91971	7056	ζ <sup>1</sup> Lyr	93026	7149	η Sct
89178	6802	V404 Sgr	90156	6923	b Dra	91971	7056	6 Lyr	93085	7150	37 Sgr
89290	6804	V692 CrA	90156	6923	39 Dra	91973	7057	ζ <sup>2</sup> Lyr	93085	7150	ξ <sup>2</sup> Sgr
88127	6809	40 Dra	89937	6927	x Dra	91973	7057	7 Lyr	93174	7152	ε CrA
88136	6810	41 Dra	89937	6927	44 Dra	92036	7058	V535 Her	93174	7152	ε CrA
85699	6811	24 UMi	90610	6929	V403 Sgr	92117	7059	5 Aql	92862	7157	R Lyr
89341	6812	μ Sgr	90595	6930	γ Sct	92043	7061	110 Her	92862	7157	13 Lyr
89341	6812	μ Sgr	90651	6932	V432 Sct	92308	7062	η <sup>1</sup> CrA	93051	7158	64 Ser

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
93124	7165	FF Aql	94141	7264	$\pi$ Sgr	94648	7352	$\tau$ Dra	96302	7441	9 Cyg
93179	7167	V128 Aql	94141	7264	41 Sgr	94648	7352	60 Dra	96198	7442	V174 Cyg
93179	7167	10 Aql	94068	7266	19 Aql	95260	7358	3 Vul	96483	7446	$\kappa$ Aql
93203	7172	11 Aql	94724	7274	$\tau$ Pav	95260	7358	V377 Vul	96483	7446	39 Aql
93104	7174	V542 Lyr	94013	7275	V176 Cyg	95477	7362	$x^1$ Sgr	96468	7447	41 Aql
92997	7175	48 Dra	94385	7279	20 Aql	95477	7362	47 Sgr	96468	7447	$\iota$ Aql
93244	7176	13 Aql	94311	7283	V471 Lyr	95503	7363	49 Sgr	96387	7457	11 Cyg
93244	7176	$\epsilon$ Aql	94311	7283	19 Lyr	95503	7363	$x^3$ Sgr	96458	7458	U Vul
93194	7178	14 Lyr	94377	7285	V338 Sge	95398	7369	2 Sge	96556	7460	42 Aql
93194	7178	$\gamma$ Lyr	94477	7287	V128 Aql	95081	7371	58 Dra	96721	7461	QQ Tel
93177	7179	V543 Lyr	94477	7287	21 Aql	95081	7371	$\pi$ Dra	96100	7462	61 Dra
92782	7180	$\upsilon$ Dra	94140	7290	55 Dra	95372	7372	2 Cyg	96100	7462	$\sigma$ Dra
92782	7180	52 Dra	94643	7292	42 Sgr	95447	7373	b Aql	96516	7463	4 Sge
93270	7183	V387 Vul	94643	7292	$\psi$ Sgr	95447	7373	31 Aql	96516	7463	$\epsilon$ Sge
93210	7185	V545 Lyr	94302	7295	53 Dra	95564	7375	50 Sgr	96739	7464	V409 Sgr
93542	7188	$\zeta$ CrA	94730	7296	RY Sgr	95501	7377	30 Aql	96441	7469	13 Cyg
93279	7192	$\lambda$ Lyr	94481	7298	$\eta$ Lyr	95501	7377	$\delta$ Aql	96441	7469	$\theta$ Cyg
93279	7192	15 Lyr	94481	7298	20 Lyr	95498	7385	4 Vul	96729	7470	53 Sgr
93429	7193	i Aql	94620	7301	1 Sge	95585	7387	v Aql	96665	7474	$\sigma$ Aql
93429	7193	12 Aql	94727	7303	22 Aql	95585	7387	32 Aql	96665	7474	44 Aql
93506	7194	38 Sgr	94820	7304	43 Sgr	95560	7390	5 Vul	96665	7474	$\sigma$ Aql
93506	7194	$\zeta$ Sgr	94820	7304	d Sgr	95932	7393	$\mu$ Tel	96688	7475	V340 Sge
93552	7197	V701 CrA	94703	7306	1 Vul	84535	7394	$\lambda$ UMi	96808	7476	54 Sgr
93309	7201	V547 Lyr	94685	7308	V473 Lyr	84535	7394	$\lambda$ UMi	96808	7476	e <sup>1</sup> Sgr
93526	7209	14 Aql	94490	7309	54 Dra	95556	7395	4 Cyg	96683	7478	12 Cyg
93526	7209	g Aql	94376	7310	57 Dra	95556	7395	V174 Cyg	96683	7478	$\phi$ Cyg
93815	7213	$\rho$ Tel	94376	7310	$\delta$ Dra	95793	7400	c Aql	96757	7479	a Sge
93408	7215	16 Lyr	94083	7312	59 Dra	95793	7400	35 Aql	96757	7479	5 Sge
93683	7217	39 Sgr	94713	7314	21 Lyr	95820	7402	U Aql	96807	7480	45 Aql
93683	7217	o Sgr	94713	7314	$\theta$ Lyr	95673	7403	V558 Lyr	96693	7483	14 Cyg
93340	7218	49 Dra	94834	7315	$\omega^1$ Aql	95771	7405	a Vul	96620	7484	V114 Cyg
93666	7220	V Aql	94834	7315	25 Aql	95771	7405	6 Vul	96840	7486	QS Aql
93603	7222	LT Vul	94827	7318	ES Vul	95785	7406	8 Vul	96837	7488	$\beta$ Sge
93187	7224	EE Dra	94827	7318	2 Vul	95656	7408	$\iota^1$ Cyg	96837	7488	6 Sge
93717	7225	15 Aql	94885	7319	23 Aql	95656	7408	7 Cyg	96950	7489	e <sup>2</sup> Sgr
93717	7225	h Aql	94913	7321	24 Aql	95818	7409	7 Vul	96950	7489	55 Sgr
93825	7226	$\gamma$ CrA	94910	7326	U Sge	95937	7414	e Aql	96931	7493	46 Aql
93825	7227	$\gamma$ CrA	94779	7328	$\kappa$ Cyg	95937	7414	36 Aql	96957	7497	x Aql
104382	7228	$\sigma$ Oct	94779	7328	1 Cyg	95929	7415	V923 Aql	96957	7497	47 Aql
104382	7228	$\sigma$ Oct	95261	7329	$\eta$ Tel	96178	7416	PW Tel	96988	7501	V127 Cyg
93864	7234	40 Sgr	94982	7331	V120 Aql	95947	7417	6 Cyg	96895	7503	16 Cyg
93864	7234	$\tau$ Sgr	94982	7331	28 Aql	95947	7417	$\beta^1$ Cyg	97077	7506	10 Vul
93747	7235	17 Aql	95002	7332	$\omega^2$ Aql	95951	7418	6 Cyg	97091	7508	PS Vul
93747	7235	$\zeta$ Aql	95002	7332	29 Aql	95951	7418	$\beta^2$ Cyg	96919	7509	V135 Cyg
93805	7236	16 Aql	95066	7333	26 Aql	95853	7420	$\iota^2$ Cyg	97421	7510	v Tel
93805	7236	$\lambda$ Aql	95066	7333	f Aql	95853	7420	10 Cyg	97139	7511	48 Aql
93887	7241	V419 Sgr	95073	7336	27 Aql	95853	7420	$\iota$ Cyg	97139	7511	$\psi$ Aql
94005	7242	$\delta$ CrA	95073	7336	d Aql	96234	7422	V408 Sgr	97290	7515	f Sgr
93820	7243	R Aql	95241	7337	$\beta^1$ Sgr	96341	7424	$\iota$ Tel	97290	7515	56 Sgr
93867	7248	Y Aql	95159	7339	V419 Sgr	96052	7426	8 Cyg	97118	7517	15 Cyg
93867	7248	18 Aql	95168	7340	$\rho^1$ Sgr	96003	7428	V181 Cyg	97150	7518	SU Cyg
93996	7249	V402 Sgr	95168	7340	44 Sgr	96229	7429	$\mu$ Aql	97229	7519	49 Aql
93713	7251	51 Dra	95168	7340	$\rho^1$ Sgr	96229	7429	38 Aql	97229	7519	$\upsilon$ Aql
94114	7254	$\alpha$ CrA	95176	7342	46 Sgr	96327	7430	37 Aql	97142	7520	V209 Cyg
93808	7258	V550 Lyr	95176	7342	v Sgr	96406	7431	h <sup>1</sup> Sgr	97151	7523	V973 Cyg
94160	7259	$\beta$ CrA	95176	7342	$\upsilon$ Sgr	96406	7431	51 Sgr	97674	7524	NZ Pav
93917	7261	17 Lyr	95294	7343	$\beta^2$ Sgr	96275	7437	9 Vul	97278	7525	50 Aql
93903	7262	$\iota$ Lyr	95188	7344	45 Sgr	96440	7439	V433 Sgr	97278	7525	$\gamma$ Aql
93903	7262	$\iota$ Lyr	95188	7344	$\rho^2$ Sgr	96465	7440	52 Sgr	97165	7528	$\delta$ Cyg
93903	7262	18 Lyr	95347	7348	a Sgr	96465	7440	h <sup>2</sup> Sgr	97165	7528	18 Cyg

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
97295	7534	17 Cyg	98103	7610	φ Aql	99303	7708	b <sup>2</sup> Cyg	100469	7779	κ <sup>1</sup> Sgr
97365	7536	7 Sge	98103	7610	61 Aql	99303	7708	V162 Cyg	100250	7786	V158 Cyg
97365	7536	8 Sge	98624	7612	μ <sup>2</sup> Pav	99303	7708	28 Cyg	100591	7787	κ <sup>2</sup> Sgr
97365	7536	δ Sge	98068	7613	22 Cyg	99457	7709	BE Cap	100435	7789	25 Vul
97473	7544	π Aql	98258	7614	g Sgr	99473	7710	θ Aql	100751	7790	α Pav
97473	7544	52 Aql	98258	7614	61 Sgr	99473	7710	65 Aql	100221	7792	DE Dra
97496	7546	8 Sge	98110	7615	21 Cyg	99404	7711	18 Vul	100221	7792	71 Dra
97496	7546	ζ Sge	98110	7615	η Cyg	99529	7712	ξ <sup>1</sup> Cap	100453	7796	37 Cyg
97485	7551	V176 Cyg	98353	7618	60 Sgr	99529	7712	1 Cap	100453	7796	γ Cyg
97749	7552	V396 Sgr	98055	7619	24 Cyg	99572	7715	ξ Cap	100261	7804	AC Dra
97650	7553	51 Aql	98055	7619	ψ Cyg	99572	7715	ξ <sup>2</sup> Cap	100587	7806	39 Cyg
97607	7554	V133 Aql	98234	7622	11 Sge	99572	7715	2 Cap	100574	7807	V211 Cyg
97572	7556	V379 Vul	98412	7623	θ <sup>1</sup> Sgr	99518	7718	19 Vul	100881	7814	10 Cap
97649	7557	53 Aql	98421	7624	θ <sup>2</sup> Sgr	99531	7719	20 Vul	100881	7814	π Cap
97649	7557	α Aql	98608	7625	ν Pav	99631	7720	66 Aql	100977	7821	68 Aql
97675	7560	o Aql	98337	7635	12 Sge	99742	7724	67 Aql	101027	7822	11 Cap
97675	7560	54 Aql	98337	7635	γ Sge	99742	7724	ρ Aql	101027	7822	ρ Cap
97783	7561	57 Sgr	98375	7641	14 Vul	99500	7727	68 Dra	100907	7826	40 Cyg
97326	7563	CN Dra	98438	7645	13 Sge	99920	7728	V443 Sgr	100859	7828	43 Cyg
97629	7564	x Cyg	98438	7645	VZ Sge	99639	7730	30 Cyg	100859	7828	V212 Cyg
97629	7564	x Cyg	98425	7647	V174 Cyg	99738	7731	21 Vul	101120	7829	o Cap
97679	7565	V395 Vul	98425	7647	25 Cyg	99738	7731	v Vul	101120	7829	12 Cap
97679	7565	12 Vul	98633	7649	63 Sgr	99675	7735	31 Cyg	101123	7830	12 Cap
97630	7566	19 Cyg	98688	7650	V387 Sgr	99675	7735	o <sup>1</sup> Cyg	101123	7830	o Cap
97630	7566	V150 Cyg	98688	7650	c Sgr	99675	7735	V695 Cyg	101101	7831	69 Aql
97634	7567	V380 Cyg	98688	7650	62 Sgr	99770	7736	V164 Cyg	101076	7834	41 Cyg
97651	7568	V209 Cyg	98379	7651	V210 Cyg	99770	7736	b <sup>3</sup> Cyg	101067	7835	42 Cyg
97804	7570	η Aql	98543	7653	15 Vul	99770	7736	29 Cyg	101160	7836	1 δ
97804	7570	55 Aql	98543	7653	NT Vul	99918	7738	3 Cap	101138	7844	V201 Cyg
97804	7570	η Aql	98636	7657	16 Vul	99824	7739	QR Vul	101138	7844	ω <sup>1</sup> Cyg
97849	7571	V505 Sgr	98571	7660	26 Cyg	99655	7740	33 Cyg	101138	7844	45 Cyg
97787	7572	V146 Aql	98571	7660	e Cyg	99853	7741	22 Vul	101477	7846	v Mic
97796	7574	9 Sge	99240	7665	δ Pav	99853	7741	QS Vul	101214	7847	44 Cyg
97796	7574	QZ Sge	98844	7667	62 Aql	99874	7744	23 Vul	101612	7848	φ <sup>1</sup> Pav
97871	7575	V129 Aql	98823	7669	63 Aql	99913	7746	18 Sge	101093	7850	2 Cep
97635	7576	20 Cyg	98823	7669	τ Aql	100027	7747	5 Cap	101093	7850	θ Cep
97635	7576	d Cyg	98910	7671	V140 Aql	100027	7747	α <sup>1</sup> Cap	101243	7851	ω <sup>2</sup> Cyg
97944	7578	V420 Sgr	98819	7672	15 Sge	100062	7748	4 Cap	101243	7851	46 Cyg
98032	7581	ι Sgr	99120	7673	ξ Tel	99255	7750	1 Cep	101421	7852	2 δ
97433	7582	63 Dra	98953	7675	65 Sgr	99255	7750	κ Cep	101421	7852	ε δ
97433	7582	ε Dra	98583	7676	e Dra	99848	7751	V148 Cyg	101483	7858	3 δ
97928	7584	56 Aql	98583	7676	64 Dra	99848	7751	o <sup>2</sup> Cyg	101483	7858	η δ
98495	7590	ε Pav	98863	7678	V176 Cyg	99848	7751	32 Cyg	101773	7859	ρ Pav
97886	7592	13 Vul	98920	7679	η Sge	99951	7753	24 Vul	101773	7859	ρ Pav
97966	7593	57 Aql	98920	7679	16 Sge	100064	7754	6 Cap	102162	7863	μ <sup>1</sup> Oct
97967	7594	57 Aql	98954	7680	V147 Aql	100064	7754	α <sup>2</sup> Cap	102125	7864	μ <sup>2</sup> Oct
97938	7595	ξ Aql	98658	7682	65 Dra	100195	7761	7 Cap	101474	7866	V212 Cyg
97938	7595	59 Aql	98702	7685	ρ Dra	100195	7761	σ Cap	101474	7866	47 Cyg
97980	7596	58 Aql	98702	7685	67 Dra	100044	7763	P Cyg	101772	7869	α Ind
98066	7597	ω Sgr	98401	7686	69 Dra	100044	7763	34 Cyg	101475	7870	V201 Cyg
98066	7597	58 Sgr	99080	7688	17 Vul	100044	7763	P Cyg	101589	7871	ζ δ
97845	7600	V819 Cyg	99031	7689	b <sup>1</sup> Cyg	100108	7769	36 Cyg	101589	7871	4 δ
98036	7602	60 Aql	99031	7689	V200 Cyg	100122	7770	35 Cyg	101692	7873	70 Aql
98036	7602	β Aql	99031	7689	27 Cyg	100310	7773	v Cap	101641	7874	26 Vul
98478	7603	μ <sup>1</sup> Pav	99171	7690	64 Aql	100310	7773	8 Cap	101983	7875	φ <sup>2</sup> Pav
98162	7604	59 Sgr	99221	7694	AV Cap	100325	7775	β <sup>2</sup> Cap	101260	7879	AF Dra
98162	7604	b Sgr	99176	7696	V344 Sge	100345	7776	9 Cap	101260	7879	73 Dra
97870	7608	23 Cyg	98962	7701	66 Dra	100345	7776	β <sup>1</sup> Cap	101716	7880	27 Vul
98085	7609	S Sge	99352	7705	17 Sge	100345	7776	β Cap	102157	7881	υ Pav
98085	7609	10 Sge	99352	7705	θ Sge	100142	7777	V177 Cyg	101769	7882	β δ

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
101769	7882	6 δ	102790	7952	ζ Ind	104019	8060	22 Cap	105269	8157	V133 Cyg
101800	7883	1 δ	102633	7953	13 δ	103828	8062	V198 Cyg	105412	8160	16 Aqr
101800	7883	5 δ	102571	7956	T Cyg	104031	8066	3 Equ	105199	8162	α Cep
101847	7884	1 Aql	102422	7957	η Cep	104177	8069	η Mic	105199	8162	5 Cep
101847	7884	71 Aql	102422	7957	3 Cep	104148	8070	δ Mic	105413	8163	9 Equ
101765	7885	48 Cyg	102589	7963	54 Cyg	104139	8075	23 Cap	105259	8164	V381 Cep
101810	7886	EU δ	102589	7963	λ Cyg	104139	8075	θ Cap	105515	8167	ι Cap
101923	7889	τ Cap	102589	7963	α Cyg	104101	8077	4 Equ	105515	8167	ι Cap
101923	7889	τ <sup>2</sup> Cap	102831	7965	α Mic	104060	8079	ξ Cyg	105515	8167	32 Cap
101923	7889	14 Cap	102950	7968	ι Ind	104060	8079	62 Cyg	105268	8171	V382 Cep
101867	7891	29 Vul	102805	7973	15 δ	104234	8080	24 Cap	105268	8171	6 Cep
101882	7892	8 δ	102819	7974	14 δ	104185	8084	DT Cyg	105502	8173	1 Peg
101882	7892	θ δ	102724	7977	V166 Cyg	104214	8085	61 Cyg	105574	8175	17 Aqr
101868	7894	28 Vul	102724	7977	55 Cyg	104214	8085	V180 Cyg	105570	8178	β Equ
101916	7896	κ δ	102989	7979	β Mic	104217	8086	61 Cyg	105570	8178	10 Equ
101916	7896	7 δ	102978	7980	18 Cap	104365	8087	x Cap	105696	8180	θ <sup>2</sup> Mic
101936	7897	1 Aqr	102978	7980	ω Cap	104365	8087	25 Cap	105858	8181	γ Pav
101984	7900	15 Cap	102945	7982	4 Aqr	104194	8089	f <sup>2</sup> Cyg	105665	8183	33 Cap
101984	7900	v Cap	102827	7983	V213 Cyg	104194	8089	63 Cyg	105668	8187	18 Aqr
100965	7901	75 Dra	102843	7984	56 Cyg	104452	8091	27 Cap	105841	8188	γ Ind
101958	7906	α δ	103005	7985	5 Aqr	104755	8092	o Pav	105729	8192	20 Aqr
101958	7906	9 δ	103227	7986	β Ind	104459	8093	v Aqr	105761	8195	19 Aqr
101082	7908	74 Dra	102949	7988	T Vul	104459	8093	13 Aqr	106044	8196	SX Pav
101949	7911	V213 Cyg	103045	7990	6 Aqr	104371	8094	V389 Cyg	105767	8199	21 Aqr
102395	7913	β Pav	103045	7990	μ Aqr	104521	8097	γ Equ	105881	8204	34 Cap
102080	7918	10 δ	103004	7995	31 Vul	104521	8097	γ Equ	105881	8204	ζ Cap
102333	7920	η Ind	103168	7997	BY Mic	104521	8097	5 Equ	105733	8206	V193 Cyg
102066	7921	49 Cyg	103226	8000	19 Cap	104538	8098	6 Equ	105928	8207	35 Cap
102158	7923	LU δ	103089	8001	57 Cyg	104634	8102	EW Aqr	105811	8209	V215 Cyg
102098	7924	50 Cyg	102208	8002	76 Dra	104483	8103	V214 Cyg	105811	8209	69 Cyg
102098	7924	α Cyg	103261	8006	EM Aqr	104451	8113	T Cep	105860	8210	IK Peg
102098	7924	a Cyg	103191	8007	BW Vul	104732	8115	ζ Cyg	106039	8213	b Cap
102195	7927	V568 Cyg	103200	8008	32 Vul	104732	8115	64 Cyg	106039	8213	36 Cap
102281	7928	δ δ	103294	8011	17 δ	104858	8123	δ Equ	106067	8214	5 PsA
102281	7928	11 δ	103298	8012	16 δ	104858	8123	7 Equ	105942	8215	70 Cyg
102281	7928	δ δ	103401	8015	7 Aqr	104963	8127	φ Cap	105966	8217	35 Vul
102177	7929	51 Cyg	103312	8020	V214 Cyg	104963	8127	28 Cap	106062	8223	NV Peg
102276	7932	X Cyg	104043	8021	α Oct	104974	8128	29 Cap	105949	8224	V426 Cep
102773	7934	σ Pav	104043	8021	α Oct	104887	8130	65 Cyg	106140	8225	2 Peg
102485	7936	16 Cap	103545	8024	DV Aqr	104887	8130	τ Cyg	105972	8227	7 Cep
102485	7936	ψ Cap	103413	8028	v Cyg	104887	8130	τ Cyg	106093	8228	g Cyg
102487	7937	17 Cap	103413	8028	58 Cyg	104987	8131	α Equ	106093	8228	71 Cyg
102388	7939	30 Vul	103527	8030	18 δ	104987	8131	8 Equ	106327	8229	ξ Gru
102258	7940	V379 Cep	103511	8032	33 Vul	105140	8135	ε Mic	106340	8230	6 PsA
102440	7941	U δ	103616	8033	AO Cap	105143	8137	30 Cap	106278	8232	22 Aqr
102453	7942	52 Cyg	103616	8033	20 Cap	105168	8139	31 Cap	106278	8232	β Aqr
102693	7943	ι Mic	103569	8034	ε Equ	105319	8140	θ Ind	106032	8238	8 Cep
102358	7944	V414 Cep	103569	8034	1 Equ	105164	8141	15 Aqr	106032	8238	β Cep
102253	7945	4 Cep	103738	8039	γ Mic	105102	8143	67 Cyg	106032	8238	β Cep
102531	7947	γ <sup>1</sup> δ	103682	8041	11 Aqr	105102	8143	σ Cyg	106559	8245	37 Cap
102531	7947	12 δ	103632	8047	f <sup>1</sup> Cyg	105334	8145	T Ind	106481	8252	ρ Cyg
102532	7948	12 δ	103632	8047	V832 Cyg	105138	8146	u Cyg	106481	8252	73 Cyg
102532	7948	γ <sup>2</sup> δ	103632	8047	59 Cyg	105138	8146	66 Cyg	106654	8253	8 PsA
102488	7949	53 Cyg	103882	8048	ζ Mic	105138	8146	v Cyg	107089	8254	v Oct
102488	7949	ε Cyg	103732	8053	V193 Cyg	105382	8151	θ <sup>1</sup> Mic	106551	8255	72 Cyg
102618	7950	2 Aqr	103732	8053	60 Cyg	105382	8151	θ <sup>1</sup> Mic	106703	8256	7 PsA
102618	7950	ε Aqr	104085	8055	μ Ind	105091	8153	V421 Cep	106723	8260	39 Cap
102624	7951	3 Aqr	103981	8058	12 Aqr	105186	8154	68 Cyg	106723	8260	ε Cap
102624	7951	k Aqr	103981	8059	12 Aqr	105186	8154	V180 Cyg	106723	8260	ε Cap
102624	7951	EN Aqr	104019	8060	η Cap	105678	8156	Y Pav	106642	8262	W Cyg

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
106786	8264	ξ Aqr	107608	8326	10 PsA	108917	8417	ξ Cep	110273	8512	ρ Aqr
106786	8264	23 Aqr	107608	8326	θ PsA	109139	8418	33 Aqr	110298	8513	30 Peg
106783	8265	3 Peg	107575	8328	11 Peg	109139	8418	ι Aqr	110618	8515	v Ind
106711	8266	74 Cyg	107835	8333	o Ind	109056	8419	23 Peg	110391	8516	47 Aqr
106787	8267	5 Peg	107418	8334	v Cep	109033	8421	HT Lac	110346	8517	PT Peg
106856	8270	4 Peg	107418	8334	10 Cep	109268	8425	α Gru	110395	8518	48 Aqr
106752	8272	CP Cyg	107418	8334	v Cep	109005	8426	20 Cep	110395	8518	γ Aqr
106897	8276	NZ Peg	107533	8335	81 Cyg	109082	8427	V365 Lac	110386	8520	31 Peg
106944	8277	d Aqr	107533	8335	π <sup>2</sup> Cyg	109017	8428	19 Cep	110386	8520	IN Peg
106944	8277	25 Aqr	107586	8339	12 Cep	109176	8430	24 Peg	110478	8521	π <sup>1</sup> Gru
106985	8278	40 Cap	107763	8343	14 Peg	109176	8430	ι Peg	110478	8521	π <sup>1</sup> Gru
106985	8278	γ Cap	107788	8344	13 Peg	109285	8431	μ PsA	110371	8522	32 Peg
106801	8279	V337 Cep	107856	8349	V161 Cyg	109285	8431	14 PsA	110351	8523	2 Lac
106801	8279	9 Cep	107956	8350	HO Peg	109289	8433	υ PsA	110506	8524	π <sup>2</sup> Gru
107843	8280	λ Oct	108036	8351	51 Cap	109124	8434	V444 Cep	110408	8528	V405 Lac
107095	8283	42 Cap	108036	8351	μ Cap	109212	8436	OY Peg	110529	8529	49 Aqr
106999	8284	75 Cyg	108085	8353	γ Gru	109240	8438	25 Peg	110548	8532	33 Peg
107128	8285	41 Cap	107975	8354	15 Peg	109332	8439	35 Aqr	110578	8533	51 Aqr
107144	8287	26 Aqr	108022	8356	OQ Peg	109205	8443	V399 Lac	110602	8534	50 Aqr
107188	8288	43 Cap	108022	8356	16 Peg	109422	8447	τ PsA	110538	8538	3 Lac
107188	8288	κ Cap	108281	8362	π Ind	109422	8447	15 PsA	110538	8538	β Lac
107151	8289	7 Peg	108347	8367	BZ Gru	109303	8448	AR Lac	110672	8539	π Aqr
107097	8291	76 Cyg	108431	8368	δ Ind	109352	8449	π <sup>1</sup> Peg	110672	8539	52 Aqr
112355	8294	CG Oct	108478	8369	κ <sup>1</sup> Ind	109352	8449	27 Peg	110672	8539	π Aqr
107232	8295	44 Cap	108478	8369	BG Ind	109427	8450	26 Peg	110838	8540	δ Tuc
107129	8297	V460 Cyg	108165	8371	13 Cep	109427	8450	θ Peg	110609	8541	4 Lac
107140	8298	V133 Cyg	108339	8373	17 Peg	109472	8452	38 Aqr	110778	8544	53 Aqr
107162	8300	77 Cyg	108348	8377	V217 Cyg	109472	8452	e Aqr	110778	8545	53 Aqr
107136	8301	π <sup>1</sup> Cyg	108494	8378	BW Cap	109410	8454	π Peg	110785	8548	34 Peg
107136	8301	80 Cyg	108317	8383	VV Cep	109410	8454	29 Peg	110882	8551	35 Peg
107302	8302	45 Cap	108612	8385	18 Peg	109410	8454	π <sup>2</sup> Peg	110936	8552	v Gru
107380	8305	9 PsA	108661	8386	η PsA	109458	8459	28 Peg	110997	8556	δ <sup>1</sup> Gru
107380	8305	ι PsA	108661	8386	12 PsA	109624	8462	39 Aqr	110960	8558	ζ <sup>1</sup> Aqr
107253	8307	79 Cyg	108870	8387	ε Ind	109492	8465	ζ Cep	110960	8558	55 Aqr
107315	8308	ε Peg	108691	8390	28 Aqr	109492	8465	ζ Cep	110960	8558	ζ <sup>2</sup> Aqr
107315	8308	8 Peg	108693	8392	20 Peg	109492	8465	21 Cep	110960	8559	ζ <sup>1</sup> Aqr
107315	8308	ε Peg	108699	8393	19 Peg	109400	8468	24 Cep	110960	8559	55 Aqr
107310	8309	78 Cyg	108797	8396	DX Aqr	109556	8469	λ Cep	110960	8559	ζ <sup>2</sup> Aqr
107310	8309	μ <sup>2</sup> Cyg	108797	8396	29 Aqr	109556	8469	22 Cep	111043	8560	δ <sup>2</sup> Gru
107310	8309	μ <sup>1</sup> Cyg	108535	8400	16 Cep	110078	8471	ψ Oct	111043	8560	δ <sup>2</sup> Gru
107310	8310	78 Cyg	108868	8401	30 Aqr	109789	8478	λ PsA	110817	8561	26 Cep
107310	8310	μ <sup>2</sup> Cyg	108874	8402	o Aqr	109789	8478	16 PsA	110986	8562	36 Peg
107310	8310	μ <sup>1</sup> Cyg	108874	8402	31 Aqr	109786	8480	41 Aqr	111062	8566	37 Peg
107382	8311	c Cap	108874	8402	o Aqr	110256	8481	BO Oct	111086	8567	56 Aqr
107382	8311	46 Cap	108875	8404	21 Peg	110256	8481	ε Oct	111138	8570	ζ PsA
107348	8313	9 Peg	108952	8405	13 PsA	109908	8486	μ <sup>1</sup> Gru	110991	8571	δ Cep
107350	8314	HN Peg	108772	8406	14 Cep	109973	8488	μ <sup>2</sup> Gru	110991	8571	δ Cep
107354	8315	10 Peg	108772	8406	LZ Cep	109857	8494	23 Cep	110991	8571	27 Cep
107354	8315	κ Peg	108845	8407	V194 Cyg	109857	8494	ε Cep	111022	8572	V412 Lac
107259	8316	μ Cep	108975	8408	UU PsA	109857	8494	ε Cep	111022	8572	5 Lac
107259	8316	μ Cep	109081	8409	κ <sup>2</sup> Ind	110000	8496	42 Aqr	111123	8573	57 Aqr
107119	8317	11 Cep	108991	8410	32 Aqr	109937	8498	1 Lac	111123	8573	σ Aqr
107487	8318	47 Cap	109111	8411	λ Gru	110003	8499	43 Aqr	111068	8574	38 Peg
107487	8318	AG Cap	109068	8413	v Peg	110003	8499	θ Aqr	111072	8575	V350 Lac
107517	8319	48 Cap	109068	8413	22 Peg	110130	8502	α Tuc	111188	8576	β PsA
107517	8319	λ Cap	109074	8414	α Aqr	110023	8504	44 Aqr	111188	8576	17 PsA
107472	8321	12 Peg	109074	8414	34 Aqr	111196	8505	υ Oct	110787	8578	28 Cep
107556	8322	49 Cap	108924	8416	MO Cep	110179	8508	45 Aqr	110787	8578	ρ <sup>1</sup> Cep
107556	8322	δ Cap	108924	8416	18 Cep	110103	8511	25 Cep	111104	8579	6 Lac
107556	8322	δ Cap	108917	8417	17 Cep	110273	8512	46 Aqr	111310	8582	v Tuc

## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
111310	8582	v Tuc	112615	8676	70 Aqr	113797	8770	V638 Cas	115102	8863	γ Scl
111200	8583	58 Aqr	112716	8679	τ Aqr	113889	8773	4 Psc	115065	8864	9 And
111191	8584	GX Peg	112716	8679	71 Aqr	113889	8773	β Psc	115065	8864	AN And
111169	8585	7 Lac	112716	8679	τ <sup>2</sup> Aqr	113957	8774	κ Gru	115115	8865	ψ <sup>3</sup> Aqr
111169	8585	α Lac	112748	8684	μ Peg	113881	8775	53 Peg	115115	8865	95 Aqr
111278	8586	39 Peg	112748	8684	48 Peg	113881	8775	β Peg	115126	8866	94 Aqr
111394	8590	60 Aqr	112778	8690	V360 Lac	113881	8775	β Peg	115142	8868	96 Aqr
111056	8591	ρ Cep	112778	8690	14 Lac	113853	8777	V387 Cep	115088	8872	34 Cep
111056	8591	29 Cep	112862	8693	21 PsA	113919	8780	3 And	115088	8872	o Cep
111449	8592	59 Aqr	112724	8694	32 Cep	113963	8781	54 Peg	115152	8874	11 And
111449	8592	υ Aqr	112724	8694	ι Cep	113963	8781	α Peg	115191	8876	10 And
111497	8597	62 Aqr	112948	8695	22 PsA	113996	8782	83 Aqr	115227	8878	7 Psc
111497	8597	η Aqr	112948	8695	γ PsA	113996	8782	h Aqr	115250	8880	τ Peg
111594	8600	σ <sup>1</sup> Gru	112935	8697	49 Peg	114131	8787	θ Gru	115250	8880	ι Peg
111643	8602	σ <sup>2</sup> Gru	112935	8697	σ Peg	114119	8789	86 Aqr	115250	8880	62 Peg
111546	8603	8 Lac	112961	8698	λ Aqr	114119	8789	c <sup>1</sup> Aqr	115271	8882	63 Peg
111710	8610	63 Aqr	112961	8698	73 Aqr	114132	8790	υ Gru	115280	8885	12 And
111710	8610	κ Aqr	112961	8698	λ Aqr	114144	8795	55 Peg	115355	8887	64 Peg
111833	8611	CC Gru	112917	8699	15 Lac	114155	8796	56 Peg	115433	8889	DR Tuc
111674	8613	9 Lac	113044	8700	τ <sup>1</sup> Gru	114104	8797	1 Cas	115404	8890	97 Aqr
111532	8615	31 Cep	113137	8701	ρ Ind	114187	8798	V343 Peg	115407	8891	65 Peg
111809	8616	VZ PsA	112997	8703	IM Peg	114189	8799	V342 Peg	115438	8892	b <sup>1</sup> Aqr
111810	8618	40 Peg	113031	8704	74 Aqr	114200	8804	4 And	115438	8892	98 Aqr
111795	8621	V416 Lac	113031	8704	HI Aqr	114210	8805	5 And	115444	8893	66 Peg
111841	8622	10 Lac	113009	8706	V377 Lac	114273	8807	5 Psc	115591	8903	67 Peg
111884	8624	41 Peg	113136	8709	δ Aqr	114341	8812	c <sup>2</sup> Aqr	115590	8904	4 Cas
111797	8627	30 Cep	113136	8709	76 Aqr	114341	8812	88 Aqr	115623	8905	υ Peg
111954	8628	ε PsA	113127	8710	78 Aqr	114347	8815	57 Peg	115623	8905	68 Peg
111954	8628	18 PsA	113148	8711	77 Aqr	114347	8815	GZ Peg	115669	8906	b <sup>2</sup> Aqr
112405	8630	β Oct	113131	8714	HR Peg	114375	8817	89 Aqr	115669	8906	99 Aqr
111944	8632	11 Lac	113167	8715	1 Psc	114407	8818	DL Gru	115713	8907	o Gru
112029	8634	ζ Peg	113186	8717	ρ Peg	114222	8819	33 Cep	115738	8911	8 Psc
112029	8634	42 Peg	113186	8717	50 Peg	114222	8819	π Cep	115738	8911	κ Psc
112122	8636	β Gru	113246	8720	δ PsA	114421	8820	ι Gru	115738	8911	κ Psc
112122	8636	β Gru	113246	8720	23 PsA	114389	8821	58 Peg	115768	8912	9 Psc
112102	8637	19 PsA	113283	8721	TW PsA	114365	8822	2 Cas	115755	8913	V388 And
112031	8640	12 Lac	113307	8722	τ <sup>3</sup> Gru	114430	8825	6 And	115755	8913	13 And
112031	8640	DD Lac	113281	8725	EN Lac	114520	8826	59 Peg	115806	8915	69 Peg
112051	8641	o Peg	113281	8725	16 Lac	114526	8827	60 Peg	115806	8915	HV Peg
112051	8641	43 Peg	113288	8726	V424 Lac	114570	8830	7 And	115830	8916	10 Psc
112203	8644	ρ Gru	113368	8728	α PsA	114724	8834	90 Aqr	115830	8916	θ Psc
112179	8647	67 Aqr	113368	8728	24 PsA	114724	8834	φ Aqr	115908	8919	CG Tuc
112211	8649	g Aqr	113357	8729	51 Peg	114855	8841	ψ <sup>1</sup> Aqr	115919	8923	70 Peg
112211	8649	66 Aqr	113327	8731	EW Lac	114855	8841	91 Aqr	115990	8926	AR Cas
112158	8650	η Peg	113503	8739	52 Peg	114844	8842	61 Peg	116076	8930	14 And
112158	8650	44 Peg	113532	8740	WX PsA	114996	8848	γ Tuc	116118	8932	100 Aqr
112374	8655	η Gru	113521	8742	2 Psc	114939	8850	92 Aqr	116119	8933	V354 Peg
112242	8656	13 Lac	113638	8747	ζ Gru	114939	8850	x Aqr	116146	8934	13 Psc
112358	8660	45 Peg	113610	8750	3 Psc	114939	8850	x Aqr	116231	8937	β Scl
112781	8663	ξ Oct	113561	8752	V509 Cas	114831	8851	V388 Cep	116247	8939	101 Aqr
112781	8663	ξ Oct	113674	8757	81 Aqr	114971	8852	6 Psc	116247	8939	b <sup>3</sup> Aqr
112447	8665	46 Peg	113640	8758	V378 And	114971	8852	γ Psc	116264	8940	HW Peg
112447	8665	ξ Peg	113726	8762	1 And	114904	8854	V649 Cas	116264	8940	71 Peg
112440	8667	47 Peg	113726	8762	o And	115033	8858	ψ <sup>2</sup> Aqr	116310	8943	72 Peg
112440	8667	λ Peg	113726	8762	o And	115033	8858	ψ <sup>2</sup> Aqr	116323	8944	14 Psc
112529	8670	68 Aqr	113781	8763	82 Aqr	115033	8858	93 Aqr	116354	8947	15 And
112542	8673	69 Aqr	113788	8766	2 And	115054	8859	φ Gru	116355	8948	73 Peg
112542	8673	τ <sup>1</sup> Aqr	113860	8767	π PsA	115022	8860	8 And	116389	8949	ι Phe
112623	8675	ε Gru	113860	8767	π PsA	115036	8861	ET And	116389	8949	ι Phe
112615	8676	FM Aqr	113802	8768	LN And	115836	8862	τ Oct	116495	8954	16 Psc



## Nombre de estrellas (Catálogo Hiparco), 2023

Estrella			Estrella			Estrella			Estrella		
NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre	NH	NBSC	nombre
116592	8960	74 Peg	116928	8984	18 Psc	117447	9018	V566 Cas	117863	9045	ρ Cas
116584	8961	λ And	116971	8988	105 Aqr	117447	9018	6 Cas	117887	9047	XZ Psc
116584	8961	λ And	116971	8988	ω <sup>2</sup> Aqr	117491	9022	21 Psc	117927	9048	26 Psc
116584	8961	16 And	116948	8989	V816 Cas	117503	9024	OU And	117931	9049	AL Scl
116611	8963	KS Peg	117020	8991	77 Peg	117500	9025	79 Peg	117957	9052	V373 Cas
116611	8963	75 Peg	117054	8992	R Aqr	117628	9030	HH Peg	118027	9056	V Cep
116631	8965	17 And	117073	8997	78 Peg	117628	9030	80 Peg	118114	9061	γ <sup>2</sup> Oct
116631	8965	ι And	117089	8998	i <sup>1</sup> Aqr	117629	9031	ET Aqr	118121	9062	η Tuc
116737	8966	θ Phe	117089	8998	106 Aqr	117629	9031	i <sup>3</sup> Aqr	118131	9064	ψ Peg
116709	8967	18 And	117218	9002	i <sup>2</sup> Aqr	117629	9031	108 Aqr	118131	9064	84 Peg
116758	8968	102 Aqr	117218	9002	107 Aqr	117689	9032	γ <sup>1</sup> Oct	118178	9065	1 Cet
116758	8968	ω <sup>1</sup> Aqr	117221	9003	ψ And	117683	9033	22 Psc	118188	9066	R Cas
116771	8969	17 Psc	117221	9003	20 And	117718	9036	φ Peg	118209	9067	27 Psc
116771	8969	ι Psc	117245	9004	TX Psc	117718	9036	81 Peg	118234	9069	π Phe
116727	8974	35 Cep	117245	9004	19 Psc	117718	9036	φ Peg	118214	9070	LQ And
116727	8974	γ Cep	117315	9006	σ Phe	117730	9039	HT Peg	118243	9071	σ Cas
116820	8975	μ Scl	117301	9008	τ Cas	117730	9039	82 Peg	118243	9071	8 Cas
116805	8976	19 And	117301	9008	5 Cas	117761	9041	24 Psc	118268	9072	28 Psc
116805	8976	κ And	117375	9012	20 Psc	117774	9042	25 Psc	118268	9072	ω Psc
116889	8980	103 Aqr	117452	9016	δ Scl	117863	9045	7 Cas	118277	9073	BU Scl
116901	8982	104 Aqr	117430	9017	V650 Cas	117863	9045	ρ Cas	118322	9076	ε Tuc

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α	δ	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
118243	0	0	12.7	+55	53	8.5	00.053073	+55.885697	4.88	-0.071	-0.05	B1V...
118268	0	0	31.2	+06	59	36.3	00.129868	+06.993406	4.03	0.419	0.49	F4IV
118322	0	1	7.3	-65	26	47.3	00.280219	-65.446474	4.49	-0.075	-0.04	B9IV
122	0	2	46.3	-76	56	9.8	00.692800	-76.936059	4.78	1.254	1.26	K2III
154	0	3	9.9	-05	53	0.8	00.791271	-05.883543	4.37	1.631	2.35	M3III
301	0	4	56.5	-17	12	18.9	01.235423	-17.205256	4.55	-0.047	-0.03	B9IVn
355	0	5	42.2	-10	22	43.8	01.425959	-10.378830	4.99	1.619	1.64	K3Ibvar
443	0	6	32.3	-05	34	34.7	01.634577	-05.576297	4.61	1.029	1.04	K1III
677	0	9	36.4	+29	13	12.3	02.401813	+29.220092	2.07	-0.038	-0.10	B9p
746	0	10	26.8	+59	16	45.5	02.611498	+59.279308	2.28	0.380	0.40	F2III-IV
765	0	10	35.8	-45	37	4.4	02.648990	-45.617900	3.88	1.013	1.00	K0III
910	0	12	27.5	-15	20	20.7	03.114694	-15.339072	4.89	0.487	0.59	F5V
001067	0	14	26.9	+15	18	50.8	03.612199	+15.314106	2.83	-0.190	-0.22	B2IV
001168	0	15	49.3	+20	20	14.0	03.955553	+20.337227	4.79	1.572	1.93	M2III
001170	0	15	49.9	-18	48	10.2	03.957958	-18.802825	4.44	1.640	1.96	M1III
001366	0	18	19.6	+38	48	43.0	04.581649	+38.811932	4.61	0.059	0.07	A2V
001473	0	19	33.7	+36	54	55.1	04.890513	+36.915307	4.51	0.054	0.06	A2V
001562	0	20	37.5	-08	41	37.9	05.156170	-08.693861	3.56	1.214	1.13	K2III
001599	0	21	16.6	-64	44	13.5	05.319370	-64.737074	4.23	0.576	0.65	F9V
002021	0	26	56.8	-77	7	20.0	06.736816	-77.122230	2.82	0.618	0.68	G2IV
002072	0	27	21.2	-43	32	59.0	06.838292	-43.549710	3.93	0.175	0.20	A7V
002081	0	27	26.4	-42	10	42.0	06.860207	-42.178337	2.40	1.083	1.11	K0III...
002210	0	29	5.4	-32	52	39.7	07.272448	-32.877698	4.86	1.634	2.32	M2/M3III
002472	0	32	32.6	-48	40	25.9	08.135756	-48.673860	4.76	0.018	0.01	A0V
002484	0	32	36.6	-62	49	44.6	08.152659	-62.829043	4.36	-0.064	-0.02	B9V
002487	0	32	37.5	-62	50	10.8	08.156050	-62.836333	4.53	0.147	0.14	A2V
002505	0	33	4.9	+54	39	6.1	08.270602	+54.651688	4.74	-0.098	-0.08	B8Vn
002599	0	34	21.3	+63	3	40.2	08.588651	+63.061161	4.17	0.130	0.17	B1Ia
002912	0	38	8.6	+33	50	54.1	09.535629	+33.848374	4.34	-0.123	-0.08	B5V
002920	0	38	17.6	+54	1	33.2	09.573480	+54.025893	3.69	-0.196	-0.23	B2IV
003031	0	39	48.2	+29	26	20.5	09.950830	+29.439023	4.34	0.871	0.92	G5III...
003092	0	40	35.4	+30	59	21.5	10.147481	+30.989311	3.27	1.268	1.23	K3III...
003179	0	41	51.3	+56	39	57.0	10.463923	+56.665821	2.24	1.170	1.13	K0II-IIIvar0
003245	0	42	25.8	-45	57	23.0	10.607612	-45.956377	4.59	0.953	0.95	G8III
003300	0	43	23.3	+50	38	27.7	10.846893	+50.641019	4.80	-0.105	-0.10	B2.5V
003405	0	44	24.1	-57	20	4.4	11.100557	-57.334550	4.36	0.024	0.02	A0IV
003414	0	44	46.7	+47	9	9.7	11.194695	+47.152693	4.95	0.170	0.19	A5V
003419	0	44	46.1	-17	51	28.9	11.191883	-17.858017	2.04	1.019	1.00	K0III
003455	0	45	22.5	-10	28	55.1	11.343777	-10.481966	4.77	0.998	0.98	K0IIIvar
003504	0	46	2.8	+48	24	45.2	11.511474	+48.412560	4.48	-0.069	0.00	B5III
003693	0	48	35.4	+24	23	40.6	12.147312	+24.394602	4.08	1.100	1.06	K1II
003786	0	49	54.2	+07	42	45.2	12.475931	+07.712544	4.44	1.500	1.58	K5III
003801	0	50	10.7	+51	5	45.1	12.544437	+51.095866	4.90	-0.091	-0.07	B9III
003821	0	50	32.5	+57	56	21.6	12.635252	+57.939330	3.46	0.587	0.66	GOV0SB
003881	0	51	7.1	+41	12	23.2	12.779730	+41.206438	4.53	-0.136	-0.14	B5V0SB
004147	0	54	12.6	-01	1	1.7	13.552574	-01.017125	4.78	1.550	1.66	M0III
004151	0	54	29.5	+61	15	8.2	13.622922	+61.252271	4.80	0.540	0.61	F8V
004292	0	56	24.9	+59	5	57.8	14.103770	+59.099394	4.83	1.216	1.19	K2III
004422	0	58	4.9	+59	18	27.0	14.520616	+59.307490	4.62	0.957	1.01	G8III-IV
004427	0	58	8.8	+60	50	36.4	14.536585	+60.843432	2.15	-0.046	-0.02	BOIV:evar
004436	0	58	4.0	+38	37	34.7	14.516525	+38.626298	3.86	0.130	0.14	A5V
004463	0	58	28.0	+23	32	38.4	14.616595	+23.544012	4.40	0.940	0.94	G8III-IV
004577	0	59	44.2	-29	13	51.4	14.933975	-29.230943	4.30	-0.154	-0.12	B7IIp
004906	1	4	9.9	+08	0	58.0	16.041397	+08.016105	4.27	0.952	0.98	K0III
005165	1	7	7.6	-46	35	34.4	16.781707	-46.592895	3.32	0.885	0.90	G8IIIvar
005348	1	9	22.0	-55	7	14.3	17.341777	-55.120632	3.94	-0.120	-0.08	B6V0+OB0V
005364	1	9	46.3	-10	3	29.7	17.442969	-10.058262	3.46	1.161	1.11	K2III
005372	1	12	27.0	+86	22	54.0	18.112564	+86.381661	4.24	1.213	1.16	K2II-III
005434	1	10	52.6	+47	21	59.1	17.719348	+47.366424	4.26	0.012	-0.02	B7III

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
005447	1	11	3.3	+35	44	40.3	17.763841	+35.744520	2.07	1.576	1.74	M0IIIvar
005542	1	12	33.0	+55	16	27.1	18.137306	+55.274206	4.34	0.170	0.19	A7Vvar
005571	1	12	43.3	+21	9	32.3	18.180361	+21.158966	4.66	1.024	0.99	K0III
005586	1	12	57.7	+30	12	49.5	18.240325	+30.213742	4.51	1.092	1.05	K0III-IV...0
005742	1	15	1.8	+24	42	27.2	18.757595	+24.707548	4.67	1.047	1.02	K0III...
005862	1	16	14.5	-45	24	24.5	19.060304	-45.406800	4.97	0.571	0.62	F8V
005896	1	16	33.7	-68	45	5.3	19.140548	-68.751472	4.25	0.480	0.55	F6IV
006193	1	20	45.8	+27	23	12.7	20.191028	+27.386874	4.74	0.032	0.10	A3V
006242	1	21	34.7	+58	21	15.6	20.394651	+58.354347	4.95	0.683	0.93	F0Ia
006411	1	23	44.1	+45	39	4.1	20.933750	+45.651142	4.87	1.077	1.04	K0III-IV
006537	1	25	11.9	-08	3	45.3	21.299656	-08.062590	3.60	1.065	1.05	K0III
006670	1	26	46.6	-14	28	38.1	21.694012	-14.477249	4.90	1.231	1.29	K2III
006686	1	27	22.4	+60	21	23.5	21.843433	+60.356540	2.66	0.160	0.19	A5VvOSB
006692	1	27	37.6	+68	15	6.2	21.906599	+68.251719	4.72	1.047	1.01	K0III
006813	1	29	4.4	+45	31	37.9	22.268389	+45.527185	4.83	0.421	0.49	F5IV
006867	1	29	23.0	-43	11	54.5	22.345703	-43.198472	3.41	1.542	1.73	K5II-III
007007	1	31	25.1	+06	15	51.1	22.854729	+06.264192	4.84	1.372	1.42	K4III
007083	1	32	13.6	-48	57	4.5	23.056666	-48.951257	3.93	0.972	1.00	K0III-IV
007097	1	32	44.7	+15	27	58.2	23.186188	+15.466179	3.62	0.974	0.94	G8III
007294	1	35	29.2	+59	21	6.1	23.871767	+59.351683	4.68	0.991	1.01	K0III
007513	1	38	11.2	+41	31	19.8	24.546613	+41.522169	4.10	0.536	0.58	F8V
007588	1	38	35.1	-57	7	4.9	24.646391	-57.118026	0.45	-0.158	-0.17	B3Vp
007607	1	39	26.9	+48	44	46.9	24.861926	+48.746347	3.59	1.275	1.23	K3III
007818	1	41	58.6	+40	41	42.5	25.494264	+40.695134	4.96	-0.068	-0.06	B8III
007884	1	42	39.4	+05	36	20.5	25.664262	+05.605684	4.45	1.347	1.37	K3III
007918	1	43	13.6	+42	43	48.5	25.806502	+42.730148	4.96	0.618	0.67	G2V
007999	1	43	54.9	-03	34	21.7	25.978645	-03.572688	4.98	1.378	1.26	K3II-III
008068	1	45	8.8	+50	48	22.0	26.286873	+50.806107	4.01	-0.098	-0.08	B2Vpe
008102	1	45	9.7	-15	48	52.6	26.290226	-15.814608	3.49	0.727	0.82	G8V
008198	1	46	38.3	+09	16	30.1	26.659435	+09.275039	4.26	0.942	0.93	K0III
008497	1	50	44.4	-10	34	15.7	27.684988	-10.571035	4.66	0.333	0.38	F3III
008645	1	52	37.3	-10	13	11.3	28.155298	-10.219802	3.74	1.136	1.07	K2III
008796	1	54	25.7	+29	41	32.5	28.607019	+29.692353	3.42	0.488	0.55	F6IV
008832	1	54	49.5	+19	24	29.2	28.706093	+19.408120	3.88	-0.047	-0.03	A1p0Si
008833	1	54	46.5	+03	18	9.3	28.693700	+03.302594	4.61	0.928	0.93	K0IIIOSB
008837	1	54	35.1	-46	11	18.0	28.646365	-46.188334	4.39	1.597	2.49	M4IIIOSB
008886	1	56	6.7	+63	47	4.5	29.028073	+63.784589	3.35	-0.150	-0.12	B2pvar
008903	1	55	56.6	+20	55	19.0	28.985778	+20.921936	2.64	0.165	0.18	A5V...
008928	1	55	32.0	-67	31	56.0	28.883349	-67.532224	4.68	0.931	0.95	G5III
009007	1	56	52.2	-51	29	34.1	29.217386	-51.492797	3.69	0.844	0.90	G5IV
009009	1	57	51.7	+68	47	57.6	29.465597	+68.799322	4.97	-0.084	-0.06	B8III
009061	1	57	46.2	-22	24	46.5	29.442487	-22.412916	4.92	1.434	1.45	K3III
009095	1	58	5.8	-47	16	16.6	29.524332	-47.271276	4.82	0.864	0.89	G8III
009153	1	59	14.6	+23	42	34.7	29.810900	+23.709647	4.79	0.290	0.33	F0V
009236	1	59	30.6	-61	27	22.2	29.877298	-61.456168	2.86	0.290	0.34	F0V
009347	2	1	6.7	-20	57	53.5	30.277999	-20.964872	3.99	1.554	1.79	K5/M0III
009480	2	3	55.9	+71	1	9.8	30.983113	+71.019379	4.49	0.164	0.20	A3IV
009487	2	3	15.9	+02	52	34.6	30.816294	+02.876268	3.82	0.024	0.05	A2
009505	2	3	53.0	+54	35	59.7	30.970844	+54.599903	4.99	-0.071	-0.02	B8III
009598	2	5	29.5	+72	32	0.3	31.372976	+72.533420	3.95	-0.002	0.03	A2V
009640	2	5	21.1	+42	26	28.8	31.337986	+42.441333	2.10	1.370	1.37	B8V
009677	2	5	32.6	-29	11	5.8	31.385805	-29.184947	4.68	-0.156	-0.12	B9.5p0(Si)00
009884	2	8	30.2	+23	34	20.9	32.125866	+23.572465	2.01	1.151	1.13	K2III
009977	2	9	54.9	+37	58	9.7	32.478650	+37.969358	4.78	0.120	0.16	A5IV-V
010053	2	10	45.9	+26	2	59.9	32.691456	+26.049968	4.98	0.339	0.40	F2III
010064	2	10	57.0	+35	5	50.2	32.737523	+35.097286	3.00	0.140	0.17	A5III
010280	2	13	44.5	+30	24	43.4	33.435422	+30.412046	4.94	0.770	0.81	F5V0compOSB0
010324	2	14	14.9	+08	57	20.9	33.562136	+08.955816	4.36	0.878	0.90	G8II:
010340	2	14	42.4	+44	20	26.3	33.676780	+44.340638	4.84	1.476	1.49	K4III

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
010602	2	17	20.9	-51	24	15.0	34.337045	-51.404164	3.56	-0.120	-0.11	B8IV-V	
010644	2	18	29.7	+34	19	49.9	34.623830	+34.330520	4.84	0.607	0.76	G0V	
010670	2	18	43.2	+33	57	16.7	34.679796	+33.954649	4.03	0.019	-0.02	A1Vnn	
011001	2	22	10.5	-68	33	10.5	35.543591	-68.552903	4.08	0.034	0.04	A3V	
011313	2	27	12.3	+50	23	0.8	36.801260	+50.383543	4.73	1.532	1.58	K4III	
011345	2	27	5.2	-12	11	8.1	36.771563	-12.185584	4.88	-0.027	-0.01	A0V	
011407	2	27	50.8	-47	35	57.2	36.961505	-47.599213	4.24	-0.136	-0.11	B5IV	
011484	2	29	24.7	+08	33	50.9	37.352910	+08.564152	4.30	-0.053	-0.06	B9III	
011569	2	31	2.1	+67	30	23.3	37.758885	+67.506464	4.46	0.153	0.17	A5p0Sr	
011767	3	2	11.3	+89	21	42.5	45.546963	+89.361798	1.97	0.636	0.70	F7:lb-IIv0SB	
011783	2	33	12.1	-15	8	34.0	38.300344	-15.142769	4.74	0.454	0.55	F5V	
011918	2	34	52.4	-28	7	48.4	38.718507	-28.130115	4.96	-0.050	-0.04	B9V	
012093	2	37	6.6	+05	41	40.5	39.277649	+05.694575	4.87	0.880	0.89	G8III	
012387	2	40	41.4	+00	25	43.2	40.172346	+00.428662	4.08	-0.212	-0.22	B2IV	
012390	2	40	42.1	-11	46	24.7	40.175530	-11.773517	4.83	0.447	0.53	F5V	
012394	2	39	57.5	-68	9	60.0	39.989744	-68.166662	4.12	-0.061	-0.07	B9III	
012413	2	40	41.7	-42	47	30.0	40.173745	-42.791659	4.74	0.061	0.09	A2V	
012486	2	41	35.6	-39	45	20.8	40.398502	-39.755768	4.11	1.006	1.05	K0III	
012623	2	43	44.5	+40	17	30.7	40.935315	+40.291871	4.91	0.582	0.62	F9V	
012706	2	44	31.2	+03	20	1.1	41.130192	+03.333641	3.47	0.093	0.10	A3V	
012719	2	44	50.2	+27	48	20.7	41.209234	+27.805745	4.65	-0.122	-0.12	B3V	
012770	2	45	14.5	-13	45	37.0	41.310454	-13.760290	4.24	-0.122	-0.11	B7IV	
012777	2	45	49.1	+49	19	34.3	41.454451	+49.326208	4.10	0.514	0.59	F7V	
012828	2	46	13.0	+10	12	43.5	41.553994	+10.212073	4.27	0.311	0.37	F1III-IV	
012843	2	46	12.0	-18	28	27.3	41.550056	-18.474237	4.47	0.481	0.54	F5/F6V	
012876	2	45	54.8	-67	31	5.8	41.478472	-67.518271	4.83	0.058	0.08	A2IV/V	
013061	2	49	18.9	+29	20	35.8	42.328636	+29.343283	4.52	1.112	1.04	K1III	
013147	2	50	4.4	-32	18	29.8	42.518408	-32.308286	4.45	0.981	1.00	G8III	
013209	2	51	22.4	+27	21	21.4	42.843257	+27.355936	3.61	-0.100	-0.08	B8Vn	
013244	2	50	21.1	-74	58	15.0	42.587903	-74.970843	4.76	1.337	1.27	K3III	
013254	2	52	4.6	+38	24	49.9	43.019119	+38.413868	4.22	0.343	0.41	F2III	
013268	2	52	25.7	+55	59	28.5	43.107147	+55.991239	3.77	1.690	1.64	K3Ib0comp0SB	
013288	2	52	6.3	-20	54	29.9	43.026354	-20.908298	4.76	0.906	0.91	K0III	
013328	2	52	58.2	+35	9	17.7	43.242391	+35.154905	4.56	1.554	1.67	K5III	
013531	2	55	56.3	+52	51	24.8	43.984704	+52.856896	3.93	0.758	0.80	G4III...	
013701	2	57	34.6	-08	48	21.1	44.394205	-08.805859	3.89	1.088	1.08	K1III-IV	
013847	2	59	9.1	-40	12	41.4	44.788029	-40.211498	2.88	0.128	0.17	A4III+...	
013879	3	0	16.4	+39	45	18.5	45.068202	+39.755153	4.68	0.065	0.11	A2Vn	
013884	2	59	14.8	-63	58	42.1	44.811500	-63.978366	4.98	0.126	0.14	A5III	
013905	3	0	31.5	+35	16	32.7	45.131258	+35.275739	4.94	1.235	1.19	K2III	
013914	3	0	33.6	+21	25	58.5	45.140183	+21.432922	4.63	0.048	0.05	A2Vs	
013954	3	0	58.7	+08	59	58.6	45.244456	+08.999619	4.71	-0.109	-0.09	B6III	
014135	3	3	30.6	+04	10	50.0	45.877624	+04.180545	2.54	1.630	1.97	M2III	
014146	3	3	25.7	-23	32	0.7	45.857067	-23.533519	4.08	0.163	0.18	A4V	
014328	3	6	30.8	+53	35	47.7	46.628461	+53.596593	2.91	0.716	0.77	G8III+...	
014354	3	6	41.5	+38	55	46.8	46.672737	+38.929656	3.32	1.528	2.76	M3IIIvar	
014382	3	7	19.4	+56	47	45.7	46.830918	+56.796026	4.77	1.018	0.99	K0II-III	
014576	3	9	42.4	+41	2	40.0	47.426756	+41.044451	2.09	-0.003	0.02	B8V	
014632	3	10	46.5	+49	42	3.9	47.693758	+49.701081	4.05	0.595	0.65	G0V	
014668	3	11	5.5	+44	56	41.6	47.772871	+44.944878	3.79	0.980	0.94	K0III	
014817	3	12	48.9	+39	41	56.8	48.203841	+39.699113	4.61	1.115	1.09	K1III	
014838	3	12	58.7	+19	48	50.5	48.244432	+19.814016	4.35	1.033	0.96	K2IIIvar	
014862	3	14	32.8	+74	28	48.4	48.636557	+74.480103	4.85	0.035	0.05	A2Vnn	
014879	3	13	4.5	-28	53	47.2	48.268752	-28.896431	3.80	0.543	0.63	F8V	
015110	3	16	15.4	+21	7	47.8	49.064247	+21.129942	4.87	-0.007	0.02	A1V	
015197	3	16	58.6	-08	44	1.7	49.244191	-08.733801	4.80	0.232	0.28	A5m	
015382	3	19	24.5	-22	25	35.3	49.851958	-22.426473	4.86	0.904	0.91	K0III	
015416	3	20	12.4	+34	18	24.9	50.051788	+34.306906	4.85	1.491	1.41	K2II	
015457	3	20	35.8	+03	27	17.6	50.149141	+03.454879	4.84	0.681	0.73	G5Vvar	

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
015474	3	20	33.8	-21	40	25.0	50.140660	-21.673599	3.70	1.614	2.42	M3/M4III
015510	3	20	51.8	-42	58	52.5	50.215822	-42.981257	4.26	0.711	0.79	G8V
015520	3	22	5.0	+65	44	9.0	50.520887	+65.735824	4.74	-0.108	-0.12	B2.5Vne
015549	3	21	46.0	+29	7	55.1	50.441784	+29.131969	4.47	1.555	1.61	K2II-III
015648	3	23	1.6	+43	24	45.9	50.756605	+43.412744	4.96	0.051	0.06	A3V
015863	3	26	0.8	+49	56	34.1	51.503215	+49.942809	1.79	0.481	0.63	F5Ib
015900	3	26	4.8	+09	6	36.1	51.520181	+09.110029	3.61	0.887	0.90	G8III
016083	3	28	26.7	+09	48	47.0	52.111437	+09.813051	3.73	-0.082	-0.07	B9Vn
016147	3	29	44.0	+49	8	34.2	52.433414	+49.142821	4.99	-0.091	-0.07	B5V
016228	3	30	59.5	+60	1	11.7	52.747871	+60.019930	4.21	0.419	0.58	B9Ia
016244	3	31	3.6	+49	35	17.8	52.764937	+49.588291	4.67	-0.096	-0.07	B3V
016245	3	29	47.6	-62	51	19.2	52.448439	-62.855335	4.71	0.410	0.49	F5IV-V
016281	3	31	48.4	+58	57	28.7	52.951765	+58.957978	4.55	0.489	0.79	A0Ia0SB:
016335	3	32	14.6	+48	4	27.5	53.060676	+48.074318	4.36	1.367	1.42	K3III
016341	3	31	47.1	-04	59	45.7	52.946357	-04.996018	4.74	-0.092	-0.07	B9Vs
016369	3	32	10.4	+13	0	56.2	53.043446	+13.015602	4.14	1.112	1.01	K0II-III...0
016537	3	34	2.4	-09	22	48.4	53.509991	-09.380103	3.72	0.881	0.94	K2V
016611	3	34	49.6	-21	33	19.4	53.706678	-21.555397	4.26	-0.106	-0.09	B9V
016826	3	38	10.2	+48	16	7.4	54.542642	+48.268724	4.32	-0.058	0.07	B5Ve
016852	3	38	4.5	+00	28	29.2	54.518632	+00.474783	4.29	0.575	0.66	F9V
016870	3	37	56.3	-40	11	54.4	54.484765	-40.198456	4.57	1.023	1.07	K0III
017304	3	43	11.0	-31	51	52.3	55.795932	-31.864522	4.99	-0.159	-0.15	B5III
017313	3	43	52.4	+34	2	18.8	55.968400	+34.038548	4.97	-0.048	-0.03	B0.5V
017351	3	43	42.4	-37	14	25.8	55.926516	-37.240487	4.59	1.191	1.12	K2IIICN...00
017358	3	44	36.5	+47	51	37.9	56.152144	+47.860536	3.01	-0.125	-0.07	B5III0SB
017378	3	44	22.6	-09	41	7.5	56.093973	-09.685421	3.52	0.915	0.94	K0IV
017440	3	44	30.0	-64	44	0.3	56.125203	-64.733428	3.84	1.133	1.11	K0IV0SB
017448	3	45	47.9	+32	21	39.0	56.449654	+32.360822	3.84	0.022	0.12	B1III
017499	3	46	16.5	+24	11	7.6	56.568945	+24.185447	3.72	-0.105	-0.09	B6III
017529	3	46	47.9	+42	39	2.7	56.699734	+42.650754	3.77	0.425	0.52	F5IIvar
017531	3	46	36.7	+24	32	21.3	56.652943	+24.539247	4.30	-0.110	-0.08	B6V
017573	3	47	13.8	+24	26	21.8	56.807449	+24.439402	3.87	-0.063	-0.02	B8III
017587	3	48	7.0	+63	25	0.0	57.029056	+63.416673	4.78	0.747	0.79	A3V...
017593	3	47	15.3	-12	1	45.6	56.813612	-12.029346	4.43	1.604	1.89	M1III
017608	3	47	43.5	+24	1	11.2	56.931420	+24.019789	4.14	-0.051	0.02	B6IV
017651	3	47	51.6	-23	10	53.6	56.964994	-23.181551	4.22	0.434	0.51	F3/F5V
017678	3	46	54.1	-74	9	59.6	56.725288	-74.166544	3.26	1.590	1.94	M2III
017702	3	48	53.2	+24	10	33.6	57.221523	+24.176011	2.85	-0.086	-0.01	B7III
017797	3	49	28.0	-37	32	58.1	57.366471	-37.549480	4.30	-0.038	-0.02	A+...
017847	3	50	33.9	+24	7	24.5	57.641065	+24.123474	3.62	-0.070	-0.03	B8III
017874	3	50	20.1	-36	7	49.0	57.583561	-36.130282	4.17	0.927	0.92	G8III
017884	3	51	41.9	+65	35	45.1	57.924512	+65.595868	4.39	1.870	2.58	M1III
017959	3	52	52.7	+71	24	5.4	58.219670	+71.401495	4.59	0.064	0.13	A2IVn
018216	3	54	42.8	-24	32	38.5	58.678152	-24.544037	4.64	-0.136	-0.13	B5V
018246	3	55	36.9	+31	57	5.4	58.903713	+31.951494	2.84	0.271	0.18	B1Ib
018255	3	55	28.4	-02	53	12.5	58.868435	-02.886808	4.46	0.672	0.73	G8III
018488	3	59	9.6	+61	10	30.4	59.790130	+61.175105	4.99	1.435	1.53	K3I-II
018505	3	59	31.1	+63	8	18.4	59.879645	+63.138456	4.95	-0.074	-0.01	B9.5V
018532	3	59	26.3	+40	4	34.1	59.859482	+40.076128	2.90	-0.199	-0.19	B0.5V
018543	3	59	7.6	-13	26	35.3	59.781754	-13.443126	2.97	1.588	1.78	M1IIIB0Ca-10
018597	3	59	7.4	-61	20	3.7	59.780705	-61.334352	4.56	1.590	1.85	M2III
018614	4	0	29.8	+35	51	23.7	60.124030	+35.856580	3.98	0.016	0.16	O7.5lab:
018673	4	0	55.6	-23	57	3.3	60.231856	-23.950918	4.62	-0.121	-0.07	Ap0Si
018724	4	1	59.1	+12	33	18.0	60.496301	+12.555010	3.41	-0.099	-0.08	B3V0+0A
018744	4	1	14.5	-62	5	39.1	60.310505	-62.094191	4.48	1.500	2.42	M4III
018772	4	1	41.3	-61	0	48.8	60.422043	-61.013560	4.97	1.386	1.41	K4III
018907	4	4	24.5	+06	3	10.1	61.102244	+06.052816	3.91	0.032	0.03	A1V
019018	4	6	25.6	+59	13	5.5	61.606672	+59.218197	5.00	0.495	0.69	F0II
019038	4	6	5.3	+22	8	39.4	61.522132	+22.144268	4.36	1.064	1.02	K0III

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α		δ		V	U-V	B-V	Espectro
	NH	h	m	s	°	'	"	°	°					
019167	4	8	20.7	+50	24	45.7	62.086270	+50.412705	4.25	-0.011	0.08	A0IVn		
019343	4	10	22.6	+47	46	22.6	62.594174	+47.772939	3.96	-0.025	0.08	B3Ve		
019515	4	11	38.1	-41	56	0.1	62.908919	-41.933366	4.93	0.334	0.41	A9V		
019587	4	13	0.9	-06	46	40.5	63.253613	-06.777905	4.04	0.327	0.38	F2II-III		
019740	4	15	13.2	+09	19	18.1	63.805101	+09.321694	4.84	0.799	0.86	G5III		
019747	4	14	46.9	-42	14	15.0	63.695401	-42.237508	3.85	1.085	1.09	K1III		
019777	4	15	30.8	-10	11	58.0	63.878532	-10.199445	4.87	1.156	1.12	K3III		
019780	4	14	44.0	-62	24	55.7	63.683182	-62.415475	3.33	0.915	0.91	G7III		
019811	4	16	29.7	+40	32	27.7	64.123670	+40.541030	4.67	1.007	1.07	G5II0comp		
019812	4	16	37.9	+48	28	0.0	64.158045	+48.466679	4.12	0.935	0.93	G0Ib...		
019849	4	16	21.3	-07	37	2.2	64.088834	-07.617271	4.43	0.820	0.89	K1V		
019860	4	16	48.8	+08	56	58.1	64.203209	+08.949467	4.27	-0.054	-0.02	B3IV		
019893	4	16	38.6	-51	25	41.9	64.161007	-51.428306	4.26	0.312	0.37	F4III		
019921	4	16	53.6	-59	14	46.5	64.223306	-59.246243	4.44	1.078	1.05	K2IV		
019990	4	18	38.5	+20	38	4.3	64.660405	+20.634534	4.93	0.259	0.30	A3m		
020042	4	18	47.1	-33	44	32.1	64.696115	-33.742256	3.55	-0.108	-0.09	B9V		
020070	4	20	1.2	+50	21	3.1	65.005074	+50.350868	4.60	0.043	0.16	A2V		
020205	4	21	8.0	+15	40	57.1	65.283412	+15.682527	3.65	0.981	0.95	G8III		
020250	4	21	48.2	+27	24	17.9	65.450759	+27.404981	4.97	1.150	1.35	K1III		
020252	4	21	56.5	+34	37	16.9	65.485468	+34.621349	4.93	0.950	0.94	G8III		
020354	4	23	15.6	+46	33	9.7	65.815079	+46.552684	4.80	-0.022	0.03	B4IV		
020455	4	24	17.6	+17	35	44.6	66.073295	+17.595731	3.77	0.983	0.93	G8III		
020535	4	24	55.2	-33	57	48.7	66.230208	-33.963529	3.97	1.468	1.53	K4III		
020542	4	25	27.2	+17	29	48.2	66.363450	+17.496712	4.80	0.154	0.18	A7V		
020635	4	26	46.4	+22	20	44.6	66.693380	+22.345709	4.21	0.136	0.16	A7IV-V		
020648	4	26	51.1	+17	58	47.2	66.713085	+17.979768	4.30	0.049	0.08	A2IV		
020711	4	27	43.0	+22	51	53.7	66.929346	+22.864914	4.28	0.263	0.32	A8Vn		
020713	4	27	41.3	+15	40	10.8	66.921882	+15.669675	4.48	0.262	0.33	F0V...		
020732	4	27	56.2	+14	45	54.3	66.984179	+14.765072	4.69	0.979	0.96	G8III		
020877	4	29	47.1	+16	24	37.1	67.446450	+16.410307	4.96	1.137	1.12	K2IIIvar		
020885	4	29	55.2	+16	0	45.1	67.480050	+16.012535	3.84	0.952	1.02	G7III		
020889	4	29	59.5	+19	13	50.2	67.497978	+19.230617	3.53	1.014	1.04	K0III		
020894	4	30	0.4	+15	55	16.0	67.501726	+15.921118	3.40	0.179	0.21	A7III		
021029	4	31	54.5	+16	14	35.7	67.977109	+16.243255	4.78	0.170	0.19	A6IV		
021139	4	33	4.9	+00	0	16.8	68.270426	+00.004680	4.91	1.320	1.25	K3II-III		
021248	4	34	25.9	-29	43	13.0	68.607968	-29.720273	4.49	0.972	1.00	K0III		
021273	4	35	11.1	+14	53	30.9	68.796226	+14.891921	4.65	0.255	0.28	A8V		
021281	4	34	30.4	-54	59	49.5	68.626748	-54.997090	3.30	-0.079	-0.08	A0V:		
021393	4	36	27.9	-30	30	56.0	69.116299	-30.515553	3.81	0.957	0.93	G8III		
021402	4	36	56.8	+10	12	25.8	69.236867	+10.207168	4.25	0.184	0.21	A5m		
021421	4	37	16.3	+16	33	16.7	69.317905	+16.554647	0.87	1.538	1.67	K5III		
021444	4	37	29.7	-03	18	22.0	69.373698	-03.306098	3.93	-0.210	-0.20	B2III0SB		
021476	4	38	19.5	+41	18	38.7	69.581124	+41.310755	4.25	1.171	1.13	G8II0comp		
021589	4	39	28.4	+12	33	22.0	69.868410	+12.556112	4.27	0.122	0.15	A6V		
021594	4	39	15.5	-14	15	35.0	69.814406	-14.259735	3.86	1.082	1.09	K1III		
021644	4	39	59.4	-12	4	41.5	69.997436	-12.078199	4.99	0.074	0.13	A0V		
021683	4	40	37.3	+15	57	45.4	70.155453	+15.962614	4.67	0.147	0.19	A5Vn		
021763	4	41	28.3	-19	37	40.4	70.367746	-19.627891	4.32	1.599	2.27	M3/M4III		
021770	4	41	19.2	-41	49	12.0	70.330079	-41.82	4.44	0.342	0.40	F2V		
021881	4	43	39.5	+22	59	59.8	70.914641	+22.999945	4.27	-0.112	-0.10	B3V		
022109	4	46	40.7	-03	12	47.8	71.669775	-03.213291	4.01	-0.148	-0.13	B5IV		
022449	4	51	7.0	+07	0	1.5	72.779357	+07.417	3.19	0.484	0.53	F6V		
022453	4	51	29.8	+37	31	38.9	72.874238	+37.527469	4.89	1.447	1.51	K4II		
022509	4	51	53.7	+08	56	19.0	72.973658	+08.938623	4.35	0.010	0.04	A1Vn		
022549	4	52	27.6	+05	38	36.4	73.114853	+05.643443	3.68	-0.157	-0.16	B2III0SB		
022667	4	53	51.9	+14	17	16.3	73.466066	+14.287870	4.71	1.773	2.63	M3Sv		
022678	4	54	12.6	+36	44	26.3	73.552575	+36.740627	4.79	1.414	1.46	K3III		
022701	4	54	3.0	-05	24	54.4	73.512632	-05.415098	4.36	0.257	0.33	A9IV		
022783	4	56	24.1	+66	22	45.1	74.100583	+66.379201	4.26	-0.008	0.09	O9.5Ia0SB:00		

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
022797	4	55	28.6	+02	28	38.5	73.869348	+02.477348	3.71	-0.179	-0.18	B2III0SB
022845	4	56	11.5	+10	11	10.7	74.047709	+10.186315	4.64	0.085	0.11	A0V
022957	4	57	41.7	+13	32	58.8	74.423643	+13.549658	4.06	1.158	1.16	K2III
023015	4	58	31.7	+33	12	3.8	74.631890	+33.201057	2.69	1.490	1.46	K3IIvar
023040	4	59	10.7	+53	47	13.1	74.794511	+53.786975	4.43	-0.017	0.06	A1V
023123	4	59	46.1	+01	44	53.8	74.941941	+01.748281	4.47	1.369	1.32	K2IIvar
023179	5	0	51.4	+37	55	24.4	75.214013	+37.923441	4.93	0.037	0.06	A1V
023231	5	1	1.3	-12	30	15.8	75.255473	-12.504381	4.78	0.267	0.33	F0V
023362	5	2	26.8	-20	1	9.2	75.611703	-20.019234	4.91	-0.047	-0.04	B9V
023364	5	2	34.8	-07	8	28.3	75.644911	-07.141189	4.80	-0.164	-0.18	B3V
023416	5	3	39.6	+43	51	20.1	75.914990	+43.855592	3.03	0.537	0.61	F0Ia
023453	5	4	7.5	+41	6	27.8	76.031248	+41.107729	3.69	1.154	1.12	K4II0comp
023497	5	4	30.2	+21	37	17.2	76.125719	+21.621454	4.62	0.155	0.19	A7V
023522	5	5	31.1	+60	28	24.7	76.379561	+60.473534	4.03	0.921	0.89	G0Ib
023595	5	5	15.2	-35	27	7.5	76.313208	-35.452080	4.55	1.177	1.19	K2III
023607	5	5	54.8	+15	26	5.5	76.478508	+15.434861	4.65	-0.064	0.02	A0p0Si
023685	5	6	27.4	-22	20	27.4	76.614139	-22.340939	3.19	1.460	1.50	K4III
023693	5	5	55.0	-57	26	28.5	76.479147	-57.441261	4.71	0.526	0.60	F7V
023767	5	8	10.0	+41	15	49.8	77.041716	+41.263826	3.18	-0.148	-0.17	B3V
023783	5	8	31.4	+51	37	34.5	77.130840	+51.626254	4.98	0.343	0.40	F0V
023835	5	8	50.5	+18	40	28.2	77.210231	+18.674508	4.91	0.657	0.74	G4V
023875	5	9	0.4	-05	3	27.9	77.251631	-05.057743	2.78	0.161	0.16	A3IIIvar
023972	5	10	16.3	-08	43	32.2	77.568014	-08.725623	4.25	-0.187	-0.16	B2IVn
024010	5	11	2.8	+15	37	30.8	77.761505	+15.625231	4.81	0.313	0.40	F2IV
024244	5	13	23.7	-11	50	33.7	78.348920	-11.842698	4.45	-0.099	-0.08	B8V
024305	5	13	59.3	-16	10	45.1	78.497067	-16.179194	3.29	-0.110	-0.09	B9IV:0HgMn00
024327	5	14	19.0	-12	54	54.4	78.579372	-12.915098	4.36	-0.094	-0.07	B7V
024331	5	14	31.3	+02	53	14.7	78.630339	+02.887425	4.46	1.166	1.12	K3III...
024340	5	15	2.4	+38	30	35.9	78.760015	+38.509980	4.82	0.189	0.23	A4m
024372	5	13	44.7	-67	9	31.6	78.436303	-67.158791	4.81	1.274	1.22	K2III
024436	5	15	40.1	-08	10	34.3	78.917062	-08.176185	0.18	-0.030	0.03	B8Ia
024608	5	18	25.7	+46	1	9.6	79.607236	+46.019344	0.08	0.795	0.83	M1:0comp
024659	5	18	20.0	-34	52	24.5	79.583318	-34.873472	4.81	0.987	1.00	K0/K1III/IV0
024674	5	18	44.9	-06	49	14.6	79.687159	-06.820735	3.59	-0.115	-0.10	B5III
024727	5	19	43.2	+33	23	38.0	79.930121	+33.393887	4.54	1.252	1.32	K3III...
024813	5	20	47.8	+40	7	3.1	80.199187	+40.117528	4.69	0.630	0.70	G0V
024822	5	20	41.4	+22	7	7.3	80.172681	+22.118697	4.96	0.937	0.92	G8III
024845	5	20	39.5	-13	9	15.0	80.164746	-13.154173	4.29	-0.235	-0.26	B0.5IV
024927	5	21	27.2	-21	13	3.5	80.363205	-21.217650	4.70	-0.048	-0.03	A0V
025044	5	22	57.8	-00	21	39.9	80.740827	-00.361072	4.72	-0.168	-0.17	B2IV-V
025142	5	24	4.2	+03	33	54.8	81.017389	+03.565233	4.99	-0.096	-0.14	B1V
025247	5	25	4.8	-07	47	17.4	81.270040	-07.788180	4.13	0.943	0.97	G8III
025278	5	25	47.8	+17	24	11.9	81.449319	+17.403319	5.00	0.544	0.62	F8V0SB
025281	5	25	39.6	-02	22	38.3	81.414888	-02.377309	3.35	-0.240	-0.16	B1V0+0B2
025302	5	25	58.1	+01	51	58.1	81.492014	+01.866135	4.89	-0.200	-0.19	B1V:pe
025336	5	26	23.6	+06	22	8.7	81.598167	+06.369084	1.64	-0.224	-0.22	B2III
025428	5	27	46.8	+28	37	30.3	81.944812	+28.625084	1.65	-0.130	-0.09	B7III
025473	5	28	4.2	+03	6	51.0	82.017356	+03.114179	4.59	-0.199	-0.21	B2IV
025539	5	29	2.9	+21	57	17.7	82.261947	+21.954930	4.88	-0.140	-0.13	B2.5IV
025606	5	29	15.2	-20	44	32.0	82.313258	-20.742211	2.81	0.807	0.86	G5II
025737	5	30	55.6	-01	4	31.9	82.731849	-01.075521	4.71	1.592	1.70	K5III
025813	5	32	2.6	+05	57	51.1	83.010676	+05.964203	4.20	-0.143	-0.14	B5V
025859	5	32	2.9	-35	27	16.5	83.011958	-35.454588	3.86	1.130	1.09	K1II/III
025923	5	33	4.1	-07	17	9.3	83.267170	-07.285910	4.62	-0.261	-0.28	B0V
025930	5	33	12.5	-00	17	0.6	83.302065	-00.283494	2.25	-0.175	-0.21	O9.5II
025945	5	33	35.5	+18	36	34.7	83.397889	+18.609633	4.32	2.060	2.54	M2Ib
025984	5	34	15.6	+32	12	25.5	83.564820	+32.207089	4.71	0.281	0.51	B5Iab
025985	5	33	46.1	-17	48	25.4	83.441886	-17.807047	2.58	0.211	0.32	F0Ib
026069	5	33	49.9	-62	28	29.2	83.457953	-62.474786	3.76	0.640	0.69	F6Ia

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
026176	5	36	6.7	+09	30	12.7	84.027947	+09.503537	4.39	-0.157	-0.13	B0IV...	
026199	5	36	11.7	-05	59	17.3	84.048563	-05.988136	4.78	-0.248	-0.27	B0.5V	
026207	5	36	26.0	+09	56	52.6	84.108323	+09.947939	3.39	-0.160	-0.13	O...	
026220	5	36	25.1	-05	22	24.8	84.104715	-05.373553	4.98	0.	0.00	O7	
026235	5	36	32.2	-05	24	8.5	84.134158	-05.402356	4.98	-0.097	0.03	O9.5Vpe	
026237	5	36	32.8	-04	49	29.0	84.136594	-04.824714	4.58	-0.183	-0.19	B2III...	
026241	5	36	35.0	-05	53	46.5	84.145870	-05.896239	2.75	-0.210	-0.22	O9III	
026311	5	37	24.4	-01	11	19.4	84.351728	-01.188716	1.69	-0.184	-0.16	B0Ia	
026366	5	38	11.9	+09	18	5.5	84.549594	+09.301518	4.09	0.951	1.02	G8III-IV	
026451	5	39	3.0	+21	9	17.2	84.762626	+21.154771	2.97	-0.148	-0.15	B4IIIp	
026549	5	39	55.6	-02	35	17.9	84.981705	-02.588296	3.77	-0.190	-0.25	O9.5V...	
026563	5	40	1.4	-07	12	5.2	85.005653	-07.201436	4.77	0.139	0.16	A4V	
026594	5	40	25.7	+04	7	58.7	85.106895	+04.132976	4.50	-0.098	-0.02	B3IIIe	
026634	5	40	30.0	-34	3	46.5	85.125173	-34.062906	2.65	-0.120	-0.07	B7IV	
026727	5	41	56.7	-01	55	54.9	85.486357	-01.931927	1.74	-0.199	-0.18	O9.5Ib0SB	
026736	5	42	2.3	-01	7	5.6	85.509787	-01.118213	4.95	-0.197	-0.21	B2IV-V	
026777	5	42	39.3	+16	32	39.6	85.663631	+16.544330	4.84	-0.125	-0.10	B3IV...	
026885	5	43	41.6	+01	29	3.0	85.923360	+01.484178	4.90	1.144	1.17	K1III	
027072	5	45	26.6	-22	26	31.8	86.360897	-22.442154	3.59	0.481	0.57	F7V	
027100	5	44	49.0	-65	43	36.5	86.204372	-65.726817	4.34	0.217	0.27	A7V	
027288	5	48	1.3	-14	48	53.4	87.005314	-14.814822	3.55	0.104	0.11	A2Vann	
027321	5	47	50.6	-51	3	32.0	86.960642	-51.058898	3.85	0.171	0.18	A3V	
027366	5	48	52.3	-09	39	46.6	87.217925	-09.662948	2.07	-0.168	-0.14	B0.5Iavar	
027468	5	50	27.6	+24	34	24.0	87.614904	+24.573336	4.88	1.021	1.04	G8IIIvar	
027483	5	50	48.2	+39	11	11.8	87.700819	+39.186618	4.51	0.949	0.95	G8III	
027511	5	50	52.2	+12	39	24.5	87.717454	+12.656797	4.89	-0.068	-0.05	B9IV	
027530	5	50	15.4	-56	9	41.2	87.563966	-56.161443	4.50	1.075	1.06	K1III	
027628	5	51	47.4	-35	45	38.9	87.947311	-35.760804	3.12	1.146	1.10	K1.5III	
027639	5	52	38.7	+37	18	35.8	88.161106	+37.309940	4.72	1.621	1.90	M1III	
027654	5	52	20.0	-20	52	42.8	88.083143	-20.878568	3.76	0.984	1.05	G8III/IV	
027673	5	53	7.2	+39	9	10.3	88.280042	+39.152872	3.97	1.132	1.07	K0III	
027750	5	53	39.7	+01	51	32.5	88.415399	+01.859034	4.76	1.382	1.31	K2IIvar	
027810	5	53	58.1	-33	47	50.9	88.492155	-33.797470	4.88	-0.154	-0.14	B5V	
027830	5	54	48.3	+27	36	56.1	88.701330	+27.615585	4.56	-0.008	0.00	A0V	
027890	5	54	16.9	-63	4	57.5	88.570402	-63.082652	4.65	1.022	1.03	K1III/IV	
027913	5	55	46.6	+20	16	42.1	88.944008	+20.278350	4.39	0.594	0.66	G0V	
027949	5	56	49.0	+55	42	34.0	89.204371	+55.709434	4.96	0.052	0.09	A2V	
027989	5	56	26.7	+07	24	34.3	89.111164	+07.409522	0.45	1.500	2.32	M2Ib	
028010	5	56	18.5	-37	7	6.5	89.077014	-37.118486	4.97	1.102	1.03	K1IIICN...00	
028103	5	57	28.6	-14	9	54.2	89.368975	-14.165067	3.71	0.337	0.39	F1V	
028199	5	58	22.2	-35	16	55.4	89.592683	-35.282042	4.36	-0.165	-0.16	B2.5IV	
028237	5	59	27.2	+25	57	16.7	89.863257	+25.954628	4.81	-0.088	-0.04	B1Ib	
028328	5	59	52.0	-42	48	53.7	89.966708	-42.814929	3.96	1.146	1.06	K0III	
028358	6	1	27.8	+54	17	0.7	90.365728	+54.283514	3.72	1.010	0.99	K0III	
028360	6	1	15.2	+44	56	49.9	90.313276	+44.947203	1.90	0.077	0.05	A2V	
028380	6	1	19.4	+37	12	42.5	90.330996	+37.211815	2.65	-0.083	-0.06	A0p0Si	
028404	6	1	40.8	+45	56	10.4	90.419918	+45.936226	4.30	1.701	2.51	M3IIvar	
028413	6	1	13.9	-03	4	30.3	90.308018	-03.075087	4.53	1.202	1.26	K2IIIvar	
028574	6	2	56.8	-10	35	57.4	90.736616	-10.599275	4.92	-0.128	-0.08	B5III	
028614	6	3	40.6	+09	38	43.1	90.919195	+09.645306	4.12	0.170	0.19	Am...	
028716	6	5	18.9	+20	8	8.9	91.328950	+20.135797	4.64	0.236	0.41	B2Iavar	
028734	6	5	33.0	+23	15	35.3	91.387303	+23.259815	4.16	0.835	0.88	G7III	
028816	6	6	2.1	-16	29	15.4	91.508680	-16.487601	4.92	0.196	0.21	Ap0shell	
028910	6	7	13.2	-14	56	20.4	91.804903	-14.938988	4.67	0.046	0.04	A0V	
029034	6	8	20.0	-37	15	26.8	92.083432	-37.257445	5.00	-0.095	-0.08	B8:IV	
029038	6	8	54.9	+14	45	49.1	92.228552	+14.763631	4.42	-0.164	-0.17	B3IV	
029276	6	10	45.4	-54	58	28.6	92.689209	-54.974611	4.72	-0.229	-0.24	B0.5IV	
029426	6	13	16.6	+14	12	5.2	93.319077	+14.201442	4.45	-0.180	-0.16	B3IV	
029434	6	13	24.6	+16	7	22.9	93.352508	+16.123034	4.95	-0.149	-0.12	B5Vn	



## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
029651	6	16	0.1	-06	17	1.3	94.532	-06.283705	3.99	1.319	1.27	K3III
029655	6	16	17.8	+22	29	52.2	94.074078	+22.497843	3.31	1.600	2.70	M3III
029696	6	16	52.5	+29	29	13.9	94.218858	+29.487206	4.32	1.021	1.04	G8IIIvar
029735	6	16	49.5	-13	43	40.0	94.206290	-13.727774	5.00	-0.078	-0.05	B9V
029807	6	17	23.3	-35	8	58.7	94.347284	-35.149638	4.37	0.978	0.94	G8II
029997	6	21	25.8	+69	18	27.6	95.357651	+69.307657	4.76	0.025	0.05	A0Vn
030060	6	21	41.7	+58	59	57.6	95.423631	+58.999344	4.44	0.032	0.05	A2Vs
030093	6	21	10.2	-02	57	22.4	95.292618	-02.956232	4.91	1.613	1.90	M1III
030122	6	21	13.0	-30	4	30.6	95.303988	-30.075179	3.02	-0.160	-0.20	B2.5V
030277	6	22	58.4	-33	26	58.5	95.743339	-33.449582	3.85	0.858	0.88	G7II
030324	6	23	44.1	-17	58	8.9	95.933772	-17.969151	1.98	-0.240	-0.24	B1II/III
030343	6	24	22.9	+22	29	57.9	96.095458	+22.499403	2.87	1.621	2.30	M3IIIvar
030419	6	25	0.8	+04	34	44.5	96.253366	+04.579038	4.39	0.215	0.25	A5IV
030438	6	24	28.4	-52	42	33.5	96.118454	-52.709304	-0.62	0.164	0.23	F0Ib
030520	6	26	42.4	+49	16	23.4	96.676652	+49.273180	4.92	1.905	1.94	K5Iabvar
030788	6	29	2.5	-32	35	46.3	97.260511	-32.596201	4.47	-0.169	-0.16	B4V
030867	6	29	57.5	-07	2	59.4	97.489434	-07.049822	3.76	-0.113	-0.11	B3Ve
030883	6	30	21.5	+20	11	42.6	97.589515	+20.195160	4.13	-0.115	-0.10	B6III
031125	6	32	50.1	-23	26	12.4	98.208939	-23.436782	4.34	-0.245	-0.24	B1III
031216	6	34	10.5	+07	18	49.9	98.543597	+07.313853	4.47	0.023	0.09	A0Ib
031407	6	35	29.7	-52	59	44.0	98.873605	-52.995567	4.35	-0.021	0.06	B9III
031416	6	36	2.5	-22	59	5.6	99.010465	-22.984897	4.54	-0.035	-0.01	A0III
031592	6	37	42.6	-19	16	38.9	99.427336	-19.277464	3.95	1.037	1.02	K1III+...
031681	6	39	4.1	+16	22	37.3	99.766881	+16.377015	1.93	0.001	0.04	A0IV
031685	6	38	28.8	-43	13	3.4	99.620174	-43.217617	3.17	-0.103	-0.07	B8IIIOSB
031700	6	38	55.5	-18	15	33.7	99.731065	-18.259351	4.42	1.137	1.12	K0II/III
031827	6	40	21.2	-14	10	6.3	100.088241	-14.168420	4.82	1.459	1.45	K2III
031832	6	41	0.4	+42	27	56.6	100.251572	+42.465712	4.80	1.236	1.17	K3III
031978	6	42	16.3	+09	52	19.6	100.567876	+09.872110	4.66	-0.233	-0.22	O7
032246	6	45	22.6	+25	6	20.6	101.344191	+25.105716	3.06	1.377	1.22	A3mA6-A9
032249	6	45	18.8	+13	12	8.5	101.328217	+13.202362	4.49	1.167	1.11	K1III
032349	6	46	11.0	-16	44	59.3	101.546002	-16.749818	-1.44	0.009	-0.02	A0m...
032362	6	46	36.5	+12	52	6.0	101.651956	+12.868322	3.35	0.443	0.48	F5IV
032438	6	48	18.3	+59	24	53.4	102.076429	+59.414825	4.86	0.084	0.10	A3V
032533	6	48	36.4	+08	0	36.0	102.151557	+08.009999	4.77	1.396	1.36	K4III
032578	6	49	5.2	+02	23	4.6	102.271523	+02.384619	4.48	1.099	1.06	K0III
032607	6	48	25.9	-61	58	2.0	102.107747	-61.967215	3.24	0.225	0.28	A7IV
032759	6	50	43.2	-32	32	12.9	102.679818	-32.536920	3.50	-0.116	-0.10	B1.5IVne
032761	6	50	21.9	-53	39	2.6	102.591406	-53.650711	4.41	0.899	0.92	G6II
032768	6	50	31.2	-50	38	36.3	102.629832	-50.643420	2.94	1.207	1.14	K0III...
032844	6	52	25.5	+41	45	4.1	103.106136	+41.751148	4.99	1.256	1.23	K3III
032855	6	51	43.7	-34	23	46.9	102.931948	-34.396349	4.99	1.379	1.28	K2/K3III
033018	6	54	20.1	+33	55	50.4	103.583920	+33.930656	3.60	0.102	0.14	A3III
033092	6	54	33.9	-20	15	17.3	103.641231	-20.254796	4.82	-0.212	-0.21	B1Ib
033152	6	55	6.5	-24	12	54.2	103.777035	-24.215059	3.89	1.740	1.58	K3Iab
033160	6	55	16.9	-12	4	10.8	103.820488	-12.069664	4.08	1.418	1.49	K4III
033202	6	55	58.1	+13	8	45.8	103.992189	+13.146069	4.73	0.321	0.36	F0Vp
033302	6	56	38.6	-20	10	4.7	104.160788	-20.167963	4.66	0.374	0.46	F2IV/V
033345	6	57	11.3	-14	4	31.4	104.296963	-14.075390	5.00	1.182	1.30	B9.5V
033347	6	57	11.1	-17	5	10.5	104.296354	-17.086241	4.36	-0.063	0.01	B3Ib/II
033357	6	56	53.5	-48	45	11.0	104.223125	-48.753057	4.94	1.668	2.05	M1III
033449	6	59	18.3	+58	23	20.6	104.826135	+58.389058	4.35	0.850	0.85	G5III-IV
033485	6	59	19.8	+45	3	39.8	104.832372	+45.061061	4.90	0.027	0.05	A2Vn
033579	6	59	33.0	-29	0	19.5	104.887440	-29.005422	1.50	-0.211	-0.20	B2II
033694	7	3	27.4	+76	56	33.0	105.864316	+76.942490	4.55	1.365	1.35	K4III
033856	7	2	39.3	-27	58	11.5	105.663914	-27.969861	3.49	1.729	1.82	K4III
033971	7	4	4.8	-04	16	30.0	106.019886	-04.274992	4.99	-0.195	-0.19	B1V
033977	7	4	0.4	-23	52	8.6	106.001547	-23.869053	3.02	-0.077	-0.03	B3Ia
034045	7	4	49.3	-15	40	10.5	106.205378	-15.669572	4.11	-0.112	-0.09	B8II

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
034059	7	4	30.3	-49	37	9.1	106.126175	-49.619196	4.92	0.140	0.15	A4IV	
034088	7	5	30.1	+20	32	1.7	106.375314	+20.533794	4.01	0.899	0.90	G3Ibv0SB	
034444	7	9	20.8	-26	25	54.8	107.336822	-26.431897	1.83	0.671	0.67	F8Ia	
034481	7	8	32.4	-70	32	12.6	107.135170	-70.536838	3.78	1.006	0.94	G8IIIvar	
034495	7	9	38.4	-39	41	40.3	107.410155	-39.694536	4.83	-0.179	-0.17	B3IV/V	
034622	7	11	23.7	-04	16	31.8	107.848781	-04.275490	4.91	1.020	1.03	K0III	
034693	7	12	38.0	+30	12	16.2	108.158179	+30.204494	4.41	1.261	1.25	K2III	
034752	7	13	16.1	+39	16	47.6	108.317020	+39.279890	4.91	1.451	1.48	K4II-III	
034769	7	13	3.8	-00	32	0.2	108.266015	-00.533395	4.15	-0.005	0.02	A2V	
034834	7	13	13.8	-46	47	58.3	108.307680	-46.799529	4.49	0.324	0.40	F0IV	
034899	7	13	55.5	-45	13	28.5	108.481441	-45.224578	4.87	-0.003	0.02	Ap	
034922	7	14	15.4	-44	40	44.8	108.564079	-44.679112	4.42	1.331	3.46	M5e	
034981	7	15	12.7	-26	23	39.8	108.802945	-26.394384	4.42	-0.170	-0.12	B3III	
035020	7	15	17.0	-48	18	50.2	108.820934	-48.313947	4.75	-0.091	-0.07	B8/B9V	
035037	7	15	45.9	-26	48	53.4	108.941166	-26.814820	4.01	-0.150	-0.08	B2IV/Ve	
035205	7	17	31.5	-27	55	26.7	109.381375	-27.924085	4.66	1.589	2.11	M2III	
035210	7	17	36.3	-23	21	31.5	109.401216	-23.358760	4.83	1.601	1.77	K4III	
035228	7	16	48.8	-68	0	0.5	109.203179	-68.127	3.97	0.760	0.78	F6II	
035264	7	17	58.4	-37	8	27.1	109.493234	-37.140851	2.71	1.616	1.65	K3Ib	
035350	7	19	26.5	+16	29	45.8	109.860504	+16.496065	3.58	0.106	0.12	A3V...	
035363	7	19	8.5	-36	46	40.8	109.785603	-36.778004	4.65	-0.099	0.11	B2V+...	
035384	7	20	18.7	+49	25	13.3	110.078024	+49.420352	5.00	0.087	0.16	A4IIIIn	
035412	7	19	39.1	-24	36	10.7	109.912972	-24.602973	4.88	-0.160	-0.06	O7f	
035415	7	19	41.0	-24	59	55.2	109.920733	-24.998658	4.37	-0.132	-0.10	O9Ib	
035550	7	21	31.5	+21	56	13.5	110.381150	+21.937091	3.50	0.374	0.44	F0IV...	
035727	7	23	15.6	-19	3	46.3	110.815175	-19.062847	4.94	-0.039	0.01	B5II/III	
035904	7	25	1.5	-29	21	0.8	111.256241	-29.350236	2.45	-0.083	0.01	B5Ia	
036041	7	26	55.9	+09	13	40.6	111.732911	+09.227948	4.99	0.991	0.96	G8III	
036046	7	27	11.0	+27	44	57.7	111.795862	+27.749360	3.78	1.024	1.01	G9III+...	
036145	7	28	28.8	+49	9	44.7	112.120021	+49.162429	4.61	-0.001	0.02	A1V	
036188	7	28	25.4	+08	14	24.7	112.106020	+08.240182	2.89	-0.097	-0.07	B8Vvar	
036284	7	29	26.5	+08	52	34.2	112.360438	+08.876174	4.33	1.425	1.48	K3III0SB	
036366	7	30	37.2	+31	44	8.9	112.655068	+31.735801	4.16	0.320	0.40	F0V...	
036377	7	29	58.6	-43	21	0.3	112.494086	-43.350074	3.25	1.509	1.54	K5III0SB	
036425	7	31	6.2	+11	57	22.1	112.775772	+11.956147	4.55	1.276	1.21	K2III	
036431	7	30	51.3	-23	4	28.2	112.713860	-23.074501	4.85	0.243	0.35	A6Ib/II	
036514	7	31	37.5	-31	0	46.6	112.906045	-31.012948	4.65	0.904	0.89	G2Ib...	
036547	7	35	52.2	+82	21	33.5	113.967609	+82.359312	4.92	1.633	2.66	M4IIIa	
036773	7	34	52.7	-14	34	34.3	113.719727	-14.576205	4.82	1.362	1.37	A4Ia	
036795	7	35	3.6	-22	20	53.6	113.764820	-22.348217	4.44	0.521	0.60	F6V	
036850	7	36	5.6	+31	50	4.1	114.023280	+31.834469	1.58	0.034	0.05	A2Vm	
036917	7	36	19.5	-28	25	21.2	114.081329	-28.422569	4.65	-0.111	-0.12	B8V	
036942	7	36	14.6	-52	35	13.5	114.060721	-52.587089	4.93	1.373	1.39	K3III	
036962	7	37	22.0	+26	50	29.4	114.341834	+26.841511	4.06	1.540	1.66	K5III	
037096	7	38	14.3	-35	1	21.2	114.559705	-35.022567	4.53	-0.081	-0.08	B8IV/V	
037173	7	39	16.8	-25	25	10.2	114.819812	-25.419501	4.69	-0.100	-0.07	B8IV	
037229	7	39	47.7	-26	51	31.0	114.948669	-26.858614	3.80	-0.159	-0.15	B5IV	
037265	7	40	41.7	+34	31	42.1	115.173801	+34.528348	4.89	0.413	0.47	F3III	
037279	7	40	31.9	+05	9	47.3	115.132712	+05.163151	0.40	0.432	0.49	F5IV-V	
037297	7	40	17.0	-38	21	47.3	115.071014	-38.363132	4.84	-0.189	-0.17	B3V	
037379	7	41	27.7	-15	19	11.5	115.365390	-15.319858	4.98	1.543	1.49	K3III	
037447	7	42	22.2	-09	36	26.9	115.592430	-09.607470	3.94	1.022	1.01	K0III	
037504	7	41	31.0	-72	39	43.7	115.379241	-72.662144	3.93	1.033	1.02	K0III	
037609	7	44	58.9	+58	39	9.7	116.245542	+58.652690	4.93	0.104	0.17	A3IVn	
037629	7	44	46.6	+28	49	28.8	116.194290	+28.824668	4.23	1.118	1.12	K1III0SB	
037648	7	44	29.3	-28	28	5.0	116.122222	-28.468043	4.63	1.632	1.76	K5III	
037677	7	44	45.1	-29	0	44.2	116.187883	-29.012285	3.94	0.160	0.34	A2Iab	
037740	7	45	51.8	+24	20	22.9	116.465900	+24.339700	3.57	0.932	0.90	G8III	
037819	7	46	5.6	-38	1	36.3	116.523178	-38.026744	3.62	1.706	1.82	K4III	

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
037826	7	46	45.0	+27	58	3.1	116.687705	+27.967528	1.16	0.991	0.97	K0IIIvar
037908	7	47	28.9	+18	27	3.4	116.870620	+18.450940	4.89	1.425	1.54	K5III
038070	7	49	3.8	-25	59	48.5	117.265820	-25.996813	4.40	-0.070	0.13	B1IV:nne
038089	7	49	2.1	-47	8	16.6	117.258837	-47.137955	4.69	1.039	1.03	K0III
038164	7	49	57.3	-46	26	0.0	117.488605	-46.433342	4.10	-0.160	-0.17	B0III
038170	7	50	17.0	-24	55	12.3	117.570712	-24.920082	3.34	1.218	1.08	G6Ia
038414	7	53	1.5	-40	38	14.9	118.256373	-40.637474	3.71	1.012	1.04	G5III...
038455	7	53	28.6	-38	55	29.0	118.369055	-38.924729	4.49	-0.188	-0.18	B2V
038500	7	53	43.4	-49	40	30.2	118.430636	-49.675059	4.63	-0.228	-0.24	B1.5Vp
038518	7	53	59.6	-48	9	54.5	118.498285	-48.165134	4.22	-0.130	-0.11	B0.5Ib
038538	7	54	55.9	+26	42	11.0	118.732898	+26.703062	4.97	0.098	0.14	A3V
038827	7	57	22.5	-53	2	46.3	119.343890	-53.046205	3.46	-0.177	-0.17	B3IVp
038835	7	57	52.2	-22	56	38.9	119.467395	-22.944135	4.20	0.718	0.75	F7/F8II
038901	7	58	36.3	-30	23	56.4	119.651414	-30.399003	4.76	0.151	0.24	A7III
038957	7	58	55.0	-49	18	34.4	119.729068	-49.309566	4.47	-0.180	-0.14	B1Vp0+0B2
039079	8	0	54.6	-03	44	42.6	120.227316	-03.745156	4.93	1.205	1.22	K2III
039095	8	0	55.2	-18	27	54.2	120.230158	-18.465049	4.61	0.087	0.11	A1V
039138	8	0	37.5	-63	37	58.7	120.156293	-63.632971	4.81	-0.173	-0.16	B3V
039211	8	2	25.0	-01	27	33.8	120.604221	-01.459392	4.69	1.475	1.54	K4III
039311	8	3	29.2	+02	16	6.3	120.871789	+02.268426	4.39	1.252	1.27	K2III
039424	8	4	57.4	+27	43	35.8	121.239317	+27.726622	4.94	1.130	1.09	K2III
039429	8	4	24.6	-40	4	13.5	121.102614	-40.070408	2.21	-0.269	-0.22	O5IAf
039757	8	8	32.7	-24	22	24.1	122.136329	-24.373364	2.83	0.458	0.42	F2mF5IIp
039794	8	7	59.8	-68	41	10.2	121.999164	-68.686164	4.35	-0.113	-0.10	B6IV
039847	8	10	12.9	+51	26	12.1	122.553592	+51.436696	4.78	0.048	0.10	A2V
039863	8	9	46.5	-03	3	13.3	122.443639	-03.053699	4.36	0.970	0.92	G2Ib
039903	8	9	23.9	-61	22	27.2	122.349502	-61.374227	4.74	0.437	0.53	F5V
039906	8	10	4.6	-19	18	54.4	122.519162	-19.315114	4.40	-0.160	-0.14	B5V
039953	8	10	15.4	-47	24	24.3	122.564231	-47.406755	1.75	-0.145	-0.14	WC80+0O9I
040084	8	12	22.5	-12	59	53.2	123.093552	-12.998103	4.72	0.939	0.93	K0III
040091	8	12	11.9	-39	41	22.8	123.049545	-39.689660	4.44	1.590	1.62	K4III
040096	8	12	13.5	-43	3	30.3	123.056457	-43.058407	4.73	0.164	0.30	A7Ib
040167	8	13	33.4	+17	34	30.5	123.388994	+17.575143	4.67	0.531	0.60	G0V
040259	8	14	24.8	-15	51	37.3	123.603243	-15.860375	4.99	1.066	1.02	G5Ib/II
040274	8	14	22.8	-35	58	17.8	123.594902	-35.971618	4.78	-0.110	-0.01	B2ne
040326	8	14	53.0	-40	25	14.6	123.720941	-40.420728	4.42	1.170	1.15	K1II/III
040526	8	17	47.3	+09	6	41.6	124.446981	+09.111546	3.53	1.481	1.47	K4III
040702	8	17	52.9	-76	59	35.6	124.470606	-76.993227	4.05	0.413	0.49	F5III
040706	8	19	26.1	-36	43	59.5	124.858863	-36.733200	4.44	0.222	0.25	A4m...
040888	8	19	53.8	-77	33	33.7	124.974037	-77.559366	4.34	1.161	1.10	K0III-IV
040945	8	22	18.6	-33	7	48.9	125.577472	-33.130238	4.83	1.419	1.35	K2/K3III
041037	8	22	59.6	-59	35	8.3	125.748511	-59.585646	1.86	1.196	1.16	K3III+B2V
041039	8	23	15.1	-48	34	0.2	125.812892	-48.566708	4.79	-0.146	-0.12	B1V
041075	8	24	26.1	+43	6	38.8	126.108920	+43.110779	4.25	1.550	1.61	K5III
041307	8	26	50.0	-03	59	4.2	126.708510	-03.984496	3.91	-0.012	-0.02	A0V
041312	8	25	59.1	-66	12	56.2	126.496382	-66.215603	3.77	1.132	1.10	K2IIIvar
041704	8	32	11.9	+60	38	14.3	128.049400	+60.637298	3.35	0.856	0.87	G4II-III
042134	8	35	52.9	-58	5	28.3	128.970589	-58.091197	4.84	0.981	0.98	K0III
042312	8	38	28.3	-43	4	20.1	129.617726	-43.072247	4.11	0.109	0.20	A6II
042313	8	38	53.9	+05	37	13.5	129.724616	+05.620414	4.14	0.003	0.02	A1Vnn
042402	8	39	59.0	+03	15	27.1	129.996036	+03.257528	4.45	1.216	1.12	K2III
042483	8	40	41.0	-29	38	45.0	130.170943	-29.645831	4.86	0.900	0.99	G5III
042509	8	41	8.3	-12	33	34.9	130.284456	-12.559698	4.98	1.415	1.40	K3III
042515	8	41	1.4	-35	23	34.1	130.255787	-35.392812	3.97	0.936	0.91	G5II/III
042527	8	42	14.6	+64	14	36.6	130.560708	+64.243491	4.59	1.179	1.18	K2III
042536	8	40	58.0	-53	0	21.7	130.241569	-53.006017	3.60	-0.168	-0.16	B3IV
042568	8	41	8.1	-59	50	43.6	130.283610	-59.845432	4.31	-0.117	-0.08	B1.5III
042570	8	41	24.4	-46	43	59.7	130.351629	-46.733239	3.77	0.670	0.92	F3Ia
042624	8	41	59.4	-47	24	6.7	130.497489	-47.401859	4.74	0.137	0.25	A5II

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α	δ	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
042662	8	42	48.8	-16	1	44.6	130.703169	-16.029069	4.87	1.063	1.04	K0IIICN...00
042726	8	43	5.8	-53	11	56.8	130.774190	-53.199115	4.83	-0.173	-0.18	B3IV
042799	8	44	27.1	+03	18	46.5	131.112861	+03.312909	4.30	-0.192	-0.20	B3V...
042806	8	44	38.5	+21	22	56.8	131.160495	+21.382451	4.66	0.010	0.03	A1IV
042828	8	44	32.2	-33	16	19.8	131.134355	-33.272160	3.68	-0.180	-0.17	B1.5III
042835	8	44	49.6	-07	19	10.8	131.206599	-07.319659	4.63	0.840	0.85	G2Ib
042884	8	45	14.4	-42	44	7.1	131.309832	-42.735319	4.05	0.874	0.89	G5III
042911	8	46	1.0	+18	3	59.2	131.504296	+18.066454	3.94	1.083	1.01	K0III
042913	8	45	21.2	-54	47	44.7	131.338159	-54.795744	1.93	0.043	0.05	A1V
043023	8	46	49.5	-46	7	42.1	131.706206	-46.128352	3.87	0.015	0.09	A1III
043067	8	47	29.2	-13	38	5.4	131.871470	-13.634830	4.32	0.900	0.91	G8III
043103	8	48	6.8	+28	40	20.4	132.028523	+28.672345	4.03	1.007	0.96	G8Iab:
043105	8	47	19.0	-56	51	24.6	131.829031	-56.856826	4.50	-0.169	-0.16	B3Vne
043109	8	48	1.0	+06	19	52.6	132.004240	+06.331286	3.38	0.685	0.78	G0III-IV
043234	8	49	40.6	+05	44	58.7	132.418965	+05.749651	4.35	-0.044	-0.03	A0Vn
043347	8	50	36.4	-45	23	46.5	132.651874	-45.396236	4.94	0.043	0.06	A2III
043409	8	51	31.8	-27	47	53.1	132.882560	-27.798083	4.02	1.272	1.24	K3III
043783	8	55	34.7	-60	44	5.7	133.894381	-60.734920	3.84	-0.104	-0.08	B8III
043813	8	56	38.1	+05	51	17.2	134.158570	+05.854788	3.11	0.978	0.96	G8III-IV
043825	8	56	32.1	-27	46	24.2	134.133736	-27.773393	4.87	0.142	0.16	A3IV
043878	8	57	1.8	-52	48	52.3	134.257662	-52.814522	4.68	-0.115	-0.11	B5V
043937	8	57	32.9	-59	19	14.4	134.386881	-59.320662	4.93	-0.182	-0.21	B2IV-V
044066	8	59	46.2	+11	45	55.3	134.942487	+11.765375	4.26	0.141	0.14	A5m
044127	9	0	48.3	+47	56	52.7	135.201421	+47.947960	3.12	0.223	0.25	A7IV
044191	9	0	58.1	-41	20	45.5	135.242170	-41.345961	4.45	0.646	0.75	Fp
044248	9	2	9.3	+41	41	18.5	135.538750	+41.688459	3.96	0.463	0.53	F5V
044382	9	2	48.7	-66	29	24.8	135.702971	-66.490235	4.00	0.145	0.15	Am
044390	9	4	37.8	+67	32	8.9	136.157560	+67.535807	4.74	1.542	2.15	M3III
044471	9	5	13.1	+47	3	42.9	136.304678	+47.061912	3.57	0.007	0.03	A1Vn
044511	9	4	58.0	-47	11	31.6	136.241590	-47.192112	3.75	1.174	1.11	K2III
044599	9	5	11.6	-72	41	50.2	136.298302	-72.697290	4.47	0.607	0.67	F6II-III
044626	9	5	49.2	-70	37	59.6	136.455066	-70.633209	4.66	-0.149	-0.13	B2IVe
044659	9	7	12.5	+04	59	49.7	136.802044	+04.997133	4.99	1.189	1.17	K2II-III
044700	9	8	1.0	+38	21	24.3	137.004130	+38.356744	4.56	1.037	0.97	G8Ib-II
044816	9	8	51.7	-43	31	42.0	137.215409	-43.528328	2.23	1.665	1.69	K4Ib-II
044824	9	9	4.8	-25	57	15.9	137.270088	-25.954415	4.62	1.594	1.66	K4/K5III
044901	9	10	30.9	+51	30	29.2	137.628842	+51.508122	4.46	0.288	0.30	Am
045038	9	12	25.7	+67	2	11.2	138.106996	+67.036457	4.80	0.489	0.57	F7IV-V
045075	9	12	49.7	+63	24	57.9	138.207262	+63.416085	4.67	0.381	0.45	Am
045080	9	11	35.2	-59	3	49.4	137.896589	-59.063734	3.43	-0.190	-0.17	B2IV
045085	9	11	55.6	-44	57	53.6	137.981856	-44.964889	4.99	0.222	0.36	B5Ia
045101	9	11	48.6	-62	24	50.1	137.952651	-62.413907	3.96	-0.180	-0.18	B3IV
045238	9	13	26.9	-69	48	51.2	138.362123	-69.814219	1.67	0.070	0.02	A2IV
045336	9	15	35.1	+02	12	50.4	138.896252	+02.213991	3.89	-0.060	-0.07	B9.5V
045439	9	16	32.4	-38	40	7.5	139.134890	-38.668753	4.92	1.084	1.06	K1III
045448	9	16	41.6	-37	30	43.2	139.173304	-37.511992	4.63	0.473	0.52	F3/F5V
045493	9	17	51.9	+53	55	23.3	139.466160	+53.923137	4.80	0.199	0.26	A5V
045496	9	16	51.9	-57	38	25.7	139.216205	-57.640485	4.34	1.602	1.83	M1III
045556	9	17	43.1	-59	22	27.8	139.429690	-59.374388	2.21	0.189	0.28	A8Ib
045688	9	20	17.9	+36	42	6.3	140.074726	+36.701763	3.82	0.066	0.12	A1V
045751	9	20	54.3	-12	4	30.4	140.226244	-12.075100	4.77	0.927	0.91	G8III
045811	9	21	37.9	-09	39	23.2	140.407715	-09.656453	4.80	0.913	0.92	F5V+...
045856	9	21	30.6	-62	30	19.0	140.377398	-62.505281	4.79	0.926	0.96	G6III
045860	9	22	28.8	+34	17	30.5	140.619990	+34.291811	3.14	1.550	1.65	M0IIIvar
045902	9	22	32.1	-26	3	59.2	140.633648	-26.066433	4.71	1.633	1.91	M0III
045941	9	22	50.5	-55	6	42.1	140.710546	-55.111700	2.47	-0.141	-0.17	B2IV
046026	9	24	13.4	-28	56	7.0	141.055669	-28.935291	4.71	0.892	0.91	G8III
046146	9	26	1.1	+26	4	47.6	141.504492	+26.079886	4.47	1.222	1.20	K2III
046371	9	28	23.0	-22	26	51.9	142.095707	-22.447762	4.72	1.154	1.11	K1III

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
046390	9	28	44.5	-08	45	41.5	142.185473	-08.761522	1.99	1.440	1.39	K3III
046509	9	30	20.4	-02	52	21.6	142.584835	-02.872668	4.59	0.411	0.52	F6V
046515	9	30	13.0	-36	3	17.9	142.554235	-36.054982	4.51	1.408	1.37	K3III
046651	9	31	37.7	-40	34	14.3	142.907209	-40.570634	3.60	0.371	0.43	F2IV
046701	9	31	56.2	-57	8	19.2	142.984246	-57.138657	3.16	1.538	1.59	K5III
046733	9	33	21.3	+62	57	26.7	143.338836	+62.957416	3.65	0.360	0.41	F0IV
046750	9	33	3.4	+22	51	47.2	143.264229	+22.863124	4.32	1.541	1.63	K5IIIvar
046771	9	33	12.6	+11	11	40.7	143.302472	+11.194628	4.99	1.046	0.89	K0IIIvar
046776	9	33	10.8	-01	17	21.7	143.294812	-01.289351	4.54	0.109	0.16	A3V
046853	9	34	25.0	+51	34	7.9	143.604057	+51.568861	3.17	0.475	0.56	F6IV
046952	9	35	39.3	+36	17	31.0	143.913784	+36.291947	4.54	0.914	0.91	G8III
046974	9	35	7.6	-59	20	6.5	143.781611	-59.335128	4.08	-0.013	0.01	B5II
046977	9	36	31.1	+69	43	30.7	144.129451	+69.725186	4.54	0.781	0.83	G4III-IV
047006	9	36	25.2	+51	56	44.0	144.104963	+51.945544	4.47	0.027	0.08	A2V
047029	9	36	31.3	+39	30	57.1	144.130368	+39.515874	4.81	0.992	1.00	K0III
047175	9	37	40.1	-49	27	39.6	144.417129	-49.460993	4.34	0.173	0.18	A5V
047193	9	40	15.6	+81	13	10.4	145.065134	+81.219568	4.28	1.488	1.46	K3III
047205	9	38	27.0	+06	43	46.0	144.612416	+06.729440	5.00	1.051	1.03	K1IIIvar
047310	9	39	40.7	+04	32	31.7	144.919751	+04.542134	4.68	1.310	1.35	K3III
047391	9	40	0.1	-61	26	5.9	145.299	-61.434982	4.51	-0.070	-0.06	B9V
047431	9	41	3.3	-01	15	1.8	145.263795	-01.250509	3.90	1.313	1.29	K3IIIvar
047508	9	42	24.1	+09	47	3.6	145.600616	+09.784344	3.52	0.516	0.59	A5V+...
047522	9	42	21.4	-23	41	57.2	145.589232	-23.699234	4.76	-0.117	-0.10	B5V
047592	9	43	18.1	-24	1	19.0	145.825550	-24.021932	4.93	0.534	0.58	G0V
047758	9	45	15.0	-27	52	40.4	146.312638	-27.877901	4.78	0.516	0.61	A7V+...
047854	9	45	53.6	-62	37	0.4	146.473135	-62.616789	3.69	1.010	1.03	G5Iab/Ib
047908	9	47	10.8	+23	39	53.8	146.795139	+23.664957	2.97	0.808	0.81	G0II
048002	9	47	41.3	-65	10	53.4	146.922095	-65.181487	2.92	0.273	0.42	A9
048319	9	52	38.4	+58	55	36.8	148.160143	+58.926897	3.78	0.291	0.39	F0IV
048356	9	52	36.5	-14	57	27.7	148.152286	-14.957683	4.11	0.918	0.92	G6/G8III
048374	9	52	35.3	-46	39	30.7	148.147030	-46.658525	4.58	1.172	1.10	G5Ib
048402	9	53	41.4	+53	57	11.7	148.422315	+53.953257	4.55	0.038	0.09	A3IV
048455	9	54	5.7	+25	53	42.9	148.523809	+25.895245	3.88	1.222	1.13	K0III
048559	9	55	16.3	-26	2	37.4	148.817928	-26.043730	4.87	1.199	1.19	K2III
048615	9	55	58.8	-19	7	17.6	148.994890	-19.121547	4.94	1.559	1.75	K5III
048774	9	57	41.4	-54	40	49.0	149.422493	-54.680265	3.52	-0.067	-0.04	B5Ib
049029	10	1	27.2	+07	55	50.0	150.363330	+07.930567	4.68	1.589	1.96	M2III
049402	10	6	16.2	-13	10	45.7	151.567340	-13.179367	4.60	-0.087	-0.07	B8V
049583	10	8	36.6	+16	38	49.8	152.152599	+16.647177	3.48	-0.031	0.06	A0Ib
049593	10	8	48.5	+35	7	45.0	152.202037	+35.129174	4.49	0.190	0.19	A7V
049637	10	9	9.0	+09	52	53.3	152.287361	+09.881465	4.39	1.448	1.51	K4III
049641	10	9	8.4	-00	29	14.3	152.284921	-00.487296	4.48	-0.032	-0.01	A0III
049669	10	9	37.3	+11	51	5.3	152.405222	+11.851482	1.36	-0.087	-0.10	B7V
049712	10	9	49.9	-51	55	37.6	152.457889	-51.927118	4.85	-0.120	-0.10	B3IV
049841	10	11	44.1	-12	28	15.8	152.933560	-12.471051	3.61	1.007	0.96	K0III
050099	10	14	17.6	-70	9	17.7	153.573446	-70.154918	3.29	-0.074	-0.03	B8III
050191	10	15	43.5	-42	14	20.4	153.931414	-42.238994	3.85	0.051	0.03	A2V
050335	10	17	59.6	+23	17	57.7	154.498219	+23.299366	3.43	0.307	0.39	F0III
050371	10	17	52.3	-61	27	0.7	154.467718	-61.450195	3.39	1.541	1.45	K3II
050372	10	18	30.2	+42	47	45.9	154.626033	+42.796082	3.45	0.029	0.05	A2IV
050555	10	20	30.0	-55	8	52.2	155.124842	-55.147840	4.59	1.600	1.50	K3II
050564	10	21	0.7	+19	21	3.3	155.252929	+19.350906	4.78	0.452	0.53	F6IV
050583	10	21	15.9	+19	43	18.5	155.316064	+19.721815	2.01	1.128	1.17	K0III
050676	10	21	47.5	-56	9	43.5	155.447926	-56.162082	4.50	-0.102	-0.08	B3III
050799	10	23	20.3	-41	46	7.7	155.834458	-41.768793	4.82	1.095	1.06	K1IIIvar
050801	10	23	43.2	+41	22	49.7	155.930029	+41.380468	3.06	1.603	1.77	M0III0SB
050847	10	23	40.1	-67	1	14.7	155.917013	-67.020763	4.97	-0.128	-0.12	B8V
050933	10	25	47.8	+65	26	47.7	156.449268	+65.446573	4.94	-0.052	-0.02	A0sp...
050954	10	24	51.3	-74	9	5.1	156.213933	-74.151427	3.99	0.369	0.43	F2IV

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
051056	10	27	15.2	+33	40	32.4	156.813486	+33.675658	4.72	0.260	0.31	F0V	
051069	10	27	13.7	-16	57	24.9	156.807060	-16.956905	3.83	1.456	1.47	K4III	
051172	10	28	13.8	-31	11	17.0	157.057404	-31.188052	4.28	1.429	1.47	K4III	
051192	10	28	17.3	-57	45	32.9	157.071961	-57.759151	4.65	0.474	0.69	A6Ia	
051232	10	28	44.8	-58	51	35.5	157.186476	-58.859863	3.81	0.317	0.41	F2II	
051233	10	29	14.1	+36	35	9.5	157.308662	+36.585983	4.20	0.908	0.89	G8III-IV	
051438	10	30	55.7	-72	6	50.3	157.731978	-72.113968	4.72	0.042	0.06	A2III	
051459	10	32	6.8	+55	51	33.1	158.028524	+55.859181	4.82	0.541	0.58	F8V	
051495	10	31	34.8	-73	20	33.3	157.895110	-73.342571	4.94	1.677	1.71	K4/K5III	
051523	10	32	16.9	-53	50	7.4	158.070430	-53.835383	4.89	0.500	0.58	F6V	
051576	10	32	51.9	-61	48	23.9	158.216183	-61.806632	3.30	-0.089	0.02	B4Vne	
051624	10	34	2.8	+09	11	5.9	158.511661	+09.184982	3.84	-0.148	-0.13	B1Ib0SB	
051658	10	34	35.6	+40	18	14.1	158.648508	+40.303929	4.72	0.222	0.23	A7IV	
051808	10	37	1.4	+75	35	26.6	159.255834	+75.590726	4.86	0.957	0.94	K0III	
051839	10	35	43.7	-78	43	47.1	158.931935	-78.729744	4.11	1.580	1.71	M0III	
051849	10	36	29.8	-57	40	47.1	159.124056	-57.679760	4.45	1.604	1.62	K3/K4II	
051979	10	38	20.0	-27	32	5.9	159.583538	-27.534971	4.87	1.626	1.89	M1III	
051986	10	38	17.7	-48	20	53.2	159.573864	-48.348108	3.84	0.300	0.35	A3m+...	
052009	10	38	43.0	-13	30	26.4	159.679020	-13.507330	4.89	2.800	2.27	C	
052085	10	39	43.7	-16	59	56.9	159.932262	-16.999149	4.91	0.922	0.85	G8III	
052098	10	40	2.2	+31	51	12.6	160.009167	+31.853491	4.68	0.823	0.82	G0II	
052102	10	39	39.0	-59	18	20.7	159.912454	-59.305749	4.69	1.562	1.63	K4/K5III:	
052154	10	40	14.8	-55	43	34.0	160.061801	-55.726111	4.29	1.025	0.96	G2II	
052370	10	43	4.5	-64	35	23.2	160.768702	-64.589778	4.76	-0.139	-0.13	B3V	
052419	10	43	48.0	-64	31	4.6	160.950134	-64.517933	2.74	-0.220	-0.24	B0Vp	
052468	10	44	26.3	-60	41	25.0	161.109715	-60.690273	4.58	1.700	1.79	K3Ib	
052502	10	44	58.3	-64	5	5.2	161.242811	-64.084771	4.80	-0.134	-0.12	B5Vn	
052633	10	45	58.6	-80	39	51.0	161.494285	-80.664169	4.45	-0.188	-0.19	B2.5IV	
052727	10	47	47.1	-49	32	41.5	161.946315	-49.544870	2.69	0.901	0.91	G5III0SB	
052736	10	47	42.9	-64	30	27.7	161.928838	-64.507688	4.87	-0.149	-0.18	B3IV	
052943	10	50	47.1	-16	19	1.8	162.696429	-16.317160	3.11	1.232	1.22	K0/K1III	
053229	10	54	37.2	+34	5	15.5	163.654908	+34.087633	3.79	1.040	1.07	K0III-IV	
053253	10	54	27.3	-58	58	42.0	163.613957	-58.978336	3.78	0.945	0.96	K0III-IV...0	
053295	10	55	19.4	+43	3	51.4	163.830656	+43.064279	4.66	-0.039	0.01	A1Vs	
053417	10	56	52.9	+24	37	25.9	164.220327	+24.623850	4.30	0.016	0.07	A1	
053502	10	57	49.0	-37	15	52.2	164.454187	-37.264493	4.60	1.006	0.99	K0III	
053740	11	0	55.3	-18	25	27.7	165.230363	-18.424354	4.08	1.079	1.06	K1III	
053773	11	1	14.3	-42	21	8.2	165.309401	-42.352277	4.37	0.116	0.13	A3IV	
053807	11	1	46.4	+03	29	27.1	165.443410	+03.490875	4.84	1.144	1.13	K1III	
053824	11	1	57.8	+05	58	29.2	165.490895	+05.974764	4.98	0.166	0.18	A5III	
053907	11	3	1.6	-02	36	41.4	165.756636	-02.611512	4.73	1.593	1.77	K5III	
053910	11	3	14.6	+56	15	21.3	165.810996	+56.255929	2.34	0.033	0.02	A1V	
053954	11	3	34.8	+20	3	12.0	165.895178	+20.053324	4.42	0.053	0.03	A1m	
054061	11	5	9.5	+61	37	25.8	166.289439	+61.623831	1.81	1.061	1.03	F7V0comp	
054182	11	6	13.7	+07	12	30.8	166.557030	+07.208568	4.62	0.332	0.39	F2III-IVvar0	
054204	11	6	28.0	-27	25	15.0	166.616793	-27.420830	4.92	0.369	0.43	F3IV/V	
054301	11	7	30.7	-62	33	5.0	166.878123	-62.551375	4.62	0.988	0.97	G8III	
054463	11	9	36.1	-59	6	9.4	167.400414	-59.102612	3.93	1.225	1.19	G0Ia	
054539	11	10	58.5	+44	22	14.1	167.743936	+44.370571	3.00	1.144	1.09	K1III	
054682	11	12	49.0	-22	57	16.0	168.204191	-22.954452	4.46	0.025	0.04	A1V	
054751	11	13	37.0	-60	26	44.5	168.404274	-60.445684	4.59	0.541	0.70	A6Ia	
054872	11	15	21.3	+20	23	40.6	168.838686	+20.394625	2.56	0.128	0.12	A4V	
054879	11	15	28.3	+15	18	2.8	168.867709	+15.300791	3.33	-0.003	0.01	A2V	
054951	11	16	27.0	+22	58	1.4	169.112495	+22.967062	4.56	1.657	2.27	M3III	
055084	11	17	51.4	-03	46	49.3	169.464198	-03.780363	4.45	0.210	0.25	A7IVn	
055203	0	1	12.3	+00	7	50.9	00.301045	+00.130801	3.79	0.606	0.68	G0V	
055219	11	19	44.6	+32	57	56.7	169.935670	+32.965756	3.49	1.400	1.37	K3III0SB	
055266	11	20	24.3	+38	3	22.8	170.101425	+38.056330	4.76	0.113	0.11	A2V	
055282	11	20	31.1	-14	54	21.7	170.129391	-14.906029	3.56	1.112	1.12	K0III	

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$		$\delta$		V	U-V	B-V	Espectro
	NH	h	m	s	°	'	"	°	°					
055425	11	22	5.2	-54	37	12.0	170.521666	-54.619998	3.90	-0.157	-0.16	B5Vn		
055434	11	22	20.8	+05	54	0.9	170.586869	+05.900256	4.05	-0.058	-0.06	B9.5Vs		
055560	11	24	6.5	+43	21	12.5	171.026966	+43.353471	4.99	0.998	0.94	G8II		
055588	11	24	21.3	-36	17	38.2	171.088601	-36.293945	5.00	1.464	1.47	K4III		
055642	11	25	8.8	+10	23	59.2	171.286734	+10.399773	4.00	0.423	0.47	F2IV0SB		
055687	11	25	47.9	-10	59	18.5	171.449533	-10.988464	4.81	1.556	1.67	K5III		
055705	11	26	3.5	-17	48	47.9	171.514627	-17.813309	4.06	0.216	0.24	A9V		
055945	11	29	8.7	+02	43	35.9	172.286362	+02.726627	4.95	1.	0.95	G8II-III		
056127	11	31	31.0	-03	8	0.1	172.879006	-03.133360	4.77	1.529	1.62	K4III		
056211	11	32	46.4	+69	12	4.0	173.193195	+69.201123	3.82	1.613	1.79	M0IIIvar		
056280	11	33	26.5	-29	23	23.9	173.360565	-29.389985	4.93	0.540	0.61	F8V		
056343	11	34	9.7	-31	59	16.2	173.540581	-31.987824	3.54	0.947	0.92	G8III		
056480	11	35	53.1	-54	23	38.5	173.971091	-54.394029	4.62	-0.077	-0.06	B9V		
056561	11	36	52.6	-63	8	60.0	174.219360	-63.149990	3.11	-0.044	-0.01	B9II:		
056633	11	37	52.5	-09	55	56.6	174.468881	-09.932388	4.70	-0.073	-0.06	B9.5Vn		
056647	11	38	9.1	-00	57	13.1	174.538066	-00.953646	4.30	0.983	0.98	G9III		
056922	11	41	23.1	-34	52	30.1	175.346381	-34.875014	4.70	-0.070	-0.05	B9V		
056986	11	42	1.0	-62	13	13.7	175.504303	-62.220468	4.93	1.111	1.11	G3Ib		
057175	11	44	39.2	-62	37	11.5	176.163462	-62.619875	5.00	0.784	0.87	F9Ia		
057283	11	45	57.4	-18	28	52.9	176.489180	-18.481366	4.71	0.958	0.94	G8III		
057328	11	46	29.7	+08	7	38.7	176.623588	+08.127420	4.84	0.174	0.19	A4V		
057363	11	46	43.9	-66	51	32.8	176.682766	-66.859114	3.63	0.160	0.17	A7III		
057380	11	47	4.0	+06	23	51.6	176.766622	+06.397653	4.04	1.501	1.79	M0III		
057399	11	47	17.0	+47	38	56.4	176.820650	+47.649007	3.69	1.181	1.15	K0III		
057439	11	47	39.8	-61	18	32.7	176.915764	-61.309096	4.11	0.895	0.88	G0II		
057443	11	47	38.7	-40	37	42.1	176.911324	-40.628368	4.89	0.664	0.73	G3/G5V		
057565	11	49	11.7	+20	5	17.8	177.298843	+20.088266	4.50	0.547	0.69	A0comp0SB		
057581	11	49	23.3	-66	56	44.4	177.347167	-66.945660	4.75	1.522	1.62	K4III		
057632	11	50	15.4	+14	26	26.4	177.564184	+14.440665	2.14	0.090	0.10	A3Vvar		
057669	11	50	50.5	-63	55	8.9	177.710573	-63.919133	4.30	-0.149	-0.09	B3V		
057696	11	51	5.2	-70	21	23.4	177.771690	-70.356493	4.98	1.360	1.31	G5Ib		
057757	11	51	55.1	+01	37	56.2	177.979755	+01.632278	3.59	0.518	0.61	F8V		
057803	11	52	19.6	-45	18	15.3	178.081850	-45.304242	4.47	1.283	1.24	K4III		
057851	11	53	1.1	-65	20	12.1	178.254590	-65.336683	4.89	-0.123	-0.11	B4V		
057936	11	54	6.1	-34	2	19.9	178.525270	-34.038858	4.29	-0.100	-0.07	Ap0Si		
058001	11	55	3.4	+53	33	50.6	178.764207	+53.564068	2.41	0.044	0.06	A0V0SB		
058484	12	0	49.7	-78	21	9.7	180.206936	-78.352695	4.88	-0.054	-0.02	B9Vn		
058590	12	2	4.6	+06	29	0.0	180.519239	+06.483334	4.65	0.122	0.14	A5V		
058758	12	4	14.2	-63	26	37.2	181.059262	-63.443676	4.32	0.280	0.36	Am		
058867	12	5	32.7	-63	17	47.3	181.386450	-63.296482	4.72	-0.081	-0.06	B2IV		
058948	12	6	24.3	+08	36	9.3	181.601364	+08.602593	4.12	0.967	0.96	G8III		
059072	12	8	7.4	-64	44	40.9	182.031024	-64.744701	4.14	0.353	0.41	F2III		
059173	12	9	18.9	-50	47	31.4	182.328545	-50.792048	4.46	-0.163	-0.16	B2IIIne		
059196	12	9	35.1	-50	51	11.4	182.396423	-50.853168	2.58	-0.128	-0.12	B2IVne		
059199	12	9	37.8	-24	51	35.4	182.407533	-24.859827	4.02	0.334	0.40	F0IV/V		
059316	12	11	20.2	-22	45	1.3	182.834279	-22.750357	3.02	1.326	1.23	K2III		
059449	12	12	53.4	-52	29	57.1	183.222669	-52.499192	3.97	-0.156	-0.17	B3V		
059747	12	16	24.4	-58	52	46.2	184.101774	-58.879488	2.79	-0.193	-0.25	B2IV		
059774	12	16	34.7	+56	54	7.9	184.144722	+56.902184	3.32	0.077	0.03	A3Vvar		
059803	12	17	1.1	-17	40	20.1	184.254488	-17.672253	2.58	-0.107	-0.10	B8III		
059847	12	17	31.7	+23	48	53.7	184.382156	+23.814927	4.93	0.957	0.94	K0III		
059856	12	17	40.8	+32	55	49.3	184.419867	+32.930374	4.99	1.140	1.12	K1III		
059929	12	18	51.8	-68	5	28.7	184.715660	-68.091293	4.06	1.603	2.82	M5III		
06	12	19	46.7	-79	26	33.0	184.944442	-79.442512	4.24	-0.123	-0.11	B5Vn		
069	12	19	43.8	-64	8	0.5	184.932305	-64.133485	4.06	-0.168	-0.18	B2.5V		
060129	12	21	6.6	-00	47	50.0	185.277304	-00.797229	3.89	0.026	0.03	A2IV		
060172	12	21	32.6	+03	10	54.9	185.385908	+03.181917	4.97	1.172	1.19	K1III		
060202	12	21	54.2	+17	39	47.5	185.475701	+17.663197	4.72	1.010	1.02	G8III		
060260	12	22	38.6	-60	31	50.7	185.660999	-60.530759	3.59	1.389	1.39	K3/K4III		

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
060351	12	23	41.0	+25	42	57.5	185.920913	+25.715966	4.78	0.515	0.61	F8:p...	
060485	12	25	9.6	+51	25	56.2	186.289796	+51.432280	4.76	0.877	0.89	G7III	
060697	12	27	34.4	+27	8	17.8	186.893306	+27.138275	4.92	0.277	0.28	F0p	
060710	12	27	48.6	-51	34	50.1	186.952518	-51.580581	4.82	-0.141	-0.16	B3Vn	
060718	12	27	55.4	-63	13	44.6	186.980794	-63.229063	0.77	-0.243	-0.26	B0.5IV	
060742	12	28	6.4	+28	8	17.0	187.026504	+28.138046	4.35	1.128	1.04	K2IIICN+...0	
060746	12	28	9.6	+26	41	44.8	187.040113	+26.695784	4.98	0.088	0.05	A4V	
060823	12	29	19.3	-50	21	37.8	187.330309	-50.360493	3.91	-0.192	-0.20	B3V	
060965	12	31	5.0	-16	38	45.5	187.770873	-16.645969	2.94	-0.012	-0.04	B9.5V	
061084	12	32	29.0	-57	14	40.0	188.120946	-57.244443	1.59	1.600	2.37	M4III	
061174	12	33	17.1	-16	19	33.1	188.321255	-16.325855	4.30	0.388	0.44	F2V	
061199	12	33	54.1	-72	15	44.8	188.475496	-72.262454	3.84	-0.157	-0.14	B5V	
061281	12	34	28.4	+69	39	32.2	188.618272	+69.658944	3.85	-0.116	-0.02	B6IIIp	
061317	12	34	51.2	+41	13	48.0	188.713521	+41.230011	4.24	0.588	0.67	G0V	
061359	12	35	37.6	-23	31	35.0	188.906500	-23.526395	2.65	0.893	0.88	G5II	
061384	12	35	43.0	+69	53	33.0	188.928973	+69.892502	4.95	1.312	1.27	K2III	
061394	12	36	1.2	+22	30	0.7	189.005116	+22.500200	4.80	0.012	0.03	A0IV	
061585	12	38	36.7	-69	15	52.8	189.652923	-69.264660	2.69	-0.176	-0.23	B2IV-V	
061622	12	38	59.9	-48	40	13.2	189.749641	-48.670320	3.85	0.049	0.06	A2V	
061740	12	40	27.7	-08	7	28.4	190.115280	-08.124550	4.66	1.240	1.15	K2III	
061789	12	41	9.3	-40	6	58.4	190.288906	-40.116225	4.63	-0.082	-0.06	B8II/III	
061932	12	42	49.5	-49	5	18.6	190.706104	-49.088490	2.20	-0.023	-0.01	A1V	
061941	12	42	51.1	-01	34	39.3	190.712913	-01.577572	2.74	0.368	0.43	F0V+...	
061960	12	43	4.4	+10	6	23.4	190.768325	+10.106493	4.88	0.076	0.08	A0V	
061966	12	43	18.7	-59	48	51.8	190.827912	-59.814388	4.91	-0.044	-0.02	B6IV	
062012	12	43	54.2	-48	56	30.4	190.975670	-48.941782	4.66	1.075	1.03	K0III	
062268	12	47	2.1	-61	6	35.5	191.758553	-61.109869	4.69	1.049	1.03	K1III	
062322	12	47	44.9	-68	14	10.5	191.936904	-68.236244	3.04	-0.178	-0.19	B2V	
062327	12	47	44.6	-56	37	1.1	191.935683	-56.616962	4.62	-0.150	-0.16	B3V	
062434	12	49	6.7	-59	49	0.3	192.277735	-59.816739	1.25	-0.238	-0.27	B0.5III	
062683	12	51	58.1	-34	7	36.9	192.991989	-34.126928	4.90	-0.031	-0.01	B9V	
062763	12	52	50.5	+27	24	47.7	193.210269	+27.413242	4.93	0.681	0.70	G0III	
062867	12	54	27.4	-49	4	14.5	193.614050	-49.070692	4.33	1.344	1.33	K3/K4III	
062886	12	54	27.1	+21	7	3.1	193.612882	+21.117534	4.89	0.904	0.91	G8III	
062896	12	54	44.8	-40	18	22.3	193.686678	-40.306186	4.25	0.224	0.27	A4IV	
062956	12	55	3.4	+55	49	57.5	193.764067	+55.832650	1.76	-0.022	-0.04	A0p	
062985	12	55	34.6	-09	39	58.2	193.894364	-09.666178	4.77	1.590	2.18	M3IIIvar	
063003	12	55	59.4	-57	18	18.1	193.997695	-57.305024	4.03	-0.180	-0.26	B2IV-V	
063007	12	56	3.9	-59	16	25.7	194.016399	-59.273799	4.62	-0.153	-0.15	B4Vn	
063090	12	56	47.3	+03	16	12.9	194.197044	+03.270243	3.39	1.571	2.24	M3III	
063125	12	57	7.4	+38	11	30.8	194.280890	+38.191895	2.89	-0.115	-0.13	A0spe...	
063355	13	0	5.1	+17	16	59.7	195.021306	+17.283252	4.76	1.568	1.79	M0III	
063462	13	1	23.8	+30	39	31.5	195.349120	+30.658761	4.88	1.165	1.13	K1IIIp	
063503	13	1	43.8	+56	14	24.7	195.432589	+56.240195	4.93	0.368	0.45	F2V	
063608	13	3	20.8	+10	50	0.1	195.833600	+10.833350	2.85	0.934	0.83	G8IIIvar	
063613	13	3	55.5	-71	40	29.6	195.981119	-71.674877	3.61	1.190	1.17	K2III	
063724	13	4	55.6	-49	39	10.9	196.231867	-49.653032	4.83	0.029	0.05	A0V	
063945	13	7	39.1	-48	35	19.1	196.912987	-48.588640	4.71	-0.148	-0.14	B5V	
064004	13	8	17.7	-50	1	53.3	197.073717	-50.031477	4.27	-0.182	-0.18	B1.5V	
064022	13	8	18.3	+27	29	57.0	197.076104	+27.499177	4.80	1.482	1.55	K5III	
064166	13	10	19.5	-23	14	35.2	197.581303	-23.243125	4.94	1.048	1.02	K0III	
064238	13	11	10.1	-05	39	49.9	197.792172	-05.663870	4.38	-0.008	0.01	A1V	
064241	13	11	7.8	+17	24	20.2	197.782570	+17.405608	4.32	0.455	0.53	F5V	
064394	13	12	58.1	+27	45	34.2	198.242106	+27.759496	4.23	0.572	0.67	G0V	
064408	13	13	22.3	-37	55	37.2	198.342946	-37.926995	4.85	0.693	0.73	G3V	
064425	13	13	46.8	-60	2	41.7	198.444934	-60.044906	4.58	-0.073	-0.07	B8V	
064540	13	14	46.7	+40	1	44.4	198.694480	+40.028987	4.94	1.061	1.03	K0III	
064583	13	15	43.6	-59	13	41.1	198.931464	-59.228085	4.90	0.489	0.56	F7IV	
064661	13	16	52.3	-68	1	6.0	199.217924	-68.018321	4.79	-0.078	-0.09	B8V	



## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$			$\delta$			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
064820	13	18	49.7	-66	54	24.4	199.707141	-66.906773	4.86	1.480	1.50	K2Ib/II	
064844	13	18	35.6	+40	26	58.0	199.648236	+40.449440	4.72	0.306	0.31	F3III	
064852	13	18	47.5	+05	20	48.0	199.698033	+05.346673	4.78	1.638	1.97	M2III	
064924	13	19	38.4	-18	26	28.0	199.909843	-18.441097	4.74	0.709	0.75	G5V	
064962	13	20	12.2	-23	17	41.2	200.051029	-23.294772	2.99	0.920	0.90	G8III	
065109	13	21	55.6	-36	50	7.9	200.481509	-36.835523	2.75	0.068	0.02	A2V	
065271	13	24	10.3	-61	6	38.6	201.042811	-61.110725	4.52	-0.141	-0.13	B3V	
065378	13	24	52.1	+54	48	11.5	201.216909	+54.803190	2.23	0.057	0.07	A2V	
065387	13	25	36.7	-64	39	27.9	201.403106	-64.657748	4.52	0.822	0.87	G5III-IV	
065474	13	26	26.0	-11	16	59.7	201.608507	-11.283263	0.98	-0.235	-0.25	B1V	
065477	13	26	9.8	+54	51	57.9	201.540742	+54.866087	3.99	0.169	0.19	A5V0SB	
065639	13	28	42.6	-16	5	40.9	202.177511	-16.094700	4.76	1.096	1.02	K1IIICN...00	
065721	13	29	34.8	+13	39	14.6	202.394952	+13.654045	4.97	0.714	0.77	G5V	
065936	13	32	24.9	-39	31	40.2	203.103951	-39.527842	3.90	1.186	1.10	G8II/III	
066006	13	33	11.3	-06	22	34.9	203.297256	-06.376367	4.68	1.606	2.06	M3III	
066200	13	35	19.5	+03	32	20.5	203.831067	+03.539027	4.92	0.029	0.03	A1p0SrCrEu00	
066234	13	35	24.7	+48	53	47.1	203.852908	+48.896408	4.68	0.132	0.10	A5V	
066249	13	35	53.6	-00	42	54.6	203.973167	-00.715167	3.38	0.114	0.12	A3V	
066257	13	35	50.6	+37	3	45.7	203.960923	+37.062703	4.91	0.404	0.55	F2IV0SB	
066458	13	38	30.2	+36	10	33.7	204.625667	+36.176021	4.82	0.239	0.31	A7III	
066657	13	41	23.5	-53	35	5.5	205.348023	-53.584867	2.29	-0.171	-0.23	B1III	
066738	13	41	37.6	+54	33	47.9	205.406593	+54.563302	4.63	1.630	1.97	M2IIIvar	
066821	13	43	16.0	-54	40	39.1	205.816770	-54.677517	4.99	-0.055	-0.03	B8Vn+...	
067153	13	47	1.8	-33	9	41.8	206.757549	-33.161623	4.23	0.390	0.44	F3V	
067234	13	48	9.5	-51	32	58.7	207.039480	-51.549642	4.64	0.955	0.93	G8/KOIII	
067275	13	48	22.8	+17	20	26.4	207.094844	+17.340660	4.50	0.508	0.51	F7V	
067301	13	48	27.9	+49	11	47.8	207.116083	+49.196621	1.85	-0.099	-0.08	B3V0SB	
067457	13	50	48.9	-34	34	1.7	207.703623	-34.567146	4.19	1.520	3.00	M5III	
067459	13	50	36.7	+15	40	55.8	207.652732	+15.682155	4.05	1.520	1.60	K5IIIvar	
067464	13	50	55.4	-41	48	13.7	207.730974	-41.803805	3.41	-0.225	-0.24	B2IV	
067472	13	51	2.5	-42	35	23.2	207.760519	-42.589789	3.47	-0.170	-0.21	B2IV-Ve	
067480	13	50	49.5	+21	8	53.7	207.706173	+21.148264	4.92	1.432	1.38	K4III	
067494	13	51	9.2	-18	15	1.1	207.788159	-18.250295	4.96	1.059	1.09	K0III	
067627	13	52	7.1	+64	36	27.7	208.029677	+64.607692	4.58	1.572	2.35	M3III	
067665	13	52	49.6	+34	19	43.1	208.206566	+34.328630	4.76	1.611	1.63	K5III	
067669	13	53	11.4	-33	6	34.7	208.297566	-33.109636	4.32	-0.146	-0.12	B5	
067786	13	54	34.1	-32	2	33.6	208.642132	-32.042661	4.75	-0.111	-0.10	B4IV	
067927	13	55	48.2	+18	16	51.0	208.950902	+18.280820	2.68	0.580	0.65	G0IV	
068002	13	57	1.1	-47	24	10.7	209.254431	-47.402985	2.55	-0.176	-0.18	B2.5IV	
068191	13	59	22.5	-63	48	2.2	209.843567	-63.800605	4.71	1.075	1.05	K4III	
068245	13	59	42.6	-42	12	52.0	209.927379	-42.214444	3.83	-0.224	-0.23	B2IV	
068282	14	0	8.5	-44	55	1.8	210.035372	-44.917167	3.87	-0.208	-0.22	B2IV-V	
068520	14	2	50.7	+01	25	54.4	210.711067	+01.431766	4.23	0.121	0.14	A3V	
068523	14	3	12.1	-45	42	58.0	210.800479	-45.716122	4.34	0.598	0.65	F6II	
068702	14	5	30.2	-60	29	6.4	211.375760	-60.485122	0.61	-0.231	-0.25	B1III	
068756	14	5	1.6	+64	15	50.6	211.256675	+64.264050	3.67	-0.049	-0.08	A0III0SB	
068862	14	7	29.4	-41	17	27.8	211.872600	-41.291067	4.36	-0.198	-0.21	B2V	
068895	14	7	42.9	-26	47	40.1	211.928945	-26.794474	3.25	1.091	1.10	K2III	
068933	14	8	4.4	-36	29	3.8	212.018475	-36.484378	2.06	1.011	1.01	K0IIIb	
069112	14	8	47.5	+77	26	13.4	212.198089	+77.437050	4.80	1.368	1.34	K3III	
069191	14	11	29.6	-53	32	58.7	212.873312	-53.549625	4.74	0.938	0.92	G8III	
069226	14	11	28.2	+24	58	52.6	212.867569	+24.981265	4.82	0.541	0.57	F9IVw	
069269	14	12	7.7	-16	24	43.0	213.032265	-16.411958	4.93	1.684	1.94	M1III	
069389	14	13	27.3	+02	17	59.4	213.363664	+02.299835	4.99	-0.118	-0.11	B9p0Si	
069427	14	14	9.2	-10	22	55.3	213.538152	-10.382025	4.18	1.323	1.35	K3III	
069483	14	14	19.5	+51	40	50.9	213.581070	+51.680795	4.53	0.233	0.23	A8IV	
069673	14	16	44.1	+19	3	40.5	214.183568	+19.061256	-0.05	1.239	1.22	K2IIp	
069701	14	17	15.0	-06	6	41.3	214.312296	-06.111465	4.07	0.511	0.59	F7V	
069713	14	16	59.8	+51	15	34.4	214.249197	+51.259549	4.75	0.236	0.19	A9V	

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
069732	14	17	16.6	+45	58	52.1	214.318988	+45.981147	4.18	0.087	0.04	A0sh	
069879	14	18	59.4	+35	24	7.1	214.747406	+35.401960	4.80	1.057	1.00	K1III	
069896	14	21	20.3	-81	6	55.4	215.334511	-81.115395	4.89	0.243	0.24	A2m...	
069974	14	20	23.1	-13	28	41.3	215.096277	-13.478135	4.52	0.128	0.11	A1V	
069996	14	20	55.2	-46	9	54.8	215.229926	-46.165210	3.55	-0.184	-0.18	B2.5IV	
070027	14	20	52.0	+16	12	1.0	215.216671	+16.200289	4.84	1.228	1.16	K3III	
070069	14	21	59.1	-56	29	35.9	215.496273	-56.493312	4.30	0.082	0.21	B6Ib	
070090	14	21	59.7	-37	59	31.5	215.498773	-37.992094	4.05	-0.030	-0.02	A0IV	
070104	14	22	13.2	-45	17	39.1	215.555155	-45.294194	4.78	0.310	0.36	F0IV	
070264	14	24	19.2	-58	33	54.0	216.080049	-58.565006	4.76	0.795	0.83	G8/K10+0F/G0	
070300	14	24	29.7	-39	37	4.3	216.123608	-39.617857	4.41	-0.185	-0.20	B2V	
070306	14	24	27.4	-27	51	38.4	216.114146	-27.860658	4.78	1.300	1.31	K3III	
070327	14	24	32.1	+08	20	26.6	216.133782	+08.340722	4.86	0.010	0.07	A0V	
070497	14	25	59.8	+51	44	34.5	216.499137	+51.742911	4.04	0.497	0.59	F7V	
070574	14	27	39.4	-45	19	34.9	216.914156	-45.326353	4.56	-0.147	-0.14	B2IV	
070576	14	27	42.2	-45	29	2.9	216.925646	-45.484141	4.33	0.434	0.58	A7:+...	
070638	14	30	58.8	-83	46	19.6	217.744853	-83.772107	4.31	1.300	1.30	K2III	
070692	14	27	30.2	+75	35	29.4	216.875994	+75.591506	4.25	1.431	1.42	K4III	
070753	14	29	33.4	-29	35	45.4	217.389147	-29.595954	4.97	-0.074	-0.05	B7/B8V	
070755	14	29	24.9	-02	19	55.8	217.353868	-02.332160	4.81	0.693	0.73	G2III	
071053	14	32	50.5	+30	16	9.3	218.210574	+30.269251	3.57	1.298	1.22	K3III	
071075	14	33	1.4	+38	12	22.8	218.255873	+38.206344	3.04	0.191	0.17	A7IIIvar	
071121	14	34	12.9	-50	33	35.4	218.553642	-50.559825	4.44	-0.177	-0.18	B2III	
071284	14	35	42.2	+29	38	38.5	218.925762	+29.644038	4.47	0.364	0.41	F3Vwvar	
071352	14	37	0.5	-42	15	34.5	219.252274	-42.259590	2.33	-0.157	-0.17	B1Vn0+0A	
071536	14	39	28.9	-49	31	36.1	219.870234	-49.526694	4.05	-0.152	-0.16	B5V	
071681	14	41	12.3	-60	55	52.1	220.301202	-60.931147	1.35	0.900	0.88	K1V	
071683	14	41	13.5	-60	55	51.5	220.306090	-60.930962	-0.01	0.710	0.69	G2V	
071762	14	41	49.9	+16	19	7.2	220.457778	+16.318657	4.49	-0.002	0.02	B9p0MnHg	
071795	14	42	16.3	+13	37	43.1	220.568044	+13.628651	3.78	0.044	0.06	A3IVn	
071832	14	42	48.1	+08	3	44.7	220.700317	+08.062406	4.86	0.992	0.96	G8IIIvar	
071860	14	43	30.2	-47	29	15.2	220.876004	-47.487550	2.30	-0.154	-0.21	B1.5III	
071865	14	43	25.7	-37	53	34.4	220.856999	-37.892898	4.01	-0.157	-0.18	B2.5V	
071908	14	44	26.1	-65	4	32.0	221.108637	-65.075550	3.18	0.256	0.26	F1Vp	
071957	14	44	18.1	-05	45	32.7	221.075378	-05.759085	3.87	0.385	0.47	F2III	
071995	14	44	27.3	+26	25	44.4	221.113898	+26.429005	4.80	1.672	2.13	M3III	
072010	14	45	6.1	-35	16	24.1	221.275607	-35.273359	4.06	1.356	1.35	K3III	
072104	14	46	26.1	-35	17	23.7	221.608946	-35.289911	4.92	0.013	0.02	A0V	
072105	14	46	0.8	+26	58	34.3	221.503321	+26.976198	2.35	0.966	0.95	A	
072125	14	46	20.3	+16	51	57.3	221.584558	+16.865913	4.60	0.972	0.94	K0III	
072220	14	47	26.3	+01	47	42.4	221.859685	+01.795102	3.73	-0.005	0.01	A0V	
072370	14	50	53.7	-79	8	29.5	222.723550	-79.141528	3.83	1.433	1.42	K5III	
072571	14	51	40.5	-28	3	24.6	222.918675	-28.056827	4.42	1.366	1.43	K3III	
072607	14	50	39.7	+74	3	33.9	222.665265	+74.059408	2.07	1.465	1.46	K4IIIvar	
072622	14	52	11.0	-16	8	17.0	223.045655	-16.138063	2.75	0.147	0.16	A3IV	
072631	14	52	14.3	-02	23	44.7	223.059720	-02.395746	4.93	0.988	0.97	G8...	
072659	14	52	28.5	+19	0	15.5	223.118691	+19.004318	4.54	0.720	0.82	G8V0+0K4V	
072683	14	53	10.9	-43	40	15.7	223.295607	-43.671032	4.32	-0.154	-0.14	B5IV	
073165	14	58	24.8	-04	26	27.0	224.603288	-04.440824	4.47	0.318	0.38	F0V	
073199	14	57	57.9	+65	50	21.4	224.491069	+65.839283	4.63	1.590	2.85	M5III	
073273	15	0	4.9	-43	13	37.1	225.020309	-43.226974	2.68	-0.184	-0.23	B2III	
073334	15	0	42.0	-42	11	48.7	225.174942	-42.196848	3.13	-0.208	-0.21	B2IV	
073473	15	2	13.9	-08	36	38.9	225.557763	-08.610806	4.91	0	0.07	B9.5V	
073555	15	2	49.9	+40	17	55.9	225.707840	+40.298858	3.49	0.956	0.89	G8III	
073568	15	3	8.3	+24	54	59.1	225.784576	+24.916403	4.80	1.506	1.54	K4III	
073620	15	4	5.4	+02	0	1.1	226.022489	+02.317	4.39	1.026	1.04	K0III	
073695	15	4	33.8	+47	33	48.2	226.140859	+47.563389	4.83	0.647	0.71	G2V0+0G2V	
073714	15	5	27.1	-25	22	22.1	226.362777	-25.372799	3.25	1.674	2.23	M3/M4III	
073745	15	5	27.2	+26	51	25.7	226.363274	+26.857148	4.52	1.240	1.23	K2III	

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
073807	15	6	43.8	-47	8	29.2	226.682408	-47.141448	3.91	-0.144	-0.15	B5
073996	15	8	20.0	+24	46	43.9	227.083403	+24.778871	4.93	0.429	0.51	F5V
074117	15	10	26.2	-45	22	6.8	227.609180	-45.368543	4.07	-0.162	-0.18	B3V
074376	15	13	34.8	-48	49	31.2	228.395053	-48.825326	3.88	-0.029	-0.02	B9V
074392	15	13	33.9	-19	52	44.6	228.391366	-19.879061	4.54	-0.071	-0.06	Asp...
074395	15	13	59.2	-52	11	12.3	228.496705	-52.186741	3.41	0.918	0.91	G8III
074449	15	14	24.9	-44	35	14.6	228.603755	-44.587388	4.83	-0.177	-0.19	B3IV
074604	15	16	4.1	-31	36	18.7	229.016960	-31.605204	4.91	0.374	0.48	F3III
074666	15	16	27.0	+33	13	41.9	229.112603	+33.228305	3.46	0.961	0.96	G8III
074785	15	18	16.5	-09	28	5.4	229.568639	-09.468154	2.61	-0.071	-0.08	B8V
074824	15	19	22.4	-58	53	12.6	229.843162	-58.886830	4.07	0.088	0.08	A3V
074837	15	19	39.5	-63	41	42.3	229.914439	-63.695074	4.85	1.260	1.20	K2.5III
074857	15	19	16.0	-30	14	0.3	229.816629	-30.233411	4.35	1.100	1.03	K1II/III
074911	15	20	10.8	-47	57	35.4	230.044865	-47.959839	4.27	-0.086	-0.07	B8V
074946	15	21	8.3	-68	45	49.7	230.284614	-68.763816	2.87	0.014	0.04	A1V
075097	15	20	42.6	+71	45	1.3	230.177399	+71.750367	3.00	0.058	0.12	A3II-III
075141	15	22	55.4	-40	43	50.9	230.730718	-40.730805	3.22	-0.227	-0.23	B1.5IV
075177	15	23	18.3	-36	20	41.6	230.826157	-36.344881	3.57	1.534	1.59	K5III
075206	15	23	47.2	-48	0	41.1	230.946521	-48.011414	4.99	0.515	0.59	F8V
075264	15	24	17.2	-44	46	20.3	231.071677	-44.772294	3.37	-0.191	-0.20	B2IV-V
075304	15	24	39.9	-36	56	27.5	231.166158	-36.940981	4.54	-0.155	-0.16	B4V
075312	15	24	10.6	+30	12	15.2	231.044065	+30.204234	4.99	0.577	0.65	G2V
075323	15	25	16.1	-59	24	11.5	231.317096	-59.403193	4.48	0.169	0.18	B5III0+0F800
075379	15	25	28.5	-10	24	18.7	231.368785	-10.405185	4.92	0.453	0.52	F5IV
075411	15	25	22.7	+37	17	44.9	231.344677	+37.295807	4.31	0.309	0.35	F0V
075458	15	25	27.3	+58	53	3.8	231.363948	+58.884391	3.29	1.166	1.07	K2III
075501	15	26	52.1	-38	48	54.3	231.717169	-38.815085	4.60	0.	0.02	A0V
075695	15	28	47.9	+29	1	33.1	232.199579	+29.025869	3.66	0.319	0.37	F0p
076008	15	30	45.8	+77	16	12.9	232.691031	+77.270253	5.00	1.545	1.61	K5III
076041	15	32	37.5	+40	49	14.2	233.156264	+40.820613	4.98	0.086	0.15	A5V
076127	15	33	52.7	+31	16	51.6	233.469468	+31.281001	4.14	-0.127	-0.12	B6Vnn
076219	15	35	27.9	-10	8	36.4	233.866403	-10.143447	4.61	1.	1.02	K1IV
076267	15	35	41.0	+26	38	12.7	233.920828	+26.636865	2.22	0.032	0.05	A0V
076276	15	35	55.6	+10	27	42.2	233.981612	+10.461712	3.80	0.268	0.30	F0IV
076297	15	36	42.9	-41	14	37.8	234.178744	-41.243835	2.80	-0.216	-0.22	B2IV
076333	15	36	50.7	-14	51	58.6	234.211089	-14.866288	3.91	1.007	1.02	K0III
076371	15	37	30.9	-45	2	6.3	234.378772	-45.035084	4.55	-0.175	-0.20	B3IVp
076440	15	38	53.9	-66	23	36.4	234.724611	-66.393431	4.11	1.161	1.12	K0III
076470	15	38	27.4	-28	12	40.2	234.613978	-28.211178	3.60	1.361	1.36	K3III
076552	15	39	38.7	-42	38	33.2	234.911315	-42.642549	4.34	1.412	1.42	K4.5III
076600	15	40	6.3	-29	51	11.7	235.026208	-29.853236	3.66	-0.177	-0.18	B2.5V
076669	15	40	15.8	+36	33	38.4	235.065867	+36.560663	4.64	-0.103	-0.09	B7V+...
076705	15	41	15.9	-34	29	12.5	235.316284	-34.486796	4.66	0.964	0.97	G8/K0III
076742	15	41	40.5	-23	53	33.7	235.418856	-23.892696	4.97	1.302	1.25	K3III
076829	15	42	48.9	-44	44	13.2	235.703610	-44.736988	4.64	0.413	0.47	F5IV-V
076852	15	42	36.0	+19	35	45.9	235.649905	+19.596074	4.51	0.062	0.07	A1V
076880	15	43	18.3	-19	45	11.8	235.826183	-19.753286	4.75	1.574	1.74	K5III
076945	15	44	11.2	-34	47	2.4	236.046871	-34.784011	4.75	-0.151	-0.15	B5V
076952	15	43	43.8	+26	13	20.8	235.932553	+26.222458	3.81	0.020	0.04	A1Vs
077055	15	43	16.1	+77	43	16.2	235.817032	+77.721176	4.29	0.038	0.05	A3Vn
077070	15	45	25.6	+06	21	11.4	236.356715	+06.353169	2.63	1.167	1.09	K2III
077233	15	47	16.4	+15	20	59.0	236.818323	+15.349717	3.65	0.073	0.09	A3V
077257	15	47	35.1	+07	16	51.3	236.896435	+07.280925	4.42	0.604	0.66	G0Vvar
077450	15	49	47.9	+18	4	13.3	237.449604	+18.070367	4.09	1.616	1.73	M1III
077512	15	50	34.8	+25	59	51.9	237.645106	+25.997750	4.59	0.794	0.82	G5III-IV
077516	15	50	50.9	-03	30	2.0	237.712137	-03.500549	3.54	-0.036	-0.03	A0V
077622	15	51	59.3	+04	24	30.7	237.997285	+04.408525	3.71	0.147	0.13	A2m
077634	15	52	27.5	-33	41	48.4	238.114554	-33.696778	3.97	-0.045	-0.05	B9.5III-IV00
077635	15	52	23.8	-25	49	15.3	238.099264	-25.820918	4.63	-0.072	-0.04	B1.5Vn

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
077655	15	52	7.1	+35	35	8.5	238.029624	+35.585692	4.79	0.996	0.97	K0III-IV	
077661	15	52	17.9	+20	54	31.0	238.074528	+20.908615	4.74	1.534	1.60	K5III	
077760	15	53	29.3	+42	23	12.3	238.372104	+42.386755	4.60	0.563	0.63	F9V	
077840	15	55	1.6	-25	23	43.8	238.756849	-25.395491	4.59	-0.073	-0.06	B2.5Vn	
077853	15	55	10.0	-16	47	47.5	238.791758	-16.796529	4.13	1.003	1.02	K0III	
077952	15	57	14.1	-63	30	2.1	239.308689	-63.500571	2.83	0.315	0.36	F2III	
078072	15	57	32.4	+15	35	11.6	239.384943	+15.586549	3.85	0.478	0.54	F6V	
078104	15	58	20.4	-29	16	50.9	239.585133	-29.280809	3.87	-0.199	-0.18	B2IV/V	
078159	15	58	33.7	+26	48	40.1	239.640328	+26.811146	4.14	1.231	1.17	K3III	
078180	15	58	21.1	+54	41	2.7	239.587748	+54.684090	4.96	0.269	0.29	F0IV	
078207	15	59	30.5	-14	20	43.6	239.877150	-14.345433	4.95	-0.080	-0.06	B8Ia/Iab	
078265	16	0	16.7	-26	10	47.6	240.069479	-26.179884	2.89	-0.180	-0.18	B1V0+0B2V	
078323	16	1	6.7	-41	48	35.2	240.278111	-41.809789	4.99	0.988	0.97	G8III	
078384	16	1	41.2	-38	27	42.6	240.421525	-38.461832	3.42	-0.206	-0.23	B2.5IV	
078401	16	1	43.6	-22	41	12.6	240.431746	-22.686835	2.29	-0.117	-0.09	B0.2IV	
078493	16	2	23.1	+29	47	11.6	240.596216	+29.786566	4.98	-0.050	-0.03	A0p...	
078527	16	2	20.0	+58	30	10.9	240.583316	+58.503034	4.01	0.528	0.55	F8IV-V	
078554	16	3	18.5	+22	44	26.2	240.826907	+22.740598	4.82	0.066	0.09	A3V	
078592	16	3	31.9	+45	58	20.9	240.882890	+45.972485	4.72	-0.094	-0.06	B9III	
078639	16	4	57.1	-49	17	34.8	241.238036	-49.292999	4.65	0.902	0.91	G8III	
078650	16	4	46.1	-25	55	43.9	241.192043	-25.928865	4.96	1.234	1.25	K3III	
078655	16	4	58.4	-38	39	57.7	241.243169	-38.666042	4.90	-0.146	-0.15	B6III/IV	
078662	16	5	27.7	-57	50	19.4	241.365278	-57.838730	4.63	0.252	0.30	A7IV	
078727	0	1	12.3	+00	7	50.9	00.301045	+00.130801	4.16	0.460	0.53	F6IV	
078820	16	6	48.4	-19	52	4.7	241.701774	-19.867963	2.56	-0.065	-0.04	B0.5V	
078821	16	6	48.7	-19	51	51.3	241.702923	-19.864256	4.90	-0.024	0.00	B2V	
078914	16	8	9.6	-45	14	4.9	242.039996	-45.234694	4.73	0.230	0.20	Am	
078918	16	8	8.5	-36	51	51.2	242.035398	-36.864212	4.22	-0.184	-0.19	B2.5Vn	
078933	16	8	11.1	-20	43	51.6	242.046337	-20.731004	3.93	-0.046	0.01	B1V	
078990	16	8	47.2	-20	55	49.5	242.196819	-20.930411	4.31	0.831	0.85	G6/G8III	
079043	16	9	8.2	+16	59	9.0	242.284277	+16.985845	5.00	0.931	0.93	G8III	
079101	16	9	30.7	+44	52	27.5	242.377807	+44.874304	4.23	-0.045	-0.02	B9Mnp...	
079119	16	9	49.9	+36	25	56.8	242.458015	+36.432440	4.73	1.015	1.00	K0III-IV	
079374	16	13	21.9	-19	31	11.7	243.341184	-19.519905	4.00	0.076	0.14	B2IV	
079375	16	13	17.2	-10	7	24.5	243.321632	-10.123486	4.93	0.087	0.09	A3IV	
079404	16	13	45.3	-27	59	7.4	243.438819	-27.985377	4.58	-0.172	-0.15	B2V	
079509	16	15	20.6	-54	41	19.5	243.835920	-54.688763	4.95	1.017	0.99	G4III	
079593	16	15	34.8	-03	45	11.2	243.894801	-03.753106	2.73	1.584	1.82	M1III	
079664	16	17	35.7	-63	44	34.2	244.398841	-63.742841	3.86	1.105	1.03	G5II	
079790	16	18	47.1	-50	7	28.2	244.696063	-50.124509	4.97	0.788	0.88	F9Ia	
079822	16	16	50.8	+75	42	0.9	244.211574	+75.700240	4.95	0.393	0.46	F5V	
079881	16	19	45.6	-28	40	13.6	244.939995	-28.670443	4.80	0.008	-0.01	A0V:	
079882	16	19	34.0	-04	44	53.1	244.891711	-04.748077	3.23	0.966	0.96	G8III	
079992	16	20	26.9	+46	15	30.2	245.112061	+46.258389	3.91	-0.151	-0.19	B5IV	
08	16	21	36.5	-50	12	38.7	245.401958	-50.210750	4.01	1.080	1.03	G8III	
080047	16	23	56.3	-78	45	0.5	245.984495	-78.750147	4.68	1.680	2.67	M5III	
080079	16	22	3.2	-24	13	26.4	245.513515	-24.223995	4.55	0.758	0.80	A4I/III	
080112	16	22	37.2	-25	38	49.9	245.655192	-25.647202	2.90	0.299	0.31	B1III	
080170	16	22	57.5	+19	5	57.8	245.739470	+19.099402	3.74	0.299	0.34	A9III	
080179	16	23	15.9	+00	58	31.6	245.816083	+00.975452	4.82	0.338	0.39	F0V	
080181	16	23	0.8	+30	50	19.4	245.753370	+30.838731	4.86	0.970	0.93	K0III	
080331	16	24	18.9	+61	27	41.2	246.078640	+61.461454	2.73	0.910	0.84	G8III	
080343	16	25	28.9	-20	5	25.5	246.370376	-20.090418	4.48	0.996	0.99	K0III	
080463	16	26	30.1	+13	58	50.6	246.625356	+13.980710	4.57	0.002	0.02	B9p0Cr	
080473	16	26	59.9	-23	29	57.6	246.749449	-23.499341	4.57	0.227	0.25	B2V	
080569	16	28	23.3	-18	30	27.6	247.097209	-18.507654	4.22	0.217	0.24	B2Vne	
080582	16	28	54.9	-47	36	21.6	247.228679	-47.605999	4.46	-0.070	-0.04	B4V	
080628	16	29	4.6	-08	25	21.7	247.269179	-08.422688	4.62	0.185	0.20	A3m	
080650	16	27	56.9	+68	43	2.0	246.987019	+68.717228	4.94	-0.051	0.02	A0III	

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$			$\delta$			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
080686	16	31	1.4	-70	8	2.0	247.755902	-70.133877	4.90	0.555	0.64	F9V	
080704	16	29	24.9	+41	49	51.9	247.353839	+41.831077	4.83	1.289	3.61	M6III:var	
080763	16	30	51.1	-26	28	55.7	247.713045	-26.482136	1.06	1.865	2.90	M1Ib+0B2.5V	
080815	16	31	38.4	-25	9	53.9	247.909809	-25.164960	4.79	-0.116	-0.12	B3V	
080816	16	31	13.9	+21	26	23.5	247.807791	+21.439849	2.78	0.947	0.94	G8III	
080883	16	32	6.0	+01	56	3.1	248.025129	+01.934198	3.82	0.022	0.03	A2V	
080894	16	32	29.2	-16	39	43.5	248.121842	-16.662072	4.29	0.924	0.89	G8/K0III	
080911	16	32	55.3	-34	45	12.2	248.230601	-34.753402	4.24	-0.168	-0.17	B2III-IV	
080975	16	33	32.0	-21	30	53.0	248.383166	-21.514714	4.45	0.130	0.12	Ap	
081008	16	33	42.3	+11	26	20.9	248.426456	+11.439149	4.84	1.495	1.58	K4III	
081065	16	37	7.8	-78	56	41.6	249.282621	-78.944900	3.86	0.923	0.92	K0IV0SB	
081122	16	35	45.6	-44	5	34.0	248.939963	-44.092779	4.86	0.045	0.18	B0Ia	
081126	16	34	51.7	+42	23	23.1	248.715453	+42.389742	4.20	-0.013	0.02	B9Vvar	
081266	16	37	20.9	-28	15	45.7	249.337276	-28.262705	2.82	-0.206	-0.24	B0V	
081304	16	37	55.5	-35	18	5.4	249.481349	-35.301509	4.18	1.535	1.72	K5III	
081377	16	38	27.3	-10	36	46.2	249.613770	-10.612837	2.54	0.038	0.10	O9.5V	
081497	16	39	23.2	+48	52	59.8	249.846715	+48.883278	4.86	1.562	2.03	M2.5III	
081660	16	41	5.2	+64	32	41.1	250.271829	+64.544746	4.84	1.212	1.19	K1p	
081693	16	42	10.4	+31	33	40.0	250.543304	+31.561120	2.81	0.650	0.70	F9IV	
081724	16	42	56.1	-17	47	8.5	250.733679	-17.785697	4.91	1.095	1.13	G8II/III	
081833	16	43	42.2	+38	52	43.5	250.925670	+38.878751	3.48	0.916	0.89	G8III-IV	
081852	16	46	29.4	-77	33	42.7	251.622479	-77.561872	4.23	1.060	1.04	K0III	
082020	16	45	44.7	+56	44	26.0	251.436446	+56.740543	4.84	0.375	0.44	F2V	
082080	16	43	38.8	+81	59	42.5	250.911741	+81.995145	4.21	0.897	0.91	G5IIIvar	
082273	16	51	10.4	-69	4	2.3	252.793346	-69.067300	1.91	1.447	1.45	K2IIb-IIIa00	
082321	16	49	55.6	+45	56	36.4	252.481557	+45.943436	4.82	0.087	0.10	A2p...	
082363	16	51	49.5	-59	4	49.6	252.956368	-59.080431	3.77	1.562	1.67	K5III	
082369	16	51	8.1	-10	49	21.3	252.783927	-10.822590	4.64	0.478	0.55	F7IV	
082396	16	51	41.4	-34	20	1.3	252.922450	-34.333698	2.29	1.144	1.10	K2IIIb	
082514	16	53	28.0	-38	5	7.4	253.366657	-38.085394	3.00	-0.200	-0.20	B1.5IV0+0B00	
082545	16	53	55.9	-38	3	19.1	253.482877	-38.055310	3.56	-0.210	-0.21	B2IV	
082671	16	55	39.5	-42	23	55.4	253.914466	-42.398734	4.70	0.444	0.71	B1Iae	
082673	16	55	7.2	+10	7	41.9	253.780199	+10.128298	4.39	-0.088	-0.13	B8V	
082729	16	56	14.5	-42	23	56.9	254.060456	-42.399143	3.62	1.393	1.37	K4III	
082860	16	56	9.7	+65	5	56.8	254.040583	+65.099124	4.88	0.481	0.56	F6Vvar	
083	16	58	46.9	+09	20	24.5	254.695443	+09.340139	3.19	1.160	1.10	K2IIIvar	
083081	17	0	34.4	-56	1	28.0	255.143162	-56.024441	3.12	1.552	1.60	K5III	
083153	17	1	27.8	-53	11	37.9	255.365940	-53.193864	4.06	1.452	1.42	K4III	
083207	17	1	11.4	+30	53	35.3	255.297370	+30.893132	3.92	-0.018	-0.04	A0V	
083262	17	2	18.0	-04	15	21.8	255.575179	-04.256067	4.82	1.483	1.49	K4III	
083430	17	4	12.5	+14	3	35.0	256.052204	+14.059718	4.97	1.600	2.08	M3III	
083574	17	6	22.3	-34	9	13.3	256.592896	-34.153708	4.83	0.257	0.38	B2Iab	
083608	17	5	49.5	+54	26	23.1	256.456199	+54.439747	4.91	0.471	0.54	F5	
083613	17	6	28.1	+12	42	36.7	256.617200	+12.710182	4.89	0.125	0.11	A4IV	
083895	17	8	51.6	+65	41	9.0	257.214865	+65.685841	3.17	-0.120	-0.14	B6III	
084012	17	11	43.6	-15	45	7.2	257.931872	-15.752008	2.43	0.059	0.06	A2.5Va	
084143	17	13	50.4	-43	16	3.6	258.460030	-43.267662	3.32	0.441	0.47	F3p	
084345	17	15	43.2	+14	21	54.5	258.930019	+14.365129	2.78	1.164	1.13	M5IIvar	
084379	17	15	59.9	+24	48	46.7	258.999483	+24.812968	3.12	0.080	0.06	A3IVv0SB	
084380	17	15	52.0	+36	47	2.1	258.966638	+36.783918	3.16	1.437	1.31	K3IIvar	
084405	17	16	47.9	-26	38	6.2	259.199433	-26.635057	4.33	0.855	0.92	K2:III:	
084514	17	17	49.1	-00	28	11.9	259.454720	-00.469981	4.72	1.119	1.09	K2III	
084573	17	18	11.7	+33	4	33.9	259.548763	+33.076094	4.80	-0.166	-0.17	B1.5Vp	
084606	17	18	28.9	+37	16	5.2	259.620518	+37.268113	4.64	0.043	0.07	A2V	
084880	17	22	9.0	-12	52	7.4	260.537682	-12.868732	4.32	0.037	0.07	A0/A1V	
084893	17	22	25.0	-21	8	9.6	260.604233	-21.135988	4.39	0.394	0.47	F2/F3V	
084969	17	24	27.4	-67	47	29.8	261.114347	-67.791616	4.76	1.194	1.18	K1III	
084970	17	23	27.3	-25	1	15.1	260.863610	-25.020871	3.27	-0.186	-0.21	B2IV	
085112	17	24	29.6	+37	7	32.1	261.123499	+37.125594	4.15	-0.011	0.01	B9.5III	

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
085258	17	27	15.5	-55	32	57.2	261.814446	-55.549217	2.84	1.479	1.50	K3Ib-II	
085267	17	27	22.6	-56	23	49.0	261.844281	-56.396942	3.31	-0.150	-0.12	B1Ib	
085340	17	27	48.4	-24	11	41.2	261.951738	-24.194779	4.16	0.283	0.30	A3IV:m	
085355	17	27	40.9	+04	7	18.1	261.920371	+04.121693	4.34	1.480	1.44	K3IIvar	
085365	17	27	52.8	-05	6	19.8	261.969843	-05.105493	4.53	0.385	0.46	F3V	
085423	17	28	51.4	-29	53	9.8	262.214209	-29.886054	4.28	0.402	0.45	F3III	
085670	17	30	57.9	+52	17	5.2	262.741242	+52.284785	2.79	0.954	0.93	G2II	
085693	17	31	41.3	+26	5	39.7	262.922219	+26.094368	4.41	1.434	1.39	K3IIvar	
085696	17	32	21.8	-37	18	43.9	263.090886	-37.312183	2.70	-0.179	-0.23	B2IV	
085727	17	33	13.5	-60	42	1.2	263.306279	-60.700331	3.60	-0.104	-0.10	B8V	
085755	17	32	51.1	-23	58	43.2	263.212781	-23.978672	4.78	0.016	0.08	AOV	
085792	17	33	39.7	-49	53	31.5	263.415273	-49.892088	2.84	-0.136	-0.15	B2Vne	
085819	17	32	38.4	+55	10	8.0	263.160072	+55.168883	4.89	0.251	0.28	Am...	
085822	17	24	45.5	+86	34	8.0	261.189502	+86.568876	4.35	0.021	0.04	A1Vn	
085829	17	32	43.9	+55	9	27.7	263.182820	+55.157703	4.86	0.279	0.30	Am	
085927	17	35	12.4	-37	7	6.9	263.801489	-37.118587	1.62	-0.231	-0.24	B1.5IV+...00	
086032	17	36	1.5	+12	32	40.7	264.006437	+12.544647	2.08	0.155	0.17	A5III	
086092	17	37	24.7	-46	31	9.5	264.352945	-46.519296	4.56	-0.020	0.01	AOV	
086170	17	38	10.0	-38	38	57.7	264.541766	-38.649373	4.26	1.075	1.09	G8/K0III/IV0	
086201	17	36	49.0	+68	44	48.7	264.204246	+68.746852	4.77	0.430	0.49	F5V	
086228	17	39	0.5	-43	0	37.0	264.752247	-43.010272	1.86	0.406	0.48	F1II	
086263	17	38	56.0	-15	24	40.8	264.733337	-15.411336	3.54	0.262	0.29	F0IIIp	
086284	17	39	7.4	-08	7	52.2	264.780865	-08.131161	4.58	0.132	0.22	B8II-IIIMNp0	
086414	17	40	7.7	+45	59	41.4	265.032246	+45.994843	3.82	-0.179	-0.21	B3V0SB	
086486	17	42	12.9	-49	25	38.6	265.553563	-49.427377	4.76	0.415	0.49	F3IV	
086565	17	42	44.2	-12	53	9.2	265.684031	-12.885878	4.24	0.086	0.10	A2Va	
086614	17	41	31.6	+72	8	12.1	265.381726	+72.136708	4.57	0.434	0.50	F5IV-V	
086670	17	44	6.9	-39	2	22.8	266.028742	-39.039667	2.39	-0.171	-0.22	B1.5III	
086736	17	44	50.3	-21	41	33.1	266.209740	-21.692526	4.86	0.469	0.54	F6/F7V	
086742	17	44	38.0	+04	33	33.2	266.158507	+04.559225	2.76	1.168	1.10	K2III	
086929	17	48	2.6	-64	43	54.2	267.010769	-64.731709	3.61	1.161	1.09	K1III	
086974	17	47	22.8	+27	42	30.3	266.845041	+27.708422	3.42	0.750	0.71	G5IV	
087072	17	49	2.4	-27	50	15.1	267.260095	-27.837529	4.53	0.600	0.76	F7II	
087073	17	49	13.8	-40	8	1.1	267.307344	-40.133650	2.99	0.509	0.64	F3Ia	
087108	17	49	4.3	+02	42	0.8	267.267897	+02.700227	3.75	0.043	0.05	AOV	
087220	17	50	42.1	-31	42	32.4	267.675454	-31.708993	4.79	-0.028	0.01	B8Ib/II	
087261	17	51	27.5	-37	2	54.4	267.864538	-37.048454	3.19	1.192	1.15	K0/K1III	
087294	17	51	49.8	-40	5	44.1	267.957412	-40.095582	4.78	0.259	0.41	A6Ib	
087585	17	53	56.2	+56	52	10.5	268.483990	+56.869570	3.73	1.177	1.11	K2III	
087808	17	57	3.6	+37	14	55.2	269.264867	+37.248679	3.86	1.350	1.17	K1IIvar	
087833	17	57	9.2	+51	29	13.1	269.288145	+51.486968	2.24	1.521	1.54	K5III	
087846	17	58	30.3	-44	20	37.4	269.626441	-44.343711	4.85	1.176	1.15	K2III	
087933	17	58	40.7	+29	14	48.3	269.669596	+29.246747	3.70	0.935	0.89	K0III	
087936	17	59	28.0	-41	43	1.8	269.866825	-41.717171	4.88	1.617	1.88	M0III	
087998	17	59	24.1	+30	11	19.3	269.850570	+30.188701	4.41	0.380	0.51	F2II	
088048	18	0	19.2	-09	46	28.4	270.080142	-09.774559	3.32	0.987	0.95	K0III	
088060	18	0	35.8	-30	15	11.4	270.149360	-30.253166	5.00	1.654	2.00	K5/M0III	
088116	18	1	13.7	-23	48	58.2	270.306881	-23.816162	4.74	-0.030	-0.01	B9V	
088128	18	1	6.2	+16	45	4.3	270.275859	+16.751184	4.67	1.254	1.12	K0II-III	
088149	18	1	25.7	+04	22	8.5	270.356891	+04.369017	4.79	-0.100	-0.08	B2Ve	
088175	18	1	43.5	-03	41	23.7	270.431345	-03.689920	4.62	0.390	0.45	F3V	
088192	18	1	49.4	+02	55	56.0	270.455664	+02.932221	3.93	0.029	0.10	B5Ib	
088267	18	2	30.2	+21	35	49.8	270.626018	+21.597177	4.26	0.406	0.47	G5	
088290	18	2	56.8	+01	18	22.8	270.736490	+01.306332	4.42	0.046	0.06	A2Vn	
088404	18	4	21.7	-08	10	42.5	271.090440	-08.178464	4.77	0.410	0.45	F5V+...	
088567	18	6	31.3	-29	34	36.6	271.630397	-29.576822	4.66	0.774	0.81	G0Ib/II	
088601	18	6	38.4	+02	29	50.6	271.659832	+02.497403	4.03	0.860	0.96	K0V0SB	
088635	18	7	19.1	-30	25	17.4	271.829442	-30.421505	2.98	0.981	0.99	K0III	
088657	18	7	1.3	+22	13	21.3	271.755458	+22.222572	4.96	1.656	2.18	M3IIIa+...00	

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
088714	18	8	27.6	-50	5	14.0	272.115051	-50.087229	3.65	-0.101	-0.06	B2Ib
088726	18	8	31.9	-43	25	17.4	272.132738	-43.421500	4.92	0.255	0.29	A5V
088765	18	8	25.8	+08	44	18.8	272.107520	+08.738552	4.64	0.951	0.92	G8III-IV
088771	18	8	27.9	+09	34	7.9	272.116048	+09.568870	3.71	0.159	0.18	A4IVs
088788	18	8	11.3	+43	27	57.6	272.046915	+43.465992	5.00	0.913	0.91	G8III...
088794	18	8	27.6	+28	46	1.6	272.114911	+28.767104	3.84	-0.018	-0.02	B9.5V
088839	18	9	34.3	-28	27	8.1	272.392806	-28.452256	4.55	0.938	1.00	K0IIICNpvar0
088866	18	10	50.5	-63	39	51.6	272.710391	-63.664337	4.33	0.228	0.23	Am
088886	18	9	45.8	+20	49	11.3	272.440881	+20.819803	4.37	-0.164	-0.19	B2IV
089112	18	12	58.4	-45	56	51.9	273.243269	-45.947751	4.52	1.009	0.95	G5III
089153	18	13	9.4	-23	41	39.5	273.288981	-23.694315	4.96	1.055	1.02	K0III
089172	18	12	47.2	+31	24	45.2	273.196837	+31.412555	4.96	1.643	2.16	M3III
089341	18	15	10.1	-21	3	2.1	273.792184	-21.050590	3.84	0.195	0.21	B2III:
089348	18	14	1.9	+64	24	19.8	273.508033	+64.405490	4.99	0.440	0.51	F5V
089642	18	19	13.0	-36	45	8.1	274.804212	-36.752247	3.10	1.582	2.24	M2III
089678	18	19	31.4	-27	1	55.0	274.880902	-27.031946	4.66	1.629	1.62	K3III
089826	18	20	41.2	+36	4	34.9	275.171467	+36.076369	4.33	1.162	1.10	K2IIIvar
089861	18	21	17.6	+21	58	22.0	275.323268	+21.972772	4.92	1.594	1.82	M1III
089908	18	20	25.0	+71	20	59.2	275.104368	+71.349779	4.22	-0.093	-0.11	A0p0(Si)
089918	18	22	2.5	+03	23	22.0	275.510286	+03.389448	4.85	0.911	0.90	G8III
089931	18	22	29.9	-29	48	57.2	275.624413	-29.815878	2.72	1.380	1.35	K3III
089937	18	20	37.8	+72	44	33.0	275.157410	+72.742490	3.55	0.489	0.62	F7Vvar
089962	18	22	31.6	-02	53	26.9	275.631634	-02.890814	3.23	0.941	0.96	K0III-IV
090098	18	25	23.3	-61	28	48.1	276.347230	-61.480041	4.35	1.462	1.50	M1III0SB
090135	18	24	56.8	-08	55	12.7	276.236747	-08.920203	4.66	0.932	0.94	K0III
090139	18	24	42.0	+21	46	55.2	276.174970	+21.781989	3.85	1.168	1.13	K2III
090156	18	24	15.2	+58	48	53.5	276.063252	+58.814853	4.98	0.082	0.05	A3V
090185	18	25	43.8	-34	22	16.3	276.432690	-34.371195	1.79	-0.031	0.01	B9.5III
090289	18	26	45.0	-20	31	37.3	276.687449	-20.527025	4.81	1.310	1.27	A1/A2V
090344	18	26	3.1	+65	34	41.3	276.512994	+65.578129	4.82	1.179	1.16	K2III
090422	18	28	42.9	-45	57	10.6	277.178559	-45.952946	3.49	-0.179	-0.18	B3IV
090496	18	29	25.2	-25	24	23.6	277.355061	-25.406554	2.82	1.025	1.04	K1IIIb
090568	18	30	38.3	-49	3	18.5	277.659674	-49.055126	4.10	0.995	1.02	G8/K0III
090595	18	30	32.2	-14	32	55.8	277.634135	-14.548836	4.67	0.076	0.10	A1IV/V
090797	18	33	33.8	-62	15	36.4	278.390794	-62.260123	4.63	-0.116	-0.11	B8III
090830	18	33	29.7	-45	53	47.2	278.373952	-45.896438	4.92	-0.101	-0.08	B6IV
090905	18	32	58.8	+57	3	51.1	278.245114	+57.064199	4.77	0.611	0.67	F7Ib
090982	18	35	10.8	-42	17	35.2	278.794798	-42.293116	4.62	0.994	0.95	G5III
091117	18	36	29.1	-08	13	32.5	279.121401	-08.225706	3.85	1.317	1.28	K2III
091262	18	37	44.1	+38	48	24.3	279.433668	+38.806747	0.03	-0.001	-0.01	A0Vvar
091726	18	43	33.6	-09	1	41.5	280.889988	-09.028183	4.70	0.358	0.40	F2IIIp0d0Del
091792	18	45	46.0	-71	24	14.2	281.441732	-71.403940	4.01	1.134	1.14	K2III
091845	18	44	48.0	-08	15	0.3	281.245	-08.250091	4.88	1.112	1.07	G8II
091918	18	45	53.7	-35	36	59.7	281.473659	-35.616578	4.86	-0.168	-0.19	B2V
091919	18	45	7.1	+39	41	45.2	281.279436	+39.695876	4.67	0.170	0.19	F1V
091926	18	45	9.5	+39	38	18.4	281.289764	+39.638443	4.59	0.180	0.20	A8Vn
091971	18	45	34.9	+37	37	51.3	281.395592	+37.630904	4.34	0.192	0.18	Am
092024	18	47	44.8	-64	50	44.9	281.936595	-64.845795	4.78	0.199	0.21	A7V
092041	18	47	7.4	-26	57	52.1	281.780745	-26.964478	3.17	-0.107	-0.10	B8.5III
092043	18	46	40.4	+20	34	13.2	281.668443	+20.570336	4.19	0.483	0.55	F6V
092088	18	47	1.3	+26	41	19.2	281.755481	+26.688672	4.83	1.199	1.16	K3III
092161	18	48	3.6	+18	12	33.2	282.014843	+18.209220	4.34	0.148	0.16	A5III
092175	18	48	25.3	-04	43	15.2	282.105230	-04.720885	4.22	1.087	1.09	G5II...
092420	18	50	56.9	+33	23	28.5	282.736944	+33.391237	3.52	0.003	0.02	A8:V0comp0SB
092512	18	51	32.8	+59	25	3.3	282.886751	+59.417592	4.63	1.185	1.20	K0II-III0SB0
092609	18	54	23.2	-62	9	27.1	283.596466	-62.157531	4.22	-0.150	-0.14	B2II-III
092689	18	53	48.5	+50	44	17.9	283.451931	+50.738313	4.92	0.903	0.88	G8III
092761	18	55	35.2	-22	42	49.8	283.896701	-22.713847	4.86	1.412	1.35	K1II
092782	18	54	6.1	+71	19	41.3	283.525471	+71.328137	4.82	1.151	1.10	K0III

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α			δ			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
092791	18	55	19.6	+36	55	46.8	283.831722	+36.929679	4.22	1.575	2.60	M4IIvar	
092818	18	55	44.4	+22	40	34.7	283.935080	+22.676309	4.57	0.782	0.86	G4III+...	
092845	18	56	32.3	-22	38	23.9	284.134551	-22.639973	5.00	1.348	1.25	K1Ib/II	
092855	18	56	43.2	-26	15	55.5	284.180175	-26.265417	2.05	-0.134	-0.13	B2.5V	
092862	18	56	3.0	+43	58	41.1	284.012536	+43.978079	4.08	1.397	3.14	M5IIIvar	
092946	18	57	23.2	+04	14	9.1	284.346857	+04.235858	4.62	0.161	0.20	A5V	
092951	18	57	24.7	+04	14	4.0	284.353043	+04.234436	4.98	0.204	0.22	A5Vn	
093015	18	59	21.6	-67	12	2.0	284.839986	-67.200551	4.40	0.530	0.59	F5Ib-II:	
093026	18	58	19.1	-05	48	50.4	284.579661	-05.813994	4.83	1.057	1.03	K1III	
093085	18	59	7.8	-21	4	25.5	284.782606	-21.073743	3.52	1.151	1.09	G8/K0II/III0	
093148	19	0	20.2	-52	54	18.6	285.084167	-52.905161	4.85	-0.051	-0.03	A0V	
093174	19	0	18.3	-37	4	28.1	285.076301	-37.074476	4.83	0.396	0.44	F3IV/V	
093194	18	59	49.4	+32	43	23.1	284.955762	+32.723084	3.25	-0.049	-0.03	B9III	
093244	19	0	41.4	+15	6	6.4	285.172304	+15.101768	4.02	1.082	1.00	K2III	
093279	19	0	54.0	+32	10	46.9	285.225126	+32.179684	4.94	1.465	1.32	K3III	
093408	19	2	6.3	+46	58	8.7	285.526078	+46.969094	5.00	0.186	0.23	A7V	
093429	19	2	56.1	-05	42	15.3	285.733628	-05.704243	4.02	1.079	1.08	K1IIIvar	
093506	19	4	6.3	-29	50	39.8	286.026163	-29.844379	2.60	0.062	0.06	A3IV	
093542	19	4	46.5	-42	3	33.7	286.193704	-42.059369	4.74	-0.027	-0.02	A0Vn	
093683	19	6	5.4	-21	42	18.2	286.522334	-21.705051	3.76	1.012	0.98	K0III	
093747	19	6	29.4	+13	53	60.0	286.622537	+13.899993	2.99	0.014	-0.01	A0Vn	
093805	19	7	29.7	-04	50	43.8	286.873823	-04.845503	3.43	-0.096	-0.09	B9Vn	
093825	19	8	0.2	-37	1	38.7	287.964	-37.027409	4.23	0.523	0.59	F7IV-V	
093864	19	8	24.3	-27	38	2.3	287.101285	-27.633958	3.32	1.169	1.15	K1/K2III	
094005	19	9	58.9	-40	27	28.8	287.495403	-40.457994	4.57	1.070	1.06	K1III	
094114	19	11	4.0	-37	51	56.2	287.766855	-37.865610	4.11	0.042	0.03	A0/A1V	
094141	19	11	9.6	-20	59	3.4	287.789873	-20.984265	2.88	0.377	0.44	F2II/III	
094160	19	11	38.5	-39	18	4.5	287.910477	-39.301242	4.10	1.163	1.11	K0II/HICN.0	
094376	19	12	33.3	+67	42	10.3	288.138571	+67.702855	3.07	0.990	0.94	G9III	
094481	19	14	33.5	+39	11	15.2	288.639540	+39.187555	4.43	-0.150	-0.19	B2.5IV	
094490	19	14	20.2	+57	44	46.6	288.584244	+57.746273	5.00	1.156	1.12	K2III	
094643	19	16	58.7	-25	12	51.0	289.244765	-25.214155	4.86	0.569	0.67	K0/K1III+..0	
094648	19	15	5.2	+73	23	54.1	288.771494	+73.398350	4.45	1.257	1.15	K3III	
094703	19	17	13.7	+21	26	0.1	289.306939	+21.433365	4.76	-0.058	-0.05	B4IV	
094713	19	17	11.1	+38	10	36.3	289.296051	+38.176744	4.35	1.258	1.13	K0II	
094779	19	17	38.7	+53	24	45.3	289.411267	+53.412573	3.80	0.950	0.85	K0III	
094820	19	19	0.5	-18	54	32.9	289.751909	-18.909139	4.88	1.013	0.99	K0III	
095066	19	21	48.1	-05	22	12.4	290.450457	-05.370111	4.98	0.937	0.93	G8III-IV...0	
095081	19	20	47.0	+65	45	35.7	290.195934	+65.759925	4.60	0.033	0.01	A2III <sub>s</sub>	
095168	19	23	2.0	-17	48	3.8	290.758396	-17.801058	3.92	0.228	0.25	F0III/IV	
095176	19	23	4.3	-15	54	32.5	290.767771	-15.909035	4.52	0.079	0.34	F2p	
095241	19	24	19.3	-44	24	45.0	291.080498	-44.412508	3.96	-0.085	-0.07	B9V	
095294	19	24	54.7	-44	45	11.6	291.227769	-44.753210	4.27	0.350	0.42	F2III	
095347	19	25	30.6	-40	34	10.1	291.377404	-40.569463	3.96	-0.105	-0.10	B8V	
095372	19	25	3.2	+29	40	7.0	291.263273	+29.668598	4.99	-0.120	-0.11	B3IV	
095501	19	26	40.9	+03	9	47.8	291.670576	+03.163281	3.36	0.319	0.38	F0IV	
095585	19	27	43.2	+00	23	13.5	291.929808	+00.387089	4.64	0.576	0.75	F2Ib	
095771	19	29	41.0	+24	42	49.9	292.420895	+24.713852	4.44	1.502	1.68	M00comp	
095853	19	30	17.9	+51	46	50.4	292.574436	+51.780656	3.76	0.148	0.18	A5Vn	
095947	19	31	40.1	+28	0	37.2	292.917255	+28.010332	3.05	1.088	1.05	K3II+...	
096052	19	32	38.7	+34	30	15.0	293.161408	+34.504165	4.74	-0.150	-0.12	B3IV	
096100	19	32	18.5	+69	42	4.9	293.077146	+69.701363	4.67	0.786	0.85	K0V	
096229	19	35	14.2	+07	25	49.6	293.809151	+07.430455	4.45	1.176	1.14	K3III	
096275	19	35	36.8	+19	49	34.1	293.903443	+19.826150	5.00	-0.093	-0.08	B8III <sub>ln</sub>	
096341	19	36	57.1	-48	2	46.3	294.238120	-48.046193	4.88	1.096	1.06	G9III	
096441	19	37	4.3	+50	16	35.0	294.268066	+50.276381	4.49	0.395	0.44	F4V	
096465	19	38	8.0	-24	49	47.4	294.533537	-24.829828	4.59	-0.075	-0.06	B8/B9V	
096468	19	37	56.2	-01	13	58.2	294.484001	-01.232838	4.36	-0.079	-0.06	B5III	
096483	19	38	9.2	-06	58	24.6	294.538388	-06.973499	4.93	-0.046	0.03	B0.5III	



## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
096683	19	40	18.3	+30	12	31.5	295.076284	+30.208750	4.68	0.971	0.89	G8III-IV...0
096757	19	41	8.8	+18	4	9.7	295.286715	+18.069367	4.39	0.777	0.77	G0II
096837	19	42	6.3	+17	31	54.9	295.526087	+17.531920	4.39	1.041	0.96	G8II
097118	19	45	7.5	+37	24	44.2	296.281120	+37.412280	4.89	0.948	0.94	G8III
097165	19	45	42.5	+45	11	20.9	296.427212	+45.189148	2.86	-0.002	-0.02	B9.5III
097278	19	47	22.6	+10	40	19.3	296.844104	+10.672024	2.72	1.507	1.44	K3II
097290	19	47	43.8	-19	42	10.0	296.932642	-19.702789	4.87	1.061	1.03	K0III
097295	19	47	19.2	+33	47	0.8	296.829810	+33.783542	5.00	0.476	0.55	F5
097365	19	48	26.1	+18	35	37.3	297.108793	+18.593696	3.68	1.313	1.27	M2II0+0B6
097433	19	48	4.9	+70	19	39.5	297.020332	+70.327630	3.84	0.888	0.88	G8III
097649	19	51	55.7	+08	55	54.7	297.982231	+08.931873	0.76	0.221	0.27	A7IV-V
097679	19	52	4.8	+22	40	16.1	298.020107	+22.671135	4.90	-0.153	-0.12	B2.5V
097804	19	53	40.1	+01	4	3.2	298.417204	+01.067562	3.87	0.630	0.73	F6Ibv0SB
097886	19	54	27.6	+24	8	32.1	298.615151	+24.142241	4.57	-0.047	-0.02	B9.5III
097938	19	55	23.2	+08	31	25.5	298.846576	+08.523758	4.71	1.023	1.03	K0III
098032	19	56	52.6	-41	48	16.2	299.219050	-41.804508	4.12	1.063	1.09	K0III
098036	19	56	28.0	+06	28	1.4	299.116741	+06.467049	3.71	0.855	0.89	G8IVvar
098055	19	56	14.2	+52	30	7.7	299.059153	+52.502131	4.91	0.124	0.12	A4Vn
098066	19	57	16.5	-26	14	7.2	299.318705	-26.235336	4.70	0.748	0.79	G3/G5III
098068	19	56	42.2	+38	33	1.0	299.175737	+38.550266	4.95	-0.086	-0.07	B5IV
098073	19	56	22.1	+58	54	33.6	299.092266	+58.909324	4.98	1.584	1.56	K5II-III
098110	19	57	11.3	+35	8	49.3	299.297027	+35.147035	3.89	1.019	0.98	K0IIIvar
098162	19	58	23.1	-27	6	20.7	299.596310	-27.105749	4.54	1.462	1.39	K3III
098337	19	59	48.1	+19	33	26.4	299.950521	+19.557338	3.51	1.571	1.65	K5III
098353	20	0	22.9	-26	7	49.3	300.095313	-26.130371	4.84	0.882	0.91	G8II/III
098412	20	1	15.6	-35	12	38.9	300.315106	-35.210818	4.37	-0.150	-0.15	B2.5IV
098495	20	3	16.0	-72	50	42.0	300.816844	-72.844987	3.97	-0.032	-0.04	A0V
098543	20	2	4.1	+27	49	11.2	300.517214	+27.819781	4.66	0.184	0.19	A4III
098608	20	3	42.6	-59	18	33.5	300.927506	-59.309319	4.95	1.356	3.25	M6III
098688	20	4	5.9	-27	38	33.7	301.024680	-27.642688	4.43	1.640	2.50	M4III
098702	20	2	54.9	+67	56	26.5	300.728762	+67.940685	4.51	1.313	1.23	K3III
098761	20	5	6.8	-37	52	25.4	301.278210	-37.873711	4.77	1.417	1.40	K4III
098842	20	5	48.7	-31	59	18.5	301.452927	-31.988473	4.99	1.208	1.17	K1III/IV
099120	20	9	10.5	-52	48	40.7	302.293665	-52.811298	4.93	1.591	1.83	M1II
099240	20	11	0.4	-66	7	8.6	302.751547	-66.119052	3.55	0.751	0.76	G5IV-Vvar
099255	20	8	3.3	+77	46	52.0	302.013581	+77.781116	4.38	-0.046	-0.06	B9III
099303	20	10	18.0	+36	54	35.7	302.575033	+36.909920	4.93	-0.139	-0.13	B2.5V
099473	20	12	31.0	-00	45	0.8	303.128966	-00.750224	3.24	-0.066	-0.06	B9.5III
099639	20	14	2.4	+46	53	15.8	303.509921	+46.887726	4.80	0.100	0.19	A5III <sub>n</sub>
099655	20	13	56.5	+56	38	25.0	303.485589	+56.640287	4.28	0.114	0.14	K3IV-Vn
099675	20	14	22.3	+46	48	48.7	303.592968	+46.813537	3.80	1.270	1.15	K2II+...
099742	20	15	21.8	+15	16	14.0	303.841027	+15.270565	4.94	0.072	0.09	A2V
099770	20	15	24.9	+36	52	45.8	303.853574	+36.879400	4.93	0.151	0.21	A2V
099824	20	16	15.7	+25	39	53.8	304.065267	+25.664958	4.79	-0.181	-0.22	B3V
099848	20	16	11.9	+47	47	14.2	304.049646	+47.787283	3.96	1.451	1.45	K3Ib-II0comp
099874	20	16	44.6	+27	53	15.2	304.185771	+27.887545	4.50	1.258	1.30	K3III
127	20	18	56.9	-12	26	2.3	304.736966	-12.433979	4.30	0.928	1.05	G3Ib
144	20	18	39.2	+38	6	25.5	304.663314	+38.107078	4.77	0.377	0.44	B2pe
164	20	19	21.3	-12	28	13.5	304.838875	-12.470414	3.58	0.883	0.92	G6/G8III
100310	20	21	57.9	-12	41	0.7	305.491139	-12.683534	4.77	-0.047	-0.06	B9IV
100345	20	22	19.7	-14	42	19.7	305.582231	-14.705473	3.05	0.790	0.90	A5:n
100453	20	23	4.3	+40	19	58.6	305.768049	+40.332933	2.23	0.673	0.65	F8Ib
100587	20	24	47.9	+32	16	1.8	306.199758	+32.267172	4.43	1.331	1.31	K3III
100751	20	27	29.5	-56	39	27.3	306.872794	-56.657574	1.94	-0.118	-0.10	B2IV
101027	20	30	11.8	-17	44	3.6	307.549315	-17.734321	4.77	0.386	0.44	F3V
101076	20	30	21.4	+30	26	53.2	307.589066	+30.448123	4.01	0.404	0.46	F5II
101093	20	29	58.3	+63	4	24.8	307.492922	+63.073548	4.21	0.199	0.20	A7III
101101	20	30	52.6	-02	48	21.3	307.719161	-02.805926	4.91	1.160	1.12	K2III
101138	20	30	47.2	+49	1	53.2	307.696725	+49.031438	4.94	-0.087	-0.06	B2.5IV

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$			$\delta$			Espectro
	NH	h	m	s	°	'	"	°	'	"	V	U-V	
101421	20	34	20.1	+11	23	3.9	308.583776	+11.384407	4.03	-0.123	-0.10	B6III	
101474	20	34	49.1	+35	19	56.7	308.704439	+35.332406	4.61	1.593	1.78	K2Ib0comp	
101589	20	36	24.4	+14	45	23.6	309.101863	+14.756543	4.64	0.120	0.14	A3V	
101612	20	37	30.4	-60	30	1.4	309.376797	-60.500376	4.75	0.291	0.34	F1III	
101692	20	37	57.0	-02	28	1.7	309.487337	-02.467150	4.91	1.606	1.66	K5II	
101769	20	38	39.1	+14	40	40.9	309.662731	+14.678029	3.64	0.425	0.50	F5IV	
101772	20	39	12.6	-47	12	27.7	309.802337	-47.207707	3.11	0.998	0.98	K0III	
101773	20	39	32.3	-61	26	48.9	309.884393	-61.446927	4.86	0.447	0.52	Fm0delta0Del	
101847	20	39	33.0	-01	1	17.8	309.887523	-01.021613	4.31	0.949	0.91	G8III0SB	
101867	20	39	34.3	+21	17	5.4	309.893047	+21.284820	4.81	-0.030	-0.01	A0V	
101958	20	40	43.8	+15	59	46.6	310.182310	+15.996282	3.77	-0.057	-0.01	B9V	
102098	20	42	14.0	+45	21	54.8	310.558386	+45.365225	1.25	0.092	0.16	A2Ia	
102281	20	44	33.4	+15	9	36.5	311.138973	+15.160132	4.43	0.302	0.34	A7IIIp0d0Del	
102333	20	45	45.1	-51	50	6.4	311.437749	-51.835113	4.51	0.278	0.30	A6:var	
102388	20	45	53.6	+25	21	21.2	311.473177	+25.355891	4.92	1.183	1.11	K2III	
102395	20	47	2.8	-66	6	59.3	311.761624	-66.116471	3.42	0.163	0.20	A5IV	
102422	20	45	45.8	+61	55	49.7	311.440902	+61.930479	3.41	0.912	0.94	K0IV	
102431	20	45	56.1	+57	39	53.1	311.483621	+57.664740	4.52	0.535	0.58	F8IV-V	
102453	20	46	38.0	+30	48	23.8	311.658346	+30.806605	4.22	1.051	1.01	K0III	
102485	20	47	28.9	-25	11	5.6	311.870586	-25.184889	4.13	0.426	0.49	F5V	
102488	20	47	9.8	+34	3	33.6	311.790694	+34.059335	2.48	1.021	1.00	K0III	
102532	20	47	44.9	+16	12	36.8	311.937199	+16.210228	4.27	1.042	1.03	K1IV	
102571	20	48	7.1	+34	27	41.6	312.029457	+34.461552	4.93	1.294	1.25	K3IIIvar	
102589	20	48	19.5	+36	34	41.3	312.081350	+36.578133	4.53	-0.083	-0.12	B6IV	
102618	20	48	56.7	-09	24	30.0	312.236379	-09.408345	3.78	0.	-0.01	A1V	
102624	20	48	58.5	-04	56	25.0	312.243805	-04.940282	4.43	1.639	2.21	M3IIIvar	
102724	20	49	44.4	+46	12	8.0	312.434883	+46.202209	4.81	0.571	0.59	B3Ia	
102790	20	51	5.4	-46	8	17.4	312.772451	-46.138162	4.90	1.494	1.57	K5III	
102831	20	51	25.8	-33	41	28.3	312.857303	-33.691188	4.89	1.004	0.97	G8III	
102978	20	53	13.1	-26	49	47.0	313.304742	-26.829724	4.12	1.633	1.76	K4III	
103004	20	53	8.1	+27	11	9.8	313.283605	+27.186061	4.56	0.835	0.87	G8III	
103045	20	53	55.1	-08	53	37.6	313.479790	-08.893785	4.73	0.325	0.36	A3m	
103089	20	54	4.7	+44	28	37.7	313.519476	+44.477144	4.80	-0.134	-0.16	B5V	
103227	20	56	37.7	-58	21	48.8	314.156990	-58.363565	3.67	1.250	1.11	K0III	
103413	20	58	3.0	+41	15	30.6	314.512682	+41.258506	3.94	0.027	0.01	A1Vn	
103632	21	0	37.6	+47	36	48.8	315.156526	+47.613550	4.74	-0.084	-0.06	B1ne	
103738	21	2	43.6	-32	9	52.1	315.681536	-32.164470	4.67	0.890	0.90	G8III	
104019	21	5	44.3	-19	45	38.3	316.434599	-19.760631	4.82	0.169	0.18	A5V	
104060	21	5	47.2	+44	1	20.9	316.446755	+44.022483	3.72	1.609	1.63	K5Ibv0SB	
104139	21	7	15.9	-17	8	17.3	316.816130	-17.138135	4.08	-0.010	0.00	A1V	
104194	21	7	24.7	+47	44	37.2	316.853021	+47.743673	4.56	1.569	1.54	K4II	
104234	21	8	29.8	-24	54	37.9	317.124357	-24.910540	4.49	1.604	1.81	K5/M0III	
104459	21	10	52.3	-11	16	31.0	317.717854	-11.275265	4.50	0.926	0.92	G8III	
104521	21	11	29.0	+10	13	38.6	317.870983	+10.227399	4.70	0.262	0.26	F0p	
104732	21	13	56.3	+30	19	27.2	318.484468	+30.324233	3.21	0.990	0.97	G8II0SB	
104858	21	15	37.5	+10	6	12.3	318.906096	+10.103405	4.47	0.529	0.57	F5V+...	
104887	21	15	43.9	+38	8	47.0	318.932988	+38.146379	3.74	0.393	0.46	F1IV	
104987	21	16	59.9	+05	20	46.0	319.249454	+05.346114	3.92	0.549	0.62	G0III+...	
105102	21	18	20.4	+39	29	38.7	319.585088	+39.494076	4.22	0.098	0.25	B9Iab	
105138	21	18	53.1	+34	59	47.6	319.721382	+34.996554	4.41	-0.103	-0.09	B2Vne	
105140	21	19	21.4	-32	4	22.7	319.839141	-32.072977	4.71	0.070	0.09	A0V	
105199	21	19	8.3	+62	41	8.4	319.784600	+62.685664	2.45	0.257	0.26	A7IV-V	
105319	21	21	31.6	-53	20	57.8	320.381613	-53.349400	4.39	0.191	0.21	A5V	
105382	21	22	15.3	-40	42	31.0	320.563762	-40.708600	4.80	0.029	0.07	A2p	
105502	21	23	10.4	+19	54	21.8	320.793485	+19.906068	4.08	1.108	1.05	K1III	
105515	21	23	33.1	-16	43	59.7	320.887875	-16.733252	4.28	0.888	0.89	G8III	
105858	21	28	21.3	-65	15	29.6	322.088887	-65.258219	4.21	0.494	0.61	F6V	
105881	21	28	0.3	-22	18	30.1	322.001050	-22.308372	3.77	1.002	0.88	G4Ibp...	
106032	21	28	57.2	+70	39	50.9	322.238477	+70.664129	3.23	-0.201	-0.25	B2IIIv0SB	

## Posiciones medias de estrellas brillantes, 2023

Estrella	α			δ			α		δ		V	U-V	B-V	Espectro
	NH	h	m	s	°	'	″	°	°					
106039	21	30	3.5	-21	42	13.2	322.514687	-21.703653	4.50	0.889	0.89	K0III		
106140	21	31	0.8	+23	44	34.1	322.753436	+23.742800	4.52	1.618	1.82	M1III		
106278	21	32	47.6	-05	28	0.1	323.198514	-05.466691	2.90	0.828	0.82	G0Ib		
106481	21	34	52.0	+45	41	47.5	323.716668	+45.696528	3.98	0.885	0.94	G8III		
106551	21	35	44.3	+38	38	24.8	323.934398	+38.640222	4.87	1.085	1.06	K1III		
106723	21	38	23.5	-19	21	34.6	324.598076	-19.359605	4.51	-0.180	-0.17	B3V:p		
106786	21	39	0.0	-07	44	51.9	324.750120	-07.747744	4.68	0.175	0.19	A7V		
106801	21	38	33.0	+62	11	18.6	324.637659	+62.188488	4.76	0.246	0.38	B2Ib		
106985	21	41	23.4	-16	33	18.2	325.347304	-16.555061	3.69	0.320	0.32	A7III:mp...0		
107089	21	44	0.1	-77	17	0.8	326.495	-77.283544	3.73	1.008	0.98	K0III		
107119	21	42	15.4	+71	25	11.5	325.564240	+71.419849	4.55	1.108	1.07	K0III		
107136	21	42	55.9	+51	17	51.3	325.732714	+51.297572	4.69	-0.119	-0.12	B3IV		
107188	21	43	58.0	-18	45	29.4	325.991670	-18.758160	4.72	0.868	0.91	G8III		
107259	21	44	13.7	+58	53	18.3	326.056992	+58.888426	4.23	2.242	3.57	M2Ia		
107310	21	45	11.7	+28	50	59.0	326.298655	+28.849736	4.49	0.512	0.58	F6V		
107315	21	45	20.4	+09	59	1.3	326.334991	+09.983703	2.38	1.520	1.42	K2Ibvar		
107348	21	45	37.5	+17	27	31.4	326.406226	+17.458729	4.34	1.161	1.05	G5Ib		
107354	21	45	42.7	+25	45	14.2	326.427838	+25.753937	4.14	0.425	0.48	F5IV		
107380	21	46	20.4	-32	55	2.7	326.584937	-32.917420	4.35	-0.053	-0.05	B9.5V		
107418	21	46	7.6	+61	13	47.3	326.531826	+61.229802	4.25	0.474	0.73	A2Iavar		
107533	21	47	39.8	+49	25	8.5	326.916012	+49.419018	4.23	-0.120	-0.13	B3III		
107556	21	48	20.1	-16	1	10.5	327.083554	-16.019574	2.85	0.180	0.35	A5mF20(IV)00		
108085	21	55	20.6	-37	15	11.6	328.835844	-37.253212	3.00	-0.084	-0.10	B8III		
108431	21	59	30.0	-54	52	46.9	329.875087	-54.879691	4.40	0.297	0.35	F0IV		
108870	22	5	8.1	-56	41	15.7	331.283937	-56.687684	4.69	1.056	1.15	K5V		
108874	22	4	31.7	-02	2	27.8	331.132045	-02.041053	4.74	-0.100	-0.03	B7IVe		
108917	22	4	28.3	+64	44	34.7	331.118049	+64.742982	4.26	0.379	0.44	Am		
109068	22	6	51.8	+05	10	27.1	331.715918	+05.174203	4.86	1.443	1.45	K4III		
109074	22	6	59.4	-00	12	17.5	331.747426	-00.204857	2.95	0.969	0.92	G2Ib		
109111	22	7	31.3	-39	25	44.3	331.880619	-39.428979	4.47	1.349	1.31	M0III		
109139	22	7	42.2	-13	45	17.3	331.925813	-13.754803	4.29	-0.075	-0.06	B8V		
109176	22	8	6.4	+25	27	38.4	332.026652	+25.460658	3.77	0.435	0.51	F5V		
109268	22	9	42.1	-46	50	46.2	332.425618	-46.846170	1.73	-0.070	-0.05	B7IV		
109285	22	9	44.9	-32	52	22.4	332.436948	-32.872877	4.50	0.054	0.06	A2V		
109289	22	9	48.0	-33	55	42.1	332.450160	-33.928367	4.99	1.499	1.50	K4III		
109400	22	10	15.2	+72	27	26.1	332.563211	+72.457258	4.79	0.919	0.91	G8III		
109410	22	11	2.0	+33	17	39.4	332.758394	+33.294267	4.28	0.471	0.52	F5III		
109422	22	11	31.0	-32	25	55.5	332.879069	-32.432075	4.94	0.489	0.54	F6V		
109427	22	11	23.1	+06	18	51.5	332.846218	+06.314297	3.52	0.086	0.09	A2V		
109492	22	11	40.4	+58	19	3.5	332.918261	+58.317644	3.39	1.558	1.58	K1IbvOSB		
109754	22	14	53.4	+39	49	55.9	333.722650	+39.832184	4.50	1.385	1.36	K3III		
109857	22	15	54.4	+57	9	40.8	333.976715	+57.161341	4.18	0.278	0.33	F0IV		
109908	22	17	1.3	-41	13	44.1	334.255480	-41.228926	4.79	0.790	0.83	G8III+...		
109937	22	16	59.8	+37	51	59.1	334.249222	+37.866427	4.14	1.447	1.33	K3III		
113	22	18	4.3	-07	39	55.8	334.517973	-07.665504	4.17	0.979	0.95	G8III-IV		
110130	22	20	5.4	-60	8	29.2	335.022676	-60.141455	2.87	1.390	1.37	K3III		
110351	22	22	0.0	+46	39	19.8	335.574	+46.655491	4.55	-0.100	-0.10	B6V		
110371	22	22	24.6	+28	26	58.4	335.602398	+28.449559	4.78	-0.010	0.06	B9III		
110386	22	22	40.5	+12	19	27.4	335.668784	+12.324269	4.82	-0.132	-0.16	B2IV-V		
110395	22	22	52.1	-01	16	5.5	335.717189	-01.268187	3.86	-0.057	-0.06	A0V		
110538	22	24	29.3	+52	20	50.5	336.122215	+52.347355	4.42	1.015	1.03	G9III		
110609	22	25	28.4	+49	35	45.9	336.368364	+49.596095	4.55	0.092	0.18	B9Iab		
110672	22	26	28.6	+01	29	50.5	336.619115	+01.497347	4.80	-0.171	-0.18	B1Ve		
110838	22	28	58.6	-64	50	45.1	337.244236	-64.845850	4.51	-0.029	-0.01	B8V		
110882	22	29	2.9	+04	48	51.1	337.261986	+04.814205	4.78	1.039	1.07	K0III		
110960	22	30	2.4	+00	6	3.6	337.510199	+00.100990	3.65	0.406	0.50	F3III-IV		
110991	22	30	2.9	+58	32	9.5	337.512084	+58.535981	4.07	0.778	0.81	G2Ibvar		
110997	22	30	39.9	-43	22	29.1	337.666073	-43.374753	3.97	1.022	0.98	G6/G8III		
111022	22	30	30.8	+47	49	39.8	337.628506	+47.827715	4.34	1.679	1.90	M0II		

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$	$\delta$	V	U-V	B-V	Espectro
	NH	h	m	s	°	'						
111043	22	31	9.1	-43	37	41.8	337.787804	-43.628268	4.12	1.570	2.49	M4.5IIIa
111104	22	31	30.4	+43	14	39.8	337.876460	+43.244401	4.52	-0.086	-0.09	B2IV
111123	22	31	53.3	-10	33	25.2	337.972048	-10.556997	4.82	-0.053	-0.04	A0IVs
111169	22	32	15.9	+50	24	13.8	338.066089	+50.403832	3.76	0.031	0.05	A1V
111188	22	32	50.1	-32	13	29.6	338.208774	-32.224879	4.29	0.011	0.03	A1V
111310	22	34	34.1	-61	51	38.1	338.641937	-61.860595	4.91	1.612	2.50	M4III
111497	22	36	33.8	+00	0	15.3	339.140743	+00.004250	4.04	-0.083	-0.07	B9IV-Vn
111674	22	38	20.6	+51	40	1.0	339.586024	+51.666953	4.64	0.254	0.28	A8IV
111841	22	40	19.2	+39	10	23.2	340.079909	+39.173106	4.89	-0.207	-0.23	O9V
111944	22	41	33.0	+44	23	58.1	340.387294	+44.399483	4.50	1.318	1.25	K3III
111954	22	41	57.0	-26	55	13.6	340.487539	-26.920456	4.18	-0.105	-0.07	B8V
112029	22	42	38.1	+10	57	16.6	340.658654	+10.954603	3.41	-0.086	-0.06	B8.5V
112051	22	42	51.8	+29	25	51.1	340.715755	+29.430872	4.80	-0.013	0.02	A1IV
112122	22	44	3.6	-46	45	39.8	341.014938	-46.761048	2.07	1.610	2.60	M5III
112158	22	44	6.4	+30	20	40.8	341.026708	+30.344671	2.93	0.852	0.87	G2II-III..00
112203	22	44	51.2	-41	17	28.5	341.213431	-41.291238	4.84	1.027	1.01	K0III
112211	22	44	50.9	-18	42	24.6	341.212069	-18.706838	4.68	1.358	1.35	K3III
112374	22	47	3.6	-53	22	33.3	341.764923	-53.375905	4.84	1.180	1.21	K2IIICNIV
112405	22	48	19.4	-81	15	26.5	342.080929	-81.257353	4.13	0.208	0.24	A9IV/V
112440	22	47	39.9	+23	41	23.4	341.916374	+23.689827	3.97	1.070	0.99	G8II-III
112447	22	47	52.1	+12	17	38.5	341.966974	+12.294017	4.20	0.502	0.60	F7V
112519	22	47	19.4	+83	16	42.3	341.830922	+83.278428	4.77	1.257	1.25	K3III
112623	22	49	57.7	-51	11	33.6	342.490413	-51.192664	3.49	0.083	0.10	A3V
112716	22	50	50.0	-13	28	5.1	342.708325	-13.468095	4.05	1.570	1.72	K5III
112724	22	50	31.4	+66	19	27.8	342.630753	+66.324376	3.50	1.053	1.06	K0III
112748	22	51	8.4	+24	43	34.1	342.784944	+24.726148	3.51	0.933	0.89	M2III
112917	22	53	5.9	+43	26	15.8	343.274646	+43.437736	4.95	1.559	1.71	M0III
112948	22	53	49.5	-32	45	1.3	343.456429	-32.750365	4.46	-0.037	-0.01	A0III
112961	22	53	50.3	-07	27	14.8	343.459778	-07.454101	3.73	1.626	2.07	M2IIIvar
113116	22	54	8.1	+84	28	18.5	343.533586	+84.471792	4.70	1.418	1.38	K4III
113136	22	55	53.7	-15	41	43.3	343.973590	-15.695359	3.27	0.066	0.08	A3V
113186	22	56	24.7	+08	56	31.4	344.102896	+08.942058	4.91	-0.003	0.00	A1V
113246	22	57	14.6	-32	24	49.0	344.310947	-32.413606	4.20	0.952	0.96	G8III
113288	22	57	28.2	+49	51	33.9	344.367335	+49.859409	4.99	1.778	1.87	K5Ibvar
113368	22	58	56.6	-29	29	49.9	344.735888	-29.497195	1.17	0.145	0.16	A3V
113638	23	2	15.3	-52	37	39.5	345.563695	-52.627646	4.11	0.960	1.01	G8III
113726	23	3	0.4	+42	27	9.7	345.751849	+42.452682	3.62	-0.099	-0.05	B6pv0SB
113881	23	4	55.0	+28	12	38.3	346.229152	+28.210633	2.44	1.655	2.31	M2II-IIivar0
113889	23	5	4.4	+03	56	49.1	346.268222	+03.946962	4.48	-0.115	-0.09	B6Ve
113919	23	5	14.7	+50	10	48.6	346.311076	+50.180174	4.64	1.058	1.02	K0III
113963	23	5	56.0	+15	19	55.5	346.483240	+15.332093	2.49	-0.002	0.00	B9.5III
114104	23	7	36.9	+59	32	49.5	346.903785	+59.547082	4.84	-0.060	-0.02	B0.5IV
114119	23	7	56.3	-23	36	56.7	346.984723	-23.615752	4.48	0.892	0.92	G8III
114131	23	8	11.6	-43	23	35.0	347.048449	-43.393058	4.28	0.423	0.44	F5me...
114144	23	8	11.3	+09	32	12.5	347.047224	+09.536808	4.54	1.559	1.79	M2III
114155	23	8	15.6	+25	35	43.6	347.064990	+25.595455	4.76	1.285	1.30	K0IIp
114222	23	8	39.1	+75	30	53.1	347.162792	+75.514757	4.41	0.802	0.84	G2III
114341	23	10	41.8	-21	2	40.2	347.673996	-21.044500	3.68	1.202	1.16	K1III
114375	23	11	10.0	-22	19	47.6	347.791582	-22.329893	4.71	0.674	0.75	A3IV:
114421	23	11	40.8	-45	7	8.6	347.919904	-45.119053	3.88	0.998	0.95	K0III0SB
114570	23	13	38.0	+49	32	5.6	348.408348	+49.534890	4.53	0.302	0.35	F0V
114724	23	15	32.3	-05	55	19.1	348.884687	-05.921973	4.22	1.545	1.89	M2III
114855	23	17	7.3	-08	57	33.8	349.280242	-08.959392	4.24	1.107	1.06	K0III
114939	23	18	3.9	-07	35	53.0	349.516420	-07.598048	4.93	1.613	2.56	M3III
114971	23	18	23.0	+03	24	39.6	349.595918	+03.410993	3.70	0.916	0.97	G7III
114996	23	18	47.1	-58	6	23.8	349.696312	-58.106603	3.99	0.410	0.50	F1III
115022	23	18	50.4	+49	8	38.3	349.710103	+49.143985	4.82	1.668	2.14	M2III
115033	23	19	7.4	-09	3	14.1	349.780848	-09.053910	4.41	-0.144	-0.14	B5Vn
115088	23	19	36.1	+68	14	24.9	349.900249	+68.240240	4.75	0.836	0.86	K0III

## Posiciones medias de estrellas brillantes, 2023

Estrella	$\alpha$			$\delta$			$\alpha$		$\delta$			Espectro
	NH	h	m	s	°	'	"	°	°	V	U-V	
115102	23	20	5.2	-32	24	13.6	350.021841	-32.403768	4.41	1.109	1.08	K1III
115115	23	20	10.9	-09	28	55.3	350.045506	-09.482028	4.99	-0.022	0.00	A0V
115250	23	21	48.2	+23	52	9.2	350.450885	+23.869212	4.58	0.180	0.23	A5V
115438	23	24	12.1	-19	58	19.4	351.050385	-19.972044	3.96	1.082	1.10	K0III
115590	23	25	53.5	+62	24	43.3	351.473060	+62.412033	4.96	1.676	1.94	M1III
115623	23	26	33.3	+23	32	1.3	351.638923	+23.533697	4.42	0.617	0.67	F8IV
115669	23	27	16.7	-20	30	46.8	351.819429	-20.512996	4.38	1.460	1.52	K4III
115738	23	28	8.2	+01	23	4.2	352.034313	+01.384496	4.95	0.036	0.01	A0p
115830	23	29	9.7	+06	30	29.8	352.290292	+06.508289	4.27	1.062	1.03	K1III
115919	23	30	20.7	+12	53	25.4	352.586250	+12.890379	4.54	0.939	0.93	G8III
115990	23	31	7.7	+58	40	43.2	352.781914	+58.678673	4.89	-0.122	-0.11	B3IV
116231	23	34	13.5	-37	41	17.1	353.556212	-37.688093	4.38	-0.095	-0.09	B9.5IVMnpe.0
116247	23	34	30.2	-20	47	4.2	353.625954	-20.784495	4.70	0.020	0.03	A0V
116310	23	35	7.4	+31	27	18.6	353.780855	+31.455155	4.97	1.383	1.36	K4III
116389	23	36	20.0	-42	29	5.8	354.083130	-42.484939	4.69	0.078	0.10	A2V
116584	23	38	43.3	+46	35	8.4	354.680400	+46.585667	3.81	0.984	0.96	G8III-IV
116602	23	39	6.4	-45	21	43.9	354.776620	-45.362205	4.74	0.082	0.08	A2V
116631	23	39	17.8	+43	23	53.9	354.824018	+43.398303	4.29	-0.083	-0.06	B8V
116727	23	40	20.1	+77	45	48.2	355.083767	+77.763384	3.21	1.031	0.99	K1IV
116758	23	41	0.1	-14	5	32.0	355.250322	-14.092210	4.97	0.257	0.29	A7IV
116771	23	41	9.6	+05	45	13.8	355.290027	+05.753831	4.13	0.507	0.59	F7V
116805	23	41	34.4	+44	27	51.0	355.393279	+44.464163	4.15	-0.071	-0.06	B9IVn
116901	23	42	58.9	-17	41	10.0	355.745213	-17.686117	4.82	0.822	0.81	G2Ib/II
116928	23	43	14.8	+01	54	34.1	355.811591	+01.909478	4.49	0.200	0.22	A7V
116971	23	43	56.3	-14	24	53.6	355.984749	-14.414876	4.49	-0.032	-0.04	B9V
117073	23	45	10.7	+29	29	30.1	356.294468	+29.491699	4.93	0.935	0.93	K0III
117221	23	47	12.4	+46	33	2.9	356.801620	+46.550815	4.97	1.086	1.05	G5Ib
117245	23	47	35.6	+03	37	2.1	356.898346	+03.617242	4.95	2.508	2.57	C5II
117301	23	48	13.1	+58	46	58.7	357.054583	+58.782963	4.88	1.122	1.08	K1III
117452	23	50	8.7	-28	0	1.0	357.536393	-28.267	4.59	0.001	-0.01	A0V
117863	23	55	34.2	+57	37	48.5	358.892451	+57.630130	4.51	1.190	1.15	F8Iavar
118121	23	58	48.1	-64	10	4.2	359.700494	-64.167824	5.00	0.060	0.07	A1V
118131	23	58	57.6	+25	16	19.2	359.740043	+25.271993	4.63	1.584	2.21	M3III
118209	23	59	52.5	-03	25	32.3	359.968948	-03.425645	4.88	0.930	0.92	G9III

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

950						1599											
		V		Sp				V		Sp							
		5.24		F3/F5V				4.23		F9V							
		α		α <sub>c</sub>		δ		α		α <sub>c</sub>		δ		Hp			
m	d	h	h	°	h	m	d	h	h	°	h	m	d	h	h		
ene	1	0.21482	0.19536	-35.00925	17.31	ene	1	0.35425	0.33479	-64.74621	17.45	ene	1	0.35425	0.33479	-64.74621	17.45
ene	8	0.21480	0.19530	-35.00920	16.85	ene	8	0.35418	0.33469	-64.74603	16.99	ene	8	0.35418	0.33469	-64.74603	16.99
ene	15	0.21477	0.19526	-35.00920	16.39	ene	15	0.35411	0.33460	-64.74586	16.53	ene	15	0.35411	0.33460	-64.74586	16.53
ene	22	0.21475	0.19521	-35.00902	15.93	ene	22	0.35405	0.33450	-64.74550	16.07	ene	22	0.35405	0.33450	-64.74550	16.07
ene	29	0.21472	0.19517	-35.00890	15.47	ene	29	0.35398	0.33443	-64.74517	15.61	ene	29	0.35398	0.33443	-64.74517	15.61
feb	5	0.21471	0.19513	-35.00865	15.01	feb	5	0.35393	0.33435	-64.74469	15.15	feb	5	0.35393	0.33435	-64.74469	15.15
feb	12	0.21468	0.19510	-35.00845	14.55	feb	12	0.35387	0.33429	-64.74426	14.69	feb	12	0.35387	0.33429	-64.74426	14.69
feb	19	0.21468	0.19507	-35.00807	14.09	feb	19	0.35384	0.33423	-64.74364	14.23	feb	19	0.35384	0.33423	-64.74364	14.23
feb	26	0.21466	0.19504	-35.00777	13.63	feb	26	0.35380	0.33418	-64.74309	13.77	feb	26	0.35380	0.33418	-64.74309	13.77
mar	5	0.21466	0.19502	-35.00734	13.17	mar	5	0.35379	0.33415	-64.74241	13.31	mar	5	0.35379	0.33415	-64.74241	13.31
mar	12	0.21465	0.19501	-35.00698	12.71	mar	12	0.35376	0.33412	-64.74180	12.85	mar	12	0.35376	0.33412	-64.74180	12.85
mar	19	0.21467	0.19500	-35.00646	12.25	mar	19	0.35377	0.33411	-64.74104	12.39	mar	19	0.35377	0.33411	-64.74104	12.39
mar	26	0.21467	0.19500	-35.00601	11.79	mar	26	0.35377	0.33410	-64.74037	11.93	mar	26	0.35377	0.33410	-64.74037	11.93
abr	2	0.21470	0.19501	-35.00546	11.33	abr	2	0.35380	0.33411	-64.73960	11.47	abr	2	0.35380	0.33411	-64.73960	11.47
abr	9	0.21471	0.19502	-35.00499	10.87	abr	9	0.35381	0.33412	-64.73893	11.01	abr	9	0.35381	0.33412	-64.73893	11.01
abr	16	0.21475	0.19503	-35.00438	10.41	abr	16	0.35387	0.33415	-64.73814	10.55	abr	16	0.35387	0.33415	-64.73814	10.55
abr	23	0.21478	0.19505	-35.00387	9.95	abr	23	0.35391	0.33418	-64.73746	10.09	abr	23	0.35391	0.33418	-64.73746	10.09
abr	30	0.21483	0.19508	-35.00328	9.49	abr	30	0.35398	0.33423	-64.73673	9.63	abr	30	0.35398	0.33423	-64.73673	9.63
may	7	0.21487	0.19511	-35.00277	9.03	may	7	0.35404	0.33428	-64.73611	9.17	may	7	0.35404	0.33428	-64.73611	9.17
may	14	0.21493	0.19515	-35.00217	8.57	may	14	0.35414	0.33435	-64.73542	8.71	may	14	0.35414	0.33435	-64.73542	8.71
may	21	0.21498	0.19518	-35.00166	8.11	may	21	0.35422	0.33442	-64.73485	8.25	may	21	0.35422	0.33442	-64.73485	8.25
may	28	0.21505	0.19523	-35.00112	7.65	may	28	0.35432	0.33450	-64.73427	7.79	may	28	0.35432	0.33450	-64.73427	7.79
jun	4	0.21511	0.19527	-35.00066	7.19	jun	4	0.35442	0.33458	-64.73381	7.33	jun	4	0.35442	0.33458	-64.73381	7.33
jun	11	0.21519	0.19532	-35.00016	6.73	jun	11	0.35454	0.33467	-64.73332	6.87	jun	11	0.35454	0.33467	-64.73332	6.87
jun	18	0.21525	0.19536	-34.99975	6.27	jun	18	0.35465	0.33476	-64.73296	6.41	jun	18	0.35465	0.33476	-64.73296	6.41
jun	25	0.21533	0.19542	-34.99936	5.81	jun	25	0.35477	0.33486	-64.73264	5.95	jun	25	0.35477	0.33486	-64.73264	5.95
jul	2	0.21539	0.19546	-34.99905	5.35	jul	2	0.35488	0.33495	-64.73242	5.49	jul	2	0.35488	0.33495	-64.73242	5.49
jul	9	0.21547	0.19552	-34.99874	4.89	jul	9	0.35501	0.33506	-64.73223	5.03	jul	9	0.35501	0.33506	-64.73223	5.03
jul	16	0.21554	0.19556	-34.99850	4.43	jul	16	0.35512	0.33514	-64.73213	4.57	jul	16	0.35512	0.33514	-64.73213	4.57
jul	23	0.21561	0.19561	-34.99834	3.97	jul	23	0.35524	0.33525	-64.73213	4.11	jul	23	0.35524	0.33525	-64.73213	4.11
jul	30	0.21567	0.19565	-34.99823	3.51	jul	30	0.35534	0.33533	-64.73219	3.65	jul	30	0.35534	0.33533	-64.73219	3.65
ago	6	0.21573	0.19570	-34.99817	3.05	ago	6	0.35546	0.33542	-64.73232	3.19	ago	6	0.35546	0.33542	-64.73232	3.19
ago	13	0.21579	0.19573	-34.99815	2.59	ago	13	0.35555	0.33549	-64.73250	2.73	ago	13	0.35555	0.33549	-64.73250	2.73
ago	20	0.21584	0.19577	-34.99824	2.13	ago	20	0.35564	0.33557	-64.73281	2.27	ago	20	0.35564	0.33557	-64.73281	2.27
ago	27	0.21588	0.19579	-34.99834	1.67	ago	27	0.35570	0.33562	-64.73313	1.81	ago	27	0.35570	0.33562	-64.73313	1.81
sep	3	0.21592	0.19582	-34.99852	1.21	sep	3	0.35578	0.33568	-64.73353	1.35	sep	3	0.35578	0.33568	-64.73353	1.35
sep	10	0.21595	0.19584	-34.99869	0.75	sep	10	0.35583	0.33571	-64.73394	0.89	sep	10	0.35583	0.33571	-64.73394	0.89
sep	17	0.21597	0.19585	-34.99900	0.29	sep	17	0.35587	0.33575	-64.73447	0.43	sep	17	0.35587	0.33575	-64.73447	0.43
sep	24	0.21599	0.19585	-34.99927	23.83	sep	24	0.35589	0.33575	-64.73496	23.97	sep	24	0.35589	0.33575	-64.73496	23.97
oct	1	0.21600	0.19586	-34.99962	23.37	oct	1	0.35591	0.33576	-64.73552	23.51	oct	1	0.35591	0.33576	-64.73552	23.51
oct	8	0.21602	0.19585	-34.99991	22.91	oct	8	0.35592	0.33575	-64.73602	23.05	oct	8	0.35592	0.33575	-64.73602	23.05
oct	15	0.21601	0.19583	-35.00033	22.45	oct	15	0.35590	0.33573	-64.73662	22.59	oct	15	0.35590	0.33573	-64.73662	22.59
oct	22	0.21601	0.19581	-35.00066	21.99	oct	22	0.35588	0.33569	-64.73711	22.13	oct	22	0.35588	0.33569	-64.73711	22.13
oct	29	0.21599	0.19579	-35.00106	21.53	oct	29	0.35585	0.33564	-64.73766	21.67	oct	29	0.35585	0.33564	-64.73766	21.67
nov	5	0.21598	0.19575	-35.00136	21.07	nov	5	0.35581	0.33558	-64.73809	21.21	nov	5	0.35581	0.33558	-64.73809	21.21
nov	12	0.21596	0.19572	-35.00176	20.61	nov	12	0.35575	0.33551	-64.73859	20.75	nov	12	0.35575	0.33551	-64.73859	20.75
nov	19	0.21594	0.19567	-35.00202	20.15	nov	19	0.35570	0.33543	-64.73891	20.29	nov	19	0.35570	0.33543	-64.73891	20.29
nov	26	0.21591	0.19563	-35.00234	19.69	nov	26	0.35563	0.33535	-64.73928	19.83	nov	26	0.35563	0.33535	-64.73928	19.83
dic	3	0.21589	0.19558	-35.00253	19.23	dic	3	0.35557	0.33525	-64.73948	19.37	dic	3	0.35557	0.33525	-64.73948	19.37
dic	10	0.21586	0.19553	-35.00280	18.77	dic	10	0.35548	0.33516	-64.73973	18.91	dic	10	0.35548	0.33516	-64.73973	18.91
dic	17	0.21584	0.19548	-35.00289	18.31	dic	17	0.35542	0.33506	-64.73977	18.45	dic	17	0.35542	0.33506	-64.73977	18.45
dic	24	0.21580	0.19542	-35.00304	17.85	dic	24	0.35533	0.33495	-64.73984	17.99	dic	24	0.35533	0.33495	-64.73984	17.99

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

2021						3419					
V			Sp			V			Sp		
2.82			G2IV			2.04			K0III		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	0.44908	0.42961	-77.13164	17.54	ene	1	0.74559	0.72612	-17.86370	17.84
ene	8	0.44891	0.42941	-77.13141	17.08	ene	8	0.74557	0.72607	-17.86376	17.38
ene	15	0.44876	0.42925	-77.13119	16.62	ene	15	0.74554	0.72603	-17.86387	16.92
ene	22	0.44861	0.42907	-77.13078	16.16	ene	22	0.74553	0.72598	-17.86384	16.46
ene	29	0.44847	0.42891	-77.13039	15.70	ene	29	0.74550	0.72594	-17.86387	16.00
feb	5	0.44834	0.42877	-77.12986	15.24	feb	5	0.74548	0.72591	-17.86378	15.54
feb	12	0.44823	0.42865	-77.12937	14.78	feb	12	0.74546	0.72587	-17.86375	15.08
feb	19	0.44814	0.42853	-77.12869	14.32	feb	19	0.74545	0.72584	-17.86357	14.62
feb	26	0.44805	0.42843	-77.12809	13.86	feb	26	0.74543	0.72581	-17.86346	14.16
mar	5	0.44800	0.42836	-77.12735	13.40	mar	5	0.74543	0.72579	-17.86322	13.70
mar	12	0.44795	0.42831	-77.12670	12.94	mar	12	0.74541	0.72577	-17.86306	13.24
mar	19	0.44794	0.42827	-77.12589	12.48	mar	19	0.74542	0.72576	-17.86273	12.78
mar	26	0.44793	0.42825	-77.12518	12.02	mar	26	0.74542	0.72575	-17.86248	12.32
abr	2	0.44796	0.42827	-77.12437	11.56	abr	2	0.74544	0.72575	-17.86210	11.86
abr	9	0.44798	0.42829	-77.12367	11.10	abr	9	0.74544	0.72575	-17.86180	11.40
abr	16	0.44806	0.42834	-77.12286	10.64	abr	16	0.74547	0.72576	-17.86134	10.94
abr	23	0.44812	0.42839	-77.12217	10.18	abr	23	0.74549	0.72577	-17.86097	10.48
abr	30	0.44824	0.42849	-77.12142	9.72	abr	30	0.74553	0.72579	-17.86050	10.02
may	7	0.44834	0.42858	-77.12080	9.26	may	7	0.74556	0.72581	-17.86010	9.56
may	14	0.44849	0.42871	-77.12011	8.80	may	14	0.74562	0.72583	-17.85957	9.10
may	21	0.44863	0.42883	-77.11955	8.34	may	21	0.74566	0.72586	-17.85913	8.64
may	28	0.44881	0.42899	-77.11899	7.88	may	28	0.74572	0.72590	-17.85863	8.18
jun	4	0.44897	0.42913	-77.11856	7.42	jun	4	0.74577	0.72593	-17.85820	7.72
jun	11	0.44918	0.42931	-77.11810	6.96	jun	11	0.74584	0.72597	-17.85768	7.26
jun	18	0.44936	0.42947	-77.11777	6.50	jun	18	0.74590	0.72601	-17.85725	6.80
jun	25	0.44958	0.42967	-77.11749	6.04	jun	25	0.74596	0.72605	-17.85680	6.34
jul	2	0.44977	0.42984	-77.11732	5.58	jul	2	0.74602	0.72609	-17.85643	5.88
jul	9	0.45000	0.43004	-77.11717	5.12	jul	9	0.74609	0.72614	-17.85602	5.42
jul	16	0.45019	0.43021	-77.11713	4.66	jul	16	0.74616	0.72618	-17.85568	4.96
jul	23	0.45041	0.43041	-77.11718	4.21	jul	23	0.74622	0.72622	-17.85537	4.50
jul	30	0.45058	0.43056	-77.11731	3.75	jul	30	0.74628	0.72626	-17.85513	4.04
ago	6	0.45078	0.43075	-77.11749	3.29	ago	6	0.74633	0.72630	-17.85489	3.58
ago	13	0.45094	0.43088	-77.11774	2.83	ago	13	0.74639	0.72633	-17.85471	3.12
ago	20	0.45111	0.43104	-77.11811	2.37	ago	20	0.74643	0.72637	-17.85461	2.66
ago	27	0.45123	0.43114	-77.11850	1.91	ago	27	0.74648	0.72639	-17.85454	2.20
sep	3	0.45136	0.43126	-77.11895	1.45	sep	3	0.74652	0.72642	-17.85451	1.74
sep	10	0.45145	0.43133	-77.11942	0.99	sep	10	0.74656	0.72644	-17.85451	1.28
sep	17	0.45152	0.43140	-77.12000	0.53	sep	17	0.74658	0.72646	-17.85461	0.82
sep	24	0.45156	0.43142	-77.12055	0.07	sep	24	0.74661	0.72647	-17.85470	0.36
oct	1	0.45159	0.43144	-77.12115	23.61	oct	1	0.74662	0.72647	-17.85486	23.90
oct	8	0.45159	0.43142	-77.12169	23.15	oct	8	0.74664	0.72647	-17.85500	23.44
oct	15	0.45156	0.43139	-77.12234	22.69	oct	15	0.74664	0.72647	-17.85525	22.98
oct	22	0.45151	0.43131	-77.12286	22.23	oct	22	0.74665	0.72646	-17.85544	22.52
oct	29	0.45144	0.43123	-77.12343	21.77	oct	29	0.74665	0.72644	-17.85572	22.06
nov	5	0.45135	0.43111	-77.12388	21.31	nov	5	0.74665	0.72642	-17.85592	21.60
nov	12	0.45123	0.43099	-77.12439	20.85	nov	12	0.74663	0.72640	-17.85623	21.14
nov	19	0.45110	0.43083	-77.12472	20.39	nov	19	0.74663	0.72636	-17.85642	20.68
nov	26	0.45096	0.43067	-77.12508	19.93	nov	26	0.74661	0.72633	-17.85671	20.22
dic	3	0.45081	0.43050	-77.12527	19.47	dic	3	0.74660	0.72629	-17.85688	19.76
dic	10	0.45064	0.43032	-77.12550	19.01	dic	10	0.74658	0.72625	-17.85715	19.30
dic	17	0.45048	0.43012	-77.12552	18.55	dic	17	0.74657	0.72621	-17.85727	18.84
dic	24	0.45030	0.42993	-77.12556	18.09	dic	24	0.74654	0.72616	-17.85748	18.38

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

3909						5364					
		V		Sp				V		Sp	
		5.17		F7IV-V				3.46		K2III	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	0.85451	0.83504	-10.52308	17.95	ene	1	1.16235	1.14288	-10.06289	18.26
ene	8	0.85449	0.83499	-10.52316	17.49	ene	8	1.16233	1.14284	-10.06299	17.80
ene	15	0.85446	0.83495	-10.52330	17.03	ene	15	1.16230	1.14279	-10.06313	17.34
ene	22	0.85445	0.83491	-10.52331	16.57	ene	22	1.16229	1.14275	-10.06315	16.88
ene	29	0.85442	0.83487	-10.52339	16.11	ene	29	1.16226	1.14271	-10.06324	16.42
feb	5	0.85441	0.83483	-10.52335	15.65	feb	5	1.16224	1.14267	-10.06322	15.96
feb	12	0.85438	0.83479	-10.52339	15.19	feb	12	1.16221	1.14263	-10.06326	15.50
feb	19	0.85437	0.83476	-10.52328	14.73	feb	19	1.16221	1.14259	-10.06316	15.04
feb	26	0.85435	0.83473	-10.52324	14.27	feb	26	1.16218	1.14256	-10.06314	14.58
mar	5	0.85435	0.83471	-10.52309	13.81	mar	5	1.16218	1.14254	-10.06299	14.12
mar	12	0.85433	0.83469	-10.52300	13.35	mar	12	1.16216	1.14251	-10.06291	13.66
mar	19	0.85434	0.83468	-10.52276	12.89	mar	19	1.16216	1.14250	-10.06268	13.20
mar	26	0.85434	0.83467	-10.52260	12.43	mar	26	1.16215	1.14248	-10.06252	12.74
abr	2	0.85435	0.83466	-10.52231	11.97	abr	2	1.16217	1.14248	-10.06224	12.28
abr	9	0.85436	0.83466	-10.52209	11.51	abr	9	1.16217	1.14247	-10.06203	11.82
abr	16	0.85439	0.83467	-10.52171	11.05	abr	16	1.16219	1.14248	-10.06167	11.36
abr	23	0.85441	0.83468	-10.52142	10.59	abr	23	1.16221	1.14248	-10.06138	10.90
abr	30	0.85445	0.83470	-10.52101	10.13	abr	30	1.16224	1.14250	-10.06098	10.44
may	7	0.85447	0.83472	-10.52068	9.67	may	7	1.16227	1.14251	-10.06065	9.98
may	14	0.85453	0.83474	-10.52021	9.21	may	14	1.16232	1.14253	-10.06018	9.52
may	21	0.85457	0.83477	-10.51983	8.75	may	21	1.16236	1.14256	-10.05980	9.06
may	28	0.85462	0.83480	-10.51936	8.29	may	28	1.16241	1.14259	-10.05933	8.60
jun	4	0.85467	0.83483	-10.51897	7.83	jun	4	1.16246	1.14262	-10.05894	8.14
jun	11	0.85474	0.83487	-10.51847	7.37	jun	11	1.16252	1.14265	-10.05844	7.68
jun	18	0.85480	0.83491	-10.51806	6.91	jun	18	1.16258	1.14269	-10.05803	7.22
jun	25	0.85486	0.83495	-10.51762	6.45	jun	25	1.16264	1.14273	-10.05758	6.76
jul	2	0.85492	0.83499	-10.51724	5.99	jul	2	1.16270	1.14277	-10.05719	6.30
jul	9	0.85499	0.83503	-10.51681	5.53	jul	9	1.16277	1.14281	-10.05675	5.84
jul	16	0.85505	0.83507	-10.51645	5.07	jul	16	1.16283	1.14285	-10.05639	5.38
jul	23	0.85511	0.83511	-10.51611	4.61	jul	23	1.16289	1.14289	-10.05603	4.92
jul	30	0.85517	0.83515	-10.51582	4.15	jul	30	1.16295	1.14293	-10.05574	4.46
ago	6	0.85522	0.83519	-10.51554	3.69	ago	6	1.16301	1.14297	-10.05544	4.00
ago	13	0.85528	0.83522	-10.51530	3.23	ago	13	1.16307	1.14301	-10.05519	3.54
ago	20	0.85532	0.83526	-10.51514	2.77	ago	20	1.16311	1.14305	-10.05501	3.08
ago	27	0.85537	0.83528	-10.51500	2.31	ago	27	1.16316	1.14307	-10.05486	2.62
sep	3	0.85541	0.83531	-10.51490	1.85	sep	3	1.16320	1.14310	-10.05475	2.16
sep	10	0.85545	0.83533	-10.51482	1.39	sep	10	1.16324	1.14313	-10.05466	1.70
sep	17	0.85547	0.83535	-10.51484	0.93	sep	17	1.16327	1.14315	-10.05467	1.24
sep	24	0.85550	0.83536	-10.51485	0.47	sep	24	1.16330	1.14316	-10.05467	0.78
oct	1	0.85551	0.83537	-10.51493	0.01	oct	1	1.16332	1.14317	-10.05474	0.32
oct	8	0.85554	0.83537	-10.51499	23.55	oct	8	1.16335	1.14318	-10.05480	23.86
oct	15	0.85554	0.83536	-10.51516	23.09	oct	15	1.16335	1.14318	-10.05497	23.40
oct	22	0.85555	0.83535	-10.51527	22.63	oct	22	1.16337	1.14317	-10.05508	22.94
oct	29	0.85555	0.83534	-10.51548	22.17	oct	29	1.16337	1.14316	-10.05529	22.48
nov	5	0.85555	0.83532	-10.51561	21.71	nov	5	1.16338	1.14315	-10.05542	22.02
nov	12	0.85554	0.83530	-10.51586	21.25	nov	12	1.16337	1.14313	-10.05568	21.56
nov	19	0.85554	0.83527	-10.51601	20.79	nov	19	1.16337	1.14310	-10.05583	21.10
nov	26	0.85552	0.83523	-10.51625	20.33	nov	26	1.16335	1.14307	-10.05608	20.64
dic	3	0.85551	0.83520	-10.51639	19.87	dic	3	1.16335	1.14304	-10.05623	20.18
dic	10	0.85549	0.83516	-10.51664	19.41	dic	10	1.16333	1.14300	-10.05648	19.72
dic	17	0.85548	0.83512	-10.51674	18.95	dic	17	1.16332	1.14296	-10.05660	19.26
dic	24	0.85545	0.83507	-10.51695	18.49	dic	24	1.16329	1.14292	-10.05682	18.80



## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

6537						7588					
V			Sp			V			Sp		
3.60			K0III			0.45			B3Vp		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	1.41948	1.40001	-8.06681	18.51	ene	1	1.64301	1.62354	-57.12576	18.74
ene	8	1.41947	1.39997	-8.06692	18.05	ene	8	1.64295	1.62346	-57.12583	18.28
ene	15	1.41944	1.39993	-8.06707	17.59	ene	15	1.64289	1.62338	-57.12588	17.82
ene	22	1.41942	1.39988	-8.06711	17.13	ene	22	1.64283	1.62329	-57.12577	17.36
ene	29	1.41939	1.39984	-8.06721	16.67	ene	29	1.64277	1.62321	-57.12566	16.90
feb	5	1.41937	1.39980	-8.06721	16.21	feb	5	1.64271	1.62313	-57.12541	16.44
feb	12	1.41934	1.39976	-8.06727	15.75	feb	12	1.64265	1.62306	-57.12517	15.98
feb	19	1.41933	1.39972	-8.06719	15.29	feb	19	1.64260	1.62299	-57.12476	15.52
feb	26	1.41931	1.39969	-8.06719	14.83	feb	26	1.64254	1.62293	-57.12439	15.06
mar	5	1.41930	1.39966	-8.06706	14.37	mar	5	1.64251	1.62287	-57.12387	14.60
mar	12	1.41928	1.39963	-8.06701	13.91	mar	12	1.64246	1.62282	-57.12340	14.14
mar	19	1.41928	1.39961	-8.06680	13.45	mar	19	1.64244	1.62277	-57.12276	13.68
mar	26	1.41927	1.39960	-8.06668	12.99	mar	26	1.64241	1.62274	-57.12219	13.22
abr	2	1.41928	1.39959	-8.06642	12.53	abr	2	1.64240	1.62271	-57.12150	12.76
abr	9	1.41927	1.39958	-8.06624	12.07	abr	9	1.64239	1.62269	-57.12088	12.30
abr	16	1.41930	1.39958	-8.06590	11.61	abr	16	1.64240	1.62268	-57.12012	11.84
abr	23	1.41931	1.39958	-8.06564	11.15	abr	23	1.64240	1.62268	-57.11946	11.38
abr	30	1.41934	1.39959	-8.06526	10.69	abr	30	1.64243	1.62268	-57.11870	10.92
may	7	1.41936	1.39961	-8.06496	10.23	may	7	1.64246	1.62270	-57.11804	10.46
may	14	1.41941	1.39963	-8.06451	9.77	may	14	1.64251	1.62272	-57.11727	10.00
may	21	1.41945	1.39965	-8.06415	9.31	may	21	1.64255	1.62275	-57.11663	9.54
may	28	1.41950	1.39967	-8.06369	8.85	may	28	1.64261	1.62279	-57.11593	9.08
jun	4	1.41954	1.39970	-8.06331	8.39	jun	4	1.64267	1.62283	-57.11535	8.62
jun	11	1.41960	1.39974	-8.06282	7.93	jun	11	1.64276	1.62289	-57.11470	8.16
jun	18	1.41966	1.39977	-8.06242	7.47	jun	18	1.64283	1.62294	-57.11419	7.70
jun	25	1.41972	1.39981	-8.06196	7.01	jun	25	1.64292	1.62301	-57.11367	7.24
jul	2	1.41978	1.39985	-8.06158	6.55	jul	2	1.64300	1.62307	-57.11328	6.78
jul	9	1.41985	1.39989	-8.06113	6.09	jul	9	1.64310	1.62315	-57.11287	6.32
jul	16	1.41991	1.39993	-8.06076	5.63	jul	16	1.64319	1.62321	-57.11259	5.86
jul	23	1.41997	1.39997	-8.06040	5.17	jul	23	1.64329	1.62329	-57.11235	5.40
jul	30	1.42003	1.40001	-8.06009	4.71	jul	30	1.64338	1.62336	-57.11223	4.94
ago	6	1.42009	1.40005	-8.05977	4.25	ago	6	1.64347	1.62344	-57.11213	4.48
ago	13	1.42015	1.40009	-8.05951	3.79	ago	13	1.64356	1.62350	-57.11213	4.02
ago	20	1.42020	1.40013	-8.05931	3.34	ago	20	1.64365	1.62358	-57.11222	3.56
ago	27	1.42025	1.40016	-8.05914	2.88	ago	27	1.64372	1.62363	-57.11240	3.10
sep	3	1.42029	1.40019	-8.05900	2.42	sep	3	1.64380	1.62370	-57.11262	2.64
sep	10	1.42033	1.40022	-8.05889	1.96	sep	10	1.64386	1.62374	-57.11291	2.18
sep	17	1.42036	1.40024	-8.05887	1.50	sep	17	1.64392	1.62379	-57.11330	1.72
sep	24	1.42040	1.40026	-8.05886	1.04	sep	24	1.64396	1.62382	-57.11372	1.26
oct	1	1.42042	1.40027	-8.05891	0.58	oct	1	1.64400	1.62385	-57.11419	0.80
oct	8	1.42045	1.40028	-8.05894	0.12	oct	8	1.64403	1.62386	-57.11467	0.34
oct	15	1.42046	1.40028	-8.05909	23.66	oct	15	1.64405	1.62388	-57.11525	23.88
oct	22	1.42048	1.40028	-8.05919	23.20	oct	22	1.64406	1.62387	-57.11578	23.42
oct	29	1.42048	1.40027	-8.05937	22.74	oct	29	1.64406	1.62386	-57.11637	22.96
nov	5	1.42049	1.40026	-8.05950	22.28	nov	5	1.64406	1.62383	-57.11689	22.50
nov	12	1.42048	1.40024	-8.05974	21.82	nov	12	1.64404	1.62380	-57.11748	22.04
nov	19	1.42049	1.40022	-8.05989	21.36	nov	19	1.64402	1.62375	-57.11796	21.58
nov	26	1.42047	1.40019	-8.06013	20.90	nov	26	1.64398	1.62370	-57.11848	21.12
dic	3	1.42047	1.40016	-8.06027	20.44	dic	3	1.64395	1.62364	-57.11886	20.66
dic	10	1.42045	1.40012	-8.06052	19.98	dic	10	1.64390	1.62357	-57.11930	20.20
dic	17	1.42045	1.40009	-8.06064	19.52	dic	17	1.64385	1.62349	-57.11956	19.74
dic	24	1.42042	1.40005	-8.06086	19.06	dic	24	1.64379	1.62342	-57.11986	19.28

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>7884</b>						<b>8102</b>									
		V		Sp				V		Sp					
		4.45		K3III				3.49		G8V					
		α		α <sub>c</sub>		δ		α		α <sub>c</sub>		δ		Hp	
m	d	h	h	h	h	°	h	m	d	h	h	°	h	h	
ene	1	1.71043	1.69096	5.60304	18.80			ene	1	1.75225	1.73278	-15.81928	18.85		
ene	8	1.71042	1.69092	5.60295	18.34			ene	8	1.75223	1.73274	-15.81940	18.39		
ene	15	1.71039	1.69088	5.60281	17.88			ene	15	1.75220	1.73269	-15.81954	17.93		
ene	22	1.71037	1.69083	5.60274	17.42			ene	22	1.75218	1.73264	-15.81958	17.47		
ene	29	1.71034	1.69079	5.60260	16.96			ene	29	1.75215	1.73260	-15.81965	17.01		
feb	5	1.71033	1.69075	5.60254	16.50			feb	5	1.75213	1.73255	-15.81961	16.55		
feb	12	1.71029	1.69071	5.60240	16.04			feb	12	1.75210	1.73251	-15.81962	16.09		
feb	19	1.71028	1.69067	5.60238	15.58			feb	19	1.75208	1.73247	-15.81949	15.63		
feb	26	1.71025	1.69063	5.60227	15.12			feb	26	1.75205	1.73243	-15.81942	15.17		
mar	5	1.71024	1.69060	5.60227	14.66			mar	5	1.75204	1.73240	-15.81923	14.71		
mar	12	1.71022	1.69057	5.60219	14.20			mar	12	1.75201	1.73237	-15.81910	14.25		
mar	19	1.71022	1.69055	5.60225	13.74			mar	19	1.75201	1.73234	-15.81881	13.79		
mar	26	1.71020	1.69053	5.60222	13.28			mar	26	1.75199	1.73232	-15.81859	13.33		
abr	2	1.71021	1.69052	5.60232	12.82			abr	2	1.75200	1.73231	-15.81825	12.87		
abr	9	1.71021	1.69051	5.60234	12.36			abr	9	1.75199	1.73230	-15.81797	12.41		
abr	16	1.71023	1.69051	5.60250	11.90			abr	16	1.75201	1.73229	-15.81754	11.95		
abr	23	1.71024	1.69051	5.60260	11.44			abr	23	1.75202	1.73229	-15.81720	11.49		
abr	30	1.71026	1.69052	5.60284	10.98			abr	30	1.75204	1.73230	-15.81673	11.03		
may	7	1.71029	1.69053	5.60299	10.52			may	7	1.75206	1.73231	-15.81635	10.57		
may	14	1.71033	1.69054	5.60330	10.06			may	14	1.75210	1.73232	-15.81582	10.11		
may	21	1.71036	1.69056	5.60352	9.60			may	21	1.75214	1.73234	-15.81539	9.65		
may	28	1.71041	1.69059	5.60386	9.14			may	28	1.75219	1.73236	-15.81487	9.19		
jun	4	1.71046	1.69062	5.60413	8.68			jun	4	1.75223	1.73239	-15.81443	8.73		
jun	11	1.71052	1.69065	5.60454	8.23			jun	11	1.75229	1.73242	-15.81389	8.27		
jun	18	1.71057	1.69068	5.60486	7.77			jun	18	1.75234	1.73245	-15.81345	7.81		
jun	25	1.71063	1.69072	5.60526	7.31			jun	25	1.75240	1.73249	-15.81295	7.35		
jul	2	1.71069	1.69076	5.60560	6.85			jul	2	1.75246	1.73253	-15.81255	6.89		
jul	9	1.71076	1.69080	5.60603	6.39			jul	9	1.75253	1.73257	-15.81208	6.43		
jul	16	1.71082	1.69084	5.60639	5.93			jul	16	1.75259	1.73261	-15.81171	5.97		
jul	23	1.71088	1.69088	5.60678	5.47			jul	23	1.75265	1.73265	-15.81134	5.51		
jul	30	1.71094	1.69092	5.60712	5.01			jul	30	1.75271	1.73269	-15.81105	5.05		
ago	6	1.71100	1.69097	5.60749	4.55			ago	6	1.75277	1.73274	-15.81075	4.59		
ago	13	1.71106	1.69101	5.60782	4.09			ago	13	1.75283	1.73277	-15.81053	4.13		
ago	20	1.71111	1.69104	5.60811	3.63			ago	20	1.75288	1.73281	-15.81035	3.67		
ago	27	1.71116	1.69108	5.60838	3.17			ago	27	1.75293	1.73285	-15.81024	3.21		
sep	3	1.71121	1.69111	5.60863	2.71			sep	3	1.75298	1.73288	-15.81015	2.75		
sep	10	1.71126	1.69114	5.60886	2.25			sep	10	1.75303	1.73291	-15.81011	2.29		
sep	17	1.71129	1.69117	5.60902	1.79			sep	17	1.75306	1.73294	-15.81016	1.83		
sep	24	1.71133	1.69119	5.60918	1.33			sep	24	1.75310	1.73296	-15.81023	1.37		
oct	1	1.71135	1.69120	5.60929	0.87			oct	1	1.75312	1.73297	-15.81035	0.91		
oct	8	1.71139	1.69122	5.60941	0.41			oct	8	1.75315	1.73298	-15.81047	0.45		
oct	15	1.71140	1.69122	5.60942	23.95			oct	15	1.75316	1.73299	-15.81070	23.99		
oct	22	1.71142	1.69123	5.60948	23.49			oct	22	1.75318	1.73299	-15.81090	23.53		
oct	29	1.71143	1.69122	5.60945	23.03			oct	29	1.75319	1.73298	-15.81117	23.07		
nov	5	1.71145	1.69122	5.60947	22.57			nov	5	1.75320	1.73297	-15.81138	22.61		
nov	12	1.71144	1.69120	5.60938	22.11			nov	12	1.75320	1.73296	-15.81170	22.15		
nov	19	1.71145	1.69118	5.60936	21.65			nov	19	1.75320	1.73293	-15.81193	21.69		
nov	26	1.71144	1.69116	5.60925	21.19			nov	26	1.75319	1.73291	-15.81225	21.23		
dic	3	1.71145	1.69113	5.60921	20.73			dic	3	1.75319	1.73288	-15.81246	20.77		
dic	10	1.71143	1.69110	5.60905	20.27			dic	10	1.75317	1.73284	-15.81276	20.31		
dic	17	1.71143	1.69107	5.60901	19.81			dic	17	1.75316	1.73280	-15.81293	19.85		
dic	24	1.71140	1.69103	5.60885	19.35			dic	24	1.75314	1.73276	-15.81319	19.39		

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

10320						10670					
		V		Sp				V		Sp	
		5.27		A0V				4.03		A1Vnn	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	2.23209	2.21262	-30.61986	19.33	ene	1	2.31141	2.29194	33.95502	19.41
ene	8	2.23206	2.21257	-30.62005	18.87	ene	8	2.31139	2.29190	33.95506	18.95
ene	15	2.23203	2.21252	-30.62022	18.41	ene	15	2.31136	2.29185	33.95504	18.49
ene	22	2.23200	2.21246	-30.62028	17.95	ene	22	2.31134	2.29180	33.95503	18.03
ene	29	2.23196	2.21241	-30.62034	17.49	ene	29	2.31130	2.29174	33.95492	17.57
feb	5	2.23194	2.21236	-30.62029	17.03	feb	5	2.31127	2.29169	33.95484	17.11
feb	12	2.23189	2.21231	-30.62026	16.57	feb	12	2.31123	2.29164	33.95465	16.65
feb	19	2.23187	2.21226	-30.62008	16.11	feb	19	2.31121	2.29159	33.95453	16.19
feb	26	2.23183	2.21221	-30.61994	15.65	feb	26	2.31117	2.29155	33.95429	15.73
mar	5	2.23181	2.21217	-30.61966	15.19	mar	5	2.31114	2.29150	33.95411	15.27
mar	12	2.23178	2.21213	-30.61943	14.73	mar	12	2.31111	2.29146	33.95382	14.81
mar	19	2.23176	2.21210	-30.61904	14.27	mar	19	2.31110	2.29143	33.95364	14.35
mar	26	2.23174	2.21207	-30.61871	13.81	mar	26	2.31107	2.29140	33.95334	13.89
abr	2	2.23173	2.21204	-30.61824	13.35	abr	2	2.31107	2.29138	33.95315	13.43
abr	9	2.23172	2.21202	-30.61785	12.89	abr	9	2.31106	2.29136	33.95286	12.97
abr	16	2.23173	2.21201	-30.61729	12.43	abr	16	2.31107	2.29136	33.95271	12.51
abr	23	2.23173	2.21200	-30.61682	11.97	abr	23	2.31108	2.29135	33.95247	12.05
abr	30	2.23175	2.21200	-30.61623	11.51	abr	30	2.31110	2.29135	33.95235	11.59
may	7	2.23176	2.21200	-30.61572	11.05	may	7	2.31112	2.29136	33.95216	11.13
may	14	2.23179	2.21201	-30.61508	10.59	may	14	2.31116	2.29138	33.95213	10.67
may	21	2.23182	2.21202	-30.61454	10.13	may	21	2.31120	2.29140	33.95202	10.21
may	28	2.23187	2.21204	-30.61391	9.67	may	28	2.31125	2.29143	33.95205	9.75
jun	4	2.23191	2.21207	-30.61339	9.21	jun	4	2.31130	2.29146	33.95202	9.29
jun	11	2.23196	2.21210	-30.61276	8.75	jun	11	2.31136	2.29150	33.95215	8.83
jun	18	2.23202	2.21213	-30.61225	8.29	jun	18	2.31143	2.29154	33.95222	8.37
jun	25	2.23208	2.21217	-30.61169	7.83	jun	25	2.31149	2.29158	33.95240	7.91
jul	2	2.23213	2.21220	-30.61124	7.37	jul	2	2.31156	2.29163	33.95255	7.45
jul	9	2.23220	2.21225	-30.61074	6.91	jul	9	2.31163	2.29167	33.95283	6.99
jul	16	2.23227	2.21229	-30.61035	6.45	jul	16	2.31171	2.29173	33.95306	6.53
jul	23	2.23234	2.21234	-30.60997	5.99	jul	23	2.31177	2.29178	33.95337	6.07
jul	30	2.23240	2.21238	-30.60971	5.53	jul	30	2.31185	2.29183	33.95365	5.61
ago	6	2.23247	2.21243	-30.60942	5.07	ago	6	2.31192	2.29188	33.95404	5.15
ago	13	2.23253	2.21248	-30.60924	4.61	ago	13	2.31199	2.29193	33.95438	4.69
ago	20	2.23259	2.21253	-30.60912	4.15	ago	20	2.31205	2.29198	33.95476	4.23
ago	27	2.23265	2.21257	-30.60909	3.69	ago	27	2.31212	2.29203	33.95512	3.77
sep	3	2.23271	2.21261	-30.60908	3.23	sep	3	2.31217	2.29208	33.95553	3.31
sep	10	2.23276	2.21265	-30.60914	2.77	sep	10	2.31224	2.29212	33.95593	2.85
sep	17	2.23280	2.21268	-30.60929	2.31	sep	17	2.31228	2.29216	33.95631	2.39
sep	24	2.23285	2.21271	-30.60949	1.85	sep	24	2.31233	2.29219	33.95669	1.93
oct	1	2.23288	2.21273	-30.60974	1.39	oct	1	2.31237	2.29222	33.95707	1.47
oct	8	2.23292	2.21275	-30.61002	0.93	oct	8	2.31242	2.29225	33.95746	1.01
oct	15	2.23294	2.21277	-30.61039	0.47	oct	15	2.31244	2.29227	33.95779	0.55
oct	22	2.23297	2.21277	-30.61074	0.01	oct	22	2.31248	2.29228	33.95815	0.09
oct	29	2.23298	2.21277	-30.61116	23.55	oct	29	2.31249	2.29229	33.95845	23.63
nov	5	2.23300	2.21276	-30.61154	23.09	nov	5	2.31252	2.29229	33.95879	23.17
nov	12	2.23299	2.21275	-30.61201	22.63	nov	12	2.31252	2.29229	33.95903	22.71
nov	19	2.23300	2.21273	-30.61240	22.17	nov	19	2.31255	2.29228	33.95933	22.25
nov	26	2.23299	2.21271	-30.61285	21.71	nov	26	2.31254	2.29226	33.95953	21.79
dic	3	2.23299	2.21268	-30.61320	21.25	dic	3	2.31255	2.29224	33.95978	21.33
dic	10	2.23297	2.21264	-30.61362	20.79	dic	10	2.31253	2.29221	33.95990	20.87
dic	17	2.23296	2.21260	-30.61391	20.33	dic	17	2.31254	2.29218	33.96010	20.41
dic	24	2.23293	2.21256	-30.61426	19.87	dic	24	2.31251	2.29214	33.96016	19.95

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>15510</b>						<b>17378</b>									
		V		Sp				V		Sp					
		4.26		G8V				3.52		K0IV					
		$\alpha$		$\alpha_c$		$\delta$		$\alpha$		$\alpha_c$		$\delta$		Hp	
m	d	h	h	h	h	°	h	m	d	h	h	h	h	°	h
ene	1	3.34772	3.32825	-42.98572	20.44			ene	1	3.73932	3.71986	-9.68721	20.83		
ene	8	3.34769	3.32819	-42.98604	19.98			ene	8	3.73932	3.71982	-9.68745	20.37		
ene	15	3.34765	3.32814	-42.98632	19.52			ene	15	3.73929	3.71979	-9.68765	19.91		
ene	22	3.34762	3.32807	-42.98651	19.06			ene	22	3.73928	3.71974	-9.68782	19.45		
ene	29	3.34757	3.32802	-42.98666	18.60			ene	29	3.73925	3.71970	-9.68797	18.99		
feb	5	3.34753	3.32795	-42.98671	18.14			feb	5	3.73923	3.71965	-9.68807	18.53		
feb	12	3.34747	3.32789	-42.98674	17.68			feb	12	3.73919	3.71961	-9.68816	18.07		
feb	19	3.34743	3.32782	-42.98664	17.22			feb	19	3.73917	3.71956	-9.68818	17.61		
feb	26	3.34738	3.32776	-42.98653	16.76			feb	26	3.73913	3.71951	-9.68822	17.15		
mar	5	3.34734	3.32770	-42.98629	16.30			mar	5	3.73911	3.71947	-9.68816	16.69		
mar	12	3.34729	3.32765	-42.98607	15.84			mar	12	3.73907	3.71942	-9.68814	16.23		
mar	19	3.34726	3.32759	-42.98570	15.38			mar	19	3.73905	3.71938	-9.68800	15.77		
mar	26	3.34721	3.32754	-42.98536	14.92			mar	26	3.73901	3.71934	-9.68791	15.31		
abr	2	3.34719	3.32750	-42.98488	14.46			abr	2	3.73900	3.71931	-9.68770	14.85		
abr	9	3.34716	3.32746	-42.98445	14.00			abr	9	3.73897	3.71928	-9.68755	14.39		
abr	16	3.34714	3.32743	-42.98386	13.54			abr	16	3.73897	3.71925	-9.68725	13.93		
abr	23	3.34713	3.32740	-42.98335	13.08			abr	23	3.73895	3.71923	-9.68704	13.47		
abr	30	3.34713	3.32738	-42.98270	12.62			abr	30	3.73896	3.71921	-9.68668	13.01		
may	7	3.34712	3.32736	-42.98213	12.16			may	7	3.73896	3.71920	-9.68641	12.55		
may	14	3.34714	3.32736	-42.98142	11.70			may	14	3.73897	3.71919	-9.68599	12.09		
may	21	3.34715	3.32735	-42.98081	11.24			may	21	3.73899	3.71919	-9.68567	11.63		
may	28	3.34718	3.32736	-42.98010	10.78			may	28	3.73901	3.71919	-9.68521	11.17		
jun	4	3.34721	3.32737	-42.97950	10.32			jun	4	3.73904	3.71920	-9.68486	10.71		
jun	11	3.34726	3.32739	-42.97877	9.86			jun	11	3.73908	3.71921	-9.68436	10.25		
jun	18	3.34730	3.32741	-42.97819	9.40			jun	18	3.73911	3.71923	-9.68398	9.79		
jun	25	3.34736	3.32745	-42.97752	8.94			jun	25	3.73916	3.71925	-9.68349	9.33		
jul	2	3.34741	3.32748	-42.97700	8.48			jul	2	3.73921	3.71927	-9.68312	8.87		
jul	9	3.34748	3.32753	-42.97640	8.02			jul	9	3.73926	3.71930	-9.68263	8.41		
jul	16	3.34755	3.32757	-42.97595	7.56			jul	16	3.73932	3.71934	-9.68226	7.95		
jul	23	3.34762	3.32762	-42.97547	7.10			jul	23	3.73937	3.71938	-9.68183	7.49		
jul	30	3.34769	3.32767	-42.97514	6.64			jul	30	3.73943	3.71941	-9.68153	7.03		
ago	6	3.34776	3.32773	-42.97477	6.18			ago	6	3.73949	3.71945	-9.68114	6.57		
ago	13	3.34784	3.32778	-42.97456	5.72			ago	13	3.73955	3.71950	-9.68088	6.11		
ago	20	3.34791	3.32784	-42.97436	5.26			ago	20	3.73961	3.71954	-9.68060	5.65		
ago	27	3.34798	3.32789	-42.97431	4.80			ago	27	3.73967	3.71958	-9.68044	5.19		
sep	3	3.34805	3.32795	-42.97426	4.34			sep	3	3.73972	3.71963	-9.68024	4.73		
sep	10	3.34812	3.32800	-42.97433	3.88			sep	10	3.73978	3.71967	-9.68014	4.27		
sep	17	3.34818	3.32806	-42.97446	3.42			sep	17	3.73983	3.71971	-9.68007	3.81		
sep	24	3.34824	3.32810	-42.97470	2.96			sep	24	3.73989	3.71975	-9.68009	3.35		
oct	1	3.34829	3.32815	-42.97496	2.50			oct	1	3.73993	3.71978	-9.68011	2.89		
oct	8	3.34835	3.32818	-42.97530	2.04			oct	8	3.73998	3.71981	-9.68020	2.44		
oct	15	3.34839	3.32821	-42.97572	1.58			oct	15	3.74002	3.71984	-9.68034	1.98		
oct	22	3.34843	3.32823	-42.97617	1.12			oct	22	3.74006	3.71987	-9.68052	1.52		
oct	29	3.34846	3.32825	-42.97667	0.66			oct	29	3.74009	3.71988	-9.68073	1.06		
nov	5	3.34849	3.32826	-42.97717	0.20			nov	5	3.74013	3.71990	-9.68095	0.60		
nov	12	3.34850	3.32826	-42.97774	23.74			nov	12	3.74015	3.71991	-9.68123	0.14		
nov	19	3.34852	3.32825	-42.97827	23.28			nov	19	3.74018	3.71991	-9.68150	23.68		
nov	26	3.34852	3.32824	-42.97885	22.82			nov	26	3.74019	3.71991	-9.68181	23.22		
dic	3	3.34853	3.32822	-42.97935	22.36			dic	3	3.74021	3.71990	-9.68207	22.76		
dic	10	3.34851	3.32819	-42.97991	21.90			dic	10	3.74021	3.71988	-9.68241	22.30		
dic	17	3.34851	3.32815	-42.98036	21.44			dic	17	3.74022	3.71986	-9.68266	21.84		
dic	24	3.34848	3.32811	-42.98084	20.98			dic	24	3.74021	3.71984	-9.68297	21.38		

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>23693</b>						<b>24436</b>					
		V		Sp				V		Sp	
		4.71		F7V				0.18		B8Ia	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	5.09911	5.07964	-57.44259	22.19	ene	1	5.26094	5.24147	-8.17587	22.35
ene	8	5.09908	5.07958	-57.44317	21.73	ene	8	5.26095	5.24145	-8.17619	21.89
ene	15	5.09903	5.07953	-57.44366	21.27	ene	15	5.26093	5.24142	-8.17644	21.43
ene	22	5.09899	5.07945	-57.44414	20.81	ene	22	5.26093	5.24139	-8.17671	20.97
ene	29	5.09893	5.07938	-57.44453	20.35	ene	29	5.26091	5.24136	-8.17692	20.51
feb	5	5.09887	5.07929	-57.44486	19.89	feb	5	5.26090	5.24132	-8.17710	20.05
feb	12	5.09879	5.07921	-57.44511	19.43	feb	12	5.26086	5.24128	-8.17725	19.59
feb	19	5.09872	5.07911	-57.44530	18.97	feb	19	5.26085	5.24123	-8.17737	19.13
feb	26	5.09864	5.07902	-57.44542	18.51	feb	26	5.26081	5.24119	-8.17747	18.67
mar	5	5.09856	5.07892	-57.44543	18.05	mar	5	5.26078	5.24114	-8.17751	18.21
mar	12	5.09848	5.07884	-57.44541	17.59	mar	12	5.26074	5.24109	-8.17754	17.75
mar	19	5.09840	5.07874	-57.44528	17.13	mar	19	5.26071	5.24105	-8.17750	17.29
mar	26	5.09832	5.07865	-57.44512	16.67	mar	26	5.26067	5.24100	-8.17748	16.83
abr	2	5.09825	5.07856	-57.44483	16.21	abr	2	5.26065	5.24096	-8.17736	16.37
abr	9	5.09818	5.07848	-57.44455	15.75	abr	9	5.26061	5.24091	-8.17727	15.91
abr	16	5.09812	5.07840	-57.44412	15.29	abr	16	5.26059	5.24087	-8.17708	15.45
abr	23	5.09806	5.07833	-57.44373	14.83	abr	23	5.26056	5.24084	-8.17694	14.99
abr	30	5.09801	5.07826	-57.44318	14.37	abr	30	5.26055	5.24081	-8.17667	14.53
may	7	5.09796	5.07820	-57.44269	13.91	may	7	5.26054	5.24078	-8.17647	14.07
may	14	5.09793	5.07815	-57.44205	13.45	may	14	5.26054	5.24075	-8.17614	13.61
may	21	5.09791	5.07811	-57.44149	12.99	may	21	5.26053	5.24073	-8.17590	13.16
may	28	5.09790	5.07807	-57.44078	12.53	may	28	5.26054	5.24072	-8.17552	12.70
jun	4	5.09789	5.07805	-57.44017	12.07	jun	4	5.26055	5.24071	-8.17523	12.24
jun	11	5.09790	5.07803	-57.43942	11.61	jun	11	5.26058	5.24071	-8.17481	11.78
jun	18	5.09791	5.07803	-57.43880	11.15	jun	18	5.26060	5.24071	-8.17449	11.32
jun	25	5.09794	5.07803	-57.43806	10.69	jun	25	5.26063	5.24072	-8.17405	10.86
jul	2	5.09798	5.07804	-57.43745	10.23	jul	2	5.26066	5.24073	-8.17373	10.40
jul	9	5.09802	5.07807	-57.43673	9.77	jul	9	5.26070	5.24074	-8.17328	9.94
jul	16	5.09807	5.07809	-57.43617	9.31	jul	16	5.26074	5.24076	-8.17296	9.48
jul	23	5.09813	5.07814	-57.43554	8.85	jul	23	5.26079	5.24079	-8.17254	9.02
jul	30	5.09820	5.07818	-57.43507	8.39	jul	30	5.26084	5.24082	-8.17226	8.56
ago	6	5.09827	5.07824	-57.43453	7.93	ago	6	5.26089	5.24085	-8.17188	8.10
ago	13	5.09835	5.07829	-57.43417	7.47	ago	13	5.26095	5.24089	-8.17164	7.64
ago	20	5.09843	5.07837	-57.43378	7.01	ago	20	5.26100	5.24093	-8.17133	7.18
ago	27	5.09852	5.07843	-57.43358	6.55	ago	27	5.26106	5.24097	-8.17118	6.72
sep	3	5.09860	5.07851	-57.43334	6.09	sep	3	5.26111	5.24101	-8.17096	6.26
sep	10	5.09869	5.07858	-57.43328	5.63	sep	10	5.26118	5.24106	-8.17087	5.80
sep	17	5.09878	5.07866	-57.43323	5.17	sep	17	5.26123	5.24110	-8.17076	5.34
sep	24	5.09887	5.07873	-57.43336	4.71	sep	24	5.26129	5.24115	-8.17078	4.88
oct	1	5.09895	5.07880	-57.43349	4.25	oct	1	5.26134	5.24119	-8.17077	4.42
oct	8	5.09904	5.07887	-57.43375	3.79	oct	8	5.26140	5.24123	-8.17087	3.96
oct	15	5.09911	5.07894	-57.43407	3.33	oct	15	5.26145	5.24127	-8.17098	3.50
oct	22	5.09918	5.07899	-57.43450	2.87	oct	22	5.26151	5.24131	-8.17118	3.04
oct	29	5.09925	5.07904	-57.43496	2.41	oct	29	5.26155	5.24134	-8.17138	2.58
nov	5	5.09931	5.07908	-57.43549	1.95	nov	5	5.26160	5.24137	-8.17163	2.12
nov	12	5.09936	5.07912	-57.43608	1.49	nov	12	5.26164	5.24140	-8.17191	1.66
nov	19	5.09940	5.07913	-57.43671	1.03	nov	19	5.26169	5.24142	-8.17223	1.20
nov	26	5.09943	5.07915	-57.43737	0.57	nov	26	5.26171	5.24143	-8.17256	0.74
dic	3	5.09945	5.07914	-57.43801	0.11	dic	3	5.26175	5.24144	-8.17289	0.28
dic	10	5.09946	5.07914	-57.43870	23.65	dic	10	5.26177	5.24144	-8.17324	23.82
dic	17	5.09947	5.07911	-57.43935	23.19	dic	17	5.26180	5.24144	-8.17357	23.36
dic	24	5.09946	5.07908	-57.44002	22.73	dic	24	5.26181	5.24143	-8.17393	22.90

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>27288</b>						<b>27654</b>					
		V		Sp				V		Sp	
		3.55		A2Vann				3.76		G8III/IV	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	5.80021	5.78074	-14.81396	22.89	ene	1	5.87211	5.85264	-20.87771	22.97
ene	8	5.80022	5.78073	-14.81437	22.43	ene	8	5.87212	5.85263	-20.87818	22.51
ene	15	5.80021	5.78070	-14.81470	21.97	ene	15	5.87211	5.85260	-20.87856	22.05
ene	22	5.80022	5.78068	-14.81506	21.51	ene	22	5.87211	5.85257	-20.87898	21.59
ene	29	5.80020	5.78064	-14.81534	21.05	ene	29	5.87209	5.85254	-20.87931	21.13
feb	5	5.80018	5.78061	-14.81561	20.59	feb	5	5.87208	5.85250	-20.87963	20.67
feb	12	5.80015	5.78057	-14.81581	20.13	feb	12	5.87205	5.85246	-20.87988	20.21
feb	19	5.80013	5.78052	-14.81600	19.67	feb	19	5.87203	5.85241	-20.88011	19.75
feb	26	5.80010	5.78048	-14.81614	19.21	feb	26	5.87199	5.85237	-20.88028	19.29
mar	5	5.80007	5.78043	-14.81623	18.75	mar	5	5.87196	5.85232	-20.88038	18.83
mar	12	5.80002	5.78038	-14.81628	18.29	mar	12	5.87191	5.85227	-20.88046	18.37
mar	19	5.80000	5.78033	-14.81628	17.83	mar	19	5.87188	5.85222	-20.88047	17.91
mar	26	5.79995	5.78028	-14.81627	17.37	mar	26	5.87184	5.85216	-20.88046	17.45
abr	2	5.79992	5.78023	-14.81616	16.91	abr	2	5.87180	5.85211	-20.88035	16.99
abr	9	5.79988	5.78019	-14.81607	16.45	abr	9	5.87176	5.85207	-20.88025	16.53
abr	16	5.79986	5.78014	-14.81588	15.99	abr	16	5.87174	5.85202	-20.88005	16.07
abr	23	5.79983	5.78010	-14.81573	15.53	abr	23	5.87170	5.85197	-20.87987	15.61
abr	30	5.79981	5.78006	-14.81545	15.07	abr	30	5.87168	5.85193	-20.87957	15.15
may	7	5.79979	5.78003	-14.81522	14.61	may	7	5.87166	5.85190	-20.87931	14.69
may	14	5.79978	5.78000	-14.81487	14.15	may	14	5.87165	5.85186	-20.87893	14.23
may	21	5.79977	5.77997	-14.81459	13.69	may	21	5.87164	5.85184	-20.87861	13.77
may	28	5.79978	5.77995	-14.81418	13.23	may	28	5.87164	5.85181	-20.87816	13.31
jun	4	5.79978	5.77994	-14.81385	12.77	jun	4	5.87164	5.85179	-20.87779	12.85
jun	11	5.79979	5.77993	-14.81339	12.31	jun	11	5.87165	5.85178	-20.87728	12.39
jun	18	5.79981	5.77992	-14.81303	11.85	jun	18	5.87166	5.85177	-20.87688	11.93
jun	25	5.79983	5.77992	-14.81255	11.39	jun	25	5.87168	5.85177	-20.87634	11.47
jul	2	5.79986	5.77993	-14.81218	10.93	jul	2	5.87171	5.85178	-20.87593	11.01
jul	9	5.79989	5.77994	-14.81168	10.47	jul	9	5.87174	5.85178	-20.87539	10.55
jul	16	5.79993	5.77995	-14.81132	10.01	jul	16	5.87178	5.85180	-20.87498	10.09
jul	23	5.79997	5.77997	-14.81086	9.55	jul	23	5.87182	5.85182	-20.87448	9.63
jul	30	5.80001	5.78000	-14.81054	9.09	jul	30	5.87186	5.85184	-20.87412	9.17
ago	6	5.80006	5.78003	-14.81012	8.63	ago	6	5.87191	5.85187	-20.87366	8.71
ago	13	5.80012	5.78006	-14.80985	8.17	ago	13	5.87196	5.85190	-20.87336	8.25
ago	20	5.80016	5.78010	-14.80951	7.72	ago	20	5.87201	5.85194	-20.87299	7.79
ago	27	5.80022	5.78013	-14.80933	7.26	ago	27	5.87207	5.85198	-20.87279	7.33
sep	3	5.80028	5.78018	-14.80908	6.80	sep	3	5.87212	5.85202	-20.87253	6.87
sep	10	5.80034	5.78022	-14.80899	6.34	sep	10	5.87218	5.85207	-20.87242	6.41
sep	17	5.80039	5.78027	-14.80886	5.88	sep	17	5.87224	5.85211	-20.87229	5.95
sep	24	5.80045	5.78031	-14.80889	5.42	sep	24	5.87230	5.85216	-20.87232	5.49
oct	1	5.80051	5.78036	-14.80888	4.96	oct	1	5.87236	5.85221	-20.87232	5.03
oct	8	5.80057	5.78040	-14.80901	4.50	oct	8	5.87242	5.85225	-20.87246	4.57
oct	15	5.80062	5.78044	-14.80913	4.04	oct	15	5.87247	5.85230	-20.87260	4.11
oct	22	5.80068	5.78048	-14.80937	3.58	oct	22	5.87253	5.85234	-20.87288	3.65
oct	29	5.80073	5.78052	-14.80961	3.12	oct	29	5.87258	5.85238	-20.87314	3.19
nov	5	5.80078	5.78055	-14.80992	2.66	nov	5	5.87264	5.85241	-20.87350	2.73
nov	12	5.80082	5.78058	-14.81025	2.20	nov	12	5.87268	5.85244	-20.87387	2.27
nov	19	5.80088	5.78061	-14.81065	1.74	nov	19	5.87273	5.85247	-20.87432	1.81
nov	26	5.80091	5.78063	-14.81105	1.28	nov	26	5.87277	5.85249	-20.87477	1.35
dic	3	5.80095	5.78064	-14.81146	0.82	dic	3	5.87281	5.85250	-20.87524	0.89
dic	10	5.80098	5.78065	-14.81189	0.36	dic	10	5.87284	5.85251	-20.87573	0.43
dic	17	5.80101	5.78065	-14.81232	23.90	dic	17	5.87287	5.85251	-20.87622	23.97
dic	24	5.80102	5.78065	-14.81276	23.44	dic	24	5.87288	5.85251	-20.87673	23.51

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>28103</b>						<b>29271</b>									
		V		Sp				V		Sp					
		3.71		F1V				5.08		G5V					
		$\alpha$		$\alpha_c$		$\delta$		$\alpha$		$\alpha_c$		$\delta$		Hp	
m	d	h	h	h	h	°	h	m	d	h	h	h	h	h	h
ene	1	5.95779	5.93832	-14.16397	23.05			ene	1	6.16077	6.14131	-74.75893	23.25		
ene	8	5.95780	5.93830	-14.16439	22.59			ene	8	6.16072	6.14122	-74.75962	22.79		
ene	15	5.95779	5.93828	-14.16471	22.13			ene	15	6.16065	6.14114	-74.76021	22.33		
ene	22	5.95780	5.93826	-14.16508	21.67			ene	22	6.16055	6.14101	-74.76084	21.87		
ene	29	5.95778	5.93823	-14.16536	21.21			ene	29	6.16045	6.14089	-74.76137	21.41		
feb	5	5.95777	5.93819	-14.16564	20.75			feb	5	6.16031	6.14074	-74.76187	20.95		
feb	12	5.95774	5.93815	-14.16584	20.29			feb	12	6.16018	6.14059	-74.76227	20.49		
feb	19	5.95772	5.93811	-14.16604	19.83			feb	19	6.16002	6.14040	-74.76265	20.03		
feb	26	5.95768	5.93806	-14.16619	19.37			feb	26	6.15985	6.14024	-74.76295	19.57		
mar	5	5.95766	5.93802	-14.16628	18.91			mar	5	6.15968	6.14004	-74.76316	19.11		
mar	12	5.95761	5.93797	-14.16634	18.45			mar	12	6.15950	6.13986	-74.76331	18.65		
mar	19	5.95758	5.93792	-14.16635	17.99			mar	19	6.15932	6.13965	-74.76338	18.19		
mar	26	5.95754	5.93787	-14.16635	17.53			mar	26	6.15914	6.13947	-74.76340	17.73		
abr	2	5.95751	5.93782	-14.16626	17.07			abr	2	6.15895	6.13926	-74.76330	17.27		
abr	9	5.95747	5.93778	-14.16617	16.61			abr	9	6.15878	6.13909	-74.76318	16.81		
abr	16	5.95745	5.93773	-14.16600	16.15			abr	16	6.15861	6.13889	-74.76294	16.35		
abr	23	5.95742	5.93769	-14.16585	15.69			abr	23	6.15845	6.13872	-74.76270	15.89		
abr	30	5.95740	5.93765	-14.16559	15.23			abr	30	6.15830	6.13855	-74.76231	15.43		
may	7	5.95737	5.93762	-14.16538	14.77			may	7	6.15816	6.13840	-74.76195	14.97		
may	14	5.95737	5.93758	-14.16504	14.31			may	14	6.15803	6.13825	-74.76144	14.51		
may	21	5.95736	5.93756	-14.16477	13.85			may	21	6.15792	6.13812	-74.76099	14.05		
may	28	5.95736	5.93753	-14.16437	13.39			may	28	6.15783	6.13801	-74.76038	13.59		
jun	4	5.95736	5.93752	-14.16406	12.93			jun	4	6.15776	6.13792	-74.75984	13.13		
jun	11	5.95737	5.93750	-14.16361	12.47			jun	11	6.15770	6.13783	-74.75917	12.67		
jun	18	5.95739	5.93750	-14.16326	12.01			jun	18	6.15766	6.13777	-74.75858	12.21		
jun	25	5.95741	5.93750	-14.16279	11.55			jun	25	6.15764	6.13773	-74.75787	11.75		
jul	2	5.95743	5.93750	-14.16243	11.09			jul	2	6.15765	6.13771	-74.75727	11.29		
jul	9	5.95746	5.93751	-14.16194	10.63			jul	9	6.15766	6.13771	-74.75654	10.83		
jul	16	5.95750	5.93752	-14.16159	10.17			jul	16	6.15770	6.13772	-74.75595	10.37		
jul	23	5.95754	5.93754	-14.16113	9.71			jul	23	6.15776	6.13776	-74.75526	9.91		
jul	30	5.95758	5.93756	-14.16082	9.25			jul	30	6.15784	6.13782	-74.75474	9.45		
ago	6	5.95763	5.93759	-14.16040	8.79			ago	6	6.15793	6.13790	-74.75412	8.99		
ago	13	5.95768	5.93762	-14.16013	8.33			ago	13	6.15804	6.13798	-74.75367	8.53		
ago	20	5.95773	5.93766	-14.15979	7.87			ago	20	6.15816	6.13810	-74.75316	8.07		
ago	27	5.95778	5.93770	-14.15962	7.41			ago	27	6.15830	6.13821	-74.75285	7.61		
sep	3	5.95784	5.93774	-14.15937	6.95			sep	3	6.15844	6.13835	-74.75248	7.15		
sep	10	5.95790	5.93778	-14.15927	6.49			sep	10	6.15860	6.13848	-74.75229	6.69		
sep	17	5.95795	5.93783	-14.15914	6.03			sep	17	6.15876	6.13864	-74.75210	6.23		
sep	24	5.95801	5.93787	-14.15917	5.57			sep	24	6.15892	6.13878	-74.75210	5.77		
oct	1	5.95807	5.93792	-14.15916	5.11			oct	1	6.15909	6.13894	-74.75208	5.31		
oct	8	5.95813	5.93796	-14.15928	4.65			oct	8	6.15925	6.13908	-74.75223	4.85		
oct	15	5.95818	5.93801	-14.15939	4.19			oct	15	6.15941	6.13924	-74.75240	4.39		
oct	22	5.95824	5.93805	-14.15963	3.73			oct	22	6.15956	6.13937	-74.75274	3.93		
oct	29	5.95829	5.93808	-14.15986	3.27			oct	29	6.15971	6.13950	-74.75309	3.47		
nov	5	5.95835	5.93812	-14.16017	2.81			nov	5	6.15983	6.13960	-74.75356	3.02		
nov	12	5.95839	5.93815	-14.16049	2.35			nov	12	6.15996	6.13972	-74.75405	2.56		
nov	19	5.95844	5.93818	-14.16089	1.89			nov	19	6.16005	6.13978	-74.75465	2.10		
nov	26	5.95848	5.93820	-14.16128	1.43			nov	26	6.16014	6.13986	-74.75527	1.64		
dic	3	5.95852	5.93821	-14.16169	0.97			dic	3	6.16019	6.13988	-74.75593	1.18		
dic	10	5.95855	5.93822	-14.16212	0.51			dic	10	6.16024	6.13992	-74.75661	0.72		
dic	17	5.95859	5.93823	-14.16254	0.05			dic	17	6.16025	6.13990	-74.75731	0.26		
dic	24	5.95860	5.93822	-14.16299	23.59			dic	24	6.16025	6.13988	-74.75803	23.80		

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>30438</b>						<b>32349</b>									
		V		Sp				V		Sp					
		-0.62		FOIb				-1.44		A0m...					
		α		α <sub>c</sub>		δ		α		α <sub>c</sub>		δ		Hp	
m	d	h	h	h	h	°	h	h	h	h	h	h	h	h	h
ene	1	6.40825	6.38879	-52.70763	23.50			ene	1	6.76960	6.75014	-16.74767	23.86		
ene	8	6.40825	6.38876	-52.70833	23.04			ene	8	6.76962	6.75013	-16.74817	23.40		
ene	15	6.40824	6.38873	-52.70893	22.58			ene	15	6.76962	6.75012	-16.74855	22.94		
ene	22	6.40822	6.38868	-52.70957	22.12			ene	22	6.76964	6.75010	-16.74901	22.48		
ene	29	6.40819	6.38863	-52.71010	21.66			ene	29	6.76962	6.75007	-16.74935	22.02		
feb	5	6.40815	6.38857	-52.71062	21.20			feb	5	6.76962	6.75004	-16.74971	21.56		
feb	12	6.40810	6.38852	-52.71105	20.74			feb	12	6.76959	6.75001	-16.74998	21.10		
feb	19	6.40805	6.38844	-52.71146	20.28			feb	19	6.76958	6.74997	-16.75026	20.64		
feb	26	6.40799	6.38837	-52.71178	19.82			feb	26	6.76955	6.74993	-16.75047	20.18		
mar	5	6.40793	6.38829	-52.71203	19.36			mar	5	6.76952	6.74988	-16.75064	19.72		
mar	12	6.40786	6.38821	-52.71220	18.90			mar	12	6.76948	6.74984	-16.75075	19.26		
mar	19	6.40779	6.38813	-52.71232	18.44			mar	19	6.76945	6.74979	-16.75084	18.80		
mar	26	6.40772	6.38805	-52.71237	17.98			mar	26	6.76941	6.74974	-16.75088	18.34		
abr	2	6.40765	6.38796	-52.71232	17.52			abr	2	6.76938	6.74969	-16.75085	17.88		
abr	9	6.40758	6.38788	-52.71223	17.06			abr	9	6.76934	6.74964	-16.75081	17.42		
abr	16	6.40752	6.38780	-52.71204	16.60			abr	16	6.76931	6.74959	-16.75070	16.96		
abr	23	6.40745	6.38773	-52.71183	16.14			abr	23	6.76927	6.74955	-16.75059	16.50		
abr	30	6.40740	6.38765	-52.71149	15.68			abr	30	6.76925	6.74950	-16.75038	16.04		
may	7	6.40734	6.38759	-52.71116	15.22			may	7	6.76922	6.74946	-16.75019	15.58		
may	14	6.40730	6.38752	-52.71070	14.76			may	14	6.76921	6.74942	-16.74991	15.12		
may	21	6.40726	6.38746	-52.71028	14.30			may	21	6.76919	6.74939	-16.74967	14.66		
may	28	6.40723	6.38741	-52.70971	13.84			may	28	6.76918	6.74936	-16.74931	14.20		
jun	4	6.40721	6.38737	-52.70921	13.38			jun	4	6.76917	6.74933	-16.74901	13.74		
jun	11	6.40720	6.38733	-52.70856	12.92			jun	11	6.76918	6.74931	-16.74859	13.28		
jun	18	6.40719	6.38730	-52.70800	12.46			jun	18	6.76918	6.74929	-16.74827	12.82		
jun	25	6.40719	6.38728	-52.70731	12.00			jun	25	6.76920	6.74928	-16.74781	12.36		
jul	2	6.40721	6.38727	-52.70673	11.54			jul	2	6.76921	6.74928	-16.74747	11.90		
jul	9	6.40723	6.38727	-52.70602	11.08			jul	9	6.76924	6.74928	-16.74700	11.44		
jul	16	6.40725	6.38727	-52.70544	10.62			jul	16	6.76926	6.74928	-16.74665	10.98		
jul	23	6.40729	6.38729	-52.70476	10.16			jul	23	6.76929	6.74930	-16.74619	10.52		
jul	30	6.40733	6.38731	-52.70423	9.70			jul	30	6.76933	6.74931	-16.74588	10.06		
ago	6	6.40738	6.38734	-52.70361	9.24			ago	6	6.76937	6.74933	-16.74546	9.60		
ago	13	6.40744	6.38738	-52.70316	8.78			ago	13	6.76941	6.74936	-16.74519	9.14		
ago	20	6.40750	6.38743	-52.70264	8.32			ago	20	6.76946	6.74939	-16.74483	8.68		
ago	27	6.40756	6.38748	-52.70231	7.86			ago	27	6.76951	6.74942	-16.74465	8.22		
sep	3	6.40763	6.38753	-52.70192	7.40			sep	3	6.76956	6.74946	-16.74438	7.76		
sep	10	6.40771	6.38759	-52.70171	6.94			sep	10	6.76961	6.74950	-16.74428	7.30		
sep	17	6.40778	6.38766	-52.70149	6.48			sep	17	6.76966	6.74954	-16.74413	6.84		
sep	24	6.40787	6.38772	-52.70146	6.02			sep	24	6.76973	6.74958	-16.74416	6.38		
oct	1	6.40794	6.38780	-52.70141	5.56			oct	1	6.76978	6.74963	-16.74413	5.92		
oct	8	6.40803	6.38786	-52.70154	5.10			oct	8	6.76984	6.74968	-16.74425	5.46		
oct	15	6.40810	6.38793	-52.70167	4.64			oct	15	6.76990	6.74972	-16.74436	5.01		
oct	22	6.40819	6.38799	-52.70198	4.18			oct	22	6.76996	6.74976	-16.74461	4.55		
oct	29	6.40826	6.38805	-52.70229	3.72			oct	29	6.77001	6.74981	-16.74484	4.09		
nov	5	6.40833	6.38810	-52.70273	3.26			nov	5	6.77008	6.74985	-16.74518	3.63		
nov	12	6.40839	6.38816	-52.70320	2.80			nov	12	6.77012	6.74988	-16.74551	3.17		
nov	19	6.40846	6.38819	-52.70378	2.34			nov	19	6.77018	6.74992	-16.74595	2.71		
nov	26	6.40851	6.38823	-52.70437	1.88			nov	26	6.77023	6.74994	-16.74636	2.25		
dic	3	6.40856	6.38825	-52.70501	1.42			dic	3	6.77028	6.74997	-16.74683	1.79		
dic	10	6.40859	6.38827	-52.70567	0.96			dic	10	6.77031	6.74999	-16.74729	1.33		
dic	17	6.40863	6.38827	-52.70637	0.50			dic	17	6.77036	6.75000	-16.74779	0.87		
dic	24	6.40864	6.38827	-52.70707	0.04			dic	24	6.77038	6.75000	-16.74829	0.41		



## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

34834						36795					
		V		Sp				V		Sp	
		4.49		FOIV				4.44		F6V	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	7.22069	7.20122	-46.79625	0.31	ene	1	7.58420	7.56473	-22.34484	0.68
ene	8	7.22071	7.20121	-46.79697	23.85	ene	8	7.58423	7.56474	-22.34541	0.22
ene	15	7.22071	7.20120	-46.79758	23.39	ene	15	7.58424	7.56473	-22.34587	23.76
ene	22	7.22071	7.20117	-46.79828	22.93	ene	22	7.58426	7.56472	-22.34643	23.30
ene	29	7.22070	7.20114	-46.79886	22.47	ene	29	7.58426	7.56471	-22.34686	22.84
feb	5	7.22068	7.20110	-46.79945	22.01	feb	5	7.58426	7.56469	-22.34732	22.38
feb	12	7.22065	7.20106	-46.79994	21.55	feb	12	7.58425	7.56466	-22.34767	21.92
feb	19	7.22062	7.20100	-46.80045	21.09	feb	19	7.58424	7.56463	-22.34807	21.46
feb	26	7.22057	7.20095	-46.80085	20.63	feb	26	7.58421	7.56459	-22.34836	21.00
mar	5	7.22053	7.20089	-46.80120	20.17	mar	5	7.58419	7.56455	-22.34863	20.54
mar	12	7.22047	7.20083	-46.80147	19.71	mar	12	7.58415	7.56451	-22.34882	20.08
mar	19	7.22042	7.20075	-46.80172	19.25	mar	19	7.58413	7.56446	-22.34901	19.62
mar	26	7.22036	7.20069	-46.80188	18.79	mar	26	7.58409	7.56441	-22.34913	19.16
abr	2	7.22030	7.20061	-46.80195	18.33	abr	2	7.58405	7.56436	-22.34918	18.70
abr	9	7.22024	7.20054	-46.80197	17.87	abr	9	7.58401	7.56431	-22.34920	18.24
abr	16	7.22019	7.20047	-46.80192	17.41	abr	16	7.58398	7.56426	-22.34917	17.78
abr	23	7.22013	7.20040	-46.80183	16.95	abr	23	7.58394	7.56421	-22.34911	17.32
abr	30	7.22008	7.20033	-46.80161	16.49	abr	30	7.58391	7.56416	-22.34896	16.86
may	7	7.22003	7.20027	-46.80139	16.03	may	7	7.58388	7.56412	-22.34880	16.40
may	14	7.21999	7.20020	-46.80106	15.57	may	14	7.58386	7.56407	-22.34857	15.94
may	21	7.21995	7.20015	-46.80074	15.11	may	21	7.58383	7.56403	-22.34835	15.48
may	28	7.21991	7.20009	-46.80029	14.65	may	28	7.58381	7.56399	-22.34802	15.02
jun	4	7.21989	7.20005	-46.79987	14.19	jun	4	7.58380	7.56396	-22.34773	14.56
jun	11	7.21987	7.20000	-46.79932	13.73	jun	11	7.58379	7.56392	-22.34734	14.10
jun	18	7.21986	7.19997	-46.79884	13.27	jun	18	7.58379	7.56390	-22.34700	13.64
jun	25	7.21985	7.19994	-46.79822	12.81	jun	25	7.58379	7.56388	-22.34654	13.18
jul	2	7.21985	7.19992	-46.79769	12.35	jul	2	7.58379	7.56386	-22.34617	12.72
jul	9	7.21986	7.19990	-46.79703	11.89	jul	9	7.58381	7.56385	-22.34569	12.26
jul	16	7.21988	7.19990	-46.79649	11.43	jul	16	7.58382	7.56384	-22.34532	11.80
jul	23	7.21990	7.19990	-46.79583	10.97	jul	23	7.58384	7.56385	-22.34482	11.34
jul	30	7.21993	7.19991	-46.79530	10.51	jul	30	7.58387	7.56385	-22.34446	10.88
ago	6	7.21996	7.19992	-46.79468	10.05	ago	6	7.58390	7.56386	-22.34399	10.42
ago	13	7.22000	7.19995	-46.79421	9.59	ago	13	7.58394	7.56388	-22.34367	9.96
ago	20	7.22005	7.19998	-46.79366	9.13	ago	20	7.58397	7.56390	-22.34326	9.50
ago	27	7.22010	7.20002	-46.79328	8.67	ago	27	7.58401	7.56393	-22.34301	9.04
sep	3	7.22016	7.20006	-46.79284	8.22	sep	3	7.58406	7.56396	-22.34268	8.58
sep	10	7.22022	7.20010	-46.79258	7.76	sep	10	7.58411	7.56399	-22.34252	8.12
sep	17	7.22028	7.20016	-46.79228	7.30	sep	17	7.58416	7.56403	-22.34230	7.66
sep	24	7.22036	7.20021	-46.79218	6.84	sep	24	7.58422	7.56407	-22.34226	7.20
oct	1	7.22042	7.20027	-46.79204	6.38	oct	1	7.58427	7.56412	-22.34218	6.74
oct	8	7.22050	7.20033	-46.79209	5.92	oct	8	7.58433	7.56416	-22.34225	6.28
oct	15	7.22057	7.20040	-46.79213	5.46	oct	15	7.58439	7.56421	-22.34230	5.82
oct	22	7.22065	7.20045	-46.79236	5.00	oct	22	7.58445	7.56426	-22.34252	5.36
oct	29	7.22072	7.20051	-46.79258	4.54	oct	29	7.58451	7.56431	-22.34271	4.90
nov	5	7.22080	7.20057	-46.79294	4.08	nov	5	7.58458	7.56435	-22.34303	4.44
nov	12	7.22086	7.20062	-46.79332	3.62	nov	12	7.58463	7.56439	-22.34334	3.98
nov	19	7.22093	7.20066	-46.79384	3.16	nov	19	7.58470	7.56443	-22.34378	3.52
nov	26	7.22099	7.20071	-46.79436	2.70	nov	26	7.58475	7.56447	-22.34421	3.06
dic	3	7.22105	7.20074	-46.79497	2.24	dic	3	7.58481	7.56450	-22.34470	2.60
dic	10	7.22109	7.20077	-46.79558	1.78	dic	10	7.58485	7.56453	-22.34519	2.14
dic	17	7.22114	7.20078	-46.79626	1.32	dic	17	7.58491	7.56455	-22.34575	1.68
dic	24	7.22117	7.20080	-46.79695	0.86	dic	24	7.58494	7.56456	-22.34628	1.22

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

44382						45238					
		V		Sp				V		Sp	
		4.00		Am				1.67		A2IV	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	9.04727	9.02780	-66.48322	2.14	ene	1	9.22464	9.20517	-69.80685	2.32
ene	8	9.04733	9.02783	-66.48398	1.68	ene	8	9.22471	9.20522	-69.80759	1.86
ene	15	9.04737	9.02786	-66.48465	1.22	ene	15	9.22476	9.20525	-69.80826	1.40
ene	22	9.04741	9.02786	-66.48548	0.76	ene	22	9.22481	9.20526	-69.80908	0.94
ene	29	9.04742	9.02786	-66.48619	0.30	ene	29	9.22482	9.20527	-69.80980	0.48
feb	5	9.04742	9.02784	-66.48698	23.84	feb	5	9.22483	9.20525	-69.81060	0.02
feb	12	9.04740	9.02782	-66.48766	23.38	feb	12	9.22481	9.20523	-69.81129	23.56
feb	19	9.04738	9.02777	-66.48844	22.92	feb	19	9.22479	9.20518	-69.81208	23.10
feb	26	9.04734	9.02772	-66.48909	22.46	feb	26	9.22475	9.20513	-69.81275	22.64
mar	5	9.04729	9.02765	-66.48976	22.00	mar	5	9.22469	9.20505	-69.81344	22.18
mar	12	9.04722	9.02758	-66.49031	21.54	mar	12	9.22462	9.20498	-69.81402	21.72
mar	19	9.04716	9.02749	-66.49090	21.08	mar	19	9.22454	9.20488	-69.81465	21.26
mar	26	9.04708	9.02740	-66.49138	20.62	mar	26	9.22445	9.20478	-69.81515	20.80
abr	2	9.04699	9.02730	-66.49182	20.16	abr	2	9.22435	9.20466	-69.81563	20.34
abr	9	9.04690	9.02720	-66.49215	19.70	abr	9	9.22425	9.20455	-69.81600	19.88
abr	16	9.04680	9.02708	-66.49247	19.24	abr	16	9.22414	9.20442	-69.81636	19.42
abr	23	9.04670	9.02698	-66.49270	18.78	abr	23	9.22403	9.20430	-69.81663	18.96
abr	30	9.04660	9.02685	-66.49285	18.32	abr	30	9.22391	9.20416	-69.81682	18.50
may	7	9.04650	9.02674	-66.49292	17.86	may	7	9.22379	9.20403	-69.81693	18.04
may	14	9.04640	9.02662	-66.49293	17.40	may	14	9.22367	9.20389	-69.81698	17.58
may	21	9.04631	9.02651	-66.49288	16.94	may	21	9.22356	9.20376	-69.81697	17.12
may	28	9.04621	9.02639	-66.49272	16.48	may	28	9.22345	9.20362	-69.81685	16.66
jun	4	9.04613	9.02629	-66.49253	16.02	jun	4	9.22335	9.20351	-69.81669	16.20
jun	11	9.04604	9.02618	-66.49224	15.56	jun	11	9.22324	9.20337	-69.81644	15.74
jun	18	9.04598	9.02609	-66.49194	15.10	jun	18	9.22316	9.20327	-69.81616	15.28
jun	25	9.04590	9.02599	-66.49150	14.64	jun	25	9.22306	9.20315	-69.81576	14.82
jul	2	9.04585	9.02592	-66.49108	14.18	jul	2	9.22300	9.20307	-69.81536	14.36
jul	9	9.04580	9.02584	-66.49055	13.72	jul	9	9.22293	9.20297	-69.81486	13.90
jul	16	9.04577	9.02579	-66.49007	13.26	jul	16	9.22288	9.20290	-69.81438	13.44
jul	23	9.04573	9.02573	-66.48944	12.80	jul	23	9.22283	9.20283	-69.81377	12.98
jul	30	9.04572	9.02570	-66.48890	12.34	jul	30	9.22281	9.20280	-69.81324	12.52
ago	6	9.04571	9.02567	-66.48825	11.88	ago	6	9.22279	9.20276	-69.81260	12.06
ago	13	9.04572	9.02567	-66.48770	11.42	ago	13	9.22280	9.20274	-69.81204	11.60
ago	20	9.04574	9.02567	-66.48703	10.96	ago	20	9.22280	9.20274	-69.81137	11.14
ago	27	9.04578	9.02569	-66.48650	10.50	ago	27	9.22284	9.20276	-69.81083	10.68
sep	3	9.04581	9.02572	-66.48590	10.04	sep	3	9.22288	9.20278	-69.81021	10.22
sep	10	9.04588	9.02576	-66.48544	9.58	sep	10	9.22294	9.20283	-69.80973	9.76
sep	17	9.04594	9.02581	-66.48490	9.12	sep	17	9.22301	9.20288	-69.80916	9.30
sep	24	9.04602	9.02588	-66.48454	8.66	sep	24	9.22310	9.20296	-69.80878	8.84
oct	1	9.04611	9.02596	-66.48415	8.20	oct	1	9.22319	9.20304	-69.80835	8.38
oct	8	9.04621	9.02604	-66.48393	7.74	oct	8	9.22330	9.20313	-69.80810	7.92
oct	15	9.04631	9.02613	-66.48367	7.28	oct	15	9.22341	9.20324	-69.80781	7.46
oct	22	9.04643	9.02623	-66.48363	6.82	oct	22	9.22354	9.20335	-69.80773	7.00
oct	29	9.04654	9.02633	-66.48356	6.36	oct	29	9.22367	9.20347	-69.80762	6.54
nov	5	9.04666	9.02643	-66.48368	5.90	nov	5	9.22381	9.20358	-69.80771	6.08
nov	12	9.04678	9.02654	-66.48379	5.44	nov	12	9.22394	9.20370	-69.80777	5.62
nov	19	9.04690	9.02663	-66.48411	4.98	nov	19	9.22408	9.20381	-69.80805	5.16
nov	26	9.04702	9.02673	-66.48441	4.52	nov	26	9.22421	9.20393	-69.80832	4.70
dic	3	9.04713	9.02682	-66.48487	4.06	dic	3	9.22434	9.20403	-69.80875	4.24
dic	10	9.04723	9.02691	-66.48532	3.60	dic	10	9.22446	9.20414	-69.80917	3.78
dic	17	9.04733	9.02697	-66.48594	3.14	dic	17	9.22458	9.20422	-69.80976	3.32
dic	24	9.04742	9.02704	-66.48654	2.68	dic	24	9.22468	9.20430	-69.81034	2.86

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

50954						51814					
V			Sp			V			Sp		
3.99			F2IV			5.16			F1V		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	10.41442	10.39496	-74.14259	3.51	ene	1	10.61076	10.59129	56.96071	3.70
ene	8	10.41456	10.39506	-74.14324	3.05	ene	8	10.61086	10.59136	56.96071	3.24
ene	15	10.41466	10.39515	-74.14382	2.59	ene	15	10.61094	10.59143	56.96089	2.78
ene	22	10.41476	10.39522	-74.14459	2.13	ene	22	10.61103	10.59149	56.96100	2.32
ene	29	10.41483	10.39528	-74.14527	1.67	ene	29	10.61109	10.59154	56.96130	1.87
feb	5	10.41489	10.39531	-74.14607	1.21	feb	5	10.61116	10.59158	56.96157	1.41
feb	12	10.41492	10.39533	-74.14677	0.75	feb	12	10.61120	10.59161	56.96199	0.95
feb	19	10.41494	10.39533	-74.14761	0.29	feb	19	10.61125	10.59164	56.96232	0.49
feb	26	10.41494	10.39532	-74.14834	23.83	feb	26	10.61127	10.59165	56.96281	0.03
mar	5	10.41492	10.39528	-74.14913	23.37	mar	5	10.61129	10.59165	56.96323	23.57
mar	12	10.41488	10.39523	-74.14980	22.91	mar	12	10.61128	10.59164	56.96376	23.11
mar	19	10.41483	10.39516	-74.15057	22.45	mar	19	10.61129	10.59163	56.96417	22.65
mar	26	10.41476	10.39509	-74.15120	21.99	mar	26	10.61126	10.59159	56.96467	22.19
abr	2	10.41467	10.39498	-74.15185	21.53	abr	2	10.61125	10.59156	56.96509	21.73
abr	9	10.41458	10.39488	-74.15238	21.07	abr	9	10.61120	10.59151	56.96555	21.27
abr	16	10.41447	10.39475	-74.15295	20.61	abr	16	10.61118	10.59146	56.96589	20.81
abr	23	10.41436	10.39463	-74.15340	20.15	abr	23	10.61112	10.59140	56.96626	20.35
abr	30	10.41423	10.39448	-74.15381	19.69	abr	30	10.61108	10.59134	56.96654	19.89
may	7	10.41410	10.39434	-74.15411	19.23	may	7	10.61102	10.59126	56.96681	19.43
may	14	10.41396	10.39418	-74.15441	18.77	may	14	10.61098	10.59120	56.96697	18.97
may	21	10.41383	10.39403	-74.15459	18.31	may	21	10.61092	10.59112	56.96711	18.51
may	28	10.41368	10.39386	-74.15471	17.85	may	28	10.61088	10.59105	56.96717	18.05
jun	4	10.41355	10.39371	-74.15474	17.39	jun	4	10.61081	10.59097	56.96719	17.59
jun	11	10.41340	10.39354	-74.15471	16.93	jun	11	10.61078	10.59091	56.96712	17.13
jun	18	10.41328	10.39339	-74.15462	16.47	jun	18	10.61073	10.59084	56.96700	16.67
jun	25	10.41314	10.39323	-74.15442	16.01	jun	25	10.61069	10.59078	56.96684	16.21
jul	2	10.41303	10.39310	-74.15418	15.55	jul	2	10.61065	10.59071	56.96660	15.75
jul	9	10.41290	10.39295	-74.15386	15.09	jul	9	10.61063	10.59067	56.96633	15.29
jul	16	10.41281	10.39284	-74.15351	14.63	jul	16	10.61060	10.59062	56.96597	14.83
jul	23	10.41271	10.39271	-74.15304	14.17	jul	23	10.61058	10.59058	56.96562	14.37
jul	30	10.41265	10.39263	-74.15258	13.71	jul	30	10.61056	10.59054	56.96517	13.91
ago	6	10.41257	10.39253	-74.15204	13.25	ago	6	10.61056	10.59052	56.96473	13.45
ago	13	10.41253	10.39248	-74.15153	12.79	ago	13	10.61056	10.59050	56.96419	12.99
ago	20	10.41249	10.39242	-74.15090	12.33	ago	20	10.61056	10.59049	56.96371	12.53
ago	27	10.41249	10.39241	-74.15035	11.87	ago	27	10.61057	10.59049	56.96312	12.07
sep	3	10.41248	10.39239	-74.14972	11.41	sep	3	10.61060	10.59050	56.96258	11.61
sep	10	10.41252	10.39240	-74.14919	10.95	sep	10	10.61063	10.59051	56.96194	11.15
sep	17	10.41255	10.39243	-74.14855	10.49	sep	17	10.61066	10.59053	56.96140	10.69
sep	24	10.41263	10.39249	-74.14807	10.03	sep	24	10.61070	10.59056	56.96074	10.23
oct	1	10.41270	10.39255	-74.14753	9.57	oct	1	10.61075	10.59060	56.96018	9.77
oct	8	10.41281	10.39264	-74.14714	9.11	oct	8	10.61082	10.59065	56.95952	9.31
oct	15	10.41292	10.39274	-74.14668	8.65	oct	15	10.61088	10.59070	56.95900	8.85
oct	22	10.41306	10.39287	-74.14643	8.19	oct	22	10.61096	10.59076	56.95837	8.39
oct	29	10.41320	10.39299	-74.14614	7.73	oct	29	10.61103	10.59083	56.95788	7.93
nov	5	10.41336	10.39313	-74.14604	7.27	nov	5	10.61113	10.59090	56.95731	7.47
nov	12	10.41352	10.39328	-74.14590	6.81	nov	12	10.61121	10.59097	56.95690	7.01
nov	19	10.41370	10.39343	-74.14599	6.35	nov	19	10.61132	10.59105	56.95641	6.55
nov	26	10.41386	10.39358	-74.14606	5.89	nov	26	10.61141	10.59113	56.95608	6.09
dic	3	10.41404	10.39373	-74.14631	5.43	dic	3	10.61153	10.59122	56.95572	5.63
dic	10	10.41421	10.39388	-74.14654	4.97	dic	10	10.61162	10.59130	56.95552	5.17
dic	17	10.41437	10.39401	-74.14698	4.51	dic	17	10.61174	10.59138	56.95527	4.71
dic	24	10.41453	10.39415	-74.14740	4.05	dic	24	10.61184	10.59146	56.95520	4.25

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

53910						54872					
V			Sp			V			Sp		
2.34			A1V			2.56			A4V		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	11.05383	11.03436	56.25557	4.15	ene	1	11.25548	11.23602	20.39656	4.35
ene	8	11.05393	11.03443	56.25550	3.69	ene	8	11.25555	11.23606	20.39622	3.89
ene	15	11.05401	11.03450	56.25562	3.23	ene	15	11.25561	11.23610	20.39603	3.43
ene	22	11.05411	11.03457	56.25567	2.77	ene	22	11.25568	11.23614	20.39575	2.97
ene	29	11.05418	11.03462	56.25593	2.31	ene	29	11.25572	11.23617	20.39564	2.51
feb	5	11.05425	11.03467	56.25615	1.85	feb	5	11.25577	11.23620	20.39549	2.05
feb	12	11.05430	11.03471	56.25653	1.39	feb	12	11.25581	11.23622	20.39550	1.59
feb	19	11.05436	11.03474	56.25683	0.93	feb	19	11.25585	11.23624	20.39542	1.13
feb	26	11.05438	11.03476	56.25730	0.47	feb	26	11.25587	11.23625	20.39550	0.67
mar	5	11.05441	11.03478	56.25770	0.01	mar	5	11.25590	11.23626	20.39553	0.21
mar	12	11.05442	11.03477	56.25823	23.55	mar	12	11.25590	11.23626	20.39570	23.75
mar	19	11.05443	11.03477	56.25864	23.09	mar	19	11.25592	11.23625	20.39577	23.29
mar	26	11.05441	11.03474	56.25916	22.63	mar	26	11.25591	11.23624	20.39598	22.83
abr	2	11.05441	11.03472	56.25960	22.17	abr	2	11.25592	11.23623	20.39613	22.37
abr	9	11.05437	11.03467	56.26010	21.71	abr	9	11.25590	11.23621	20.39638	21.91
abr	16	11.05435	11.03463	56.26047	21.25	abr	16	11.25590	11.23618	20.39652	21.45
abr	23	11.05430	11.03457	56.26089	20.79	abr	23	11.25588	11.23615	20.39676	20.99
abr	30	11.05427	11.03452	56.26121	20.33	abr	30	11.25587	11.23612	20.39694	20.53
may	7	11.05421	11.03445	56.26154	19.87	may	7	11.25584	11.23608	20.39717	20.07
may	14	11.05418	11.03439	56.26175	19.41	may	14	11.25583	11.23604	20.39731	19.61
may	21	11.05411	11.03431	56.26195	18.95	may	21	11.25580	11.23600	20.39750	19.15
may	28	11.05407	11.03425	56.26207	18.49	may	28	11.25578	11.23596	20.39764	18.69
jun	4	11.05401	11.03417	56.26215	18.03	jun	4	11.25576	11.23592	20.39779	18.23
jun	11	11.05398	11.03411	56.26213	17.57	jun	11	11.25574	11.23588	20.39788	17.77
jun	18	11.05392	11.03403	56.26207	17.11	jun	18	11.25572	11.23583	20.39797	17.31
jun	25	11.05388	11.03397	56.26196	16.65	jun	25	11.25570	11.23579	20.39804	16.85
jul	2	11.05383	11.03390	56.26178	16.19	jul	2	11.25568	11.23575	20.39808	16.39
jul	9	11.05381	11.03385	56.26154	15.73	jul	9	11.25567	11.23571	20.39808	15.93
jul	16	11.05377	11.03379	56.26123	15.27	jul	16	11.25566	11.23568	20.39804	15.47
jul	23	11.05375	11.03375	56.26091	14.81	jul	23	11.25564	11.23565	20.39803	15.01
jul	30	11.05372	11.03370	56.26051	14.35	jul	30	11.25563	11.23562	20.39794	14.55
ago	6	11.05371	11.03368	56.26009	13.89	ago	6	11.25563	11.23559	20.39785	14.09
ago	13	11.05370	11.03364	56.25957	13.43	ago	13	11.25563	11.23557	20.39769	13.63
ago	20	11.05370	11.03363	56.25911	12.97	ago	20	11.25562	11.23556	20.39758	13.17
ago	27	11.05370	11.03361	56.25853	12.51	ago	27	11.25563	11.23554	20.39736	12.71
sep	3	11.05371	11.03361	56.25799	12.05	sep	3	11.25564	11.23554	20.39717	12.25
sep	10	11.05373	11.03361	56.25734	11.59	sep	10	11.25565	11.23553	20.39688	11.79
sep	17	11.05375	11.03363	56.25679	11.13	sep	17	11.25566	11.23554	20.39666	11.33
sep	24	11.05378	11.03364	56.25612	10.67	sep	24	11.25569	11.23555	20.39631	10.87
oct	1	11.05382	11.03368	56.25553	10.21	oct	1	11.25571	11.23556	20.39602	10.41
oct	8	11.05388	11.03371	56.25484	9.75	oct	8	11.25575	11.23558	20.39561	9.95
oct	15	11.05393	11.03375	56.25428	9.29	oct	15	11.25577	11.23560	20.39529	9.49
oct	22	11.05400	11.03380	56.25361	8.83	oct	22	11.25582	11.23563	20.39483	9.03
oct	29	11.05406	11.03386	56.25307	8.37	oct	29	11.25586	11.23566	20.39445	8.57
nov	5	11.05415	11.03392	56.25245	7.91	nov	5	11.25593	11.23569	20.39396	8.11
nov	12	11.05423	11.03399	56.25199	7.45	nov	12	11.25597	11.23573	20.39358	7.65
nov	19	11.05433	11.03406	56.25143	6.99	nov	19	11.25604	11.23577	20.39307	7.19
nov	26	11.05442	11.03414	56.25105	6.53	nov	26	11.25610	11.23582	20.39267	6.73
dic	3	11.05453	11.03422	56.25061	6.07	dic	3	11.25618	11.23586	20.39218	6.27
dic	10	11.05462	11.03430	56.25034	5.61	dic	10	11.25624	11.23591	20.39181	5.81
dic	17	11.05474	11.03438	56.25002	5.15	dic	17	11.25632	11.23596	20.39134	5.35
dic	24	11.05483	11.03446	56.24988	4.69	dic	24	11.25638	11.23600	20.39101	4.89

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

58001						58803					
V			Sp			V			Sp		
2.41			AOV SB			5.15			F6V		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	11.91729	11.89783	53.56323	5.01	ene	1	12.08076	12.06129	-42.55811	5.17
ene	8	11.91739	11.89790	53.56303	4.55	ene	8	12.08084	12.06135	-42.55860	4.71
ene	15	11.91748	11.89797	53.56300	4.09	ene	15	12.08091	12.06140	-42.55905	4.25
ene	22	11.91757	11.89803	53.56293	3.63	ene	22	12.08099	12.06145	-42.55966	3.79
ene	29	11.91765	11.89810	53.56306	3.17	ene	29	12.08105	12.06150	-42.56018	3.34
feb	5	11.91773	11.89815	53.56317	2.71	feb	5	12.08112	12.06154	-42.56082	2.88
feb	12	11.91779	11.89821	53.56345	2.25	feb	12	12.08116	12.06157	-42.56136	2.42
feb	19	11.91786	11.89825	53.56367	1.79	feb	19	12.08122	12.06160	-42.56203	1.96
feb	26	11.91790	11.89828	53.56406	1.33	feb	26	12.08125	12.06163	-42.56260	1.50
mar	5	11.91795	11.89831	53.56441	0.87	mar	5	12.08129	12.06165	-42.56324	1.04
mar	12	11.91797	11.89832	53.56491	0.41	mar	12	12.08130	12.06166	-42.56376	0.58
mar	19	11.91800	11.89833	53.56530	23.95	mar	19	12.08133	12.06167	-42.56440	0.12
mar	26	11.91800	11.89832	53.56582	23.49	mar	26	12.08134	12.06167	-42.56489	23.66
abr	2	11.91800	11.89831	53.56627	23.03	abr	2	12.08135	12.06166	-42.56545	23.20
abr	9	11.91798	11.89829	53.56681	22.57	abr	9	12.08134	12.06164	-42.56587	22.74
abr	16	11.91798	11.89826	53.56722	22.11	abr	16	12.08134	12.06162	-42.56637	22.28
abr	23	11.91795	11.89822	53.56771	21.65	abr	23	12.08133	12.06160	-42.56674	21.82
abr	30	11.91793	11.89818	53.56810	21.19	abr	30	12.08132	12.06157	-42.56713	21.36
may	7	11.91788	11.89813	53.56853	20.73	may	7	12.08129	12.06153	-42.56740	20.90
may	14	11.91786	11.89807	53.56882	20.27	may	14	12.08128	12.06149	-42.56772	20.44
may	21	11.91781	11.89801	53.56914	19.81	may	21	12.08125	12.06145	-42.56792	19.98
may	28	11.91777	11.89795	53.56936	19.35	may	28	12.08123	12.06140	-42.56810	19.52
jun	4	11.91772	11.89788	53.56957	18.89	jun	4	12.08119	12.06135	-42.56819	19.06
jun	11	11.91769	11.89782	53.56965	18.43	jun	11	12.08117	12.06130	-42.56829	18.60
jun	18	11.91763	11.89774	53.56972	17.97	jun	18	12.08114	12.06125	-42.56829	18.14
jun	25	11.91759	11.89768	53.56972	17.51	jun	25	12.08110	12.06119	-42.56826	17.68
jul	2	11.91754	11.89761	53.56967	17.05	jul	2	12.08107	12.06114	-42.56815	17.22
jul	9	11.91751	11.89755	53.56952	16.59	jul	9	12.08103	12.06108	-42.56803	16.76
jul	16	11.91747	11.89749	53.56933	16.13	jul	16	12.08101	12.06103	-42.56785	16.30
jul	23	11.91743	11.89744	53.56910	15.67	jul	23	12.08097	12.06097	-42.56760	15.84
jul	30	11.91740	11.89738	53.56880	15.21	jul	30	12.08094	12.06093	-42.56732	15.38
ago	6	11.91737	11.89734	53.56844	14.75	ago	6	12.08091	12.06088	-42.56702	14.92
ago	13	11.91735	11.89729	53.56802	14.29	ago	13	12.08090	12.06084	-42.56670	14.46
ago	20	11.91733	11.89726	53.56760	13.83	ago	20	12.08087	12.06080	-42.56630	14.00
ago	27	11.91731	11.89723	53.56709	13.37	ago	27	12.08086	12.06077	-42.56592	13.54
sep	3	11.91731	11.89721	53.56657	12.91	sep	3	12.08084	12.06075	-42.56552	13.08
sep	10	11.91731	11.89719	53.56597	12.45	sep	10	12.08085	12.06073	-42.56515	12.62
sep	17	11.91731	11.89719	53.56542	11.99	sep	17	12.08084	12.06072	-42.56471	12.16
sep	24	11.91732	11.89718	53.56476	11.53	sep	24	12.08086	12.06072	-42.56436	11.70
oct	1	11.91734	11.89719	53.56415	11.07	oct	1	12.08087	12.06072	-42.56397	11.24
oct	8	11.91737	11.89721	53.56344	10.61	oct	8	12.08090	12.06073	-42.56369	10.78
oct	15	11.91740	11.89723	53.56284	10.15	oct	15	12.08092	12.06075	-42.56334	10.32
oct	22	11.91745	11.89726	53.56212	9.69	oct	22	12.08097	12.06077	-42.56314	9.86
oct	29	11.91750	11.89730	53.56151	9.23	oct	29	12.08101	12.06080	-42.56291	9.40
nov	5	11.91757	11.89734	53.56082	8.77	nov	5	12.08107	12.06084	-42.56283	8.94
nov	12	11.91763	11.89739	53.56026	8.31	nov	12	12.08112	12.06088	-42.56270	8.48
nov	19	11.91772	11.89745	53.55961	7.85	nov	19	12.08120	12.06093	-42.56276	8.02
nov	26	11.91779	11.89751	53.55911	7.39	nov	26	12.08127	12.06098	-42.56279	7.56
dic	3	11.91789	11.89757	53.55855	6.93	dic	3	12.08135	12.06104	-42.56298	7.10
dic	10	11.91797	11.89764	53.55816	6.47	dic	10	12.08142	12.06110	-42.56313	6.64
dic	17	11.91808	11.89772	53.55770	6.01	dic	17	12.08151	12.06115	-42.56347	6.18
dic	24	11.91816	11.89779	53.55743	5.55	dic	24	12.08159	12.06121	-42.56377	5.72

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

58948						59774					
V			Sp			V			Sp		
4.12			G8III			3.32			A3Vvar		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	12.10623	12.08676	8.60520	5.20	ene	1	12.27600	12.25653	56.90093	5.37
ene	8	12.10630	12.08681	8.60477	4.74	ene	8	12.27610	12.25661	56.90070	4.91
ene	15	12.10636	12.08685	8.60445	4.28	ene	15	12.27620	12.25669	56.90064	4.45
ene	22	12.10643	12.08689	8.60405	3.82	ene	22	12.27630	12.25676	56.90055	3.99
ene	29	12.10648	12.08692	8.60380	3.36	ene	29	12.27639	12.25684	56.90065	3.53
feb	5	12.10654	12.08696	8.60350	2.90	feb	5	12.27648	12.25690	56.90075	3.07
feb	12	12.10657	12.08699	8.60335	2.44	feb	12	12.27655	12.25696	56.90102	2.61
feb	19	12.10662	12.08701	8.60311	1.98	feb	19	12.27662	12.25701	56.90123	2.15
feb	26	12.10665	12.08703	8.60304	1.52	feb	26	12.27668	12.25706	56.90162	1.69
mar	5	12.10669	12.08705	8.60291	1.06	mar	5	12.27673	12.25709	56.90198	1.23
mar	12	12.10670	12.08706	8.60294	0.60	mar	12	12.27676	12.25712	56.90248	0.77
mar	19	12.10673	12.08706	8.60286	0.14	mar	19	12.27680	12.25713	56.90289	0.31
mar	26	12.10673	12.08706	8.60294	23.68	mar	26	12.27680	12.25713	56.90344	23.85
abr	2	12.10675	12.08706	8.60296	23.22	abr	2	12.27682	12.25713	56.90391	23.39
abr	9	12.10674	12.08705	8.60311	22.76	abr	9	12.27680	12.25711	56.90449	22.93
abr	16	12.10675	12.08703	8.60315	22.30	abr	16	12.27680	12.25709	56.90493	22.47
abr	23	12.10674	12.08701	8.60331	21.84	abr	23	12.27677	12.25705	56.90546	22.01
abr	30	12.10674	12.08699	8.60342	21.38	abr	30	12.27675	12.25701	56.90589	21.55
may	7	12.10672	12.08696	8.60361	20.92	may	7	12.27671	12.25695	56.90636	21.09
may	14	12.10671	12.08693	8.60371	20.46	may	14	12.27668	12.25690	56.90669	20.63
may	21	12.10669	12.08689	8.60389	20.00	may	21	12.27663	12.25683	56.90706	20.17
may	28	12.10668	12.08686	8.60402	19.54	may	28	12.27659	12.25677	56.90732	19.71
jun	4	12.10666	12.08682	8.60419	19.08	jun	4	12.27653	12.25669	56.90757	19.25
jun	11	12.10665	12.08678	8.60429	18.62	jun	11	12.27649	12.25663	56.90769	18.79
jun	18	12.10663	12.08674	8.60443	18.16	jun	18	12.27643	12.25655	56.90781	18.33
jun	25	12.10661	12.08670	8.60454	17.70	jun	25	12.27639	12.25648	56.90783	17.87
jul	2	12.10659	12.08666	8.60466	17.24	jul	2	12.27633	12.25640	56.90782	17.41
jul	9	12.10657	12.08662	8.60473	16.78	jul	9	12.27629	12.25633	56.90769	16.95
jul	16	12.10656	12.08658	8.60480	16.32	jul	16	12.27624	12.25626	56.90753	16.49
jul	23	12.10654	12.08654	8.60487	15.86	jul	23	12.27619	12.25620	56.90731	16.03
jul	30	12.10652	12.08651	8.60491	15.40	jul	30	12.27615	12.25613	56.90703	15.57
ago	6	12.10651	12.08648	8.60492	14.94	ago	6	12.27611	12.25608	56.90668	15.11
ago	13	12.10650	12.08645	8.60489	14.48	ago	13	12.27608	12.25602	56.90626	14.65
ago	20	12.10649	12.08642	8.60489	14.02	ago	20	12.27605	12.25598	56.90584	14.19
ago	27	12.10649	12.08640	8.60482	13.56	ago	27	12.27602	12.25594	56.90533	13.73
sep	3	12.10648	12.08638	8.60475	13.10	sep	3	12.27601	12.25591	56.90480	13.27
sep	10	12.10649	12.08637	8.60461	12.64	sep	10	12.27600	12.25588	56.90418	12.81
sep	17	12.10649	12.08636	8.60452	12.18	sep	17	12.27599	12.25587	56.90361	12.35
sep	24	12.10650	12.08636	8.60432	11.72	sep	24	12.27600	12.25586	56.90294	11.89
oct	1	12.10651	12.08636	8.60413	11.26	oct	1	12.27601	12.25586	56.90230	11.43
oct	8	12.10654	12.08637	8.60385	10.80	oct	8	12.27603	12.25586	56.90157	10.97
oct	15	12.10655	12.08638	8.60363	10.34	oct	15	12.27606	12.25588	56.90093	10.51
oct	22	12.10659	12.08640	8.60327	9.88	oct	22	12.27610	12.25590	56.90019	10.05
oct	29	12.10662	12.08642	8.60298	9.42	oct	29	12.27615	12.25594	56.89954	9.59
nov	5	12.10667	12.08644	8.60256	8.96	nov	5	12.27621	12.25598	56.89881	9.13
nov	12	12.10671	12.08647	8.60224	8.50	nov	12	12.27627	12.25603	56.89821	8.67
nov	19	12.10677	12.08651	8.60176	8.04	nov	19	12.27635	12.25608	56.89752	8.21
nov	26	12.10682	12.08654	8.60138	7.58	nov	26	12.27643	12.25614	56.89699	7.75
dic	3	12.10689	12.08658	8.60089	7.12	dic	3	12.27652	12.25621	56.89639	7.29
dic	10	12.10695	12.08662	8.60050	6.66	dic	10	12.27661	12.25628	56.89596	6.83
dic	17	12.10703	12.08667	8.59999	6.20	dic	17	12.27672	12.25636	56.89546	6.37
dic	24	12.10709	12.08671	8.59960	5.74	dic	24	12.27681	12.25643	56.89515	5.91

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

60718						61084					
		V		Sp				V		Sp	
		0.77		B0.5IV				1.59		M4III	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	12.46452	12.44506	-63.22042	5.56	ene	1	12.54057	12.52111	-57.23618	5.63
ene	8	12.46465	12.44516	-63.22082	5.10	ene	8	12.54068	12.52119	-57.23659	5.17
ene	15	12.46475	12.44524	-63.22119	4.64	ene	15	12.54077	12.52126	-57.23697	4.71
ene	22	12.46487	12.44533	-63.22174	4.18	ene	22	12.54088	12.52134	-57.23752	4.25
ene	29	12.46496	12.44541	-63.22225	3.72	ene	29	12.54096	12.52140	-57.23802	3.79
feb	5	12.46507	12.44549	-63.22288	3.26	feb	5	12.54105	12.52147	-57.23864	3.34
feb	12	12.46514	12.44555	-63.22344	2.80	feb	12	12.54111	12.52152	-57.23920	2.88
feb	19	12.46522	12.44561	-63.22417	2.34	feb	19	12.54119	12.52157	-57.23990	2.42
feb	26	12.46528	12.44566	-63.22481	1.88	feb	26	12.54124	12.52162	-57.24051	1.96
mar	5	12.46534	12.44570	-63.22554	1.42	mar	5	12.54129	12.52165	-57.24123	1.50
mar	12	12.46537	12.44573	-63.22618	0.96	mar	12	12.54132	12.52168	-57.24183	1.04
mar	19	12.46541	12.44575	-63.22695	0.50	mar	19	12.54136	12.52170	-57.24257	0.58
mar	26	12.46543	12.44576	-63.22759	0.04	mar	26	12.54138	12.52171	-57.24317	0.12
abr	2	12.46545	12.44576	-63.22831	23.58	abr	2	12.54140	12.52171	-57.24385	23.66
abr	9	12.46544	12.44575	-63.22890	23.12	abr	9	12.54140	12.52170	-57.24440	23.20
abr	16	12.46544	12.44573	-63.22959	22.66	abr	16	12.54140	12.52168	-57.24506	22.74
abr	23	12.46543	12.44570	-63.23015	22.20	abr	23	12.54139	12.52166	-57.24557	22.28
abr	30	12.46541	12.44566	-63.23073	21.74	abr	30	12.54138	12.52163	-57.24612	21.82
may	7	12.46537	12.44561	-63.23119	21.28	may	7	12.54135	12.52159	-57.24653	21.36
may	14	12.46534	12.44555	-63.23171	20.82	may	14	12.54133	12.52155	-57.24701	20.90
may	21	12.46530	12.44550	-63.23208	20.36	may	21	12.54130	12.52150	-57.24735	20.44
may	28	12.46524	12.44542	-63.23245	19.90	may	28	12.54126	12.52144	-57.24769	19.98
jun	4	12.46519	12.44535	-63.23270	19.44	jun	4	12.54122	12.52138	-57.24791	19.52
jun	11	12.46513	12.44526	-63.23297	18.98	jun	11	12.54117	12.52131	-57.24816	19.06
jun	18	12.46507	12.44518	-63.23312	18.52	jun	18	12.54113	12.52124	-57.24828	18.60
jun	25	12.46500	12.44509	-63.23322	18.06	jun	25	12.54107	12.52116	-57.24836	18.14
jul	2	12.46494	12.44500	-63.23322	17.60	jul	2	12.54103	12.52109	-57.24835	17.68
jul	9	12.46486	12.44491	-63.23320	17.14	jul	9	12.54097	12.52101	-57.24833	17.22
jul	16	12.46480	12.44482	-63.23309	16.68	jul	16	12.54092	12.52094	-57.24822	16.76
jul	23	12.46473	12.44473	-63.23291	16.22	jul	23	12.54086	12.52086	-57.24803	16.30
jul	30	12.46467	12.44465	-63.23266	15.76	jul	30	12.54082	12.52080	-57.24779	15.84
ago	6	12.46460	12.44456	-63.23238	15.30	ago	6	12.54076	12.52073	-57.24752	15.38
ago	13	12.46455	12.44450	-63.23205	14.84	ago	13	12.54073	12.52067	-57.24720	14.92
ago	20	12.46449	12.44442	-63.23162	14.38	ago	20	12.54068	12.52061	-57.24680	14.46
ago	27	12.46446	12.44437	-63.23119	13.92	ago	27	12.54065	12.52056	-57.24639	14.00
sep	3	12.46441	12.44432	-63.23071	13.46	sep	3	12.54061	12.52052	-57.24594	13.54
sep	10	12.46440	12.44428	-63.23025	13.00	sep	10	12.54061	12.52049	-57.24550	13.08
sep	17	12.46437	12.44425	-63.22969	12.54	sep	17	12.54058	12.52046	-57.24498	12.62
sep	24	12.46438	12.44424	-63.22919	12.08	sep	24	12.54059	12.52045	-57.24452	12.16
oct	1	12.46438	12.44423	-63.22866	11.62	oct	1	12.54059	12.52044	-57.24403	11.70
oct	8	12.46441	12.44424	-63.22820	11.16	oct	8	12.54062	12.52045	-57.24361	11.24
oct	15	12.46443	12.44426	-63.22767	10.70	oct	15	12.54063	12.52046	-57.24312	10.78
oct	22	12.46449	12.44430	-63.22728	10.24	oct	22	12.54069	12.52049	-57.24277	10.32
oct	29	12.46454	12.44434	-63.22685	9.78	oct	29	12.54073	12.52052	-57.24239	9.86
nov	5	12.46463	12.44439	-63.22656	9.32	nov	5	12.54080	12.52057	-57.24214	9.40
nov	12	12.46470	12.44446	-63.22623	8.86	nov	12	12.54086	12.52062	-57.24184	8.94
nov	19	12.46480	12.44453	-63.22608	8.40	nov	19	12.54095	12.52068	-57.24174	8.48
nov	26	12.46490	12.44461	-63.22591	7.94	nov	26	12.54103	12.52075	-57.24160	8.02
dic	3	12.46501	12.44470	-63.22591	7.48	dic	3	12.54113	12.52082	-57.24164	7.56
dic	10	12.46512	12.44479	-63.22587	7.02	dic	10	12.54122	12.52090	-57.24163	7.10
dic	17	12.46525	12.44489	-63.22606	6.56	dic	17	12.54134	12.52098	-57.24184	6.64
dic	24	12.46536	12.44499	-63.22621	6.10	dic	24	12.54144	12.52106	-57.24201	6.18

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>62896</b>						<b>63608</b>					
V			Sp			V			Sp		
4.25			A4IV			2.85			G8IIIvar		
α		α <sub>c</sub>		δ	Hp	α		α <sub>c</sub>		δ	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	12.91166	12.89219	-40.29939	6.01	ene	1	13.05517	13.03570	10.83514	6.15
ene	8	12.91174	12.89225	-40.29980	5.55	ene	8	13.05524	13.03574	10.83469	5.69
ene	15	12.91181	12.89230	-40.30017	5.09	ene	15	13.05530	13.03579	10.83434	5.23
ene	22	12.91190	12.89236	-40.30068	4.63	ene	22	13.05537	13.03583	10.83393	4.77
ene	29	12.91196	12.89241	-40.30113	4.17	ene	29	13.05543	13.03587	10.83366	4.31
feb	5	12.91204	12.89246	-40.30168	3.71	feb	5	13.05549	13.03591	10.83335	3.85
feb	12	12.91209	12.89251	-40.30216	3.25	feb	12	13.05554	13.03595	10.83319	3.39
feb	19	12.91216	12.89255	-40.30276	2.79	feb	19	13.05560	13.03598	10.83295	2.93
feb	26	12.91220	12.89258	-40.30327	2.33	feb	26	13.05563	13.03601	10.83287	2.47
mar	5	12.91225	12.89262	-40.30385	1.87	mar	5	13.05568	13.03604	10.83276	2.01
mar	12	12.91228	12.89264	-40.30433	1.41	mar	12	13.05570	13.03606	10.83279	1.55
mar	19	12.91233	12.89266	-40.30493	0.95	mar	19	13.05574	13.03608	10.83273	1.09
mar	26	12.91234	12.89267	-40.30539	0.49	mar	26	13.05576	13.03609	10.83284	0.63
abr	2	12.91237	12.89268	-40.30592	0.03	abr	2	13.05578	13.03609	10.83289	0.17
abr	9	12.91238	12.89268	-40.30632	23.57	abr	9	13.05579	13.03609	10.83307	23.71
abr	16	12.91239	12.89268	-40.30683	23.11	abr	16	13.05581	13.03609	10.83314	23.25
abr	23	12.91239	12.89267	-40.30719	22.65	abr	23	13.05581	13.03608	10.83336	22.79
abr	30	12.91239	12.89265	-40.30760	22.19	abr	30	13.05581	13.03607	10.83350	22.33
may	7	12.91238	12.89263	-40.30788	21.73	may	7	13.05580	13.03605	10.83374	21.87
may	14	12.91238	12.89260	-40.30825	21.27	may	14	13.05581	13.03602	10.83387	21.41
may	21	12.91237	12.89256	-40.30847	20.81	may	21	13.05579	13.03599	10.83411	20.95
may	28	12.91235	12.89253	-40.30871	20.35	may	28	13.05579	13.03596	10.83427	20.49
jun	4	12.91233	12.89249	-40.30884	19.89	jun	4	13.05577	13.03593	10.83450	20.03
jun	11	12.91231	12.89244	-40.30902	19.43	jun	11	13.05576	13.03589	10.83462	19.57
jun	18	12.91228	12.89239	-40.30908	18.97	jun	18	13.05574	13.03585	10.83482	19.11
jun	25	12.91225	12.89234	-40.30913	18.51	jun	25	13.05573	13.03581	10.83494	18.65
jul	2	12.91222	12.89229	-40.30909	18.05	jul	2	13.05570	13.03577	10.83510	18.19
jul	9	12.91219	12.89224	-40.30907	17.59	jul	9	13.05569	13.03573	10.83517	17.73
jul	16	12.91217	12.89219	-40.30896	17.13	jul	16	13.05567	13.03569	10.83527	17.27
jul	23	12.91213	12.89213	-40.30881	16.67	jul	23	13.05565	13.03565	10.83534	16.81
jul	30	12.91210	12.89208	-40.30861	16.21	jul	30	13.05562	13.03561	10.83540	16.35
ago	6	12.91207	12.89203	-40.30840	15.75	ago	6	13.05561	13.03557	10.83539	15.89
ago	13	12.91204	12.89199	-40.30815	15.29	ago	13	13.05559	13.03553	10.83538	15.43
ago	20	12.91201	12.89194	-40.30784	14.83	ago	20	13.05557	13.03550	10.83536	14.97
ago	27	12.91199	12.89191	-40.30753	14.37	ago	27	13.05556	13.03547	10.83529	14.51
sep	3	12.91197	12.89187	-40.30720	13.91	sep	3	13.05554	13.03544	10.83519	14.05
sep	10	12.91196	12.89184	-40.30688	13.45	sep	10	13.05554	13.03542	10.83504	13.59
sep	17	12.91194	12.89182	-40.30649	12.99	sep	17	13.05552	13.03540	10.83492	13.13
sep	24	12.91195	12.89181	-40.30616	12.53	sep	24	13.05553	13.03539	10.83471	12.67
oct	1	12.91194	12.89179	-40.30581	12.07	oct	1	13.05553	13.03538	10.83450	12.21
oct	8	12.91196	12.89179	-40.30553	11.61	oct	8	13.05554	13.03537	10.83420	11.75
oct	15	12.91197	12.89180	-40.30519	11.15	oct	15	13.05555	13.03537	10.83395	11.29
oct	22	12.91201	12.89181	-40.30497	10.69	oct	22	13.05557	13.03538	10.83359	10.83
oct	29	12.91204	12.89183	-40.30472	10.23	oct	29	13.05559	13.03539	10.83326	10.37
nov	5	12.91209	12.89186	-40.30460	9.77	nov	5	13.05563	13.03540	10.83283	9.91
nov	12	12.91213	12.89189	-40.30443	9.31	nov	12	13.05566	13.03542	10.83247	9.45
nov	19	12.91220	12.89193	-40.30443	8.85	nov	19	13.05572	13.03545	10.83198	8.99
nov	26	12.91225	12.89197	-40.30439	8.39	nov	26	13.05576	13.03548	10.83157	8.53
dic	3	12.91233	12.89202	-40.30451	7.93	dic	3	13.05582	13.03551	10.83105	8.07
dic	10	12.91240	12.89207	-40.30458	7.47	dic	10	13.05587	13.03555	10.83064	7.61
dic	17	12.91249	12.89213	-40.30484	7.01	dic	17	13.05594	13.03559	10.83010	7.15
dic	24	12.91256	12.89218	-40.30505	6.55	dic	24	13.05600	13.03563	10.82969	6.69



## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

64394						66249					
V			Sp			V			Sp		
4.23			G0V			3.38			A3V		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	13.21558	13.19611	27.75962	6.31	ene	1	13.59751	13.57805	-0.71267	6.69
ene	8	13.21566	13.19616	27.75919	5.85	ene	8	13.59758	13.57809	-0.71311	6.23
ene	15	13.21572	13.19621	27.75888	5.39	ene	15	13.59764	13.57813	-0.71348	5.77
ene	22	13.21580	13.19626	27.75854	4.93	ene	22	13.59772	13.57818	-0.71392	5.31
ene	29	13.21586	13.19631	27.75835	4.47	ene	29	13.59777	13.57822	-0.71425	4.85
feb	5	13.21593	13.19635	27.75815	4.01	feb	5	13.59784	13.57826	-0.71463	4.39
feb	12	13.21598	13.19639	27.75810	3.55	feb	12	13.59789	13.57830	-0.71488	3.93
feb	19	13.21604	13.19643	27.75801	3.09	feb	19	13.59795	13.57834	-0.71521	3.47
feb	26	13.21609	13.19647	27.75809	2.63	feb	26	13.59799	13.57837	-0.71540	3.01
mar	5	13.21614	13.19650	27.75814	2.17	mar	5	13.59804	13.57840	-0.71563	2.55
mar	12	13.21616	13.19652	27.75835	1.71	mar	12	13.59807	13.57843	-0.71572	2.09
mar	19	13.21621	13.19654	27.75848	1.25	mar	19	13.59812	13.57845	-0.71590	1.63
mar	26	13.21623	13.19655	27.75877	0.79	mar	26	13.59814	13.57847	-0.71593	1.17
abr	2	13.21625	13.19656	27.75901	0.33	abr	2	13.59817	13.57848	-0.71601	0.71
abr	9	13.21626	13.19656	27.75938	23.87	abr	9	13.59818	13.57849	-0.71596	0.25
abr	16	13.21628	13.19656	27.75964	23.41	abr	16	13.59821	13.57849	-0.71601	23.79
abr	23	13.21628	13.19655	27.76003	22.95	abr	23	13.59822	13.57849	-0.71591	23.33
abr	30	13.21628	13.19653	27.76034	22.49	abr	30	13.59823	13.57848	-0.71589	22.87
may	7	13.21627	13.19651	27.76074	22.03	may	7	13.59823	13.57847	-0.71575	22.41
may	14	13.21627	13.19649	27.76102	21.57	may	14	13.59824	13.57845	-0.71572	21.95
may	21	13.21625	13.19645	27.76139	21.11	may	21	13.59823	13.57843	-0.71556	21.49
may	28	13.21624	13.19642	27.76166	20.65	may	28	13.59823	13.57840	-0.71548	21.03
jun	4	13.21622	13.19638	27.76199	20.19	jun	4	13.59821	13.57837	-0.71531	20.57
jun	11	13.21621	13.19634	27.76218	19.73	jun	11	13.59821	13.57834	-0.71524	20.11
jun	18	13.21618	13.19629	27.76243	19.27	jun	18	13.59820	13.57831	-0.71508	19.65
jun	25	13.21616	13.19625	27.76260	18.81	jun	25	13.59818	13.57827	-0.71498	19.19
jul	2	13.21614	13.19620	27.76277	18.35	jul	2	13.59816	13.57823	-0.71482	18.73
jul	9	13.21612	13.19616	27.76283	17.89	jul	9	13.59815	13.57819	-0.71476	18.27
jul	16	13.21609	13.19611	27.76291	17.43	jul	16	13.59813	13.57815	-0.71463	17.81
jul	23	13.21606	13.19607	27.76293	16.97	jul	23	13.59811	13.57811	-0.71454	17.35
jul	30	13.21603	13.19602	27.76292	16.51	jul	30	13.59808	13.57807	-0.71442	16.89
ago	6	13.21601	13.19598	27.76283	16.05	ago	6	13.59806	13.57803	-0.71438	16.43
ago	13	13.21599	13.19593	27.76271	15.59	ago	13	13.59805	13.57799	-0.71431	15.97
ago	20	13.21596	13.19590	27.76257	15.13	ago	20	13.59802	13.57795	-0.71426	15.51
ago	27	13.21594	13.19586	27.76237	14.67	ago	27	13.59800	13.57792	-0.71422	15.05
sep	3	13.21593	13.19583	27.76213	14.21	sep	3	13.59798	13.57789	-0.71422	14.59
sep	10	13.21592	13.19580	27.76182	13.75	sep	10	13.59798	13.57786	-0.71424	14.13
sep	17	13.21590	13.19578	27.76153	13.29	sep	17	13.59796	13.57784	-0.71425	13.67
sep	24	13.21590	13.19576	27.76115	12.83	sep	24	13.59796	13.57781	-0.71432	13.21
oct	1	13.21589	13.19575	27.76076	12.37	oct	1	13.59795	13.57780	-0.71440	12.75
oct	8	13.21590	13.19574	27.76029	11.91	oct	8	13.59796	13.57779	-0.71455	12.29
oct	15	13.21591	13.19573	27.75986	11.45	oct	15	13.59796	13.57778	-0.71465	11.83
oct	22	13.21593	13.19573	27.75933	10.99	oct	22	13.59798	13.57778	-0.71487	11.37
oct	29	13.21595	13.19574	27.75883	10.53	oct	29	13.59799	13.57779	-0.71507	10.91
nov	5	13.21599	13.19576	27.75825	10.07	nov	5	13.59803	13.57780	-0.71537	10.45
nov	12	13.21602	13.19578	27.75774	9.61	nov	12	13.59805	13.57781	-0.71561	9.99
nov	19	13.21607	13.19580	27.75712	9.15	nov	19	13.59810	13.57783	-0.71598	9.53
nov	26	13.21611	13.19583	27.75660	8.69	nov	26	13.59814	13.57786	-0.71629	9.07
dic	3	13.21618	13.19586	27.75599	8.23	dic	3	13.59820	13.57789	-0.71671	8.61
dic	10	13.21623	13.19590	27.75551	7.77	dic	10	13.59824	13.57792	-0.71705	8.15
dic	17	13.21630	13.19594	27.75492	7.31	dic	17	13.59831	13.57795	-0.71752	7.69
dic	24	13.21636	13.19599	27.75448	6.85	dic	24	13.59837	13.57799	-0.71789	7.23

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>67494</b>						<b>68895</b>					
		V		Sp				V		Sp	
		4.96		K0III				3.25		K2III	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	13.85174	13.83227	-18.24635	6.95	ene	1	14.12771	14.10824	-26.79007	7.22
ene	8	13.85182	13.83232	-18.24673	6.49	ene	8	14.12779	14.10829	-26.79038	6.76
ene	15	13.85188	13.83237	-18.24707	6.03	ene	15	14.12785	14.10834	-26.79069	6.30
ene	22	13.85195	13.83241	-18.24750	5.57	ene	22	14.12793	14.10839	-26.79108	5.84
ene	29	13.85201	13.83246	-18.24786	5.11	ene	29	14.12800	14.10844	-26.79142	5.38
feb	5	13.85208	13.83251	-18.24828	4.65	feb	5	14.12807	14.10849	-26.79183	4.92
feb	12	13.85213	13.83255	-18.24861	4.19	feb	12	14.12813	14.10854	-26.79218	4.46
feb	19	13.85220	13.83259	-18.24904	3.73	feb	19	14.12820	14.10859	-26.79262	4.00
feb	26	13.85225	13.83263	-18.24935	3.27	feb	26	14.12825	14.10863	-26.79297	3.54
mar	5	13.85230	13.83266	-18.24972	2.81	mar	5	14.12831	14.10867	-26.79338	3.08
mar	12	13.85234	13.83269	-18.24997	2.35	mar	12	14.12835	14.10871	-26.79369	2.62
mar	19	13.85239	13.83272	-18.25033	1.89	mar	19	14.12841	14.10874	-26.79411	2.16
mar	26	13.85241	13.83274	-18.25054	1.43	mar	26	14.12844	14.10877	-26.79439	1.70
abr	2	13.85245	13.83276	-18.25082	0.97	abr	2	14.12848	14.10879	-26.79475	1.24
abr	9	13.85247	13.83277	-18.25096	0.51	abr	9	14.12850	14.10881	-26.79499	0.78
abr	16	13.85250	13.83278	-18.25122	0.05	abr	16	14.12854	14.10882	-26.79533	0.32
abr	23	13.85251	13.83278	-18.25132	23.59	abr	23	14.12855	14.10882	-26.79553	23.86
abr	30	13.85253	13.83278	-18.25150	23.13	abr	30	14.12857	14.10883	-26.79580	23.40
may	7	13.85253	13.83277	-18.25155	22.67	may	7	14.12858	14.10882	-26.79595	22.94
may	14	13.85254	13.83276	-18.25171	22.21	may	14	14.12859	14.10881	-26.79620	22.48
may	21	13.85254	13.83274	-18.25173	21.75	may	21	14.12860	14.10880	-26.79631	22.02
may	28	13.85254	13.83272	-18.25182	21.29	may	28	14.12860	14.10878	-26.79649	21.56
jun	4	13.85253	13.83269	-18.25179	20.83	jun	4	14.12859	14.10875	-26.79655	21.10
jun	11	13.85253	13.83266	-18.25186	20.37	jun	11	14.12859	14.10872	-26.79670	20.64
jun	18	13.85251	13.83263	-18.25181	19.91	jun	18	14.12858	14.10869	-26.79672	20.18
jun	25	13.85250	13.83259	-18.25181	19.45	jun	25	14.12856	14.10865	-26.79679	19.72
jul	2	13.85248	13.83255	-18.25172	18.99	jul	2	14.12855	14.10861	-26.79676	19.26
jul	9	13.85247	13.83251	-18.25171	18.53	jul	9	14.12853	14.10857	-26.79680	18.80
jul	16	13.85245	13.83247	-18.25161	18.07	jul	16	14.12851	14.10853	-26.79674	18.34
jul	23	13.85242	13.83242	-18.25153	17.61	jul	23	14.12848	14.10848	-26.79670	17.88
jul	30	13.85240	13.83238	-18.25140	17.15	jul	30	14.12846	14.10844	-26.79657	17.42
ago	6	13.85237	13.83234	-18.25132	16.69	ago	6	14.12843	14.10839	-26.79651	16.96
ago	13	13.85235	13.83230	-18.25119	16.23	ago	13	14.12841	14.10835	-26.79637	16.50
ago	20	13.85232	13.83226	-18.25105	15.77	ago	20	14.12837	14.10830	-26.79622	16.04
ago	27	13.85231	13.83222	-18.25090	15.31	ago	27	14.12835	14.10826	-26.79604	15.58
sep	3	13.85228	13.83218	-18.25078	14.85	sep	3	14.12832	14.10822	-26.79589	15.12
sep	10	13.85227	13.83215	-18.25066	14.39	sep	10	14.12831	14.10819	-26.79571	14.66
sep	17	13.85225	13.83212	-18.25051	13.93	sep	17	14.12828	14.10816	-26.79550	14.20
sep	24	13.85224	13.83210	-18.25040	13.47	sep	24	14.12827	14.10813	-26.79532	13.74
oct	1	13.85223	13.83208	-18.25029	13.01	oct	1	14.12825	14.10811	-26.79514	13.28
oct	8	13.85224	13.83207	-18.25024	12.55	oct	8	14.12826	14.10809	-26.79499	12.82
oct	15	13.85224	13.83206	-18.25015	12.09	oct	15	14.12825	14.10808	-26.79481	12.36
oct	22	13.85226	13.83206	-18.25016	11.63	oct	22	14.12827	14.10807	-26.79471	11.90
oct	29	13.85227	13.83206	-18.25014	11.17	oct	29	14.12828	14.10807	-26.79459	11.44
nov	5	13.85230	13.83207	-18.25021	10.71	nov	5	14.12831	14.10808	-26.79455	10.98
nov	12	13.85232	13.83209	-18.25024	10.25	nov	12	14.12833	14.10809	-26.79447	10.52
nov	19	13.85238	13.83211	-18.25040	9.79	nov	19	14.12838	14.10811	-26.79452	10.06
nov	26	13.85241	13.83213	-18.25052	9.33	nov	26	14.12842	14.10814	-26.79454	9.60
dic	3	13.85247	13.83216	-18.25077	8.87	dic	3	14.12848	14.10817	-26.79468	9.14
dic	10	13.85252	13.83220	-18.25095	8.41	dic	10	14.12853	14.10820	-26.79476	8.68
dic	17	13.85259	13.83223	-18.25129	7.95	dic	17	14.12860	14.10824	-26.79501	8.22
dic	24	13.85265	13.83227	-18.25154	7.49	dic	24	14.12866	14.10829	-26.79518	7.76

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

68933							69763						
V			Sp				V			Sp			
2.06			K0IIIb				5.72			B1.5III			
		$\alpha$	$\alpha_c$		$\delta$	Hp			$\alpha$	$\alpha_c$		$\delta$	Hp
m	d	h	h		°	h	m	d	h	h		°	h
ene	1	14.13360	14.11414	-36.47917	7.23	ene	1	14.30730	14.28784	-66.68901	7.40		
ene	8	14.13369	14.11419	-36.47944	6.77	ene	8	14.30745	14.28795	-66.68907	6.94		
ene	15	14.13376	14.11425	-36.47971	6.31	ene	15	14.30757	14.28806	-66.68917	6.48		
ene	22	14.13385	14.11431	-36.48008	5.85	ene	22	14.30773	14.28819	-66.68939	6.02		
ene	29	14.13391	14.11436	-36.48041	5.39	ene	29	14.30785	14.28830	-66.68963	5.56		
feb	5	14.13400	14.11442	-36.48083	4.93	feb	5	14.30800	14.28842	-66.68998	5.10		
feb	12	14.13405	14.11447	-36.48119	4.47	feb	12	14.30811	14.28853	-66.69031	4.64		
feb	19	14.13413	14.11452	-36.48167	4.01	feb	19	14.30826	14.28864	-66.69079	4.18		
feb	26	14.13419	14.11457	-36.48206	3.55	feb	26	14.30836	14.28874	-66.69123	3.72		
mar	5	14.13425	14.11461	-36.48253	3.09	mar	5	14.30848	14.28884	-66.69179	3.26		
mar	12	14.13430	14.11465	-36.48291	2.63	mar	12	14.30857	14.28892	-66.69228	2.80		
mar	19	14.13436	14.11469	-36.48341	2.17	mar	19	14.30867	14.28901	-66.69292	2.34		
mar	26	14.13439	14.11472	-36.48378	1.71	mar	26	14.30875	14.28908	-66.69347	1.88		
abr	2	14.13443	14.11475	-36.48424	1.25	abr	2	14.30883	14.28914	-66.69413	1.42		
abr	9	14.13446	14.11476	-36.48457	0.79	abr	9	14.30888	14.28918	-66.69469	0.96		
abr	16	14.13450	14.11478	-36.48502	0.33	abr	16	14.30894	14.28922	-66.69538	0.50		
abr	23	14.13451	14.11479	-36.48533	23.87	abr	23	14.30898	14.28925	-66.69595	0.04		
abr	30	14.13453	14.11479	-36.48571	23.41	abr	30	14.30901	14.28926	-66.69662	23.58		
may	7	14.13454	14.11478	-36.48597	22.95	may	7	14.30902	14.28926	-66.69715	23.12		
may	14	14.13456	14.11477	-36.48633	22.49	may	14	14.30904	14.28925	-66.69780	22.66		
may	21	14.13456	14.11476	-36.48655	22.03	may	21	14.30904	14.28924	-66.69829	22.20		
may	28	14.13456	14.11474	-36.48683	21.57	may	28	14.30902	14.28920	-66.69886	21.74		
jun	4	14.13455	14.11471	-36.48698	21.11	jun	4	14.30900	14.28916	-66.69928	21.28		
jun	11	14.13455	14.11468	-36.48722	20.65	jun	11	14.30897	14.28910	-66.69978	20.82		
jun	18	14.13453	14.11464	-36.48732	20.19	jun	18	14.30893	14.28904	-66.70013	20.36		
jun	25	14.13451	14.11460	-36.48747	19.73	jun	25	14.30887	14.28896	-66.70050	19.90		
jul	2	14.13449	14.11456	-36.48749	19.27	jul	2	14.30882	14.28889	-66.70073	19.44		
jul	9	14.13447	14.11451	-36.48759	18.81	jul	9	14.30875	14.28880	-66.70101	18.98		
jul	16	14.13445	14.11447	-36.48756	18.35	jul	16	14.30869	14.28871	-66.70114	18.52		
jul	23	14.13441	14.11441	-36.48755	17.89	jul	23	14.30860	14.28861	-66.70126	18.06		
jul	30	14.13438	14.11437	-36.48744	17.43	jul	30	14.30853	14.28851	-66.70125	17.60		
ago	6	14.13435	14.11431	-36.48738	16.97	ago	6	14.30844	14.28841	-66.70125	17.14		
ago	13	14.13432	14.11427	-36.48723	16.51	ago	13	14.30837	14.28831	-66.70114	16.68		
ago	20	14.13428	14.11422	-36.48706	16.05	ago	20	14.30827	14.28821	-66.70097	16.22		
ago	27	14.13426	14.11417	-36.48684	15.59	ago	27	14.30821	14.28812	-66.70072	15.76		
sep	3	14.13422	14.11413	-36.48664	15.13	sep	3	14.30812	14.28802	-66.70046	15.30		
sep	10	14.13421	14.11409	-36.48641	14.67	sep	10	14.30807	14.28795	-66.70012	14.84		
sep	17	14.13417	14.11405	-36.48614	14.21	sep	17	14.30799	14.28787	-66.69972	14.38		
sep	24	14.13416	14.11402	-36.48587	13.75	sep	24	14.30796	14.28781	-66.69928	13.92		
oct	1	14.13415	14.11400	-36.48561	13.29	oct	1	14.30790	14.28776	-66.69883	13.46		
oct	8	14.13415	14.11398	-36.48537	12.83	oct	8	14.30789	14.28773	-66.69836	13.00		
oct	15	14.13414	14.11397	-36.48509	12.37	oct	15	14.30786	14.28769	-66.69784	12.54		
oct	22	14.13416	14.11396	-36.48487	11.91	oct	22	14.30788	14.28769	-66.69735	12.08		
oct	29	14.13417	14.11396	-36.48465	11.45	oct	29	14.30789	14.28768	-66.69684	11.62		
nov	5	14.13420	14.11397	-36.48451	10.99	nov	5	14.30794	14.28771	-66.69640	11.16		
nov	12	14.13423	14.11399	-36.48432	10.53	nov	12	14.30797	14.28773	-66.69591	10.70		
nov	19	14.13428	14.11401	-36.48426	10.07	nov	19	14.30806	14.28779	-66.69554	10.24		
nov	26	14.13432	14.11404	-36.48417	9.61	nov	26	14.30812	14.28784	-66.69514	9.78		
dic	3	14.13439	14.11407	-36.48421	9.15	dic	3	14.30823	14.28792	-66.69488	9.32		
dic	10	14.13444	14.11411	-36.48420	8.69	dic	10	14.30832	14.28799	-66.69458	8.86		
dic	17	14.13452	14.11416	-36.48436	8.23	dic	17	14.30845	14.28809	-66.69445	8.40		
dic	24	14.13458	14.11421	-36.48446	7.77	dic	24	14.30857	14.28819	-66.69430	7.94		

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

71683						71957					
		V		Sp				V		Sp	
		-0.01		G2V				3.87		F2III	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	14.68562	14.66615	-60.92496	7.78	ene	1	14.73753	14.71806	-5.75724	7.83
ene	8	14.68574	14.66625	-60.92501	7.32	ene	8	14.73760	14.71810	-5.75763	7.37
ene	15	14.68584	14.66633	-60.92510	6.86	ene	15	14.73765	14.71815	-5.75799	6.91
ene	22	14.68598	14.66643	-60.92529	6.40	ene	22	14.73773	14.71819	-5.75838	6.45
ene	29	14.68608	14.66652	-60.92550	5.94	ene	29	14.73779	14.71823	-5.75871	5.99
feb	5	14.68620	14.66662	-60.92582	5.48	feb	5	14.73786	14.71828	-5.75907	5.53
feb	12	14.68629	14.66671	-60.92612	5.02	feb	12	14.73791	14.71832	-5.75935	5.07
feb	19	14.68642	14.66681	-60.92655	4.56	feb	19	14.73798	14.71837	-5.75967	4.61
feb	26	14.68651	14.66689	-60.92694	4.10	feb	26	14.73803	14.71841	-5.75989	4.15
mar	5	14.68661	14.66697	-60.92745	3.64	mar	5	14.73809	14.71845	-5.76014	3.69
mar	12	14.68668	14.66704	-60.92789	3.18	mar	12	14.73813	14.71849	-5.76027	3.23
mar	19	14.68678	14.66711	-60.92847	2.72	mar	19	14.73819	14.71852	-5.76048	2.77
mar	26	14.68684	14.66717	-60.92896	2.26	mar	26	14.73822	14.71855	-5.76054	2.31
abr	2	14.68691	14.66722	-60.92956	1.80	abr	2	14.73827	14.71858	-5.76066	1.85
abr	9	14.68696	14.66726	-60.93006	1.34	abr	9	14.73829	14.71860	-5.76065	1.39
abr	16	14.68702	14.66730	-60.93068	0.88	abr	16	14.73833	14.71861	-5.76074	0.93
abr	23	14.68705	14.66732	-60.93119	0.42	abr	23	14.73835	14.71862	-5.76067	0.47
abr	30	14.68708	14.66734	-60.93179	23.96	abr	30	14.73838	14.71863	-5.76069	0.01
may	7	14.68710	14.66734	-60.93227	23.50	may	7	14.73839	14.71863	-5.76058	23.55
may	14	14.68712	14.66734	-60.93286	23.04	may	14	14.73841	14.71863	-5.76059	23.09
may	21	14.68713	14.66732	-60.93330	22.58	may	21	14.73842	14.71862	-5.76045	22.63
may	28	14.68712	14.66730	-60.93382	22.12	may	28	14.73843	14.71860	-5.76041	22.17
jun	4	14.68711	14.66727	-60.93420	21.66	jun	4	14.73843	14.71858	-5.76026	21.71
jun	11	14.68709	14.66722	-60.93467	21.20	jun	11	14.73843	14.71856	-5.76023	21.25
jun	18	14.68706	14.66718	-60.93498	20.74	jun	18	14.73843	14.71854	-5.76007	20.79
jun	25	14.68702	14.66711	-60.93533	20.28	jun	25	14.73842	14.71851	-5.76001	20.33
jul	2	14.68698	14.66705	-60.93554	19.82	jul	2	14.73840	14.71847	-5.75985	19.87
jul	9	14.68693	14.66698	-60.93581	19.36	jul	9	14.73839	14.71844	-5.75981	19.41
jul	16	14.68689	14.66691	-60.93594	18.90	jul	16	14.73838	14.71840	-5.75967	18.95
jul	23	14.68682	14.66682	-60.93606	18.44	jul	23	14.73836	14.71836	-5.75961	18.49
jul	30	14.68676	14.66674	-60.93605	17.98	jul	30	14.73833	14.71832	-5.75948	18.03
ago	6	14.68669	14.66665	-60.93608	17.52	ago	6	14.73831	14.71827	-5.75944	17.57
ago	13	14.68663	14.66658	-60.93598	17.06	ago	13	14.73829	14.71823	-5.75935	17.11
ago	20	14.68655	14.66649	-60.93585	16.60	ago	20	14.73826	14.71819	-5.75930	16.65
ago	27	14.68650	14.66641	-60.93563	16.14	ago	27	14.73824	14.71815	-5.75921	16.19
sep	3	14.68643	14.66633	-60.93540	15.68	sep	3	14.73821	14.71811	-5.75920	15.73
sep	10	14.68638	14.66626	-60.93510	15.22	sep	10	14.73819	14.71807	-5.75918	15.27
sep	17	14.68631	14.66619	-60.93475	14.76	sep	17	14.73816	14.71804	-5.75916	14.81
sep	24	14.68628	14.66614	-60.93435	14.30	sep	24	14.73815	14.71801	-5.75916	14.35
oct	1	14.68623	14.66608	-60.93395	13.84	oct	1	14.73813	14.71798	-5.75920	13.89
oct	8	14.68622	14.66605	-60.93353	13.38	oct	8	14.73813	14.71796	-5.75927	13.43
oct	15	14.68619	14.66601	-60.93305	12.92	oct	15	14.73812	14.71794	-5.75933	12.97
oct	22	14.68620	14.66600	-60.93261	12.46	oct	22	14.73812	14.71793	-5.75945	12.51
oct	29	14.68620	14.66599	-60.93215	12.00	oct	29	14.73813	14.71792	-5.75957	12.05
nov	5	14.68623	14.66600	-60.93174	11.54	nov	5	14.73815	14.71792	-5.75977	11.59
nov	12	14.68625	14.66602	-60.93129	11.08	nov	12	14.73816	14.71792	-5.75994	11.13
nov	19	14.68632	14.66605	-60.93095	10.62	nov	19	14.73820	14.71793	-5.76021	10.67
nov	26	14.68637	14.66609	-60.93058	10.16	nov	26	14.73822	14.71794	-5.76045	10.21
dic	3	14.68646	14.66614	-60.93034	9.70	dic	3	14.73827	14.71796	-5.76078	9.75
dic	10	14.68652	14.66620	-60.93005	9.24	dic	10	14.73831	14.71798	-5.76105	9.29
dic	17	14.68663	14.66627	-60.92993	8.78	dic	17	14.73837	14.71801	-5.76145	8.83
dic	24	14.68673	14.66635	-60.92978	8.32	dic	24	14.73842	14.71805	-5.76176	8.37

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

73714						74824											
V			Sp			V			Sp								
3.25			M3/M4III			4.07			A3V								
α		α <sub>c</sub>		δ		α		α <sub>c</sub>		δ		Hp					
m	d	h	h	°	h	m	d	h	h	°	h	m	d	h			
ene	1	15.08987	15.07040	-25.36980	8.18	ene	1	15.32134	15.30187	-58.88211	8.42	ene	1	15.32134	15.30187	-58.88211	8.42
ene	8	15.08994	15.07044	-25.37003	7.72	ene	8	15.32145	15.30195	-58.88206	7.96	ene	8	15.32145	15.30195	-58.88206	7.96
ene	15	15.09000	15.07049	-25.37027	7.26	ene	15	15.32154	15.30203	-58.88206	7.50	ene	15	15.32154	15.30203	-58.88206	7.50
ene	22	15.09008	15.07054	-25.37056	6.80	ene	22	15.32167	15.30213	-58.88213	7.04	ene	22	15.32167	15.30213	-58.88213	7.04
ene	29	15.09014	15.07059	-25.37083	6.34	ene	29	15.32177	15.30222	-58.88224	6.58	ene	29	15.32177	15.30222	-58.88224	6.58
feb	5	15.09022	15.07064	-25.37115	5.88	feb	5	15.32189	15.30231	-58.88244	6.12	feb	5	15.32189	15.30231	-58.88244	6.12
feb	12	15.09028	15.07069	-25.37142	5.42	feb	12	15.32199	15.30240	-58.88264	5.66	feb	12	15.32199	15.30240	-58.88264	5.66
feb	19	15.09036	15.07075	-25.37177	4.96	feb	19	15.32211	15.30250	-58.88294	5.20	feb	19	15.32211	15.30250	-58.88294	5.20
feb	26	15.09041	15.07079	-25.37204	4.50	feb	26	15.32221	15.30259	-58.88323	4.74	feb	26	15.32221	15.30259	-58.88323	4.74
mar	5	15.09048	15.07084	-25.37237	4.04	mar	5	15.32232	15.30268	-58.88362	4.28	mar	5	15.32232	15.30268	-58.88362	4.28
mar	12	15.09053	15.07088	-25.37261	3.58	mar	12	15.32240	15.30276	-58.88397	3.82	mar	12	15.32240	15.30276	-58.88397	3.82
mar	19	15.09059	15.07093	-25.37294	3.12	mar	19	15.32250	15.30284	-58.88444	3.36	mar	19	15.32250	15.30284	-58.88444	3.36
mar	26	15.09064	15.07096	-25.37316	2.66	mar	26	15.32258	15.30291	-58.88485	2.90	mar	26	15.32258	15.30291	-58.88485	2.90
abr	2	15.09069	15.07100	-25.37345	2.20	abr	2	15.32267	15.30298	-58.88536	2.44	abr	2	15.32267	15.30298	-58.88536	2.44
abr	9	15.09072	15.07103	-25.37363	1.75	abr	9	15.32273	15.30303	-58.88579	1.98	abr	9	15.32273	15.30303	-58.88579	1.98
abr	16	15.09077	15.07105	-25.37391	1.29	abr	16	15.32280	15.30309	-58.88635	1.52	abr	16	15.32280	15.30309	-58.88635	1.52
abr	23	15.09080	15.07107	-25.37406	0.83	abr	23	15.32286	15.30313	-58.88680	1.06	abr	23	15.32286	15.30313	-58.88680	1.06
abr	30	15.09083	15.07108	-25.37429	0.37	abr	30	15.32291	15.30316	-58.88736	0.60	abr	30	15.32291	15.30316	-58.88736	0.60
may	7	15.09085	15.07109	-25.37440	23.91	may	7	15.32294	15.30319	-58.88780	0.14	may	7	15.32294	15.30319	-58.88780	0.14
may	14	15.09088	15.07109	-25.37463	23.45	may	14	15.32299	15.30320	-58.88837	23.68	may	14	15.32299	15.30320	-58.88837	23.68
may	21	15.09089	15.07109	-25.37471	22.99	may	21	15.32301	15.30321	-58.88880	23.22	may	21	15.32301	15.30321	-58.88880	23.22
may	28	15.09090	15.07108	-25.37488	22.53	may	28	15.32303	15.30320	-58.88933	22.76	may	28	15.32303	15.30320	-58.88933	22.76
jun	4	15.09091	15.07107	-25.37492	22.07	jun	4	15.32303	15.30319	-58.88972	22.30	jun	4	15.32303	15.30319	-58.88972	22.30
jun	11	15.09092	15.07105	-25.37508	21.61	jun	11	15.32304	15.30317	-58.89021	21.84	jun	11	15.32304	15.30317	-58.89021	21.84
jun	18	15.09091	15.07103	-25.37511	21.15	jun	18	15.32303	15.30314	-58.89056	21.38	jun	18	15.32303	15.30314	-58.89056	21.38
jun	25	15.09091	15.07100	-25.37521	20.69	jun	25	15.32301	15.30310	-58.89097	20.92	jun	25	15.32301	15.30310	-58.89097	20.92
jul	2	15.09090	15.07097	-25.37519	20.23	jul	2	15.32299	15.30305	-58.89123	20.46	jul	2	15.32299	15.30305	-58.89123	20.46
jul	9	15.09089	15.07093	-25.37528	19.77	jul	9	15.32296	15.30300	-58.89158	20.00	jul	9	15.32296	15.30300	-58.89158	20.00
jul	16	15.09087	15.07089	-25.37524	19.31	jul	16	15.32292	15.30294	-58.89177	19.54	jul	16	15.32292	15.30294	-58.89177	19.54
jul	23	15.09085	15.07085	-25.37526	18.85	jul	23	15.32287	15.30287	-58.89199	19.08	jul	23	15.32287	15.30287	-58.89199	19.08
jul	30	15.09082	15.07081	-25.37518	18.39	jul	30	15.32282	15.30280	-58.89206	18.62	jul	30	15.32282	15.30280	-58.89206	18.62
ago	6	15.09080	15.07076	-25.37518	17.93	ago	6	15.32276	15.30273	-58.89219	18.16	ago	6	15.32276	15.30273	-58.89219	18.16
ago	13	15.09077	15.07072	-25.37509	17.47	ago	13	15.32271	15.30266	-58.89218	17.70	ago	13	15.32271	15.30266	-58.89218	17.70
ago	20	15.09074	15.07067	-25.37502	17.01	ago	20	15.32264	15.30257	-58.89216	17.24	ago	20	15.32264	15.30257	-58.89216	17.24
ago	27	15.09071	15.07063	-25.37489	16.55	ago	27	15.32259	15.30250	-58.89203	16.78	ago	27	15.32259	15.30250	-58.89203	16.78
sep	3	15.09068	15.07058	-25.37481	16.09	sep	3	15.32252	15.30242	-58.89191	16.32	sep	3	15.32252	15.30242	-58.89191	16.32
sep	10	15.09066	15.07054	-25.37467	15.63	sep	10	15.32247	15.30235	-58.89170	15.86	sep	10	15.32247	15.30235	-58.89170	15.86
sep	17	15.09062	15.07050	-25.37454	15.17	sep	17	15.32240	15.30228	-58.89144	15.40	sep	17	15.32240	15.30228	-58.89144	15.40
sep	24	15.09061	15.07046	-25.37439	14.71	sep	24	15.32236	15.30222	-58.89112	14.94	sep	24	15.32236	15.30222	-58.89112	14.94
oct	1	15.09058	15.07043	-25.37426	14.25	oct	1	15.32231	15.30216	-58.89080	14.48	oct	1	15.32231	15.30216	-58.89080	14.48
oct	8	15.09057	15.07041	-25.37414	13.79	oct	8	15.32229	15.30212	-58.89043	14.02	oct	8	15.32229	15.30212	-58.89043	14.02
oct	15	15.09056	15.07038	-25.37400	13.33	oct	15	15.32224	15.30207	-58.89002	13.56	oct	15	15.32224	15.30207	-58.89002	13.56
oct	22	15.09056	15.07037	-25.37389	12.87	oct	22	15.32224	15.30205	-58.88961	13.10	oct	22	15.32224	15.30205	-58.88961	13.10
oct	29	15.09056	15.07035	-25.37379	12.41	oct	29	15.32223	15.30202	-58.88918	12.64	oct	29	15.32223	15.30202	-58.88918	12.64
nov	5	15.09058	15.07035	-25.37375	11.95	nov	5	15.32225	15.30202	-58.88878	12.18	nov	5	15.32225	15.30202	-58.88878	12.18
nov	12	15.09059	15.07035	-25.37367	11.49	nov	12	15.32226	15.30202	-58.88834	11.72	nov	12	15.32226	15.30202	-58.88834	11.72
nov	19	15.09063	15.07036	-25.37368	11.03	nov	19	15.32231	15.30204	-58.88797	11.26	nov	19	15.32231	15.30204	-58.88797	11.26
nov	26	15.09065	15.07037	-25.37366	10.57	nov	26	15.32234	15.30206	-58.88758	10.80	nov	26	15.32234	15.30206	-58.88758	10.80
dic	3	15.09070	15.07039	-25.37375	10.11	dic	3	15.32241	15.30210	-58.88729	10.34	dic	3	15.32241	15.30210	-58.88729	10.34
dic	10	15.09074	15.07041	-25.37379	9.65	dic	10	15.32247	15.30214	-58.88696	9.88	dic	10	15.32247	15.30214	-58.88696	9.88
dic	17	15.09081	15.07045	-25.37397	9.19	dic	17	15.32256	15.30220	-58.88676	9.42	dic	17	15.32256	15.30220	-58.88676	9.42
dic	24	15.09086	15.07048	-25.37408	8.73	dic	24	15.32264	15.30227	-58.88654	8.96	dic	24	15.32264	15.30227	-58.88654	8.96

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

75458						76440					
V			Sp			V			Sp		
3.29			K2III			4.11			K0III		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	15.42363	15.40417	58.88151	8.52	ene	1	15.64638	15.62691	-66.38906	8.74
ene	8	15.42371	15.40422	58.88093	8.06	ene	8	15.64651	15.62702	-66.38890	8.28
ene	15	15.42380	15.40429	58.88041	7.60	ene	15	15.64662	15.62712	-66.38880	7.82
ene	22	15.42389	15.40435	58.87994	7.14	ene	22	15.64678	15.62724	-66.38878	7.36
ene	29	15.42399	15.40443	58.87959	6.68	ene	29	15.64690	15.62735	-66.38879	6.90
feb	5	15.42409	15.40451	58.87929	6.22	feb	5	15.64706	15.62748	-66.38890	6.44
feb	12	15.42418	15.40460	58.87912	5.76	feb	12	15.64718	15.62759	-66.38903	5.98
feb	19	15.42428	15.40467	58.87899	5.30	feb	19	15.64734	15.62773	-66.38926	5.52
feb	26	15.42438	15.40476	58.87901	4.84	feb	26	15.64746	15.62784	-66.38949	5.06
mar	5	15.42447	15.40483	58.87907	4.38	mar	5	15.64760	15.62796	-66.38983	4.60
mar	12	15.42455	15.40491	58.87928	3.92	mar	12	15.64771	15.62807	-66.39014	4.14
mar	19	15.42464	15.40497	58.87949	3.46	mar	19	15.64785	15.62818	-66.39058	3.68
mar	26	15.42471	15.40504	58.87987	3.00	mar	26	15.64795	15.62828	-66.39097	3.22
abr	2	15.42478	15.40509	58.88022	2.54	abr	2	15.64807	15.62838	-66.39147	2.76
abr	9	15.42483	15.40514	58.88073	2.08	abr	9	15.64815	15.62846	-66.39191	2.30
abr	16	15.42489	15.40517	58.88118	1.62	abr	16	15.64826	15.62854	-66.39248	1.84
abr	23	15.42492	15.40519	58.88178	1.16	abr	23	15.64833	15.62860	-66.39295	1.38
abr	30	15.42495	15.40521	58.88231	0.70	abr	30	15.64841	15.62866	-66.39354	0.92
may	7	15.42497	15.40521	58.88296	0.24	may	7	15.64846	15.62870	-66.39402	0.46
may	14	15.42499	15.40520	58.88349	23.78	may	14	15.64852	15.62873	-66.39464	0.00
may	21	15.42499	15.40519	58.88414	23.32	may	21	15.64855	15.62875	-66.39513	23.54
may	28	15.42498	15.40516	58.88468	22.86	may	28	15.64858	15.62876	-66.39571	23.08
jun	4	15.42496	15.40512	58.88529	22.40	jun	4	15.64859	15.62875	-66.39617	22.62
jun	11	15.42495	15.40508	58.88575	21.94	jun	11	15.64860	15.62873	-66.39674	22.16
jun	18	15.42491	15.40502	58.88630	21.48	jun	18	15.64860	15.62871	-66.39716	21.70
jun	25	15.42488	15.40496	58.88669	21.02	jun	25	15.64857	15.62866	-66.39765	21.24
jul	2	15.42482	15.40489	58.88714	20.56	jul	2	15.64854	15.62861	-66.39799	20.78
jul	9	15.42478	15.40482	58.88741	20.10	jul	9	15.64850	15.62855	-66.39842	20.32
jul	16	15.42472	15.40474	58.88774	19.64	jul	16	15.64846	15.62848	-66.39868	19.86
jul	23	15.42466	15.40466	58.88791	19.18	jul	23	15.64839	15.62840	-66.39898	19.40
jul	30	15.42459	15.40457	58.88810	18.72	jul	30	15.64833	15.62831	-66.39913	18.94
ago	6	15.42452	15.40449	58.88812	18.26	ago	6	15.64825	15.62822	-66.39934	18.48
ago	13	15.42445	15.40439	58.88817	17.80	ago	13	15.64819	15.62813	-66.39939	18.02
ago	20	15.42438	15.40431	58.88808	17.34	ago	20	15.64809	15.62802	-66.39943	17.56
ago	27	15.42430	15.40421	58.88798	16.88	ago	27	15.64801	15.62793	-66.39935	17.10
sep	3	15.42423	15.40413	58.88774	16.42	sep	3	15.64792	15.62782	-66.39928	16.64
sep	10	15.42416	15.40404	58.88749	15.96	sep	10	15.64785	15.62774	-66.39909	16.18
sep	17	15.42409	15.40397	58.88715	15.50	sep	17	15.64776	15.62764	-66.39887	15.72
sep	24	15.42402	15.40388	58.88677	15.04	sep	24	15.64770	15.62756	-66.39856	15.26
oct	1	15.42397	15.40382	58.88629	14.58	oct	1	15.64762	15.62747	-66.39824	14.80
oct	8	15.42391	15.40374	58.88577	14.12	oct	8	15.64758	15.62741	-66.39786	14.34
oct	15	15.42387	15.40369	58.88521	13.66	oct	15	15.64752	15.62735	-66.39744	13.88
oct	22	15.42383	15.40363	58.88459	13.20	oct	22	15.64751	15.62731	-66.39698	13.42
oct	29	15.42380	15.40360	58.88394	12.74	oct	29	15.64748	15.62727	-66.39651	12.96
nov	5	15.42379	15.40356	58.88323	12.28	nov	5	15.64749	15.62726	-66.39606	12.50
nov	12	15.42378	15.40354	58.88253	11.82	nov	12	15.64749	15.62725	-66.39556	12.04
nov	19	15.42379	15.40352	58.88177	11.36	nov	19	15.64754	15.62727	-66.39511	11.58
nov	26	15.42380	15.40352	58.88105	10.90	nov	26	15.64757	15.62729	-66.39464	11.12
dic	3	15.42384	15.40352	58.88026	10.44	dic	3	15.64765	15.62733	-66.39425	10.66
dic	10	15.42387	15.40355	58.87956	9.98	dic	10	15.64770	15.62738	-66.39383	10.20
dic	17	15.42393	15.40357	58.87879	9.52	dic	17	15.64781	15.62745	-66.39353	9.74
dic	24	15.42399	15.40361	58.87815	9.06	dic	24	15.64791	15.62753	-66.39320	9.28

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>77622</b>						<b>81724</b>					
V			Sp			V			Sp		
3.71			A2m			4.91			G8II/III		
		α	α <sub>c</sub>	δ	Hp			α	α <sub>c</sub>	δ	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	15.86562	15.84615	4.40835	8.96	ene	1	16.71453	16.69506	-17.78566	9.81
ene	8	15.86568	15.84618	4.40794	8.50	ene	8	16.71459	16.69509	-17.78582	9.35
ene	15	15.86573	15.84622	4.40754	8.04	ene	15	16.71464	16.69513	-17.78602	8.89
ene	22	15.86580	15.84626	4.40716	7.58	ene	22	16.71471	16.69516	-17.78620	8.43
ene	29	15.86585	15.84630	4.40681	7.12	ene	29	16.71476	16.69521	-17.78640	7.97
feb	5	15.86592	15.84634	4.40648	6.66	feb	5	16.71483	16.69525	-17.78659	7.51
feb	12	15.86597	15.84639	4.40621	6.20	feb	12	16.71488	16.69530	-17.78678	7.05
feb	19	15.86604	15.84643	4.40594	5.74	feb	19	16.71496	16.69535	-17.78697	6.59
feb	26	15.86610	15.84648	4.40577	5.28	feb	26	16.71502	16.69540	-17.78712	6.13
mar	5	15.86616	15.84652	4.40559	4.82	mar	5	16.71509	16.69545	-17.78729	5.67
mar	12	15.86621	15.84657	4.40552	4.36	mar	12	16.71514	16.69550	-17.78741	5.21
mar	19	15.86627	15.84661	4.40542	3.90	mar	19	16.71521	16.69555	-17.78755	4.75
mar	26	15.86632	15.84665	4.40545	3.44	mar	26	16.71526	16.69559	-17.78762	4.29
abr	2	15.86637	15.84668	4.40545	2.98	abr	2	16.71533	16.69564	-17.78774	3.83
abr	9	15.86641	15.84671	4.40557	2.52	abr	9	16.71537	16.69568	-17.78776	3.37
abr	16	15.86646	15.84674	4.40563	2.06	abr	16	16.71543	16.69572	-17.78785	2.91
abr	23	15.86649	15.84676	4.40583	1.60	abr	23	16.71548	16.69575	-17.78784	2.45
abr	30	15.86652	15.84678	4.40595	1.14	abr	30	16.71553	16.69578	-17.78790	1.99
may	7	15.86655	15.84679	4.40620	0.68	may	7	16.71556	16.69580	-17.78786	1.53
may	14	15.86658	15.84680	4.40634	0.22	may	14	16.71561	16.69583	-17.78792	1.07
may	21	15.86660	15.84680	4.40663	23.76	may	21	16.71564	16.69584	-17.78785	0.61
may	28	15.86662	15.84680	4.40681	23.30	may	28	16.71567	16.69585	-17.78789	0.15
jun	4	15.86663	15.84679	4.40711	22.84	jun	4	16.71569	16.69585	-17.78781	23.69
jun	11	15.86664	15.84677	4.40726	22.38	jun	11	16.71572	16.69585	-17.78787	23.23
jun	18	15.86664	15.84676	4.40755	21.92	jun	18	16.71574	16.69585	-17.78779	22.77
jun	25	15.86665	15.84673	4.40772	21.46	jun	25	16.71575	16.69584	-17.78782	22.31
jul	2	15.86664	15.84671	4.40799	21.00	jul	2	16.71575	16.69582	-17.78774	21.85
jul	9	15.86663	15.84668	4.40811	20.54	jul	9	16.71576	16.69580	-17.78779	21.39
jul	16	15.86662	15.84664	4.40833	20.08	jul	16	16.71575	16.69577	-17.78771	20.93
jul	23	15.86660	15.84661	4.40845	19.62	jul	23	16.71574	16.69574	-17.78775	20.47
jul	30	15.86658	15.84657	4.40864	19.16	jul	30	16.71573	16.69571	-17.78767	20.01
ago	6	15.86656	15.84653	4.40869	18.70	ago	6	16.71571	16.69567	-17.78771	19.55
ago	13	15.86654	15.84648	4.40882	18.24	ago	13	16.71569	16.69563	-17.78764	19.09
ago	20	15.86651	15.84644	4.40886	17.78	ago	20	16.71566	16.69559	-17.78766	18.63
ago	27	15.86648	15.84640	4.40894	17.32	ago	27	16.71563	16.69555	-17.78758	18.17
sep	3	15.86645	15.84635	4.40891	16.86	sep	3	16.71560	16.69550	-17.78760	17.71
sep	10	15.86643	15.84631	4.40892	16.40	sep	10	16.71558	16.69546	-17.78754	17.25
sep	17	15.86639	15.84627	4.40887	15.94	sep	17	16.71553	16.69541	-17.78753	16.79
sep	24	15.86637	15.84623	4.40883	15.48	sep	24	16.71551	16.69537	-17.78745	16.33
oct	1	15.86634	15.84619	4.40871	15.02	oct	1	16.71547	16.69533	-17.78746	15.87
oct	8	15.86633	15.84616	4.40859	14.56	oct	8	16.71546	16.69529	-17.78741	15.41
oct	15	15.86630	15.84613	4.40843	14.10	oct	15	16.71542	16.69525	-17.78739	14.95
oct	22	15.86630	15.84610	4.40825	13.64	oct	22	16.71541	16.69522	-17.78736	14.49
oct	29	15.86628	15.84608	4.40802	13.18	oct	29	16.71539	16.69519	-17.78736	14.03
nov	5	15.86629	15.84606	4.40775	12.72	nov	5	16.71540	16.69517	-17.78736	13.57
nov	12	15.86629	15.84605	4.40749	12.26	nov	12	16.71538	16.69515	-17.78738	13.11
nov	19	15.86631	15.84604	4.40716	11.80	nov	19	16.71540	16.69513	-17.78741	12.65
nov	26	15.86633	15.84604	4.40684	11.34	nov	26	16.71541	16.69513	-17.78745	12.19
dic	3	15.86636	15.84605	4.40644	10.88	dic	3	16.71544	16.69513	-17.78753	11.73
dic	10	15.86638	15.84606	4.40609	10.42	dic	10	16.71545	16.69513	-17.78761	11.27
dic	17	15.86643	15.84607	4.40565	9.96	dic	17	16.71550	16.69514	-17.78776	10.81
dic	24	15.86647	15.84610	4.40528	9.50	dic	24	16.71553	16.69516	-17.78787	10.35

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>81833</b>						<b>82396</b>					
V			Sp			V			Sp		
3.48			G8III-IV			2.29			K2IIIb		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	16.72757	16.70811	38.87624	9.82	ene	1	16.86028	16.84082	-34.33316	9.95
ene	8	16.72763	16.70813	38.87563	9.36	ene	8	16.86035	16.84085	-34.33313	9.49
ene	15	16.72767	16.70816	38.87502	8.90	ene	15	16.86040	16.84089	-34.33316	9.03
ene	22	16.72774	16.70820	38.87448	8.44	ene	22	16.86048	16.84094	-34.33318	8.57
ene	29	16.72780	16.70824	38.87398	7.98	ene	29	16.86054	16.84098	-34.33324	8.11
feb	5	16.72787	16.70829	38.87355	7.52	feb	5	16.86062	16.84104	-34.33332	7.65
feb	12	16.72793	16.70834	38.87319	7.06	feb	12	16.86068	16.84109	-34.33341	7.19
feb	19	16.72800	16.70839	38.87289	6.60	feb	19	16.86076	16.84115	-34.33353	6.73
feb	26	16.72807	16.70845	38.87271	6.14	feb	26	16.86083	16.84121	-34.33363	6.27
mar	5	16.72814	16.70850	38.87257	5.68	mar	5	16.86091	16.84127	-34.33378	5.82
mar	12	16.72820	16.70856	38.87256	5.22	mar	12	16.86097	16.84133	-34.33390	5.36
mar	19	16.72827	16.70861	38.87257	4.76	mar	19	16.86105	16.84139	-34.33407	4.90
mar	26	16.72833	16.70866	38.87274	4.30	mar	26	16.86111	16.84144	-34.33419	4.44
abr	2	16.72840	16.70871	38.87291	3.84	abr	2	16.86119	16.84150	-34.33438	3.98
abr	9	16.72845	16.70875	38.87322	3.38	abr	9	16.86124	16.84154	-34.33450	3.52
abr	16	16.72851	16.70879	38.87351	2.92	abr	16	16.86131	16.84159	-34.33470	3.06
abr	23	16.72855	16.70883	38.87396	2.46	abr	23	16.86136	16.84163	-34.33482	2.60
abr	30	16.72860	16.70885	38.87436	2.00	abr	30	16.86142	16.84167	-34.33502	2.14
may	7	16.72864	16.70888	38.87489	1.54	may	7	16.86146	16.84170	-34.33514	1.68
may	14	16.72868	16.70889	38.87534	1.08	may	14	16.86152	16.84173	-34.33537	1.22
may	21	16.72870	16.70890	38.87594	0.62	may	21	16.86155	16.84175	-34.33548	0.76
may	28	16.72873	16.70890	38.87643	0.16	may	28	16.86159	16.84177	-34.33570	0.30
jun	4	16.72874	16.70890	38.87704	23.70	jun	4	16.86162	16.84178	-34.33581	23.84
jun	11	16.72875	16.70888	38.87751	23.24	jun	11	16.86165	16.84178	-34.33605	23.38
jun	18	16.72875	16.70887	38.87811	22.78	jun	18	16.86167	16.84178	-34.33615	22.92
jun	25	16.72875	16.70884	38.87856	22.32	jun	25	16.86168	16.84177	-34.33637	22.46
jul	2	16.72874	16.70881	38.87911	21.86	jul	2	16.86169	16.84176	-34.33646	22.00
jul	9	16.72873	16.70878	38.87948	21.40	jul	9	16.86169	16.84174	-34.33668	21.54
jul	16	16.72871	16.70873	38.87995	20.94	jul	16	16.86169	16.84171	-34.33676	21.08
jul	23	16.72869	16.70869	38.88027	20.48	jul	23	16.86168	16.84168	-34.33694	20.62
jul	30	16.72866	16.70864	38.88064	20.02	jul	30	16.86166	16.84164	-34.33699	20.16
ago	6	16.72862	16.70859	38.88084	19.56	ago	6	16.86164	16.84161	-34.33714	19.70
ago	13	16.72859	16.70853	38.88110	19.10	ago	13	16.86162	16.84156	-34.33717	19.24
ago	20	16.72854	16.70847	38.88121	18.64	ago	20	16.86158	16.84152	-34.33726	18.78
ago	27	16.72850	16.70841	38.88135	18.18	ago	27	16.86155	16.84147	-34.33723	18.32
sep	3	16.72845	16.70835	38.88133	17.72	sep	3	16.86151	16.84142	-34.33728	17.86
sep	10	16.72840	16.70829	38.88134	17.26	sep	10	16.86149	16.84137	-34.33723	17.40
sep	17	16.72835	16.70823	38.88122	16.80	sep	17	16.86144	16.84131	-34.33721	16.94
sep	24	16.72831	16.70817	38.88111	16.34	sep	24	16.86141	16.84127	-34.33709	16.48
oct	1	16.72826	16.70811	38.88086	15.88	oct	1	16.86137	16.84122	-34.33704	16.02
oct	8	16.72822	16.70805	38.88060	15.42	oct	8	16.86134	16.84117	-34.33691	15.56
oct	15	16.72818	16.70801	38.88026	14.96	oct	15	16.86130	16.84113	-34.33679	15.10
oct	22	16.72815	16.70795	38.87989	14.50	oct	22	16.86129	16.84109	-34.33662	14.64
oct	29	16.72812	16.70791	38.87943	14.04	oct	29	16.86127	16.84106	-34.33648	14.18
nov	5	16.72810	16.70787	38.87894	13.58	nov	5	16.86127	16.84104	-34.33633	13.72
nov	12	16.72808	16.70784	38.87841	13.12	nov	12	16.86125	16.84101	-34.33617	13.26
nov	19	16.72808	16.70781	38.87782	12.66	nov	19	16.86127	16.84100	-34.33602	12.80
nov	26	16.72808	16.70779	38.87722	12.20	nov	26	16.86127	16.84099	-34.33587	12.34
dic	3	16.72809	16.70778	38.87657	11.74	dic	3	16.86130	16.84099	-34.33576	11.88
dic	10	16.72810	16.70778	38.87593	11.28	dic	10	16.86132	16.84099	-34.33563	11.42
dic	17	16.72813	16.70777	38.87524	10.82	dic	17	16.86137	16.84101	-34.33555	10.96
dic	24	16.72816	16.70779	38.87461	10.36	dic	24	16.86141	16.84103	-34.33545	10.50



**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>86796</b>						<b>91262</b>					
		V		Sp				V		Sp	
		5.12		G5V				0.03		AOVvar	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	17.76533	17.74587	-51.84457	10.86	ene	1	18.62801	18.60854	38.80393	11.72
ene	8	17.76540	17.74590	-51.84426	10.40	ene	8	18.62803	18.60854	38.80334	11.26
ene	15	17.76545	17.74594	-51.84404	9.94	ene	15	18.62805	18.60855	38.80269	10.80
ene	22	17.76554	17.74600	-51.84379	9.48	ene	22	18.62810	18.60855	38.80213	10.34
ene	29	17.76561	17.74606	-51.84360	9.02	ene	29	18.62813	18.60858	38.80153	9.88
feb	5	17.76570	17.74612	-51.84343	8.56	feb	5	18.62818	18.60860	38.80102	9.42
feb	12	17.76577	17.74619	-51.84331	8.10	feb	12	18.62822	18.60864	38.80052	8.96
feb	19	17.76588	17.74627	-51.84320	7.64	feb	19	18.62829	18.60867	38.80012	8.50
feb	26	17.76596	17.74634	-51.84313	7.18	feb	26	18.62834	18.60872	38.79976	8.04
mar	5	17.76607	17.74643	-51.84310	6.72	mar	5	18.62841	18.60877	38.79948	7.58
mar	12	17.76614	17.74650	-51.84309	6.26	mar	12	18.62846	18.60882	38.79927	7.12
mar	19	17.76625	17.74659	-51.84313	5.80	mar	19	18.62854	18.60887	38.79914	6.66
mar	26	17.76634	17.74667	-51.84316	5.34	mar	26	18.62860	18.60893	38.79912	6.20
abr	2	17.76644	17.74675	-51.84328	4.88	abr	2	18.62867	18.60898	38.79915	5.74
abr	9	17.76652	17.74682	-51.84337	4.42	abr	9	18.62873	18.60904	38.79928	5.28
abr	16	17.76662	17.74690	-51.84354	3.96	abr	16	18.62880	18.60909	38.79947	4.82
abr	23	17.76669	17.74697	-51.84367	3.50	abr	23	18.62886	18.60914	38.79977	4.36
abr	30	17.76678	17.74704	-51.84391	3.04	abr	30	18.62893	18.60918	38.80009	3.90
may	7	17.76685	17.74709	-51.84409	2.58	may	7	18.62898	18.60922	38.80052	3.44
may	14	17.76693	17.74715	-51.84439	2.12	may	14	18.62904	18.60926	38.80094	2.98
may	21	17.76699	17.74719	-51.84460	1.66	may	21	18.62909	18.60929	38.80149	2.52
may	28	17.76706	17.74724	-51.84494	1.20	may	28	18.62914	18.60932	38.80198	2.06
jun	4	17.76710	17.74726	-51.84519	0.74	jun	4	18.62918	18.60934	38.80260	1.60
jun	11	17.76716	17.74729	-51.84557	0.28	jun	11	18.62922	18.60935	38.80312	1.14
jun	18	17.76720	17.74731	-51.84583	23.82	jun	18	18.62925	18.60936	38.80378	0.68
jun	25	17.76723	17.74732	-51.84622	23.36	jun	25	18.62927	18.60936	38.80433	0.22
jul	2	17.76725	17.74731	-51.84649	22.90	jul	2	18.62928	18.60935	38.80498	23.76
jul	9	17.76726	17.74731	-51.84690	22.44	jul	9	18.62929	18.60934	38.80549	23.30
jul	16	17.76727	17.74729	-51.84716	21.98	jul	16	18.62930	18.60932	38.80612	22.84
jul	23	17.76726	17.74727	-51.84753	21.52	jul	23	18.62929	18.60929	38.80660	22.38
jul	30	17.76725	17.74723	-51.84776	21.06	jul	30	18.62928	18.60926	38.80717	21.92
ago	6	17.76723	17.74719	-51.84810	20.60	ago	6	18.62926	18.60923	38.80756	21.46
ago	13	17.76721	17.74715	-51.84828	20.14	ago	13	18.62924	18.60918	38.80805	21.00
ago	20	17.76716	17.74710	-51.84855	19.68	ago	20	18.62921	18.60914	38.80837	20.54
ago	27	17.76713	17.74704	-51.84866	19.22	ago	27	18.62917	18.60909	38.80876	20.08
sep	3	17.76708	17.74698	-51.84885	18.76	sep	3	18.62913	18.60903	38.80897	19.62
sep	10	17.76703	17.74692	-51.84890	18.30	sep	10	18.62909	18.60897	38.80924	19.16
sep	17	17.76697	17.74685	-51.84899	17.84	sep	17	18.62904	18.60892	38.80935	18.70
sep	24	17.76692	17.74678	-51.84893	17.38	sep	24	18.62899	18.60885	38.80950	18.24
oct	1	17.76686	17.74672	-51.84892	16.92	oct	1	18.62894	18.60879	38.80948	17.78
oct	8	17.76683	17.74666	-51.84880	16.46	oct	8	18.62890	18.60873	38.80949	17.32
oct	15	17.76676	17.74659	-51.84869	16.00	oct	15	18.62884	18.60867	38.80936	16.86
oct	22	17.76673	17.74654	-51.84846	15.54	oct	22	18.62880	18.60861	38.80925	16.40
oct	29	17.76669	17.74648	-51.84827	15.08	oct	29	18.62875	18.60855	38.80899	15.94
nov	5	17.76667	17.74644	-51.84800	14.62	nov	5	18.62872	18.60849	38.80874	15.48
nov	12	17.76664	17.74640	-51.84772	14.16	nov	12	18.62868	18.60844	38.80837	15.02
nov	19	17.76664	17.74637	-51.84740	13.70	nov	19	18.62866	18.60839	38.80800	14.56
nov	26	17.76663	17.74634	-51.84708	13.24	nov	26	18.62863	18.60835	38.80753	14.10
dic	3	17.76665	17.74634	-51.84676	12.78	dic	3	18.62862	18.60830	38.80704	13.64
dic	10	17.76665	17.74633	-51.84642	12.32	dic	10	18.62860	18.60828	38.80650	13.18
dic	17	17.76670	17.74634	-51.84609	11.86	dic	17	18.62861	18.60825	38.80593	12.72
dic	24	17.76673	17.74635	-51.84575	11.40	dic	24	18.62861	18.60823	38.80534	12.26

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

92262						97649					
V			Sp			V			Sp		
6.86			F6V			0.76			A7IV-V		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	18.82450	18.80503	-14.68404	11.92	ene	1	19.86454	19.84507	8.92826	12.96
ene	8	18.82453	18.80504	-14.68410	11.46	ene	8	19.86455	19.84506	8.92798	12.50
ene	15	18.82456	18.80505	-14.68425	11.00	ene	15	19.86456	19.84505	8.92760	12.04
ene	22	18.82460	18.80506	-14.68430	10.54	ene	22	19.86460	19.84505	8.92734	11.58
ene	29	18.82464	18.80509	-14.68441	10.08	ene	29	19.86461	19.84506	8.92700	11.12
feb	5	18.82469	18.80511	-14.68447	9.62	feb	5	19.86465	19.84507	8.92674	10.66
feb	12	18.82473	18.80514	-14.68457	9.16	feb	12	19.86468	19.84509	8.92644	10.20
feb	19	18.82479	18.80518	-14.68459	8.70	feb	19	19.86473	19.84512	8.92625	9.74
feb	26	18.82484	18.80522	-14.68463	8.24	feb	26	19.86476	19.84514	8.92604	9.28
mar	5	18.82490	18.80527	-14.68464	7.78	mar	5	19.86482	19.84518	8.92590	8.82
mar	12	18.82495	18.80531	-14.68465	7.32	mar	12	19.86485	19.84521	8.92577	8.36
mar	19	18.82502	18.80536	-14.68461	6.86	mar	19	19.86492	19.84525	8.92574	7.90
mar	26	18.82508	18.80540	-14.68455	6.40	mar	26	19.86496	19.84529	8.92574	7.44
abr	2	18.82514	18.80545	-14.68449	5.94	abr	2	19.86503	19.84534	8.92579	6.98
abr	9	18.82520	18.80550	-14.68439	5.48	abr	9	19.86507	19.84538	8.92589	6.52
abr	16	18.82527	18.80555	-14.68429	5.02	abr	16	19.86514	19.84542	8.92604	6.06
abr	23	18.82532	18.80559	-14.68413	4.56	abr	23	19.86520	19.84547	8.92626	5.60
abr	30	18.82539	18.80564	-14.68402	4.10	abr	30	19.86526	19.84551	8.92649	5.14
may	7	18.82544	18.80568	-14.68384	3.64	may	7	19.86531	19.84555	8.92679	4.68
may	14	18.82550	18.80572	-14.68372	3.18	may	14	19.86538	19.84559	8.92709	4.22
may	21	18.82555	18.80575	-14.68351	2.72	may	21	19.86543	19.84563	8.92747	3.76
may	28	18.82561	18.80578	-14.68340	2.26	may	28	19.86549	19.84566	8.92781	3.30
jun	4	18.82565	18.80581	-14.68320	1.80	jun	4	19.86554	19.84569	8.92823	2.84
jun	11	18.82570	18.80583	-14.68310	1.34	jun	11	19.86559	19.84572	8.92859	2.38
jun	18	18.82574	18.80585	-14.68291	0.88	jun	18	19.86563	19.84574	8.92905	1.92
jun	25	18.82577	18.80586	-14.68283	0.42	jun	25	19.86567	19.84576	8.92941	1.46
jul	2	18.82580	18.80586	-14.68266	23.96	jul	2	19.86571	19.84577	8.92986	1.00
jul	9	18.82582	18.80587	-14.68263	23.50	jul	9	19.86574	19.84578	8.93020	0.54
jul	16	18.82584	18.80586	-14.68248	23.04	jul	16	19.86576	19.84578	8.93064	0.08
jul	23	18.82585	18.80585	-14.68247	22.58	jul	23	19.86578	19.84578	8.93094	23.62
jul	30	18.82585	18.80584	-14.68235	22.12	jul	30	19.86579	19.84577	8.93134	23.16
ago	6	18.82585	18.80582	-14.68238	21.66	ago	6	19.86580	19.84576	8.93159	22.70
ago	13	18.82585	18.80579	-14.68229	21.20	ago	13	19.86580	19.84575	8.93194	22.24
ago	20	18.82583	18.80576	-14.68234	20.74	ago	20	19.86579	19.84572	8.93213	21.78
ago	27	18.82582	18.80573	-14.68227	20.28	ago	27	19.86578	19.84570	8.93242	21.32
sep	3	18.82579	18.80569	-14.68234	19.82	sep	3	19.86576	19.84567	8.93256	20.86
sep	10	18.82577	18.80565	-14.68229	19.36	sep	10	19.86575	19.84563	8.93278	20.40
sep	17	18.82573	18.80561	-14.68237	18.90	sep	17	19.86572	19.84560	8.93284	19.94
sep	24	18.82571	18.80557	-14.68234	18.44	sep	24	19.86570	19.84555	8.93300	19.48
oct	1	18.82567	18.80552	-14.68242	17.98	oct	1	19.86566	19.84551	8.93300	19.02
oct	8	18.82565	18.80548	-14.68241	17.52	oct	8	19.86564	19.84547	8.93308	18.56
oct	15	18.82561	18.80543	-14.68249	17.06	oct	15	19.86560	19.84542	8.93301	18.10
oct	22	18.82558	18.80539	-14.68248	16.60	oct	22	19.86557	19.84537	8.93303	17.64
oct	29	18.82555	18.80534	-14.68255	16.14	oct	29	19.86553	19.84533	8.93290	17.18
nov	5	18.82554	18.80531	-14.68257	15.68	nov	5	19.86551	19.84528	8.93283	16.72
nov	12	18.82551	18.80527	-14.68265	15.22	nov	12	19.86548	19.84524	8.93265	16.26
nov	19	18.82550	18.80523	-14.68267	14.76	nov	19	19.86547	19.84520	8.93252	15.80
nov	26	18.82549	18.80520	-14.68275	14.30	nov	26	19.86544	19.84516	8.93229	15.34
dic	3	18.82549	18.80518	-14.68280	13.84	dic	3	19.86543	19.84512	8.93208	14.88
dic	10	18.82548	18.80516	-14.68289	13.38	dic	10	19.86542	19.84509	8.93180	14.42
dic	17	18.82551	18.80515	-14.68296	12.92	dic	17	19.86542	19.84506	8.93155	13.96
dic	24	18.82551	18.80514	-14.68303	12.46	dic	24	19.86542	19.84504	8.93125	13.50

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

99240						102485					
V			Sp			V			Sp		
3.55			G5IV-Vvar			4.13			F5V		
α		α <sub>c</sub>	δ		Hp	α		α <sub>c</sub>	δ		Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	20.18161	20.16214	-66.12491	13.28	ene	1	20.79036	20.77089	-25.19056	13.88
ene	8	20.18163	20.16213	-66.12435	12.82	ene	8	20.79037	20.77087	-25.19043	13.42
ene	15	20.18164	20.16213	-66.12389	12.36	ene	15	20.79037	20.77086	-25.19040	12.96
ene	22	20.18170	20.16216	-66.12329	11.90	ene	22	20.79040	20.77086	-25.19023	12.50
ene	29	20.18174	20.16219	-66.12278	11.44	ene	29	20.79041	20.77086	-25.19015	12.04
feb	5	20.18181	20.16223	-66.12221	10.98	feb	5	20.79044	20.77086	-25.18996	11.58
feb	12	20.18187	20.16229	-66.12174	10.52	feb	12	20.79046	20.77087	-25.18985	11.12
feb	19	20.18197	20.16236	-66.12118	10.06	feb	19	20.79051	20.77089	-25.18962	10.66
feb	26	20.18205	20.16243	-66.12071	9.60	feb	26	20.79054	20.77092	-25.18946	10.20
mar	5	20.18217	20.16253	-66.12023	9.14	mar	5	20.79059	20.77095	-25.18923	9.74
mar	12	20.18226	20.16262	-66.11983	8.68	mar	12	20.79062	20.77098	-25.18905	9.28
mar	19	20.18240	20.16273	-66.11940	8.22	mar	19	20.79068	20.77102	-25.18878	8.82
mar	26	20.18250	20.16283	-66.11905	7.76	mar	26	20.79073	20.77106	-25.18854	8.36
abr	2	20.18264	20.16295	-66.11873	7.30	abr	2	20.79079	20.77110	-25.18828	7.91
abr	9	20.18276	20.16306	-66.11848	6.84	abr	9	20.79084	20.77115	-25.18804	7.45
abr	16	20.18291	20.16319	-66.11824	6.38	abr	16	20.79091	20.77120	-25.18775	6.99
abr	23	20.18303	20.16331	-66.11806	5.92	abr	23	20.79097	20.77124	-25.18747	6.53
abr	30	20.18318	20.16343	-66.11795	5.46	abr	30	20.79104	20.77130	-25.18721	6.07
may	7	20.18330	20.16354	-66.11788	5.00	may	7	20.79110	20.77134	-25.18694	5.61
may	14	20.18345	20.16367	-66.11787	4.54	may	14	20.79118	20.77140	-25.18669	5.15
may	21	20.18357	20.16377	-66.11789	4.08	may	21	20.79124	20.77144	-25.18642	4.69
may	28	20.18371	20.16389	-66.11801	3.62	may	28	20.79131	20.77149	-25.18621	4.23
jun	4	20.18382	20.16398	-66.11814	3.16	jun	4	20.79137	20.77153	-25.18598	3.77
jun	11	20.18395	20.16408	-66.11837	2.70	jun	11	20.79144	20.77157	-25.18582	3.31
jun	18	20.18404	20.16416	-66.11858	2.24	jun	18	20.79150	20.77161	-25.18561	2.85
jun	25	20.18415	20.16423	-66.11892	1.78	jun	25	20.79156	20.77164	-25.18552	2.39
jul	2	20.18422	20.16429	-66.11922	1.32	jul	2	20.79160	20.77167	-25.18538	1.93
jul	9	20.18431	20.16435	-66.11964	0.86	jul	9	20.79165	20.77170	-25.18534	1.47
jul	16	20.18436	20.16439	-66.12000	0.40	jul	16	20.79169	20.77171	-25.18524	1.01
jul	23	20.18441	20.16442	-66.12049	23.94	jul	23	20.79173	20.77173	-25.18528	0.55
jul	30	20.18444	20.16442	-66.12089	23.48	jul	30	20.79175	20.77174	-25.18524	0.09
ago	6	20.18447	20.16443	-66.12141	23.02	ago	6	20.79178	20.77174	-25.18533	23.63
ago	13	20.18447	20.16442	-66.12182	22.56	ago	13	20.79180	20.77174	-25.18533	23.17
ago	20	20.18446	20.16439	-66.12235	22.10	ago	20	20.79180	20.77173	-25.18549	22.71
ago	27	20.18444	20.16435	-66.12274	21.64	ago	27	20.79180	20.77171	-25.18554	22.25
sep	3	20.18440	20.16431	-66.12323	21.18	sep	3	20.79179	20.77170	-25.18571	21.79
sep	10	20.18436	20.16425	-66.12357	20.72	sep	10	20.79179	20.77167	-25.18578	21.33
sep	17	20.18430	20.16417	-66.12400	20.26	sep	17	20.79177	20.77164	-25.18599	20.87
sep	24	20.18423	20.16409	-66.12426	19.80	sep	24	20.79175	20.77161	-25.18607	20.41
oct	1	20.18416	20.16401	-66.12458	19.34	oct	1	20.79172	20.77157	-25.18627	19.95
oct	8	20.18409	20.16392	-66.12473	18.88	oct	8	20.79170	20.77153	-25.18635	19.49
oct	15	20.18399	20.16382	-66.12494	18.42	oct	15	20.79166	20.77149	-25.18655	19.03
oct	22	20.18392	20.16372	-66.12496	17.96	oct	22	20.79164	20.77144	-25.18660	18.57
oct	29	20.18382	20.16362	-66.12502	17.50	oct	29	20.79160	20.77139	-25.18676	18.11
nov	5	20.18376	20.16352	-66.12493	17.04	nov	5	20.79158	20.77135	-25.18679	17.65
nov	12	20.18366	20.16342	-66.12485	16.58	nov	12	20.79154	20.77130	-25.18692	17.19
nov	19	20.18361	20.16334	-66.12461	16.12	nov	19	20.79152	20.77125	-25.18692	16.73
nov	26	20.18354	20.16325	-66.12439	15.66	nov	26	20.79149	20.77121	-25.18698	16.27
dic	3	20.18350	20.16319	-66.12405	15.20	dic	3	20.79148	20.77117	-25.18696	15.81
dic	10	20.18344	20.16312	-66.12372	14.74	dic	10	20.79145	20.77113	-25.18699	15.35
dic	17	20.18343	20.16307	-66.12327	14.28	dic	17	20.79146	20.77110	-25.18692	14.89
dic	24	20.18340	20.16303	-66.12283	13.82	dic	24	20.79144	20.77107	-25.18690	14.43

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

<b>105199</b>						<b>105858</b>					
V			Sp			V			Sp		
2.45			A7IV-V			4.21			F6V		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	21.31788	21.29841	62.68457	14.41	ene	1	21.47116	21.45170	-65.26613	14.57
ene	8	21.31784	21.29834	62.68411	13.95	ene	8	21.47115	21.45165	-65.26562	14.11
ene	15	21.31779	21.29828	62.68350	13.49	ene	15	21.47113	21.45162	-65.26517	13.65
ene	22	21.31777	21.29823	62.68297	13.03	ene	22	21.47114	21.45160	-65.26456	13.19
ene	29	21.31775	21.29820	62.68230	12.57	ene	29	21.47114	21.45159	-65.26403	12.73
feb	5	21.31775	21.29818	62.68171	12.11	feb	5	21.47117	21.45160	-65.26340	12.27
feb	12	21.31776	21.29817	62.68102	11.65	feb	12	21.47119	21.45161	-65.26286	11.81
feb	19	21.31778	21.29817	62.68046	11.19	feb	19	21.47125	21.45164	-65.26218	11.35
feb	26	21.31781	21.29819	62.67983	10.73	feb	26	21.47129	21.45168	-65.26161	10.89
mar	5	21.31785	21.29821	62.67930	10.27	mar	5	21.47137	21.45173	-65.26097	10.43
mar	12	21.31790	21.29826	62.67874	9.81	mar	12	21.47143	21.45179	-65.26043	9.97
mar	19	21.31797	21.29830	62.67832	9.35	mar	19	21.47153	21.45186	-65.25980	9.51
mar	26	21.31804	21.29837	62.67791	8.89	mar	26	21.47161	21.45193	-65.25928	9.05
abr	2	21.31812	21.29843	62.67761	8.43	abr	2	21.47172	21.45203	-65.25874	8.59
abr	9	21.31821	21.29851	62.67734	7.97	abr	9	21.47181	21.45211	-65.25829	8.13
abr	16	21.31830	21.29858	62.67721	7.51	abr	16	21.47194	21.45222	-65.25781	7.67
abr	23	21.31840	21.29867	62.67713	7.05	abr	23	21.47204	21.45231	-65.25741	7.21
abr	30	21.31850	21.29876	62.67714	6.59	abr	30	21.47218	21.45243	-65.25706	6.75
may	7	21.31861	21.29885	62.67723	6.13	may	7	21.47228	21.45253	-65.25677	6.29
may	14	21.31871	21.29893	62.67742	5.67	may	14	21.47243	21.45265	-65.25651	5.83
may	21	21.31882	21.29902	62.67769	5.21	may	21	21.47255	21.45275	-65.25631	5.37
may	28	21.31891	21.29909	62.67802	4.75	may	28	21.47269	21.45286	-65.25620	4.91
jun	4	21.31901	21.29917	62.67844	4.29	jun	4	21.47280	21.45296	-65.25613	4.45
jun	11	21.31910	21.29923	62.67889	3.83	jun	11	21.47294	21.45307	-65.25613	3.99
jun	18	21.31919	21.29930	62.67945	3.37	jun	18	21.47305	21.45316	-65.25615	3.53
jun	25	21.31926	21.29935	62.68000	2.91	jun	25	21.47317	21.45326	-65.25631	3.07
jul	2	21.31933	21.29940	62.68065	2.45	jul	2	21.47326	21.45333	-65.25646	2.61
jul	9	21.31939	21.29943	62.68128	1.99	jul	9	21.47337	21.45341	-65.25672	2.15
jul	16	21.31944	21.29946	62.68201	1.53	jul	16	21.47345	21.45347	-65.25696	1.69
jul	23	21.31947	21.29948	62.68266	1.07	jul	23	21.47353	21.45353	-65.25734	1.23
jul	30	21.31951	21.29949	62.68342	0.61	jul	30	21.47358	21.45357	-65.25768	0.77
ago	6	21.31952	21.29948	62.68409	0.15	ago	6	21.47364	21.45361	-65.25812	0.31
ago	13	21.31953	21.29947	62.68485	23.69	ago	13	21.47368	21.45362	-65.25851	23.85
ago	20	21.31951	21.29945	62.68550	23.23	ago	20	21.47370	21.45363	-65.25903	23.39
ago	27	21.31950	21.29942	62.68623	22.77	ago	27	21.47371	21.45362	-65.25946	22.93
sep	3	21.31947	21.29937	62.68683	22.31	sep	3	21.47371	21.45361	-65.25998	22.47
sep	10	21.31944	21.29932	62.68751	21.85	sep	10	21.47369	21.45357	-65.26039	22.01
sep	17	21.31938	21.29926	62.68803	21.39	sep	17	21.47365	21.45353	-65.26092	21.55
sep	24	21.31933	21.29919	62.68862	20.93	sep	24	21.47361	21.45347	-65.26129	21.09
oct	1	21.31926	21.29911	62.68905	20.47	oct	1	21.47356	21.45341	-65.26174	20.63
oct	8	21.31920	21.29903	62.68954	20.01	oct	8	21.47351	21.45334	-65.26204	20.17
oct	15	21.31912	21.29894	62.68985	19.55	oct	15	21.47343	21.45325	-65.26241	19.71
oct	22	21.31904	21.29885	62.69021	19.09	oct	22	21.47336	21.45316	-65.26260	19.25
oct	29	21.31895	21.29875	62.69039	18.63	oct	29	21.47327	21.45307	-65.26284	18.79
nov	5	21.31888	21.29865	62.69060	18.17	nov	5	21.47321	21.45298	-65.26291	18.33
nov	12	21.31878	21.29855	62.69063	17.71	nov	12	21.47311	21.45287	-65.26302	17.87
nov	19	21.31871	21.29844	62.69069	17.25	nov	19	21.47305	21.45278	-65.26294	17.41
nov	26	21.31862	21.29834	62.69057	16.79	nov	26	21.47296	21.45268	-65.26289	16.95
dic	3	21.31854	21.29823	62.69046	16.33	dic	3	21.47291	21.45259	-65.26269	16.49
dic	10	21.31847	21.29814	62.69018	15.87	dic	10	21.47283	21.45250	-65.26251	16.03
dic	17	21.31840	21.29804	62.68992	15.41	dic	17	21.47279	21.45243	-65.26216	15.57
dic	24	21.31834	21.29796	62.68952	14.95	dic	24	21.47273	21.45236	-65.26183	15.11

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

108870						111449									
		V		Sp				V		Sp					
		4.69		K5V				5.21		F7V					
		$\alpha$		$\alpha_c$		$\delta$		$\alpha$		$\alpha_c$		$\delta$		Hp	
m	d	h	h	h	h	°	h	m	d	h	h	°	h	h	
ene	1	22.08452	22.06505	-56.69599	15.18			ene	1	22.59878	22.57932	-20.59364	15.69		
ene	8	22.08451	22.06501	-56.69561	14.72			ene	8	22.59878	22.57928	-20.59358	15.23		
ene	15	22.08448	22.06497	-56.69529	14.26			ene	15	22.59876	22.57925	-20.59361	14.77		
ene	22	22.08449	22.06495	-56.69478	13.80			ene	22	22.59876	22.57922	-20.59348	14.31		
ene	29	22.08448	22.06493	-56.69436	13.34			ene	29	22.59875	22.57920	-20.59344	13.85		
feb	5	22.08450	22.06492	-56.69382	12.88			feb	5	22.59876	22.57918	-20.59328	13.39		
feb	12	22.08450	22.06492	-56.69336	12.42			feb	12	22.59876	22.57917	-20.59320	12.93		
feb	19	22.08454	22.06493	-56.69274	11.96			feb	19	22.59878	22.57917	-20.59296	12.47		
feb	26	22.08457	22.06495	-56.69222	11.50			feb	26	22.59878	22.57916	-20.59280	12.01		
mar	5	22.08462	22.06498	-56.69162	11.04			mar	5	22.59881	22.57917	-20.59253	11.55		
mar	12	22.08465	22.06501	-56.69111	10.58			mar	12	22.59882	22.57918	-20.59233	11.09		
mar	19	22.08472	22.06506	-56.69049	10.12			mar	19	22.59886	22.57919	-20.59199	10.63		
mar	26	22.08477	22.06510	-56.68996	9.66			mar	26	22.59888	22.57921	-20.59172	10.17		
abr	2	22.08485	22.06516	-56.68940	9.20			abr	2	22.59893	22.57924	-20.59136	9.71		
abr	9	22.08492	22.06522	-56.68892	8.74			abr	9	22.59896	22.57927	-20.59106	9.25		
abr	16	22.08501	22.06530	-56.68838	8.28			abr	16	22.59902	22.57930	-20.59065	8.79		
abr	23	22.08509	22.06536	-56.68793	7.82			abr	23	22.59906	22.57934	-20.59029	8.33		
abr	30	22.08519	22.06544	-56.68750	7.36			abr	30	22.59912	22.57938	-20.58988	7.87		
may	7	22.08528	22.06552	-56.68714	6.90			may	7	22.59917	22.57942	-20.58952	7.41		
may	14	22.08539	22.06561	-56.68677	6.44			may	14	22.59924	22.57946	-20.58910	6.95		
may	21	22.08548	22.06568	-56.68648	5.98			may	21	22.59930	22.57950	-20.58871	6.49		
may	28	22.08560	22.06577	-56.68625	5.52			may	28	22.59937	22.57955	-20.58832	6.03		
jun	4	22.08569	22.06585	-56.68607	5.06			jun	4	22.59943	22.57959	-20.58797	5.57		
jun	11	22.08580	22.06594	-56.68594	4.60			jun	11	22.59951	22.57964	-20.58760	5.11		
jun	18	22.08590	22.06601	-56.68586	4.14			jun	18	22.59957	22.57968	-20.58726	4.65		
jun	25	22.08600	22.06609	-56.68588	3.68			jun	25	22.59964	22.57972	-20.58697	4.19		
jul	2	22.08608	22.06615	-56.68592	3.22			jul	2	22.59969	22.57976	-20.58670	3.73		
jul	9	22.08618	22.06622	-56.68605	2.76			jul	9	22.59976	22.57980	-20.58646	3.27		
jul	16	22.08626	22.06628	-56.68618	2.30			jul	16	22.59981	22.57983	-20.58623	2.81		
jul	23	22.08633	22.06633	-56.68645	1.84			jul	23	22.59986	22.57987	-20.58610	2.35		
jul	30	22.08639	22.06637	-56.68670	1.38			jul	30	22.59991	22.57989	-20.58596	1.89		
ago	6	22.08645	22.06641	-56.68705	0.92			ago	6	22.59995	22.57992	-20.58589	1.43		
ago	13	22.08649	22.06644	-56.68737	0.46			ago	13	22.59999	22.57993	-20.58580	0.97		
ago	20	22.08653	22.06646	-56.68782	0.00			ago	20	22.60001	22.57995	-20.58585	0.51		
ago	27	22.08655	22.06646	-56.68820	23.54			ago	27	22.60004	22.57995	-20.58584	0.05		
sep	3	22.08656	22.06647	-56.68868	23.08			sep	3	22.60005	22.57995	-20.58593	23.59		
sep	10	22.08657	22.06645	-56.68908	22.62			sep	10	22.60007	22.57995	-20.58597	23.13		
sep	17	22.08656	22.06643	-56.68960	22.16			sep	17	22.60006	22.57994	-20.58616	22.68		
sep	24	22.08654	22.06640	-56.68999	21.70			sep	24	22.60007	22.57992	-20.58625	22.22		
oct	1	22.08651	22.06636	-56.69047	21.24			oct	1	22.60005	22.57991	-20.58645	21.76		
oct	8	22.08649	22.06632	-56.69081	20.78			oct	8	22.60005	22.57988	-20.58657	21.30		
oct	15	22.08644	22.06626	-56.69125	20.32			oct	15	22.60003	22.57985	-20.58682	20.84		
oct	22	22.08640	22.06620	-56.69152	19.86			oct	22	22.60001	22.57982	-20.58694	20.38		
oct	29	22.08634	22.06613	-56.69185	19.40			oct	29	22.59999	22.57978	-20.58717	19.92		
nov	5	22.08630	22.06607	-56.69202	18.94			nov	5	22.59997	22.57974	-20.58729	19.46		
nov	12	22.08623	22.06599	-56.69225	18.48			nov	12	22.59994	22.57970	-20.58752	19.00		
nov	19	22.08619	22.06592	-56.69230	18.02			nov	19	22.59992	22.57965	-20.58761	18.54		
nov	26	22.08613	22.06585	-56.69238	17.56			nov	26	22.59989	22.57961	-20.58780	18.08		
dic	3	22.08609	22.06578	-56.69231	17.10			dic	3	22.59988	22.57956	-20.58786	17.62		
dic	10	22.08603	22.06571	-56.69227	16.64			dic	10	22.59984	22.57952	-20.58801	17.16		
dic	17	22.08600	22.06564	-56.69205	16.18			dic	17	22.59983	22.57947	-20.58802	16.70		
dic	24	22.08596	22.06558	-56.69187	15.72			dic	24	22.59981	22.57943	-20.58810	16.24		

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

112440						112623					
		V		Sp				V		Sp	
		3.97		G8II-III				3.49		A3V	
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	22.79361	22.77414	23.68718	15.89	ene	1	22.83186	22.81239	-51.20123	15.93
ene	8	22.79360	22.77410	23.68697	15.43	ene	8	22.83183	22.81233	-51.20094	15.47
ene	15	22.79357	22.77406	23.68662	14.97	ene	15	22.83180	22.81229	-51.20071	15.01
ene	22	22.79357	22.77403	23.68638	14.51	ene	22	22.83179	22.81225	-51.20029	14.55
ene	29	22.79355	22.77400	23.68600	14.05	ene	29	22.83177	22.81222	-51.19995	14.09
feb	5	22.79355	22.77398	23.68572	13.59	feb	5	22.83177	22.81219	-51.19947	13.63
feb	12	22.79354	22.77396	23.68532	13.13	feb	12	22.83176	22.81217	-51.19906	13.17
feb	19	22.79356	22.77394	23.68507	12.67	feb	19	22.83177	22.81216	-51.19848	12.71
feb	26	22.79356	22.77394	23.68471	12.21	feb	26	22.83178	22.81216	-51.19799	12.25
mar	5	22.79357	22.77394	23.68447	11.75	mar	5	22.83180	22.81216	-51.19739	11.79
mar	12	22.79358	22.77394	23.68415	11.29	mar	12	22.83182	22.81217	-51.19688	11.33
mar	19	22.79362	22.77395	23.68399	10.83	mar	19	22.83186	22.81220	-51.19623	10.87
mar	26	22.79364	22.77397	23.68378	10.37	mar	26	22.83189	22.81222	-51.19568	10.41
abr	2	22.79368	22.77399	23.68368	9.91	abr	2	22.83195	22.81226	-51.19506	9.95
abr	9	22.79371	22.77401	23.68355	9.45	abr	9	22.83199	22.81229	-51.19453	9.49
abr	16	22.79376	22.77404	23.68358	8.99	abr	16	22.83206	22.81234	-51.19391	9.03
abr	23	22.79381	22.77408	23.68359	8.53	abr	23	22.83212	22.81239	-51.19338	8.57
abr	30	22.79386	22.77412	23.68370	8.07	abr	30	22.83220	22.81245	-51.19284	8.11
may	7	22.79392	22.77416	23.68381	7.61	may	7	22.83226	22.81250	-51.19237	7.65
may	14	22.79398	22.77420	23.68405	7.15	may	14	22.83236	22.81257	-51.19188	7.19
may	21	22.79404	22.77424	23.68430	6.69	may	21	22.83243	22.81263	-51.19146	6.73
may	28	22.79411	22.77429	23.68461	6.23	may	28	22.83253	22.81270	-51.19108	6.27
jun	4	22.79417	22.77433	23.68494	5.77	jun	4	22.83261	22.81276	-51.19077	5.81
jun	11	22.79424	22.77437	23.68535	5.31	jun	11	22.83271	22.81284	-51.19048	5.35
jun	18	22.79431	22.77442	23.68578	4.85	jun	18	22.83279	22.81290	-51.19025	4.89
jun	25	22.79437	22.77446	23.68622	4.39	jun	25	22.83288	22.81297	-51.19011	4.43
jul	2	22.79443	22.77449	23.68671	3.93	jul	2	22.83296	22.81303	-51.19001	3.97
jul	9	22.79449	22.77453	23.68720	3.47	jul	9	22.83305	22.81310	-51.18998	3.51
jul	16	22.79454	22.77456	23.68773	3.01	jul	16	22.83313	22.81315	-51.18998	3.05
jul	23	22.79459	22.77459	23.68822	2.55	jul	23	22.83320	22.81321	-51.19010	2.59
jul	30	22.79463	22.77462	23.68875	2.09	jul	30	22.83326	22.81325	-51.19022	2.13
ago	6	22.79467	22.77464	23.68924	1.63	ago	6	22.83333	22.81329	-51.19044	1.67
ago	13	22.79471	22.77465	23.68978	1.17	ago	13	22.83338	22.81332	-51.19065	1.21
ago	20	22.79473	22.77466	23.69021	0.71	ago	20	22.83342	22.81335	-51.19100	0.75
ago	27	22.79475	22.77467	23.69071	0.25	ago	27	22.83345	22.81336	-51.19130	0.29
sep	3	22.79477	22.77467	23.69111	23.79	sep	3	22.83347	22.81338	-51.19171	23.83
sep	10	22.79478	22.77466	23.69158	23.33	sep	10	22.83349	22.81338	-51.19206	23.37
sep	17	22.79478	22.77466	23.69190	22.87	sep	17	22.83349	22.81337	-51.19254	22.91
sep	24	22.79478	22.77464	23.69230	22.41	sep	24	22.83349	22.81335	-51.19292	22.45
oct	1	22.79477	22.77462	23.69257	21.95	oct	1	22.83348	22.81333	-51.19338	21.99
oct	8	22.79477	22.77460	23.69290	21.49	oct	8	22.83346	22.81330	-51.19375	21.53
oct	15	22.79474	22.77457	23.69307	21.03	oct	15	22.83343	22.81326	-51.19422	21.07
oct	22	22.79473	22.77454	23.69333	20.57	oct	22	22.83340	22.81321	-51.19454	20.61
oct	29	22.79470	22.77450	23.69343	20.11	oct	29	22.83336	22.81316	-51.19493	20.15
nov	5	22.79469	22.77446	23.69360	19.65	nov	5	22.83333	22.81310	-51.19517	19.69
nov	12	22.79465	22.77442	23.69360	19.19	nov	12	22.83328	22.81304	-51.19549	19.23
nov	19	22.79464	22.77437	23.69369	18.73	nov	19	22.83324	22.81297	-51.19563	18.77
nov	26	22.79461	22.77432	23.69362	18.27	nov	26	22.83319	22.81290	-51.19582	18.31
dic	3	22.79459	22.77427	23.69361	17.81	dic	3	22.83315	22.81284	-51.19585	17.85
dic	10	22.79455	22.77423	23.69344	17.35	dic	10	22.83310	22.81277	-51.19593	17.39
dic	17	22.79454	22.77418	23.69335	16.89	dic	17	22.83307	22.81271	-51.19582	16.93
dic	24	22.79451	22.77413	23.69313	16.43	dic	24	22.83302	22.81264	-51.19575	16.47

## Posiciones aparentes de estrellas brillantes, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

112724						112748					
V			Sp			V			Sp		
3.50			K0III			3.51			M2III		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	22.84092	22.82146	66.32461	15.93	ene	1	22.85152	22.83205	24.72361	15.95
ene	8	22.84085	22.82136	66.32435	15.47	ene	8	22.85150	22.83201	24.72340	15.49
ene	15	22.84077	22.82126	66.32392	15.01	ene	15	22.85148	22.83197	24.72305	15.03
ene	22	22.84072	22.82118	66.32356	14.55	ene	22	22.85147	22.83193	24.72281	14.57
ene	29	22.84065	22.82110	66.32302	14.09	ene	29	22.85146	22.83190	24.72243	14.11
feb	5	22.84061	22.82104	66.32253	13.63	feb	5	22.85146	22.83188	24.72214	13.65
feb	12	22.84057	22.82098	66.32191	13.17	feb	12	22.85144	22.83186	24.72174	13.19
feb	19	22.84056	22.82094	66.32139	12.71	feb	19	22.85146	22.83184	24.72147	12.73
feb	26	22.84054	22.82092	66.32074	12.25	feb	26	22.85145	22.83184	24.72111	12.27
mar	5	22.84055	22.82091	66.32019	11.79	mar	5	22.85147	22.83183	24.72085	11.81
mar	12	22.84056	22.82092	66.31955	11.33	mar	12	22.85148	22.83184	24.72053	11.35
mar	19	22.84060	22.82093	66.31906	10.87	mar	19	22.85151	22.83185	24.72035	10.89
mar	26	22.84064	22.82097	66.31850	10.41	mar	26	22.85153	22.83186	24.72013	10.43
abr	2	22.84070	22.82101	66.31806	9.95	abr	2	22.85157	22.83188	24.72002	9.97
abr	9	22.84077	22.82108	66.31760	9.50	abr	9	22.85160	22.83191	24.71988	9.51
abr	16	22.84085	22.82114	66.31730	9.04	abr	16	22.85166	22.83194	24.71989	9.05
abr	23	22.84095	22.82122	66.31699	8.58	abr	23	22.85170	22.83197	24.71989	8.59
abr	30	22.84105	22.82130	66.31681	8.12	abr	30	22.85176	22.83201	24.71999	8.13
may	7	22.84115	22.82140	66.31665	7.66	may	7	22.85181	22.83205	24.72010	7.67
may	14	22.84127	22.82148	66.31664	7.20	may	14	22.85188	22.83209	24.72032	7.21
may	21	22.84139	22.82159	66.31666	6.74	may	21	22.85194	22.83214	24.72056	6.75
may	28	22.84150	22.82168	66.31679	6.28	may	28	22.85201	22.83218	24.72087	6.29
jun	4	22.84163	22.82178	66.31697	5.82	jun	4	22.85207	22.83223	24.72119	5.83
jun	11	22.84174	22.82187	66.31726	5.36	jun	11	22.85214	22.83227	24.72160	5.37
jun	18	22.84186	22.82197	66.31761	4.90	jun	18	22.85220	22.83231	24.72203	4.91
jun	25	22.84197	22.82205	66.31801	4.44	jun	25	22.85227	22.83235	24.72247	4.45
jul	2	22.84208	22.82214	66.31848	3.98	jul	2	22.85233	22.83239	24.72295	3.99
jul	9	22.84217	22.82221	66.31901	3.52	jul	9	22.85238	22.83243	24.72344	3.53
jul	16	22.84227	22.82229	66.31961	3.06	jul	16	22.85244	22.83246	24.72398	3.07
jul	23	22.84234	22.82234	66.32020	2.60	jul	23	22.85249	22.83249	24.72447	2.61
jul	30	22.84242	22.82240	66.32088	2.14	jul	30	22.85253	22.83252	24.72501	2.15
ago	6	22.84247	22.82243	66.32155	1.68	ago	6	22.85257	22.83254	24.72550	1.69
ago	13	22.84252	22.82247	66.32229	1.22	ago	13	22.85261	22.83255	24.72605	1.23
ago	20	22.84255	22.82248	66.32297	0.76	ago	20	22.85263	22.83257	24.72649	0.77
ago	27	22.84258	22.82250	66.32373	0.30	ago	27	22.85266	22.83257	24.72700	0.31
sep	3	22.84259	22.82249	66.32442	23.84	sep	3	22.85267	22.83257	24.72741	23.85
sep	10	22.84260	22.82248	66.32519	23.38	sep	10	22.85269	22.83257	24.72789	23.39
sep	17	22.84257	22.82245	66.32584	22.92	sep	17	22.85268	22.83256	24.72822	22.93
sep	24	22.84256	22.82242	66.32656	22.46	sep	24	22.85269	22.83255	24.72863	22.47
oct	1	22.84252	22.82237	66.32717	22.00	oct	1	22.85268	22.83253	24.72891	22.01
oct	8	22.84249	22.82232	66.32784	21.54	oct	8	22.85267	22.83251	24.72926	21.55
oct	15	22.84243	22.82225	66.32835	21.08	oct	15	22.85265	22.83248	24.72944	21.09
oct	22	22.84238	22.82218	66.32893	20.62	oct	22	22.85264	22.83244	24.72971	20.63
oct	29	22.84230	22.82209	66.32935	20.16	oct	29	22.85261	22.83241	24.72982	20.17
nov	5	22.84223	22.82200	66.32981	19.70	nov	5	22.85260	22.83237	24.73000	19.71
nov	12	22.84215	22.82191	66.33009	19.24	nov	12	22.85256	22.83232	24.73002	19.25
nov	19	22.84207	22.82180	66.33042	18.78	nov	19	22.85255	22.83228	24.73011	18.79
nov	26	22.84198	22.82169	66.33056	18.32	nov	26	22.85251	22.83223	24.73005	18.33
dic	3	22.84189	22.82158	66.33072	17.86	dic	3	22.85250	22.83218	24.73004	17.87
dic	10	22.84180	22.82147	66.33070	17.40	dic	10	22.85246	22.83214	24.72988	17.41
dic	17	22.84171	22.82135	66.33071	16.94	dic	17	22.85245	22.83209	24.72980	16.95
dic	24	22.84162	22.82125	66.33053	16.48	dic	24	22.85242	22.83204	24.72958	16.49

**Posiciones aparentes de estrellas brillantes, 2023**  
(a las 0<sup>h</sup> del meridiano 90° W.G.)

115102						115623					
V			Sp			V			Sp		
4.41			K1III			4.42			F8IV		
		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
ene	1	23.33408	23.31461	-32.41123	16.43	ene	1	23.44183	23.42236	23.53134	16.54
ene	8	23.33406	23.31457	-32.41112	15.97	ene	8	23.44181	23.42232	23.53117	16.08
ene	15	23.33404	23.31453	-32.41108	15.51	ene	15	23.44178	23.42227	23.53087	15.62
ene	22	23.33403	23.31449	-32.41086	15.05	ene	22	23.44177	23.42223	23.53068	15.16
ene	29	23.33401	23.31446	-32.41072	14.59	ene	29	23.44175	23.42220	23.53034	14.70
feb	5	23.33401	23.31443	-32.41044	14.13	feb	5	23.44174	23.42217	23.53010	14.24
feb	12	23.33399	23.31441	-32.41024	13.67	feb	12	23.44173	23.42214	23.52974	13.78
feb	19	23.33400	23.31439	-32.40986	13.21	feb	19	23.44173	23.42212	23.52951	13.32
feb	26	23.33400	23.31438	-32.40957	12.75	feb	26	23.44172	23.42210	23.52917	12.86
mar	5	23.33401	23.31438	-32.40915	12.29	mar	5	23.44173	23.42210	23.52894	12.40
mar	12	23.33402	23.31438	-32.40882	11.83	mar	12	23.44173	23.42209	23.52863	11.94
mar	19	23.33405	23.31438	-32.40832	11.37	mar	19	23.44176	23.42209	23.52848	11.48
mar	26	23.33406	23.31439	-32.40791	10.91	mar	26	23.44177	23.42210	23.52825	11.02
abr	2	23.33410	23.31441	-32.40741	10.45	abr	2	23.44181	23.42212	23.52815	10.56
abr	9	23.33413	23.31443	-32.40698	9.99	abr	9	23.44183	23.42214	23.52800	10.10
abr	16	23.33418	23.31446	-32.40644	9.53	abr	16	23.44188	23.42216	23.52801	9.64
abr	23	23.33422	23.31449	-32.40597	9.07	abr	23	23.44192	23.42219	23.52798	9.18
abr	30	23.33428	23.31453	-32.40545	8.61	abr	30	23.44197	23.42222	23.52807	8.72
may	7	23.33432	23.31457	-32.40500	8.15	may	7	23.44202	23.42226	23.52814	8.26
may	14	23.33440	23.31461	-32.40448	7.69	may	14	23.44208	23.42230	23.52835	7.80
may	21	23.33445	23.31465	-32.40403	7.23	may	21	23.44214	23.42234	23.52855	7.34
may	28	23.33453	23.31470	-32.40358	6.77	may	28	23.44220	23.42238	23.52883	6.88
jun	4	23.33459	23.31475	-32.40318	6.31	jun	4	23.44226	23.42242	23.52912	6.42
jun	11	23.33467	23.31480	-32.40277	5.85	jun	11	23.44233	23.42247	23.52950	5.96
jun	18	23.33474	23.31485	-32.40242	5.39	jun	18	23.44240	23.42251	23.52989	5.50
jun	25	23.33481	23.31490	-32.40212	4.93	jun	25	23.44247	23.42255	23.53031	5.04
jul	2	23.33487	23.31494	-32.40187	4.47	jul	2	23.44253	23.42260	23.53075	4.58
jul	9	23.33495	23.31499	-32.40164	4.01	jul	9	23.44259	23.42263	23.53123	4.12
jul	16	23.33501	23.31503	-32.40145	3.55	jul	16	23.44265	23.42267	23.53173	3.66
jul	23	23.33507	23.31508	-32.40136	3.09	jul	23	23.44270	23.42271	23.53220	3.20
jul	30	23.33513	23.31511	-32.40129	2.63	jul	30	23.44276	23.42274	23.53270	2.74
ago	6	23.33518	23.31515	-32.40129	2.17	ago	6	23.44280	23.42276	23.53319	2.28
ago	13	23.33523	23.31517	-32.40129	1.71	ago	13	23.44285	23.42279	23.53371	1.82
ago	20	23.33527	23.31520	-32.40142	1.25	ago	20	23.44287	23.42281	23.53415	1.36
ago	27	23.33530	23.31521	-32.40153	0.79	ago	27	23.44291	23.42282	23.53463	0.90
sep	3	23.33533	23.31523	-32.40173	0.33	sep	3	23.44293	23.42283	23.53505	0.44
sep	10	23.33535	23.31523	-32.40190	23.87	sep	10	23.44295	23.42284	23.53551	23.98
sep	17	23.33536	23.31524	-32.40220	23.41	sep	17	23.44296	23.42283	23.53585	23.52
sep	24	23.33537	23.31523	-32.40243	22.95	sep	24	23.44297	23.42283	23.53625	23.06
oct	1	23.33536	23.31522	-32.40276	22.49	oct	1	23.44297	23.42282	23.53654	22.60
oct	8	23.33537	23.31520	-32.40301	22.03	oct	8	23.44297	23.42280	23.53689	22.14
oct	15	23.33535	23.31517	-32.40338	21.57	oct	15	23.44295	23.42278	23.53709	21.68
oct	22	23.33534	23.31514	-32.40363	21.11	oct	22	23.44295	23.42276	23.53736	21.22
oct	29	23.33531	23.31511	-32.40397	20.65	oct	29	23.44293	23.42273	23.53750	20.76
nov	5	23.33530	23.31507	-32.40420	20.19	nov	5	23.44292	23.42269	23.53770	20.30
nov	12	23.33527	23.31503	-32.40452	19.73	nov	12	23.44289	23.42265	23.53774	19.84
nov	19	23.33525	23.31498	-32.40469	19.27	nov	19	23.44288	23.42261	23.53787	19.38
nov	26	23.33521	23.31493	-32.40494	18.81	nov	26	23.44285	23.42257	23.53784	18.92
dic	3	23.33519	23.31488	-32.40504	18.35	dic	3	23.44284	23.42252	23.53787	18.46
dic	10	23.33516	23.31483	-32.40523	17.89	dic	10	23.44280	23.42248	23.53775	18.00
dic	17	23.33514	23.31478	-32.40524	17.43	dic	17	23.44279	23.42243	23.53772	17.54
dic	24	23.33511	23.31473	-32.40532	16.97	dic	24	23.44276	23.42238	23.53754	17.08



## Posiciones aparentes de la estrella Polar, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

**11767**

(V = 1.97Sp = F7:Ib-IIv SB)

α						α <sub>c</sub>						δ						Hp					
m		d		h		h		°		h		m		d		h		h		°		h	
ene	1	3.03161	3.01214	89.36502	20.13	feb	23	3.00515	2.98553	89.36638	16.62												
ene	2	3.03126	3.01179	89.36507	20.06	feb	24	3.00462	2.98501	89.36635	16.55												
ene	3	3.03093	3.01146	89.36513	19.99	feb	25	3.00415	2.98453	89.36631	16.48												
ene	4	3.03060	3.01112	89.36519	19.93	feb	26	3.00370	2.98408	89.36627	16.42												
ene	5	3.03026	3.01078	89.36526	19.86	feb	27	3.00327	2.98365	89.36624	16.35												
ene	6	3.02989	3.01040	89.36533	19.80	feb	28	3.00284	2.98321	89.36621	16.29												
ene	7	3.02949	3.01000	89.36540	19.73	mar	1	3.00240	2.98277	89.36618	16.22												
ene	8	3.02905	3.00956	89.36547	19.66	mar	2	3.00194	2.98231	89.36615	16.15												
ene	9	3.02858	3.00908	89.36554	19.60	mar	3	3.00146	2.98183	89.36613	16.09												
ene	10	3.02808	3.00858	89.36560	19.53	mar	4	3.00095	2.98132	89.36610	16.02												
ene	11	3.02756	3.00805	89.36566	19.46	mar	5	3.00042	2.98079	89.36607	15.95												
ene	12	3.02702	3.00752	89.36571	19.40	mar	6	2.99988	2.98024	89.36604	15.89												
ene	13	3.02650	3.00699	89.36576	19.33	mar	7	2.99934	2.97969	89.36600	15.82												
ene	14	3.02599	3.00648	89.36580	19.27	mar	8	2.99880	2.97916	89.36595	15.76												
ene	15	3.02550	3.00599	89.36583	19.20	mar	9	2.99828	2.97864	89.36590	15.69												
ene	16	3.02505	3.00554	89.36587	19.13	mar	10	2.99780	2.97816	89.36584	15.62												
ene	17	3.02464	3.00512	89.36590	19.07	mar	11	2.99737	2.97772	89.36578	15.56												
ene	18	3.02425	3.00473	89.36594	19.00	mar	12	2.99697	2.97733	89.36572	15.49												
ene	19	3.02386	3.00434	89.36599	18.93	mar	13	2.99661	2.97697	89.36566	15.43												
ene	20	3.02345	3.00392	89.36604	18.87	mar	14	2.99628	2.97663	89.36561	15.36												
ene	21	3.02300	3.00346	89.36610	18.80	mar	15	2.99595	2.97629	89.36556	15.29												
ene	22	3.02249	3.00294	89.36615	18.74	mar	16	2.99560	2.97594	89.36552	15.23												
ene	23	3.02192	3.00237	89.36621	18.67	mar	17	2.99522	2.97556	89.36548	15.16												
ene	24	3.02131	3.00177	89.36625	18.60	mar	18	2.99480	2.97514	89.36544	15.09												
ene	25	3.02070	3.00116	89.36628	18.54	mar	19	2.99434	2.97468	89.36540	15.03												
ene	26	3.02011	3.00057	89.36630	18.47	mar	20	2.99387	2.97420	89.36534	14.96												
ene	27	3.01956	3.00001	89.36632	18.40	mar	21	2.99340	2.97373	89.36528	14.90												
ene	28	3.01904	2.99949	89.36633	18.34	mar	22	2.99297	2.97330	89.36521	14.83												
ene	29	3.01856	2.99901	89.36634	18.27	mar	23	2.99258	2.97292	89.36513	14.76												
ene	30	3.01809	2.99854	89.36635	18.21	mar	24	2.99226	2.97259	89.36506	14.70												
ene	31	3.01763	2.99807	89.36637	18.14	mar	25	2.99197	2.97230	89.36498	14.63												
feb	1	3.01717	2.99760	89.36639	18.07	mar	26	2.99171	2.97204	89.36490	14.57												
feb	2	3.01669	2.99712	89.36641	18.01	mar	27	2.99147	2.97179	89.36484	14.50												
feb	3	3.01618	2.99661	89.36643	17.94	mar	28	2.99122	2.97154	89.36477	14.43												
feb	4	3.01564	2.99606	89.36646	17.88	mar	29	2.99096	2.97128	89.36471	14.37												
feb	5	3.01507	2.99549	89.36648	17.81	mar	30	2.99068	2.97099	89.36465	14.30												
feb	6	3.01447	2.99489	89.36650	17.74	mar	31	2.99037	2.97068	89.36459	14.24												
feb	7	3.01386	2.99428	89.36651	17.68	abr	1	2.99005	2.97036	89.36452	14.17												
feb	8	3.01324	2.99366	89.36651	17.61	abr	2	2.98971	2.97002	89.36446	14.10												
feb	9	3.01263	2.99305	89.36651	17.54	abr	3	2.98937	2.96968	89.36439	14.04												
feb	10	3.01204	2.99246	89.36651	17.48	abr	4	2.98904	2.96935	89.36431	13.97												
feb	11	3.01148	2.99189	89.36649	17.41	abr	5	2.98873	2.96904	89.36423	13.91												
feb	12	3.01095	2.99137	89.36648	17.34	abr	6	2.98846	2.96877	89.36414	13.84												
feb	13	3.01046	2.99088	89.36646	17.28	abr	7	2.98823	2.96854	89.36405	13.77												
feb	14	3.01001	2.99042	89.36645	17.21	abr	8	2.98805	2.96836	89.36396	13.71												
feb	15	3.00957	2.98997	89.36645	17.15	abr	9	2.98792	2.96822	89.36387	13.64												
feb	16	3.00912	2.98952	89.36644	17.08	abr	10	2.98781	2.96812	89.36379	13.58												
feb	17	3.00865	2.98904	89.36645	17.01	abr	11	2.98772	2.96802	89.36371	13.51												
feb	18	3.00813	2.98852	89.36646	16.95	abr	12	2.98761	2.96791	89.36364	13.44												
feb	19	3.00756	2.98794	89.36646	16.88	abr	13	2.98748	2.96777	89.36358	13.38												
feb	20	3.00695	2.98733	89.36646	16.82	abr	14	2.98731	2.96760	89.36351	13.31												
feb	21	3.00632	2.98671	89.36644	16.75	abr	15	2.98711	2.96740	89.36345	13.25												
feb	22	3.00572	2.98610	89.36642	16.68	abr	16	2.98689	2.96717	89.36337	13.18												

## Posiciones aparentes de la estrella Polar, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

**11767**

(V = 1.97Sp = F7: Ib- IIv SB)

<div style="display: flex; justify-content: space-between;"> <span><math>\alpha</math></span> <span><math>\alpha_c</math></span> <span><math>\delta</math></span> <span>Hp</span> </div>						<div style="display: flex; justify-content: space-between;"> <span><math>\alpha</math></span> <span><math>\alpha_c</math></span> <span><math>\delta</math></span> <span>Hp</span> </div>					
m	d	h	h	°	h	m	d	h	h	°	h
abr	17	2.98667	2.96695	89.36329	13.12	jun	9	2.99423	2.97436	89.35920	9.64
abr	18	2.98648	2.96676	89.36320	13.05	jun	10	2.99451	2.97464	89.35915	9.57
abr	19	2.98633	2.96661	89.36311	12.98	jun	11	2.99480	2.97494	89.35909	9.51
abr	20	2.98624	2.96652	89.36301	12.92	jun	12	2.99513	2.97527	89.35902	9.44
abr	21	2.98619	2.96647	89.36292	12.85	jun	13	2.99551	2.97564	89.35895	9.38
abr	22	2.98619	2.96647	89.36282	12.79	jun	14	2.99593	2.97606	89.35888	9.31
abr	23	2.98621	2.96648	89.36273	12.72	jun	15	2.99639	2.97652	89.35882	9.25
abr	24	2.98623	2.96650	89.36265	12.65	jun	16	2.99688	2.97700	89.35876	9.18
abr	25	2.98624	2.96651	89.36257	12.59	jun	17	2.99739	2.97750	89.35870	9.12
abr	26	2.98624	2.96650	89.36250	12.52	jun	18	2.99788	2.97800	89.35866	9.05
abr	27	2.98621	2.96647	89.36243	12.46	jun	19	2.99837	2.97847	89.35862	8.99
abr	28	2.98616	2.96642	89.36235	12.39	jun	20	2.99883	2.97893	89.35858	8.92
abr	29	2.98610	2.96636	89.36228	12.33	jun	21	2.99926	2.97936	89.35854	8.86
abr	30	2.98604	2.96629	89.36220	12.26	jun	22	2.99967	2.97977	89.35851	8.79
may	1	2.98597	2.96623	89.36211	12.19	jun	23	3.00007	2.98016	89.35847	8.73
may	2	2.98593	2.96618	89.36202	12.13	jun	24	3.00046	2.98055	89.35843	8.66
may	3	2.98592	2.96617	89.36193	12.06	jun	25	3.00085	2.98094	89.35838	8.60
may	4	2.98595	2.96620	89.36183	12.00	jun	26	3.00127	2.98135	89.35834	8.53
may	5	2.98604	2.96628	89.36173	11.93	jun	27	3.00171	2.98179	89.35829	8.46
may	6	2.98617	2.96641	89.36164	11.87	jun	28	3.00219	2.98227	89.35824	8.40
may	7	2.98633	2.96657	89.36155	11.80	jun	29	3.00271	2.98280	89.35819	8.33
may	8	2.98652	2.96675	89.36147	11.74	jun	30	3.00328	2.98336	89.35814	8.27
may	9	2.98669	2.96693	89.36140	11.67	jul	1	3.00387	2.98395	89.35811	8.20
may	10	2.98685	2.96707	89.36133	11.60	jul	2	3.00448	2.98455	89.35808	8.14
may	11	2.98696	2.96719	89.36127	11.54	jul	3	3.00507	2.98513	89.35806	8.07
may	12	2.98704	2.96726	89.36120	11.47	jul	4	3.00562	2.98568	89.35805	8.01
may	13	2.98710	2.96732	89.36113	11.41	jul	5	3.00613	2.98618	89.35804	7.94
may	14	2.98715	2.96737	89.36105	11.34	jul	6	3.00659	2.98663	89.35803	7.88
may	15	2.98723	2.96744	89.36097	11.28	jul	7	3.00702	2.98707	89.35801	7.81
may	16	2.98734	2.96755	89.36088	11.21	jul	8	3.00746	2.98751	89.35798	7.75
may	17	2.98750	2.96771	89.36079	11.14	jul	9	3.00793	2.98797	89.35795	7.68
may	18	2.98771	2.96792	89.36069	11.08	jul	10	3.00843	2.98848	89.35792	7.62
may	19	2.98797	2.96818	89.36060	11.01	jul	11	3.00899	2.98903	89.35788	7.55
may	20	2.98825	2.96845	89.36052	10.95	jul	12	3.00958	2.98961	89.35785	7.49
may	21	2.98854	2.96874	89.36044	10.88	jul	13	3.01019	2.99023	89.35783	7.42
may	22	2.98883	2.96902	89.36037	10.82	jul	14	3.01082	2.99085	89.35781	7.36
may	23	2.98910	2.96929	89.36031	10.75	jul	15	3.01145	2.99147	89.35779	7.29
may	24	2.98934	2.96953	89.36024	10.69	jul	16	3.01206	2.99208	89.35779	7.23
may	25	2.98957	2.96975	89.36018	10.62	jul	17	3.01264	2.99266	89.35779	7.16
may	26	2.98977	2.96995	89.36012	10.56	jul	18	3.01320	2.99321	89.35779	7.10
may	27	2.98997	2.97015	89.36005	10.49	jul	19	3.01373	2.99374	89.35779	7.03
may	28	2.99016	2.97034	89.35998	10.42	jul	20	3.01423	2.99424	89.35779	6.97
may	29	2.99037	2.97055	89.35990	10.36	jul	21	3.01473	2.99474	89.35778	6.90
may	30	2.99061	2.97078	89.35982	10.29	jul	22	3.01523	2.99523	89.35778	6.84
may	31	2.99088	2.97105	89.35974	10.23	jul	23	3.01573	2.99574	89.35777	6.77
jun	1	2.99119	2.97136	89.35966	10.16	jul	24	3.01626	2.99626	89.35776	6.71
jun	2	2.99156	2.97173	89.35958	10.10	jul	25	3.01682	2.99682	89.35774	6.64
jun	3	2.99196	2.97213	89.35951	10.03	jul	26	3.01742	2.99742	89.35773	6.58
jun	4	2.99239	2.97255	89.35945	9.97	jul	27	3.01805	2.99805	89.35772	6.51
jun	5	2.99283	2.97298	89.35939	9.90	jul	28	3.01872	2.99871	89.35772	6.44
jun	6	2.99323	2.97338	89.35934	9.84	jul	29	3.01940	2.99938	89.35773	6.38
jun	7	2.99360	2.97375	89.35929	9.77	jul	30	3.02007	3.00005	89.35774	6.31
jun	8	2.99393	2.97407	89.35925	9.71	jul	31	3.02071	3.00069	89.35777	6.25

## Posiciones aparentes de la estrella Polar, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

**11767**

(V = 1.97Sp = F7:Ib-IIv SB)

α						α <sub>c</sub>						δ						Hp					
m		d		h		h		°		h		m		d		h		h		°		h	
ago	1	3.02131	3.00128	89.35780	6.18	sep	23	3.05051	3.03038	89.36018	2.73												
ago	2	3.02185	3.00182	89.35783	6.12	sep	24	3.05101	3.03087	89.36027	2.67												
ago	3	3.02235	3.00232	89.35785	6.05	sep	25	3.05146	3.03132	89.36037	2.60												
ago	4	3.02284	3.00281	89.35787	5.99	sep	26	3.05186	3.03172	89.36047	2.54												
ago	5	3.02335	3.00332	89.35788	5.92	sep	27	3.05222	3.03207	89.36056	2.47												
ago	6	3.02390	3.00386	89.35788	5.86	sep	28	3.05256	3.03242	89.36064	2.40												
ago	7	3.02449	3.00445	89.35789	5.79	sep	29	3.05292	3.03277	89.36071	2.34												
ago	8	3.02512	3.00508	89.35789	5.73	sep	30	3.05331	3.03316	89.36078	2.27												
ago	9	3.02577	3.00573	89.35790	5.66	oct	1	3.05374	3.03360	89.36085	2.21												
ago	10	3.02644	3.00640	89.35792	5.60	oct	2	3.05422	3.03407	89.36092	2.14												
ago	11	3.02710	3.00705	89.35794	5.53	oct	3	3.05471	3.03456	89.36100	2.08												
ago	12	3.02775	3.00769	89.35798	5.47	oct	4	3.05520	3.03505	89.36108	2.01												
ago	13	3.02837	3.00831	89.35801	5.40	oct	5	3.05568	3.03552	89.36117	1.95												
ago	14	3.02895	3.00889	89.35805	5.34	oct	6	3.05612	3.03595	89.36127	1.88												
ago	15	3.02951	3.00945	89.35809	5.27	oct	7	3.05652	3.03636	89.36137	1.82												
ago	16	3.03004	3.00997	89.35813	5.21	oct	8	3.05689	3.03672	89.36147	1.75												
ago	17	3.03055	3.01049	89.35816	5.14	oct	9	3.05721	3.03704	89.36157	1.69												
ago	18	3.03106	3.01099	89.35820	5.08	oct	10	3.05751	3.03734	89.36167	1.62												
ago	19	3.03157	3.01150	89.35823	5.01	oct	11	3.05779	3.03762	89.36176	1.56												
ago	20	3.03209	3.01203	89.35825	4.95	oct	12	3.05807	3.03789	89.36185	1.49												
ago	21	3.03265	3.01258	89.35828	4.88	oct	13	3.05834	3.03817	89.36194	1.42												
ago	22	3.03323	3.01316	89.35830	4.82	oct	14	3.05864	3.03847	89.36202	1.36												
ago	23	3.03385	3.01378	89.35833	4.75	oct	15	3.05896	3.03878	89.36210	1.29												
ago	24	3.03449	3.01442	89.35837	4.69	oct	16	3.05930	3.03913	89.36218	1.23												
ago	25	3.03515	3.01507	89.35841	4.62	oct	17	3.05967	3.03949	89.36227	1.16												
ago	26	3.03581	3.01573	89.35845	4.56	oct	18	3.06006	3.03988	89.36236	1.10												
ago	27	3.03644	3.01636	89.35851	4.49	oct	19	3.06044	3.04026	89.36246	1.03												
ago	28	3.03704	3.01694	89.35858	4.43	oct	20	3.06081	3.04062	89.36256	0.97												
ago	29	3.03758	3.01748	89.35864	4.36	oct	21	3.06113	3.04094	89.36267	0.90												
ago	30	3.03807	3.01797	89.35871	4.30	oct	22	3.06141	3.04122	89.36279	0.84												
ago	31	3.03853	3.01843	89.35876	4.23	oct	23	3.06164	3.04144	89.36290	0.77												
sep	1	3.03899	3.01889	89.35881	4.17	oct	24	3.06182	3.04162	89.36301	0.71												
sep	2	3.03948	3.01938	89.35886	4.10	oct	25	3.06198	3.04178	89.36312	0.64												
sep	3	3.04001	3.01992	89.35890	4.03	oct	26	3.06213	3.04193	89.36321	0.57												
sep	4	3.04059	3.02049	89.35894	3.97	oct	27	3.06231	3.04211	89.36330	0.51												
sep	5	3.04120	3.02110	89.35898	3.90	oct	28	3.06253	3.04232	89.36339	0.44												
sep	6	3.04182	3.02172	89.35903	3.84	oct	29	3.06279	3.04258	89.36347	0.38												
sep	7	3.04244	3.02233	89.35909	3.77	oct	30	3.06307	3.04286	89.36357	0.31												
sep	8	3.04303	3.02292	89.35916	3.71	oct	31	3.06336	3.04315	89.36366	0.25												
sep	9	3.04360	3.02349	89.35923	3.64	nov	1	3.06364	3.04342	89.36377	0.18												
sep	10	3.04414	3.02402	89.35930	3.58	nov	2	3.06389	3.04367	89.36388	0.12												
sep	11	3.04463	3.02451	89.35937	3.51	nov	3	3.06410	3.04387	89.36399	0.05												
sep	12	3.04510	3.02498	89.35944	3.45	nov	4	3.06426	3.04403	89.36410	23.99												
sep	13	3.04555	3.02542	89.35952	3.38	nov	5	3.06438	3.04415	89.36422	23.92												
sep	14	3.04598	3.02585	89.35958	3.32	nov	6	3.06447	3.04424	89.36433	23.85												
sep	15	3.04641	3.02629	89.35965	3.25	nov	7	3.06453	3.04430	89.36444	23.79												
sep	16	3.04685	3.02673	89.35971	3.19	nov	8	3.06458	3.04435	89.36454	23.72												
sep	17	3.04731	3.02719	89.35977	3.12	nov	9	3.06463	3.04440	89.36464	23.66												
sep	18	3.04780	3.02768	89.35982	3.06	nov	10	3.06469	3.04446	89.36473	23.59												
sep	19	3.04832	3.02819	89.35988	2.99	nov	11	3.06477	3.04453	89.36482	23.53												
sep	20	3.04886	3.02874	89.35995	2.93	nov	12	3.06488	3.04464	89.36491	23.46												
sep	21	3.04942	3.02929	89.36002	2.86	nov	13	3.06501	3.04477	89.36500	23.39												
sep	22	3.04998	3.02984	89.36010	2.80	nov	14	3.06516	3.04491	89.36510	23.33												

## Posiciones aparentes de la estrella Polar, 2023

(a las 0<sup>h</sup> del meridiano 90° W.G.)

**11767**

(V = 1.97Sp = F7:Ib-IIv SB)

		$\alpha$	$\alpha_c$	$\delta$	Hp			$\alpha$	$\alpha_c$	$\delta$	Hp
m	d	h	h	°	h	m	d	h	h	°	h
nov	15	3.06531	3.04506	89.36520	23.26	dic	9	3.06370	3.04338	89.36764	21.68
nov	16	3.06545	3.04519	89.36531	23.20	dic	10	3.06356	3.04323	89.36772	21.62
nov	17	3.06555	3.04529	89.36543	23.13	dic	11	3.06344	3.04311	89.36780	21.55
nov	18	3.06560	3.04533	89.36555	23.07	dic	12	3.06333	3.04300	89.36789	21.49
nov	19	3.06559	3.04532	89.36567	23.00	dic	13	3.06321	3.04287	89.36799	21.42
nov	20	3.06554	3.04527	89.36579	22.94	dic	14	3.06306	3.04272	89.36809	21.36
nov	21	3.06545	3.04518	89.36589	22.87	dic	15	3.06287	3.04252	89.36820	21.29
nov	22	3.06536	3.04508	89.36600	22.80	dic	16	3.06261	3.04226	89.36830	21.22
nov	23	3.06527	3.04500	89.36609	22.74	dic	17	3.06231	3.04195	89.36840	21.16
nov	24	3.06522	3.04495	89.36618	22.67	dic	18	3.06196	3.04160	89.36850	21.09
nov	25	3.06521	3.04493	89.36626	22.61	dic	19	3.06160	3.04124	89.36858	21.03
nov	26	3.06523	3.04495	89.36635	22.54	dic	20	3.06126	3.04089	89.36866	20.96
nov	27	3.06526	3.04498	89.36645	22.47	dic	21	3.06094	3.04057	89.36873	20.89
nov	28	3.06529	3.04500	89.36655	22.41	dic	22	3.06065	3.04029	89.36880	20.83
nov	29	3.06529	3.04500	89.36665	22.34	dic	23	3.06040	3.04003	89.36887	20.76
nov	30	3.06526	3.04496	89.36676	22.28	dic	24	3.06017	3.03980	89.36894	20.70
dic	1	3.06518	3.04487	89.36687	22.21	dic	25	3.05994	3.03956	89.36902	20.63
dic	2	3.06505	3.04474	89.36698	22.15	dic	26	3.05970	3.03931	89.36910	20.56
dic	3	3.06489	3.04458	89.36709	22.08	dic	27	3.05942	3.03903	89.36918	20.50
dic	4	3.06470	3.04438	89.36719	22.01	dic	28	3.05910	3.03871	89.36927	20.43
dic	5	3.06449	3.04417	89.36729	21.95	dic	29	3.05874	3.03834	89.36936	20.37
dic	6	3.06427	3.04395	89.36738	21.88	dic	30	3.05834	3.03794	89.36944	20.30
dic	7	3.06406	3.04374	89.36747	21.82	dic	31	3.05791	3.03750	89.36952	3.06
dic	8	3.06387	3.04355	89.36756	21.75	ene	1	3.05746	3.03705	89.36959	3.06

## Constelaciones, 2023

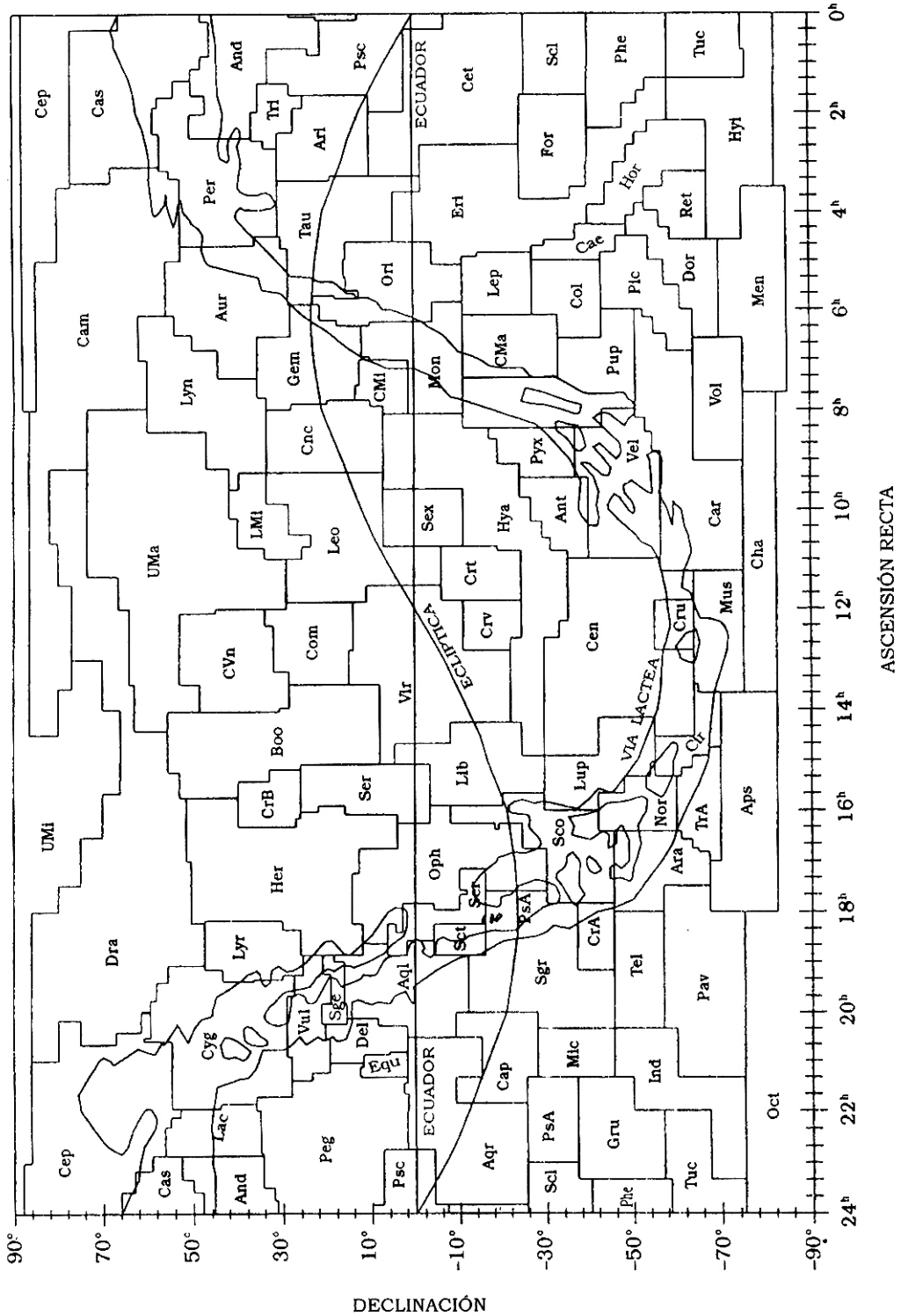
### Nombres y significados

Nominativo	Genitivo	Abreviatura	Significado
Andromeda	Andromedae	And	Andrómeda, hija de Casiopea y Cefeo
Antlia	Antliae	Ant	Máquina neumática
Apus	Apodis	Aps	Ave del paraíso
Aquarius	Aquarii	Aqr	Aguador
Aquila	Aquilae	Aql	Aguila
Ara	Arae	Ara	Altar
Aries	Arietis	Ari	Carnero
Auriga	Aurigae	Aur	Cochero
Bootes	Bootis	Boo	Boyero o pastor
Caelum	Caeli	Cae	Buril
Camelopardalis	Camaleopardalis	Cam	Jirafa
Cancer	Cancri	Cnc	Cangrejo
Canes Venatici	Canum Venaticorum	CVn	Lebrelas o perros de caza
Canis Major	Canis Majoris	CMa	Can mayor
Canis Minor	Canis Minoris	CMi	Can menor
Capricornus	Capricorni	Cap	Cabra marina
Carina	Carinae	Car	Carena o quilla
Cassiopeia	Cassiopeiae	Cas	Casiopea, reina
Centaurus	Centauri	Cen	Centaurio
Cepheus	Cephei	Cep	Cefeo, rey
Cetus	Ceti	Cet	Cetáceo o ballena
Chamaleon	Chamaleontis	Cha	Camaleón
Circinus	Circini	Cir	Compás
Columba	Columbae	Col	Paloma
Coma Berenices	Comae Berenices	Com	Cabellera de Berenice
Corona Australis	Coronae Australis	CrA	Corona austral
Corona Borealis	Coronae Borealis	CrB	Corona boreal
Corvus	Corvi	Crv	Cuervo
Crater	Crateris	Crt	Copa
Crux	Crucis	Cru	Cruz del sur
Cygnus	Cygni	Cyg	Cisne
Delphinus	Delphini	Del	Delfín
Dorado	Doradus	Dor	Pez dorado
Draco	Draconis	Dra	Dragón
Equuleus	Equulei	Equ	Caballo menor
Eridanus	Eridani	Eri	Río
Fornax	Fornacis	For	Horno
Gemini	Geminorum	Gem	Gemelos
Grus	Gruis	Gru	Grulla
Hercules	Herculis	Her	Hércules
Horologium	Horologii	Hor	Reloj
Hydra	Hydrae	Hya	Serpiente marina hembra
Hydrus	Hydri	Hyi	Serpiente marina macho
Indus	Indi	Ind	Indio
Lacerta	Lacertae	Lac	Lagartija
Leo	Leonis	Leo	León
Leo Minor	Leonis Minoris	LMi	León menor
Lepus	Leporis	Lep	Liebre
Libra	Librae	Lib	Balanza
Lupus	Lupi	Lup	Lobo
Lynx	Lyncis	Lyn	Lince

## Constelaciones, 2023

Nominativo	Genitivo	Abreviatura	Significado
Lyra	Lyrae	Lyr	Lira
Mensa	Mensae	Men	Mesa o altiplano
Microscopium	Microscopii	Mic	Microscopio
Monoceros	Monocerotis	Mon	Unicornio
Musca	Muscae	Mus	Mosca
Norma	Normae	Nor	Escuadra o regla
Octantis	Octantis	Oct	Octante
Ophiuchus	Ophiuchi	Oph	Serpentero, Ofiuco
Orionis	Orionis	Ori	Cazador
Pavo	Pavonis	Pav	Pavo real, pavón
Pegasus	Pegasi	Peg	Pegaso
Perseus	Persei	Per	Salvador de Andrómeda
Phoenix	Phoenicis	Phe	Fénix
Pictor	Pictoris	Pic	Caballete de pintor
Pisces	Piscium	Psc	Peces
Piscis Austrinus	Piscis Austrini	PsA	Pez austral
Puppis	Puppis	Pup	Popa
Pyxis	Pyxidis	Pyx	Compás o brújula
Reticulum	Reticuli	Ret	Reticula
Sagitta	Sagittae	Sge	Flecha
Sagittarius	Sagittarii	Sgr	Arquero
Scorpius	Scorpii	Sco	Escorpión
Sculptor	Sculptoris	Scl	Escultor
Scutum	Scuti	Sct	Escudo
Serpents	Serpentis	Ser	Serpiente
Sextans	Sextantis	Sex	Sextante
Taurus	Tauri	Tau	Toro
Telescopium	Telescopii	Tel	Telescopio
Triangulum	Trianguli	Tri	Triángulo
Triangulum-Australe	Trianguli-Australis	TrA	Triángulo austral
Tucana	Tucanae	Tuc	Tucán
Ursa Major	Ursae Majoris	UMa	Osa mayor
Ursa Minor	Ursae Minoris	UMi	Osa menor
Vela	Velorum	Vel	Vela
Virgo	Virginis	Vir	Virgen
Volans	Volantis	Vol	Pez volador
Vulpecula	Vulpeculae	Vul	Zorra

## Diagrama de constelaciones, 2023



## Objetos Messier, 2023

M	NGC	$\alpha$			$\delta$			const	v	tipo	descripción
		h	m	s	°	'	"				
110	205	0	40	24	+ 41	41	37	And	8	E6	Satélite de M31
032	221	0	42	42	+ 40	52	36	And	8	E2	Satélite de M31
031	224	0	42	42	+ 41	16	36	And	4	S	Galaxia de Andrómeda
103	581	1	33	12	+ 60	42	8	Cas	7	ca	
033	598	1	33	54	+ 30	39	17	Tri	7	Sc	
074	628	1	36	42	+ 15	47	26	Psc	10	Sc	
076	650	1	42	18	+ 51	34	9	Per	12	np	Nebulosa, Pequeña Mancuerna
077	1068	2	42	42	- 0	1	22	Cet	9	Sbp	Galaxia Seyfert
034	1039	2	42	0	+ 42	47	4	Per	6	ca	
045		3	47	18	+ 24	5	56	Tau	1	ca	Pléyades
079	1904	5	24	30	- 24	33	6	Lep	8	cg	
038	1912	5	28	42	+ 35	50	15	Aur	6	ca	
001	1952	5	34	30	+ 22	1	13	Tau	8	rsn	Nebulosa del Cangrejo
042	1976	5	35	24	- 5	27	2	Ori		ne	Nebulosa de Orión
036	1960	5	36	6	+ 34	8	3	Aur	6	ca	
078	2068	5	46	42	+ 0	3	5	Ori		nr	
037	2099	5	52	24	+ 32	33	10	Aur	6	ca	
035	2168	6	8	54	+ 24	20	5	Gem	5	ca	
041	2287	6	47	0	- 20	44	5	CMa	5	ca	
050	2323	7	3	12	- 8	20	1	Mon	7	ca	
047*	2422	7	36	36	- 14	30	4	Pup	5	ca	
046	2437	7	41	48	- 14	49	6	Pup	6	ca	
093	2447	7	44	42	- 23	52	13	Pup	6	ca	
048*	2548	8	13	48	- 5	48	3	Hya	5	ca	
044	2632	8	40	1	+ 19	59	1	Cnc	4	ca	El Pesebre o La Colmena
067	2682	8	50	24	+ 11	49	5	Cnc	6	ca	Cúmulo muy viejo
081	3031	9	55	30	+ 69	4	0	UMa	8	Sb	
082	3034	9	55	48	+ 69	41	1	UMa	9	gPec	
095	3351	10	40	0	+ 11	42	3	Leo	10	SBb	Miembro del grupo de Leo
096	3368	10	46	48	+ 11	49	14	Leo	9	Sbp	Miembro del grupo de Leo
105	3379	10	47	48	+ 12	35	3	Leo	9	E1	
108	3556	11	11	30	+ 55	40	2	UMa	11	Sc	
097	3587	11	14	48	+ 55	1	5	UMa	12	np	Nebulosa de la Lechuza
065	3623	11	18	54	+ 13	5	14	Leo	9	Sa	Miembro del grupo de Leo
066	3627	11	20	12	+ 12	59	3	Leo	8	Sb	Miembro del grupo de Leo
109	3992	11	57	42	+ 53	23	1	UMa	11	Sb	
098	4192	12	13	48	+ 14	54	2	Com	11	Sb	
099	4254	12	18	48	+ 14	25	12	Com	10	Sc	Miembro del cúmulo de Virgo
106	4258	12	19	0	+ 47	18	2	CVn	9	Sbp	Gran espiral
061	4303	12	21	54	+ 4	28	3	Vir	10	Sc	Miembro del cúmulo de Virgo
040		12	22	24	+ 58	5	13	UMa	9		Estrella binaria
100	4321	12	22	54	+ 15	49	2	Com	11	Sc	Miembro del cúmulo de Virgo
084	4374	12	25	6	+ 12	53	12	Vir	9	S0	Miembro del cúmulo de Virgo
085	4382	12	25	24	+ 18	11	2	Com	9	S0	Miembro del cúmulo de Virgo
086	4406	12	26	6	+ 13	7	12	Vir	10	E3	
049	4472	12	29	48	+ 8	0	12	Vir	9	E4	Elíptica gigante, cúmulo de Virgo
087	4486	12	30	48	+ 12	24	22	Vir	9	E0	Elíptica gigante, cúmulo de Virgo
088	4501	12	32	0	+ 14	25	3	Com	10	Sc	Espiral, cúmulo de Virgo
091*	4548	12	35	24	+ 14	30	21	Com	11	SBb	
089	4552	12	35	42	+ 12	33	22	Vir	10	E0	
090	4569	12	36	48	+ 13	10	3	Vir	10	Sb	Miembro del cúmulo de Virgo
058	4579	12	37	42	+ 11	49	12	Vir	9	SB	Miembro del cúmulo de Virgo
068	4590	12	39	30	- 26	45	7	Hya	8	cg	
104	4594	12	40	0	- 11	37	3	Vir	9	Sb	Galaxia del Sombrero, en Virgo
059	4621	12	42	0	+ 11	39	2	Vir	10	E5	Probable miembro de Virgo



## Objetos Messier, 2023

M	NGC	h	$\alpha$ m	s	$\delta$ °	'	"	const	v	tipo	descripción
060	4649	12	43	42	+ 11	33	20	Vir	9	E2	Elíptica del cúmulo de Virgo
094	4736	12	50	54	+ 41	7	26	CVn	8	Sbp	
064	4826	12	56	42	+ 21	41	2	Com	9	Sb	Con región oscura en el centro
053	5024	13	12	54	+ 18	10	13	Com	8	cg	
063	5055	13	15	48	+ 42	2	4	CVn	10	Sb	Galaxia de la Margarita
051	5194	13	29	54	+ 47	12	4	CVn	8	Sc	Galaxia del Remolino
083	5236	13	37	0	- 29	52	6	Hya	10	Sc	
003	5272	13	42	12	+ 28	23	26	CVn	6	cg	Contiene muchas variables
101	5457	14	3	12	+ 54	21	9	UMa	10	Sc	
102*	5866	15	6	30	+ 55	46	4	Dra	11	E6p	
005	5904	15	18	36	+ 2	5	15	Ser	6	cg	Con asimetría poco común
080	6093	16	17	3	- 22	58	3	Sco	8	cg	
004	6121	16	23	36	- 26	32	5	Sco	6	cg	Cúmulo más cercano a la Tie-
rra											
107	6171	16	32	30	- 13	3	15	Oph	9	cg	
013	6205	16	41	42	+ 36	28	2	Her	6	cg	Gran cúmulo globular
012	6218	16	47	12	- 1	57	2	Oph	7	cg	
010	6254	16	57	64	- 4	6	7	Oph	7	cg	
062	6266	17	1	12	- 30	7	11	Oph	7	cg	
019	6273	17	2	36	- 26	16	11	Oph	7	cg	Cúmulo elongado
092	6341	17	17	6	+ 43	8	12	Her	6	cg	
009	6333	17	19	12	- 18	30	59	Oph	7	cg	
014	6402	17	37	36	- 3	15	2	Oph	8	cg	
006	6405	17	40	6	- 32	13	5	Sco	5	ca	
023	6494	17	56	48	- 19	1	5	Sgr	7	ca	
020	6514	18	2	18	- 23	2	5	Sgr	0	ne	Nebulosa Trífida
008	6523	18	3	48	- 24	22	59	Sgr	0	ne	Nebulosa de la Laguna
021	6531	18	4	36	- 22	30	5	Sgr	7	ca	
024		18	16	54	- 18	29	3	Sgr	5		Parte del bulbo de la Via Láctea
016	6611	18	18	48	- 13	47	8	Ser		ne	
018	6613	18	19	54	- 17	8	3	Sgr	8	ca	
017	6618	18	20	48	- 16	11	5	Sgr		ne	Nebulosa Omega
028	6626	18	24	30	- 24	52	10	Sgr	7	cg	
069	6637	18	31	24	- 32	21	2	Sgr	9	cg	Pequeño
025	4725	18	31	36	- 19	15	12	Sgr	7	ca	
022	6656	18	36	24	- 23	54	1	Sgr	6	cg	
070	6681	18	43	12	- 32	18	8	Sgr	10	cg	Cercano a M69
026	6694	18	45	12	- 9	24	16	Sct	9	ca	Brillante
011	6705	18	51	6	- 6	16	15	Sct	6	ca	Gran cúmulo
057	6720	18	53	36	+ 33	2	5	Lyr	9	np	Nebulosa del Anillo
054	6715	18	55	6	- 30	29	5	Sgr	9	cg	Difícil observación
056	6779	19	16	36	+ 30	11	3	Lyr	8	cg	
055	6809	19	40	0	- 30	58	13	Sgr	7	cg	
071	6838	19	53	48	+ 18	47	1	Sge	9	cg	
027	6853	19	59	36	+ 22	43	11	Vul	8	np	Nebulosa de la Mancuerna
075	6864	20	6	6	- 21	55	32	Sgr	8	cg	Cúmulo lejano
029	6913	20	23	54	+ 38	32	5	Cyg	7	ca	
072	6981	20	53	30	- 12	32	18	Aqr	10	cg	Nebulosa Saturno
073	6994	20	59	0	- 12	38	13	Aqr	11	ca	Cuatro estrellas
015	7078	21	30	0	+ 12	10	21	Peg	6	cg	Cúmulo compacto
039	7092	21	32	12	+ 48	26	24	Cyg	5	ca	Cúmulo disperso
002	7089	21	33	30	- 0	49	11	Aqr	6	cg	
030	7099	21	40	24	- 23	11	15	Cap	8	cg	Cuasi elíptico
052	7654	23	24	12	+ 61	35	7	Cas	7	ca	Cúmulo rico

\*Existe controversia en la identificación de estos objetos.

## Lluvias de estrellas, 2023

### Lluvias de estrellas observables a simple vista

Nombre	inicia		máximo		termina		$\alpha$		$\delta$		obj./h	Cometa asociado
	m	d	m	d	m	d	h	m	°	'		
Cuadrántidas	ene	01	ene	03	ene	05	15	18	+49	41	120	
Cancerínidas	ene	01	ene	17	ene	24	08	42	+20	28	4	
Centáuridas	ene	28	feb	07	feb	21	14	00	-59	56	6	
Leónidas	feb	15	feb	24	mar	10	11	12	+16	23	2	
Nórmidas	feb	25	mar	13	mar	22	16	36	-51	56	8	
Virginidas	ene	25	mar	25		15	13	00	-04	30	5	
Líridas		16		22		25	18	06	+34	49	15	C/Thatcher (1861 G1)
Púpidas		15		24		28	07	18	-45	18	26	P/Grigg-Skjellerup
Acuáridas		19		06		28	22	30	-01	66	60	P/Halley
Sagitáridas		15		20	jul	15	16	30	-22	30	5	
Pegásidas	jul	07	jul	10	jul	13	22	42	+15	70	3	
Fenícidas	jul	10	jul	13	jul	16	02	06	-48	47		
Piscis Austrínidas	jul	15	jul	28	ago	10	22	42	-30	35	5	
Acuáridas	jul	12	jul	28	ago	19	22	36	-16	41	20	
Capricórnidas	jul	03	jul	30	ago	15	20	30	-10	23	4	
Acuáridas(sur)	jul	25	ago	04	ago	15	22	18	-15	34	2	
Acuáridas(norte)	jul	15	ago	09	ago	25	22	18	-05	42	4	
Perséidas	jul	17	ago	12	ago	24	03	06	+58	59	140	P/Swift-Tuttle
Cígnidas	ago	03	ago	18	ago	25	19	06	+59	25	3	
Acuáridas(norte)	ago	11	ago	20	ago	31	21	48	-06	31	3	
Aurígidas	ago	25	sep	01	sep	05	05	36	+42	66	10	
Aurígidas	sep	05	sep	09	oct	10	04	00	+47	64	6	
Piscidas	sep	01	sep	20	sep	30	00	18	-01	26	3	
Dracónidas	oct	06	oct	09	oct	10	17	30	+54	20	21	P/Giacobini-Zinner
Gemínidas	oct	14	oct	18	oct	27	06	48	+27	70	2	C/Ikeya (1964 N1)
Oriónidas	oct	02	oct	21	nov	07	06	18	+16	66	20	P/Halley
Táuridas (sur)	oct	01	nov	05	nov	25	03	30	+13	27	5	P/Encke
Táuridas (norte)	oct	01	nov	12	nov	25	03	54	+22	29	5	P/Encke
Leonidas	nov	14	nov	17	nov	21	10	12	+22	71	100	P/Tempel-Tuttle
Monocéridas	nov	15	nov	22	nov	25	07	48	+01	65		
Oriónidas	nov	26	dic	02	dic	15	05	30	+23	28	3	
Fenícidas	nov	28	dic	06	dic	09	01	12	-53	18		D/Blanpain (1819 W1)
Pupí vélidas	dic	01	dic	07	dic	15	08	12	-45	40	10	
Monocéridas	nov	27	dic	09	dic	17	15	00	+08	42	3	D/Mellish (1917 F1)
Hídridas	dic	03	dic	12	dic	15	08	30	+02	58	2	
Gemínidas	dic	07	dic	14	dic	17	07	30	+33	35	120	Phaethon
Coma Berenícidas	dic	12	dic	20	ene	23	11	42	+25	65	5	
Úrsidas	dic	17	dic	22	dic	26	15	00	+76	33	10	P/Tuttle

## Eventos Planetarios, 2023

Hora del meridiano 90° W.G.

Mes				Eventos				Mes				Eventos			
d	h	objeto	suceso	d	h	objeto	suceso	d	h	objeto	suceso	d	h	objeto	suceso
<b>Enero</b>															
1	16	Urano	0.7° al sur de la Luna	5	23	Luna	Luna Llena								
3	14	Marte	0.5° al norte de la Luna	11	16	Júpiter	Conjunción con el Sol								
4	10	Tierra	Perihelio	11	16	Mercurio	Máxima elongación al E(19°)								
6	17	Luna	Luna Llena	13	3	Luna	Cuarto Creciente								
7	7	Mercurio	Conjunción inferior	15	20	Luna	Perigeo								
8	3	Luna	Apogeo	15	22	Saturno	3° al norte de la Luna								
8	13	Palas	Oposición	17	11	Neptuno	2° al norte de la Luna								
12	14	Marte	Estacionario	19	22	Luna	Luna Nueva								
14	20	Luna	Cuarto Creciente	20	15	Venus	8° al norte de Aldebarán								
18	6	Mercurio	Estacionario	21	7	Urano	1.7° al sur de la Luna								
18	9	Plutón	Conjunción con el Sol	21	10	Mercurio	Estacionario								
20	2	Mercurio	7° al norte de la Luna	23	7	Venus	1.3° al sur de la Luna								
21	15	Luna	Perigeo	24	3	Vesta	Conjunción con el Sol								
21	15	Luna	Luna Nueva	25	20	Marte	3° al sur de la Luna								
22	14	Venus	0.4° al sur de Saturno	27	15	Luna	Cuarto Creciente								
22	21	Urano	Estacionario	28	1	Luna	Apogeo								
23	1	Saturno	4° al norte de la Luna	<b>Mayo</b>											
23	2	Venus	3° al norte de la Luna	1	17	Mercurio	Conjunción inferior								
25	0	Neptuno	3° al norte de la Luna	2	17	Plutón	Estacionario								
25	20	Júpiter	1.8° al norte de la Luna	5	12	Luna	Luna Llena								
28	9	Luna	Cuarto Creciente	9	14	Urano	Conjunción con el Sol								
28	22	Urano	0.9° al sur de la Luna	10	14	Marte	5° al sur de Polux								
30	0	Mercurio	Elongación máxima al W(25°)	10	23	Luna	Perigeo								
30	22	Marte	0.1° al norte de la Luna	12	8	Luna	Cuarto Creciente								
<b>Febrero</b>															
4	3	Luna	Apogeo	13	5	Ceres	Ceres								
5	1	Marte	8° al norte de Aldebarán	13	7	Saturno	3° al norte de la Luna								
5	12	Luna	Luna Llena	14	1	Mercurio	Estacionario								
8	14	Ceres	Estacionario	14	19	Neptuno	2° al norte de la Luna								
12	14	Palas	Estacionario	17	7	Júpiter	0.8° al sur de la Luna								
13	10	Luna	Cuarto Creciente	17	20	Mercurio	4° al sur de la Luna								
15	6	Venus	0.01° al sur de Neptuno	19	10	Luna	Luna Nueva								
16	11	Saturno	Conjunción con el Sol	23	6	Venus	2° al sur de la Luna								
18	15	Mercurio	4° al norte de la Luna	24	12	Marte	4° al sur de la Luna								
19	3	Luna	Perigeo	25	20	Luna	Apogeo								
20	1	Luna	Luna Nueva	27	9	Luna	Cuarto Creciente								
21	12	Neptuno	2° al norte de la Luna	29	0	Mercurio	Elongación máxima al W(25°)								
22	2	Venus	2° al norte de la Luna	30	10	Venus	4° al sur de Polux								
22	16	Júpiter	1.2° al norte de la Luna	<b>Junio</b>											
25	7	Urano	1.3° al norte de la Luna	3	22	Luna	Luna Llena								
27	2	Luna	Cuarto Creciente	3	23	Mercurio	3° al sur de Urano								
27	23	Marte	1.1° al sur de la Luna	4	5	Venus	Máxima elongación al E(45°)								
<b>Marzo</b>															
2	5	Venus	0.5° al norte de Júpiter	6	17	Luna	Perigeo								
3	12	Luna	Apogeo	9	14	Saturno	3° al norte de la Luna								
7	7	Luna	Luna Llena	10	14	Luna	Cuarto Creciente								
14	20	Luna	Cuarto Creciente	11	2	Neptuno	2° al norte de la Luna								
15	18	Neptuno	Conjunción con el Sol	14	1	Júpiter	1.5° al sur de la Luna								
17	5	Mercurio	Conjunción superior	15	4	Urano	2° al sur de la Luna								
19	9	Luna	Perigeo	16	15	Mercurio	4° al sur de la Luna								
19	9	Saturno	4° al norte de la Luna	17	8	Mercurio	4° al norte de Aldebarán								
20	15	Sol	Equinoccio	17	23	Luna	Luna Nueva								
21	2	Ceres	Oposición	18	9	Saturno	Estacionario								
21	11	Luna	Luna Nueva	20	2	Jun	Conjunción con el Sol								
22	14	Júpiter	0.5° al norte de la Luna	21	9	Sol	Solsticio								
22	4	Venus	0.1° al norte de la Luna	21	19	Venus	4° al sur de la Luna								
24	19	Urano	1.5° al sur de la Luna	22	4	Marte	4° al sur de la Luna								
28	7	Marte	2° al sur de la Luna	22	13	Luna	Apogeo								
28	9	Mercurio	1.5° al norte de Júpiter	<b>Julio</b>											
28	21	Luna	Cuarto Creciente	26	2	Luna	Cuarto Creciente								
31	0	Venus	11.3nUrano	0	23	Mercurio	Conjunción superior								
31	5	Luna	Apogeo	1	7	Neptuno	Estacionario								
				3	6	Luna	Luna Llena								
				4	16	Luna	Perigeo								

## Eventos Planetarios, 2023

Hora del meridiano 90° W.G.

Mes		Eventos		Mes		Eventos	
d	h	objeto	suceso	d	h	objeto	suceso
6	14	Tierra	Afelio	<b>Octubre</b>			
6	21	Saturno	3° al norte de la Luna	29	4	Luna	Luna Llena
7	14	Venus	Máximo brillo	1	10	Palas	Conjunción con el Sol
8	8	Neptuno	1.7° al norte de la Luna	1	21	Júpiter	3° al sur de la Luna
9	20	Luna	Cuarto Creciente	2	11	Urano	3° al sur de la Luna
10	2	Marte	0.7° al norte de Régulo	6	8	Luna	Cuarto Creciente
11	15	Júpiter	2° al sur de la Luna	9	22	Luna	Apogeo
12	12	Urano	2° al sur de la Luna	9	23	Venus	2° al sur de Régulo
17	13	Luna	Luna Nueva	10	4	Venus	6° al sur de la Luna
19	3	Mercurio	4° al sur de la Luna	10	18	Plutón	Estacionario
20	1	Luna	Apogeo	14	12	Luna	Luna Nueva
20	3	Venus	8° al sur de la Luna	18	8	Antares	0.8° al sur de la Luna
20	17	Venus	Estacionario	20	0	Mercurio	Conjunción superior
20	22	Marte	3° al sur de la Luna	21	21	Luna	Cuarto Creciente
21	22	Plutón	Plutón en oposición	23	17	Venus	Elongación máxima al W(46°)
25	16	Luna	Cuarto Creciente	24	2	Saturno	3° al norte de la Luna
26	7	Mercurio	5° al norte de Venus	25	19	Neptuno	1.5° al norte de la Luna
<b>Agosto</b>				25	21	Luna	Perigeo
28	19	Mercurio	0.1° al sur de Régulo	28	14	Luna	Luna Llena
1	13	Luna	Luna Llena	29	2	Júpiter	3° al sur de la Luna
2	0	Luna	Perigeo	<b>Noviembre</b>			
3	4	Saturno	2° al norte de la Luna	29	20	Urano	3° al sur de la Luna
4	16	Neptuno	1.5° al norte de la Luna	2	22	Vesta	Estacionario
8	4	Júpiter	3° al sur de la Luna	2	23	Júpiter	Oposición
8	4	Luna	Cuarto Creciente	4	11	Saturno	Estacionario
8	20	Urano	3° al sur de la Luna	5	3	Luna	Cuarto Creciente
9	20	Mercurio	Máxima elongación al E(27°)	6	16	Luna	Apogeo
13	5	Venus	Conjunción inferior	9	3	Venus	1° al sur de la Luna
16	4	Luna	Luna Nueva	13	3	Luna	Luna Nueva
16	6	Luna	Apogeo	13	11	Urano	Oposición
18	5	Mercurio	7° al sur de la Luna	14	14	Antares	0.9° al sur de la Luna
18	5	Palas	1.1° al sur de la Luna	16	12	Mercurio	3nAntares
18	17	Marte	2° al sur de la Luna	18	0	Marte	Conjunción con el Sol
22	23	Mercurio	Estacionario	20	5	Luna	Cuarto Creciente
24	4	Luna	Cuarto Creciente	20	8	Saturno	3° al norte de la Luna
24	20	Antares	1.1° al sur de la Luna	20	10	Ceres	Conjunción con el Sol
27	2	Saturno	Oposición	21	15	Luna	Perigeo
28	21	Urano	Estacionario	22	2	Neptuno	1.5° al norte de la Luna
30	10	Luna	Perigeo	25	5	Júpiter	3° al sur de la Luna
30	12	Saturno	2° al norte de la Luna	26	3	Urano	3° al sur de la Luna
30	20	Luna	Luna Llena	27	3	Luna	Luna Llena
<b>Septiembre</b>				<b>Diciembre</b>			
1	1	Neptuno	1.4° al norte de la Luna	28	3	Venus	4° al norte de Espiga
2	22	Venus	Estacionario	4	8	Mercurio	Máxima elongación al E(21°)
4	14	Júpiter	3° al sur de la Luna	4	13	Luna	Apogeo
4	15	Júpiter	Estacionario	5	0	Luna	Cuarto Creciente
5	3	Urano	3° al sur de la Luna	6	18	Neptuno	Estacionario
6	5	Mercurio	Conjunción inferior	9	11	Venus	4° al norte de la Luna
6	16	Luna	Cuarto Creciente	12	18	Luna	Luna Nueva
11	7	Venus	11° al sur de la Luna	12	23	Mercurio	Estacionario
12	10	Luna	Apogeo	13	23	Mercurio	4° al norte de la Luna
14	18	Mercurio	Estacionario	16	13	Luna	Perigeo
14	20	Luna	Luna Nueva	17	16	Saturno	2° al norte de la Luna
16	13	Marte	0.7° al sur de la Luna	19	7	Neptuno	1.3° al norte de la Luna
19	1	Venus	Máximo brillo	19	13	Luna	Cuarto Creciente
19	5	Neptuno	Oposición	21	13	Vesta	Oposición
21	2	Antares	0.9° al sur de la Luna	21	21	Sol	Solsticio
22	7	Mercurio	Elongación máxima al W(18°)	22	8	Júpiter	3° al sur de la Luna
22	14	Luna	Cuarto Creciente	22	13	Mercurio	Conjunción inferior
23	1	Sol	Equinoccio	23	9	Urano	3° al sur de la Luna
26	19	Saturno	3° al norte de la Luna	26	19	Luna	Luna Llena
27	19	Luna	Perigeo	31	9	Júpiter	Estacionario
28	11	Neptuno	1.4° al norte de la Luna				

## Pasos cenitales del sol, 2023

Para algunas poblaciones de la República Mexicana

Hora del meridiano 90° W.G.

Población	mes	día	$\varphi = \delta$		Paso cenital	
			h	m	h	m
<b>Aguascalientes</b>						
Aguascalientes	may	30	23	12.7	12	34.9
Calvillo	may	30	17	50.8	12	36.6
Puertecitos	may	31	13	51.7	12	34.8
Agascalientes	jul	12	20	11.1	12	43.0
Puertecitos	jul	12	05	33.4	12	42.8
Calvillo	jul	13	01	41.8	12	44.9
<b>Baja-California-Sur</b>						
San-Jose-del-Cabo	jun	11	00	17.5	13	06.5
San-Jose-del-Cabo	jul	01	17	50.9	13	10.7
<b>Campeche</b>						
Merma	may	12	17	31.6	11	47.0
Carmen-Isla	may	14	07	11.9	11	51.9
Escarcega	may	14	03	20.2	11	47.4
Champoton	may	17	07	52.4	11	47.4
Dzibalchen	may	17	19	41.6	11	43.5
Iturbide	may	18	08	55.5	11	43.0
Campeche	may	19	14	15.7	11	46.8
Bolonchenticul	may	20	08	28.3	11	43.7
Becal	may	22	12	28.2	11	44.9
Becal	jul	21	08	16.1	11	54.7
Bolonchenticul	jul	23	12	40.1	11	53.7
Campeche	jul	24	07	03.0	11	56.9
Iturbide	jul	25	12	37.6	11	53.1
Champoton	jul	26	13	54.2	11	57.6
Dzibalchen	jul	26	02	00.1	11	53.7
Carmen-Isla	jul	29	15	16.5	12	02.1
Escarcega	jul	29	19	10.1	11	57.6
Merma	jul	31	05	20.3	11	57.0
<b>Colima</b>						
Colima	may	16	20	12.3	12	39.5
Manzanillo	may	16	00	36.8	12	41.9
Colima	jul	27	01	42.3	12	49.7
Manzanillo	jul	27	21	26.4	12	52.1
<b>Chiapas</b>						
Suchiate	abr	29	21	35.4	11	54.2
Cacahuaton	abr	30	22	36.6	11	54.1
Puerto-Madero	abr	30	00	57.8	11	59.2
Las-Margaritas	may	02	18	44.9	11	57.6
Jaltenango	may	03	21	28.3	11	56.0
Comitan	may	05	05	25.3	11	53.4
Chiapa-de-Corzo	may	06	20	09.8	11	56.9
Ocosingo	may	07	13	48.9	11	53.1
Pichucalco	may	09	21	01.5	11	57.1
Catazaja	may	10	15	39.9	11	52.7
Catazaja	ago	02	07	43.2	12	02.6
Pichucalco	ago	03	02	33.5	12	06.9
Ocosingo	ago	05	10	21.6	12	02.6
Chiapa-de-Corzo	ago	06	04	12.0	12	06.2
Comitan	ago	07	19	22.1	12	02.5
Jaltenango	ago	09	03	39.4	12	04.7
Las-Margaritas	ago	10	06	40.7	12	06.0
<b>Cacahuaton</b>						
Cacahuaton	ago	12	03	18.6	12	02.0
Puerto-Madero	ago	13	01	13.0	12	06.9
Suchiate	ago	13	04	37.2	12	01.8
<b>Ciudad-de-Mexico</b>						
Atzacapotzalco	may	17	21	41.3	12	21.3
Ciudad-Universitaria	may	17	05	59.9	12	21.3
Chapultepec	may	17	15	13.7	12	21.3
Ixtapalapa	may	17	08	24.6	12	20.9
Mexico	may	17	16	39.4	12	21.1
Tacubaya	may	17	13	24.7	12	21.3
Tlalpam	may	17	01	05.1	12	21.2
Atzacapotzalco	jul	25	23	59.6	12	31.5
Ciudad-Universitaria	jul	26	15	47.5	12	31.5
Chapultepec	jul	26	06	29.9	12	31.5
Ixtapalapa	jul	26	13	21.8	12	31.1
Mexico	jul	26	05	03.6	12	31.3
Tacubaya	jul	26	08	19.7	12	31.5
Tlalpam	jul	26	20	44.3	12	31.4
<b>Durango</b>						
Santa-Maria-Ocotlan	jun	09	00	00.1	12	45.8
Santa-Maria-Ocotlan	jul	03	18	20.7	12	50.8
<b>Guerrero</b>						
Acapulco	may	07	07	34.7	12	24.4
San-Marcos	may	07	03	27.2	12	22.1
Chilpancingo	may	09	23	08.2	12	22.6
Petatlan	may	09	21	34.7	12	29.8
Zihuatanejo	may	10	06	54.4	12	30.9
Coyuca-de-Catalan	may	13	00	32.5	12	27.1
Taxco	may	13	22	07.7	12	22.9
Teloloapan	may	13	03	54.8	12	24.0
Coyuca-de-Catalan	jul	30	22	14.0	12	37.3
Taxco	jul	30	00	27.2	12	33.1
Teloloapan	jul	30	18	49.9	12	34.2
Zihuatanejo	ago	02	16	34.1	12	40.8
Chilpancingo	ago	03	00	25.5	12	32.4
Petatlan	ago	03	01	60.0	12	39.6
Acapulco	ago	05	16	39.9	12	33.9
San-Marcos	ago	05	20	50.2	12	31.6
<b>Guanajuato</b>						
Abasolo	may	22	13	19.3	12	26.9
Celaya	may	22	22	21.4	12	28.1
Irapuato	may	23	17	25.8	12	30.3
Salamanca	may	23	04	33.8	12	29.7
Guanajuato	may	25	14	26.6	12	30.1
San-Miguel-de-Allend	may	25	00	35.7	12	28.1
Dolores-Hidalgo	may	26	09	57.7	12	28.9
Leon	may	26	04	54.6	12	31.9
Xichu	may	27	05	54.8	12	25.5
Xichu	jul	16	14	00.1	12	34.5
Dolores-Hidalgo	jul	17	10	06.3	12	38.1
Leon	jul	17	15	09.6	12	41.1
Guanajuato	jul	18	05	46.5	12	39.4
San-Miguel-de-Allend	jul	18	19	38.5	12	37.4

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Para algunas poblaciones de la República Mexicana

Hora del meridiano 90° W.G.

Población	mes	día	$\varphi = \delta$		Paso cenital		Población	mes	día	$\varphi = \delta$		Paso cenital		
			h	m	h	m				h	m			
Celaya	jul	20	22	17.6	12	37.8	Tecamac	jul	24	22	59.6	12	30.6	
Irapuato	jul	20	03	06.7	12	39.9	Huexotla	jul	25	23	55.9	12	30.2	
Salamanca	jul	20	16	01.0	12	39.3	Texcoco	jul	25	20	11.1	12	30.3	
Abasolo	jul	21	07	24.8	12	36.7	Tlalnepantla	jul	25	17	28.9	12	31.5	
<b>Hidalgo</b>							Chalco	jul	26	23	13.6	12	30.4	
Apan	may	18	17	22.9	12	18.2	Naucalpan	jul	26	00	21.2	12	31.7	
Tezontepec	may	19	17	55.6	12	19.9	Amecameca	jul	27	13	47.9	12	29.8	
Pachuca	may	20	22	43.9	12	19.6	Ozumba	jul	27	23	32.9	12	29.9	
Real-del-Monte	may	20	23	59.2	12	19.4	Tlalmanalco	jul	27	05	00.8	12	30.0	
Tulancingo	may	20	17	23.3	12	18.2	Ixtapan-de-la	jul	28	19	53.1	12	33.4	
Nopala	may	21	13	45.6	12	19.3	Popocatepetl	jul	28	00	52.6	12	29.2	
Huichapan	may	22	04	23.3	12	23.4	Tenancingo	jul	28	06	46.4	12	33.1	
Pisa-Flores	may	26	15	05.4	12	21.2	San-Antonio-del-Rosa	jul	30	15	35.7	12	35.9	
Pisa-Flores	jul	17	04	58.4	12	30.3	<b>Michoacan</b>							
Huichapan	jul	21	16	22.7	12	33.2	Tacambaro	may	16	19	07.8	12	30.4	
Nopala	jul	22	07	09.6	12	29.3	Uruapan	may	17	14	46.9	12	32.8	
Pachuca	jul	22	22	17.4	12	29.6	Janitzio	may	18	07	58.7	12	31.2	
Real-del-Monte	jul	22	20	59.6	12	29.3	Morelia	may	18	22	17.8	12	29.4	
Tulancingo	jul	23	03	42.4	12	28.2	Patzcuaro	may	18	04	13.4	12	31.1	
Tezontepec	jul	24	03	21.8	12	30.0	Cotija	may	19	10	18.8	12	35.5	
Apan	jul	25	04	07.1	12	28.4	Maravatio	may	19	19	27.8	12	26.4	
<b>Jalisco</b>							Zacapu	may	19	11	15.2	12	31.8	
Cihuatlan	may	16	19	35.7	12	42.8	Cotija	jul	24	11	01.2	12	45.6	
Tecatitlan	may	17	20	44.2	12	37.8	Maravatio	jul	24	01	49.2	12	36.5	
Cocula	may	22	07	02.9	12	40.1	Morelia	jul	24	23	09.1	12	39.5	
Guadalajara	may	23	21	47.4	12	38.4	Zacapu	jul	24	10	04.5	12	41.9	
Puerto-Vallarta	may	23	09	58.6	12	45.9	Janitzio	jul	25	13	34.8	12	41.4	
Lagos-de-Moreno	may	27	13	58.5	12	33.0	Patzcuaro	jul	25	17	21.5	12	41.2	
Colotlan	jun	01	16	13.1	12	39.0	Uruapan	jul	26	06	56.9	12	43.0	
Colotlan	jul	11	03	06.2	12	46.7	Tacambaro	jul	27	02	47.3	12	40.6	
Lagos-de-Moreno	jul	16	05	56.6	12	41.9	<b>Morelos</b>							
Guadalajara	jul	19	22	42.0	12	48.0	Cuautla	may	14	23	11.9	12	20.3	
Puerto-Vallarta	jul	20	10	35.2	12	55.5	Cuernavaca	may	15	10	22.2	12	21.5	
Cocula	jul	21	13	42.6	12	49.9	Huitzilac	may	15	21	52.4	12	21.6	
Tecatitlan	jul	26	00	57.2	12	48.0	Oaxtepec	may	15	08	53.6	12	20.4	
Cihuatlan	jul	27	02	19.2	12	53.0	Cuautla	jul	28	23	07.2	12	30.5	
<b>Mexico</b>							Cuernavaca	jul	28	11	50.4	12	31.7	
San-Antonio-del-Rosa	may	13	07	07.3	12	25.8	Huitzilac	jul	28	00	14.8	12	31.8	
Ixtapan-de-la	may	15	02	23.3	12	23.2	Oaxtepec	jul	28	13	19.8	12	30.6	
Ozumba	may	15	22	33.3	12	19.7	<b>Nayarit</b>							
Popocatepetl	may	15	21	14.9	12	19.0	Ixtlan-del-Rio	may	25	16	59.7	12	42.6	
Tenancingo	may	15	15	23.8	12	22.9	San-BLas	may	28	17	30.8	12	46.6	
Amecameca	may	16	08	12.0	12	19.6	Tepic	may	28	13	19.6	12	45.0	
Chalco	may	16	22	38.8	12	20.2	Mezcaltitan	may	31	03	41.4	12	47.7	
Tlalmanalco	may	16	16	55.2	12	19.8	Acaponeta	jun	04	17	27.1	12	47.9	
Huexotla	may	17	21	44.9	12	20.1	Acaponeta	jul	08	01	35.2	12	54.7	
Naucalpan	may	17	21	19.9	12	21.5	Mezcaltitan	jul	12	15	41.3	12	55.7	
Otumba	may	18	21	46.6	12	19.6	San-BLas	jul	15	02	16.2	12	55.3	
Tecamac	may	18	22	26.9	12	20.5	Tepic	jul	15	06	27.2	12	53.7	
Texcoco	may	18	01	24.9	12	20.1	Ixtlan-del-Rio	jul	18	03	13.1	12	51.9	
Tlalnepantla	may	18	04	06.1	12	21.4	<b>Oaxaca</b>							
Atlatomulco	may	19	09	14.9	12	20.2	Huatulco	may	03	18	06.1	12	10.4	
Atlatomulco	jul	24	12	05.5	12	30.2	Puerto-Angel	may	03	03	59.0	12	11.1	
Otumba	jul	24	23	41.2	12	29.8								

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Para algunas poblaciones de la República Mexicana

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Población	mes	día	$\varphi = \delta$		Paso cenital	
			h	m	h	m
Salinas-Cruz	may	04	21	35.5	12	05.8
Juchitan-de-Zaragoza	may	05	20	32.7	12	05.0
Miahuatlan	may	05	12	12.5	12	11.3
Tehuantepec	may	05	12	06.8	12	05.8
Guichicovi	may	07	19	34.1	12	05.7
Putla	may	07	23	46.0	12	16.5
Etla	may	08	15	47.2	12	11.9
Oaxaca-de-Juarez	may	08	03	05.7	12	11.6
Tlaxiaco	may	08	21	16.1	12	15.4
Guelatao	may	09	02	09.9	12	10.6
Ocotepc	may	10	21	44.0	12	10.2
Valle-Nacional	may	10	10	43.3	12	09.8
Huautla	may	12	05	07.0	12	11.9
Huautla	jul	31	17	51.9	12	22.0
Ocotepc	ago	02	01	35.4	12	20.1
Valle-Nacional	ago	02	12	42.8	12	19.7
Guelatao	ago	03	21	37.0	12	20.4
Etla	ago	04	08	06.5	12	21.5
Oaxaca-de-Juarez	ago	04	20	56.2	12	21.2
Tlaxiaco	ago	04	02	34.1	12	25.1
Guichicovi	ago	05	04	32.7	12	15.2
Putla	ago	05	00	18.1	12	26.0
Juchitan-de-Zaragoza	ago	07	04	04.4	12	14.1
Miahuatlan	ago	07	12	30.3	12	20.4
Tehuantepec	ago	07	12	36.0	12	14.9
Salinas-Cruz	ago	08	03	16.4	12	14.7
Huatulco	ago	09	07	04.0	12	19.0
Puerto-Angel	ago	09	21	21.1	12	19.7
<b>Puebla</b>						
Chila-Asuncion	may	11	14	12.9	12	16.0
Izucar-de-Matamoros	may	14	02	48.6	12	18.4
Tepeji-de-Rodriguez	may	14	00	36.9	12	16.2
Atlixco	may	15	09	44.7	12	18.3
Popocatepetl	may	15	21	14.9	12	19.0
Puebla-de-Zaragoza	may	15	23	19.3	12	17.3
Tecali	may	15	08	46.8	12	16.4
Tonantzintla	may	15	22	24.8	12	17.8
Cuautlancingo	may	16	04	07.9	12	17.6
Cholula	may	16	01	29.1	12	17.8
Huejotzingo	may	16	11	29.1	12	18.2
Tlaltenango	may	16	12	40.6	12	17.9
San-Martin-Textmeluca	may	17	00	34.7	12	18.3
Huauchinango	may	21	04	53.2	12	16.9
Huauchinango	jul	22	16	04.3	12	26.9
San-Martin-Textmeluca	jul	26	21	14.9	12	28.5
Cuautlancingo	jul	27	17	53.8	12	27.8
Cholula	jul	27	20	33.7	12	28.0
Huejotzingo	jul	27	10	29.3	12	28.4
Puebla-de-Zaragoza	jul	27	22	45.5	12	27.5
Tlaltenango	jul	27	09	17.3	12	28.1
Tonantzintla	jul	27	23	41.7	12	28.0
Atlixco	jul	28	12	28.2	12	28.5
Popocatepetl	jul	28	00	52.6	12	29.2
Tecali	jul	28	13	26.6	12	26.6
Izucar-de-Matamoros	jul	29	19	42.0	12	28.6
Tepeji-de-Rodriguez	jul	29	21	54.8	12	26.4
Chila-Asuncion	ago	01	08	55.9	12	26.0
<b>Queretaro</b>						
San-Juan-del-Rio	may	22	06	11.7	12	24.8
Cadereyta	may	23	19	59.8	12	24.2
Queretaro	may	23	07	09.9	12	26.4
Jalpan	may	26	18	21.3	12	23.1
Arroyo-Seco	may	28	18	38.7	12	24.2
Arroyo-Seco	jul	15	01	08.5	12	32.9
Jalpan	jul	17	01	42.4	12	32.2
Cadereyta	jul	20	00	32.3	12	33.8
Queretaro	jul	20	13	24.5	12	36.1
San-Juan-del-Rio	jul	21	14	33.9	12	34.6
<b>Quintana-Roo</b>						
Xkalak	may	12	14	08.7	11	35.9
Chetumal	may	13	16	13.7	11	37.7
Santa-Cruz-Chico	may	15	12	19.8	11	37.2
Carrillo-Puerto	may	18	08	40.9	11	36.8
Cozumel	may	22	22	13.2	11	32.6
Kantunil-Kin	may	26	02	16.0	11	35.1
Cabo-Catoche	may	29	03	37.4	11	34.0
Cabo-Catoche	jul	14	16	00.5	11	42.5
Kantunil-Kin	jul	17	17	48.2	11	44.3
Cozumel	jul	20	22	26.1	11	42.4
Carrillo-Puerto	jul	25	12	52.4	11	46.9
Santa-Cruz-Chico	jul	28	09	51.9	11	47.4
Chetumal	jul	30	06	24.3	11	47.9
Xkalak	jul	31	08	45.2	11	46.0
<b>San-Luis-Potosi</b>						
Tamanzuchale	may	27	01	04.6	12	20.5
Rio-Verde	may	31	08	09.5	12	25.8
San-Luis-Potosi	jun	01	23	08.4	12	29.9
Arista	jun	06	04	13.6	12	30.2
Arista	jul	06	14	29.9	12	36.3
San-Luis-Potosi	jul	10	20	01.6	12	37.4
Rio-Verde	jul	12	11	14.3	12	33.8
Tamanzuchale	jul	16	18	50.3	12	29.4
<b>Sinaloa</b>						
Rosario	jun	09	23	22.4	12	50.8
Mazatlan	jun	13	00	47.0	12	53.8
Mazatlan	jun	29	17	10.7	12	57.3
Rosario	jul	02	18	54.5	12	55.6
<b>Tabasco</b>						
Tapijulapa	may	09	15	08.6	11	55.8
Astapa	may	10	19	54.9	11	56.6
Tierr-Colorada	may	11	12	32.6	11	55.1
Villahermosa	may	11	15	29.6	11	56.2
Comcalcalco	may	12	17	55.6	11	57.4
Ignacio-Allende	may	13	05	39.2	11	55.9
Ignacio-Allende	jul	30	17	04.6	12	06.1
Comcalcalco	jul	31	04	56.1	12	07.5
Tierr-Colorada	ago	01	10	37.1	12	05.1
Villahermosa	ago	01	07	38.4	12	06.2
Astapa	ago	02	03	25.6	12	06.5

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Población	mes	día	$\varphi = \delta$		Paso cenital	
			h	m	h	m
Tapijulapa	ago	03	08	30.1	12	05.6
<b>Tamaulipas</b>						
Ocampo	may	24	15	08.4	12	22.3
Jaumave	jun	18	11	06.1	12	26.7
Jaumave	jun	24	07	05.3	12	28.0
Ocampo	jul	19	05	14.4	12	31.8
<b>Tlaxcala</b>						
Cuauhutotohuatlan	may	16	07	21.4	12	17.2
Huamantla	may	17	03	58.4	12	16.3
Tlaxcala	may	17	04	18.0	12	17.5
Huamantla	jul	26	17	49.8	12	26.5
Tlaxcala	jul	26	17	30.0	12	27.7
Cuauhutotohuatlan	jul	27	14	38.8	12	27.4
<b>Veracruz</b>						
Minatitlan	may	11	14	45.7	12	02.7
Pl.-Vicente	may	11	01	08.1	12	07.8
Coatzacoalcos	may	12	06	47.7	12	02.2
Tehuipango	may	13	18	48.7	12	12.8
Tierra-Blanca	may	13	11	59.3	12	10.0
Alvarado	may	14	19	41.9	12	07.6
Tamarindo	may	14	18	16.9	12	10.0
Tlacotalpan	may	14	03	45.2	12	07.2
Cordoba	may	15	08	05.9	12	12.2
Orizaba	may	15	03	40.0	12	12.9
Pico-de-Orizaba	may	15	22	28.2	12	13.6
Huatusco	may	16	10	40.3	12	12.3
Rizo	may	16	00	40.3	12	08.2
Veracruz	may	16	15	55.9	12	09.1
Actopan	may	18	00	09.8	12	11.0
Jalapa	may	18	02	43.7	12	12.3
Martines-de-la	may	20	15	27.4	12	12.9
Coatzintla	may	22	17	39.1	12	14.6
Papantla	may	22	13	07.0	12	14.1
Tihuatlan	may	23	23	41.3	12	15.1
Chicontepec	may	25	08	48.9	12	17.7
Tuxpan	may	25	06	04.5	12	14.7
Ixcatepec	may	26	21	16.1	12	17.2
Tantoyuca	may	27	13	27.0	12	18.2
Ixcatepec	jul	16	22	44.8	12	26.3
Tantoyuca	jul	16	06	28.0	12	27.1
Chicontepec	jul	18	11	24.7	12	27.1
Tuxpan	jul	18	14	09.3	12	24.0
Tihuatlan	jul	19	20	44.1	12	24.6
Coatzintla	jul	21	03	04.0	12	24.4
Papantla	jul	21	07	37.1	12	23.9
Martines-de-la	jul	23	05	38.9	12	22.9
Actopan	jul	25	21	26.6	12	21.2
Jalapa	jul	25	18	51.8	12	22.4
Huatusco	jul	27	11	18.5	12	22.6
Pico-de-Orizaba	jul	27	23	38.2	12	23.8
Rizo	jul	27	21	22.9	12	18.4
Veracruz	jul	27	06	00.5	12	19.3
Cordoba	jul	28	14	07.9	12	22.5
Orizaba	jul	28	18	35.8	12	23.1
<b>Yucatan</b>						
Alvarado	jul	29	02	40.1	12	17.8
Tamarindo	jul	29	04	05.8	12	20.2
Tlacotalpan	jul	29	18	44.9	12	17.4
Tehuipango	jul	30	03	48.0	12	22.9
Tierra-Blanca	jul	30	10	41.1	12	20.1
Coatzacoalcos	jul	31	16	10.3	12	12.3
Minatitlan	ago	01	08	22.7	12	12.7
Pl.-Vicente	ago	01	22	08.4	12	17.8
<b>Zacatecas</b>						
Becanchen	may	19	17	33.1	11	41.5
Maxcanu	may	23	06	17.2	11	44.9
Celestum	may	24	17	27.7	11	46.6
Merida	may	25	09	54.2	11	43.7
Tzimin	may	26	06	25.5	11	37.8
Chavihau	may	27	14	17.8	11	41.8
Progreso	may	27	05	54.8	11	43.9
Telchac	may	27	12	09.6	11	42.4
Chavihau	jul	16	05	37.3	11	50.7
Progreso	jul	16	14	00.1	11	52.9
Telchac	jul	16	07	45.4	11	51.3
Tzimin	jul	17	13	38.6	11	46.9
Merida	jul	18	10	19.3	11	53.0
Celestum	jul	19	02	54.7	11	56.1
Maxcanu	jul	20	14	17.4	11	54.6
Becanchen	jul	24	03	44.5	11	51.6
<b>Juchipila</b>						
Juchipila	may	27	22	16.6	12	37.8
Nochistlan	may	27	15	03.8	12	36.7
Villanueva	jun	03	13	46.7	12	37.8
Jerez	jun	06	04	33.4	12	38.8
Observatorio-Astrono	jun	07	00	40.5	12	37.1
Panuco	jun	08	14	59.1	12	37.3
Calera	jun	09	11	19.1	12	38.2
Fresnillo	jun	12	15	57.1	12	39.5
Fresnillo	jun	30	02	27.4	12	43.3
Calera	jul	03	07	11.7	12	43.2
Panuco	jul	04	03	39.9	12	42.7
Observatorio-Astrono	jul	05	17	54.2	12	42.9
Jerez	jul	06	14	10.3	12	44.9
Villanueva	jul	09	05	19.8	12	44.9
Juchipila	jul	15	21	33.2	12	46.6
Nochistlan	jul	16	04	51.3	12	45.6



## Fases de la Luna, 2023

Hora del meridiano 90° W.G.

### Luna Nueva

mes	d	h	m
ene	21	14	53
feb	20	1	6
mar	21	11	23
abr	19	22	13
may	19	9	53
jun	17	22	37
jul	17	12	32
ago	16	3	38
sep	14	19	40
oct	14	11	55
nov	13	3	27
dic	12	17	32

### Cuarto Creciente

mes	d	h	m
ene	28	9	19
feb	27	2	6
mar	28	20	32
abr	27	15	20
may	27	9	22
jun	26	1	50
jul	25	16	7
ago	24	3	57
sep	22	13	32
oct	21	21	29
nov	20	4	50
dic	19	12	39

### Luna Llena

mes	d	h	m
ene	6	17	8
feb	5	12	29
mar	7	6	40
abr	5	22	35
may	5	11	34
jun	3	21	42
jul	3	5	39
ago	1	12	32
ago	30	19	36
sep	29	3	58
oct	28	14	24
nov	27	3	16
dic	26	18	33

### Cuarto Menguante

mes	d	h	m
ene	14	20	10
feb	13	10	1
mar	14	20	8
abr	13	3	11
may	12	8	28
jun	10	13	31
jul	9	19	48
ago	8	4	28
sep	6	16	21
oct	6	7	48
nov	5	2	37
dic	4	23	49
...	...	...	...

## Crepúsculos, salidas y puestas de Sol, 2023

Hora local

LATITUD 30°

	AM	CM	SS	PS	CV	AV		AM	CM	SS	PS	CV	AV
	h m	h m	h m	h m	h m	h m		h m	h m	h m	h m	h m	h m
Ene 1	5 31	6 30	6 56	17 12	17 38	18 37	Jul 6	3 29	4 37	5 05	19 05	19 32	20 40
7	5 32	6 31	6 57	17 16	17 42	18 41	12	3 33	4 41	5 08	19 04	19 30	20 38
13	5 33	6 31	6 57	17 21	17 47	18 45	18	3 38	4 44	5 11	19 01	19 28	20 34
19	5 32	6 30	6 56	17 26	17 52	18 50	24	3 43	4 48	5 14	18 58	19 25	20 30
25	5 31	6 28	6 54	17 31	17 57	18 54	30	3 48	4 52	5 18	18 55	19 21	20 24
31	5 29	6 26	6 51	17 37	18 02	18 59	Ago 5	3 53	4 56	5 22	18 50	19 16	20 18
Feb 6	5 26	6 22	6 47	17 42	18 07	19 03	11	3 58	5 00	5 25	18 45	19 10	20 12
12	5 22	6 18	6 42	17 47	18 11	19 07	17	4 03	5 04	5 29	18 39	19 04	20 04
18	5 17	6 13	6 37	17 51	18 16	19 11	23	4 08	5 07	5 32	18 33	18 57	19 57
24	5 11	6 07	6 31	17 56	18 20	19 15	29	4 12	5 11	5 35	18 26	18 50	19 49
Mar 2	5 05	6 01	6 25	18 00	18 24	19 19	Sep 4	4 17	5 14	5 39	18 19	18 43	19 40
8	4 59	5 54	6 18	18 04	18 28	19 23	10	4 21	5 18	5 42	18 11	18 35	19 32
14	4 52	5 47	6 11	18 08	18 32	19 27	16	4 25	5 21	5 45	18 04	18 28	19 24
20	4 44	5 40	6 04	18 12	18 35	19 31	22	4 29	5 25	5 48	17 56	18 20	19 16
26	4 36	5 33	5 56	18 15	18 39	19 36	28	4 32	5 28	5 52	17 49	18 13	19 08
Abr 1	4 28	5 25	5 49	18 19	18 43	19 40	Oct 4	4 36	5 31	5 55	17 42	18 06	19 01
7	4 20	5 18	5 42	18 22	18 47	19 44	10	4 39	5 35	5 59	17 35	17 59	18 54
13	4 13	5 11	5 35	18 26	18 51	19 49	16	4 43	5 39	6 03	17 28	17 52	18 48
19	4 05	5 04	5 29	18 30	18 55	19 54	22	4 47	5 42	6 07	17 22	17 46	18 42
25	3 57	4 58	5 23	18 34	18 59	19 59	28	4 50	5 47	6 11	17 16	17 41	18 37
May 1	3 50	4 52	5 17	18 38	19 03	20 05	Nov 3	4 54	5 51	6 16	17 11	17 36	18 33
7	3 44	4 46	5 12	18 41	19 07	20 10	9	4 58	5 55	6 20	17 07	17 32	18 29
13	3 38	4 42	5 08	18 45	19 11	20 16	15	5 03	6 00	6 25	17 04	17 29	18 27
19	3 33	4 38	5 04	18 49	19 16	20 21	21	5 07	6 05	6 30	17 02	17 27	18 25
25	3 28	4 35	5 02	18 53	19 19	20 26	27	5 11	6 09	6 35	17 00	17 26	18 24
31	3 25	4 33	5 00	18 56	19 23	20 31	Dic 3	5 15	6 14	6 40	17 00	17 26	18 25
6	3 23	4 31	4 59	18 59	19 26	20 35	9	5 19	6 18	6 44	17 01	17 27	18 26
12	3 22	4 31	4 58	19 02	19 29	20 38	15	5 23	6 22	6 48	17 02	17 29	18 28
18	3 22	4 31	4 59	19 04	19 31	20 40	21	5 26	6 25	6 52	17 05	17 31	18 30
24	3 24	4 33	5 00	19 05	19 32	20 41	27	5 29	6 28	6 54	17 08	17 35	18 34
30	3 26	4 35	5 02	19 05	19 33	20 41	Ene 2	5 31	6 30	6 56	17 12	17 38	18 37

LATITUD 25°

	AM	CM	SS	PS	CV	AV		AM	CM	SS	PS	CV	AV
	h m	h m	h m	h m	h m	h m		h m	h m	h m	h m	h m	h m
Ene 1	5 24	6 20	6 45	17 22	17 47	18 44	7	4 28	5 22	5 45	18 19	18 42	19 37
7	5 26	6 22	6 47	17 27	17 51	18 48	13	4 21	5 16	5 40	18 22	18 45	19 40
13	5 27	6 22	6 47	17 31	17 56	18 51	19	4 15	5 11	5 34	18 25	18 48	19 44
19	5 27	6 22	6 47	17 36	18 00	18 55	25	4 08	5 05	5 29	18 27	18 51	19 48
25	5 26	6 21	6 45	17 40	18 04	18 59	May 1	4 03	5 00	5 24	18 30	18 54	19 52
31	5 25	6 19	6 43	17 44	18 08	19 03	7	3 57	4 56	5 20	18 33	18 58	19 56
Feb 6	5 22	6 16	6 40	17 49	18 12	19 06	13	3 52	4 52	5 17	18 36	19 01	20 01
12	5 19	6 13	6 36	17 53	18 16	19 10	19	3 48	4 49	5 14	18 39	19 04	20 05
18	5 15	6 09	6 32	17 56	18 19	19 13	25	3 45	4 47	5 12	18 42	19 08	20 09
24	5 11	6 04	6 27	18 00	18 23	19 16	31	3 43	4 45	5 10	18 45	19 11	20 13
Mar 2	5 06	5 59	6 22	18 03	18 26	19 19	Jun 6	3 41	4 44	5 10	18 48	19 14	20 16
8	5 00	5 53	6 16	18 06	18 29	19 22	12	3 41	4 44	5 10	18 50	19 16	20 19
14	4 54	5 47	6 10	18 09	18 31	19 25	18	3 41	4 45	5 10	18 52	19 18	20 21
20	4 48	5 41	6 04	18 11	18 34	19 27	24	3 42	4 46	5 12	18 53	19 19	20 22
26	4 41	5 35	5 58	18 14	18 37	19 30	30	3 45	4 48	5 14	18 54	19 20	20 23
Abr 1	4 35	5 29	5 52	18 17	18 40	19 34	Jul 6	3 47	4 50	5 16	18 54	19 19	20 22

## Crepúsculos, salidas y puestas de Sol, 2023

Hora local

LATITUD 25°

	AM	CM	SS	PS	CV	AV		AM	CM	SS	PS	CV	AV	
	h m	h m	h m	h m	h m	h m		h m	h m	h m	h m	h m	h m	
	12	3 51	4 53	5 18	18 53	19 18	20 20	10	4 40	5 33	5 56	17 38	18 01	18 54
	18	3 54	4 56	5 21	18 51	19 16	20 18	16	4 43	5 36	5 59	17 32	17 55	18 48
	24	3 58	4 59	5 24	18 49	19 14	20 14	22	4 45	5 39	6 02	17 27	17 50	18 43
	30	4 02	5 02	5 27	18 46	19 10	20 10	28	4 48	5 42	6 05	17 22	17 46	18 39
Ago 5	4 07	5 05	5 30	18 42	19 06	20 05	Nov 3	4 51	5 45	6 09	17 18	17 42	18 36	
	11	4 10	5 08	5 32	18 38	19 02	19 59	9	4 54	5 49	6 13	17 15	17 39	18 33
	17	4 14	5 11	5 35	18 33	18 57	19 53	15	4 58	5 53	6 17	17 12	17 37	18 31
	23	4 18	5 14	5 37	18 27	18 51	19 47	21	5 01	5 57	6 21	17 11	17 35	18 30
	29	4 21	5 16	5 40	18 22	18 45	19 40	27	5 05	6 01	6 25	17 10	17 35	18 30
Sep 4	4 24	5 19	5 42	18 15	18 39	19 33	Dic 3	5 09	6 05	6 30	17 10	17 35	18 31	
	10	4 27	5 21	5 44	18 09	18 32	19 26	9	5 12	6 09	6 34	17 11	17 36	18 33
	16	4 30	5 24	5 46	18 03	18 26	19 19	15	5 16	6 12	6 37	17 13	17 38	18 35
	22	4 33	5 26	5 49	17 56	18 19	19 12	21	5 19	6 16	6 41	17 16	17 41	18 37
	28	4 35	5 28	5 51	17 50	18 13	19 06	27	5 22	6 18	6 43	17 19	17 44	18 41
Oct 4	4 38	5 31	5 53	17 44	18 06	18 59	Ene 2	5 24	6 21	6 45	17 23	17 48	18 44	

LATITUD 20°

	AM	CM	SS	PS	CV	AV		AM	CM	SS	PS	CV	AV	
	h m	h m	h m	h m	h m	h m		h m	h m	h m	h m	h m	h m	
Ene 1	5 17	6 11	6 35	17 32	17 56	18 51	May 1	4 13	5 08	5 31	18 24	18 47	19 42	
	7	5 19	6 13	6 37	17 36	18 00	7	4 09	5 04	5 27	18 26	18 49	19 45	
	13	5 20	6 14	6 38	17 40	18 04	13	4 05	5 01	5 25	18 28	18 52	19 48	
	19	5 21	6 14	6 38	17 44	18 08	19 01	19	4 02	4 59	5 23	18 31	18 55	19 52
	25	5 21	6 14	6 37	17 48	18 11	19 04	25	3 59	4 57	5 21	18 33	18 57	19 55
	31	5 20	6 13	6 36	17 52	18 15	19 07	31	3 57	4 56	5 20	18 36	19 00	19 58
Feb 6	5 19	6 11	6 34	17 55	18 18	19 10	Jun 6	3 56	4 55	5 20	18 38	19 02	20 01	
	12	5 16	6 08	6 31	17 58	18 21	19 13	12	3 56	4 56	5 20	18 40	19 04	20 04
	18	5 13	6 05	6 27	18 01	18 23	19 15	18	3 57	4 56	5 21	18 41	19 06	20 06
	24	5 10	6 01	6 23	18 03	18 26	19 17	24	3 58	4 58	5 22	18 43	19 07	20 07
Mar 2	5 06	5 57	6 19	18 06	18 28	19 19	30	4 00	4 59	5 24	18 43	19 08	20 07	
	8	5 01	5 52	6 14	18 08	18 30	19 21	Jul 6	4 03	5 02	5 26	18 44	19 08	20 07
	14	4 56	5 47	6 09	18 09	18 31	19 23	12	4 05	5 04	5 28	18 43	19 07	20 06
	20	4 51	5 42	6 04	18 11	18 33	19 24	18	4 08	5 06	5 30	18 42	19 06	20 04
	26	4 45	5 37	5 59	18 13	18 35	19 26	24	4 12	5 09	5 33	18 40	19 04	20 01
Abr 1	4 40	5 31	5 54	18 14	18 37	19 28	30	4 15	5 11	5 35	18 38	19 01	19 58	
	7	4 34	5 26	5 48	18 16	18 38	19 31	Ago 5	4 18	5 14	5 37	18 35	18 58	19 54
	13	4 28	5 21	5 44	18 18	18 40	19 33	11	4 21	5 16	5 39	18 31	18 54	19 49
	19	4 23	5 16	5 39	18 20	18 42	19 36	17	4 24	5 18	5 41	18 27	18 50	19 44
	25	4 18	5 12	5 35	18 22	18 44	19 39	23	4 26	5 20	5 42	18 23	18 45	19 39

## Crepúsculos, salidas y puestas de Sol, 2023

Hora local

LATITUD 20°

	AM	CM	SS	PS	CV	AV		AM	CM	SS	PS	CV	AV
	h m	h m	h m	h m	h m	h m		h m	h m	h m	h m	h m	h m
29	4 28	5 21	5 44	18 18	18 40	19 33	Nov 3	4 48	5 40	6 03	17 24	17 47	18 39
Sep 4	4 31	5 23	5 45	18 13	18 35	19 27	9	4 50	5 43	6 06	17 22	17 45	18 38
10	4 32	5 24	5 46	18 07	18 29	19 21	15	4 53	5 46	6 09	17 20	17 43	18 37
16	4 34	5 26	5 48	18 02	18 24	19 15	21	4 56	5 49	6 13	17 19	17 43	18 36
22	4 36	5 27	5 49	17 56	18 18	19 09	27	4 59	5 53	6 16	17 19	17 43	18 37
28	4 37	5 28	5 50	17 51	18 13	19 04	Dic 3	5 02	5 56	6 20	17 20	17 44	18 38
Oct 4	4 39	5 30	5 52	17 45	18 07	18 58	9	5 05	6 00	6 24	17 21	17 45	18 40
10	4 40	5 31	5 53	17 40	18 02	18 54	15	5 09	6 03	6 27	17 23	17 47	18 42
16	4 42	5 33	5 55	17 36	17 58	18 49	21	5 12	6 07	6 31	17 26	17 50	18 45
22	4 43	5 35	5 57	17 31	17 54	18 45	27	5 15	6 09	6 33	17 29	17 53	18 48
28	4 45	5 37	6 00	17 28	17 50	18 42	Ene 2	5 17	6 12	6 36	17 33	17 57	18 51

LATITUD 15°

	AM	CM	SS	PS	CV	AV		AM	CM	SS	PS	CV	AV
	h m	h m	h m	h m	h m	h m		h m	h m	h m	h m	h m	h m
Ene 1	5 10	6 03	6 26	17 42	18 05	18 58	Jul 6	4 16	5 12	5 35	18 34	18 58	19 54
7	5 12	6 05	6 28	17 45	18 08	19 01	12	4 18	5 14	5 37	18 34	18 57	19 53
13	5 14	6 06	6 29	17 49	18 12	19 04	18	4 20	5 16	5 39	18 33	18 57	19 52
19	5 15	6 07	6 30	17 52	18 15	19 07	24	4 23	5 18	5 41	18 32	18 55	19 50
25	5 15	6 07	6 30	17 55	18 18	19 10	30	4 25	5 20	5 42	18 30	18 53	19 47
31	5 15	6 07	6 29	17 58	18 21	19 12	Ago 5	4 28	5 21	5 44	18 28	18 51	19 44
Feb 6	5 14	6 05	6 28	18 01	18 23	19 14	11	4 30	5 23	5 45	18 25	18 48	19 40
12	5 13	6 04	6 26	18 03	18 25	19 16	17	4 32	5 24	5 46	18 22	18 44	19 36
18	5 11	6 01	6 23	18 05	18 27	19 17	23	4 33	5 25	5 47	18 18	18 40	19 32
24	5 08	5 58	6 20	18 07	18 28	19 18	29	4 35	5 26	5 47	18 14	18 36	19 27
Mar 2	5 05	5 55	6 16	18 08	18 30	19 19	Sep 4	4 36	5 26	5 48	18 10	18 31	19 22
8	5 01	5 51	6 12	18 09	18 31	19 20	10	4 37	5 27	5 48	18 05	18 27	19 17
14	4 57	5 47	6 08	18 10	18 32	19 21	16	4 37	5 27	5 49	18 01	18 22	19 12
20	4 53	5 43	6 04	18 11	18 32	19 22	22	4 38	5 28	5 49	17 56	18 17	19 07
26	4 48	5 38	6 00	18 12	18 33	19 23	28	4 38	5 28	5 50	17 51	18 13	19 03
Abr 1	4 44	5 34	5 55	18 12	18 34	19 24	Oct 4	4 39	5 29	5 50	17 47	18 08	18 58
7	4 39	5 30	5 51	18 13	18 35	19 25	10	4 39	5 29	5 51	17 43	18 04	18 54
13	4 34	5 25	5 47	18 14	18 36	19 27	16	4 40	5 30	5 52	17 39	18 01	18 51
19	4 30	5 21	5 43	18 15	18 37	19 29	22	4 41	5 31	5 53	17 36	17 57	18 48
25	4 26	5 18	5 40	18 16	18 38	19 30	28	4 42	5 33	5 55	17 33	17 55	18 45
May 1	4 22	5 15	5 37	18 17	18 40	19 33	Nov 3	4 44	5 35	5 57	17 30	17 53	18 44
7	4 18	5 12	5 34	18 19	18 42	19 35	9	4 45	5 37	5 59	17 29	17 51	18 42
13	4 15	5 09	5 32	18 21	18 44	19 38	15	4 47	5 39	6 02	17 28	17 50	18 42
19	4 13	5 08	5 31	18 23	18 46	19 40	21	4 50	5 42	6 05	17 27	17 50	18 42
25	4 11	5 06	5 30	18 24	18 48	19 43	27	4 52	5 45	6 08	17 28	17 51	18 43
31	4 10	5 06	5 29	18 26	18 50	19 46	Dic 3	4 55	5 48	6 11	17 29	17 52	18 45
Jun 6	4 09	5 06	5 29	18 28	18 52	19 48	9	4 58	5 51	6 15	17 30	17 54	18 47
12	4 10	5 06	5 30	18 30	18 54	19 50	15	5 01	5 55	6 18	17 33	17 56	18 49
18	4 10	5 07	5 31	18 32	18 55	19 52	21	5 04	5 58	6 21	17 36	17 59	18 52
24	4 12	5 08	5 32	18 33	18 57	19 53	27	5 07	6 01	6 24	17 39	18 02	18 55
30	4 13	5 10	5 34	18 34	18 57	19 54	Ene 2	5 10	6 03	6 26	17 42	18 05	18 58

## Eclipses 2023

Hora del meridiano 90° W.G.

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### I.- Eclipse anular-total del 19 al 20 de abril de 2023, no se observará en el República Mexicana.

<i>Circunstancias</i>	<i>mes</i>	<i>d</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia el eclipse		19	19	34	24
Inicia eclipse norte umbra		19	20	37	6
Inicia eclipse central		19	20	37	6
Inicia eclipse sur umbral		19	20	37	6
Eclipse central		19	21	55	36
Fin eclipse norte umbra		19	23	56	36
Fin eclipse central		19	23	56	36
Fin eclipse sur umbra		19	19	56	36
Fin del eclipse		20	0	59	24

La trayectoria del eclipse anular iniciará en el sur del Océano Índico, en la región central entre Madagascar, Australia y la Antártica. Pasará por la costa occidental extrema de Australia, Cabo Range, para continuar hacia la región entre Indonesia y Papúa para finalizar en la región de Federación Micronesia e Islas Marshall.

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### II.- Eclipse penumbral de Luna el 5 de mayo de 2023, no se observará en la República Mexicana.

<i>Circunstancias</i>	<i>mes</i>	<i>d</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia el eclipse penumbral		5	9	12	6
Media el eclipse		11	22	54	
Fin del eclipse penumbral		5	13	38	48

El eclipse se observará en el hemisferio desde el norte de Asia hasta el continente Antártico. Se observarán todas su fases en la región central de Asia, el Océano Índico, Filipinas, Indonesia, Australia.

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## Eclipses 2023

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Hora del meridiano 90° W.G.

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**III.- Eclipse anular de sol el 14 de octubre de 2023**, se observará en la República Mexicana.

<i>Circunstancias</i>	<i>mes</i>	<i>d</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia el eclipse	oct	14	9	3	48
Inicia límite sur umbra	oct	14	10	11	42
Inicia eclipse central	oct	14	10	12	24
Inicia límite norte umbral	oct	14	10	13	12
Eclipse central	oct	14	11	36	36
Fin límite norte umbral	oct	14	13	46	6
Fin del eclipse central	oct	14	13	46	48
Fin límite sur umbral	oct	14	13	47	30
Fin del eclipse	oct	14	14	55	18

La trayectoria del eclipse iniciará en la región norte del Océano Pacífico al sur de las costas de Alaska y al oeste del Canadá. Entrará al Norte del continente Americano en la región norte de la costa occidental de Estados Unidos, y saldrá por las costas de Tamaulipas

**IV.- Eclipse parcial de luna el 28 de octubre de 2023**, no se observará como eclipse parcial en el República Mexicana.

<i>Circunstancias</i>	<i>mes</i>	<i>d</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia el eclipse	oct	28	11	59	54
Inicia el eclipse parcial	oct	28	13	34	30
Máximo del eclipse	oct	28	14	14	6
Fin del eclipse parcial	oct	28	14	53	36
Fin del eclipse	oct	28	16	28	16

# Eclipse anular de sol (fase parcial) 14 de octubre de 2023

(Hora del meridian 90°W.G.)

ESTADO	ini	alt	cen	alt	fin	alt	dur	gra			
Población	h	m	°	h	m	°	h	m	h	%	
<b>Aguascalientes</b>											
Aguascalientes	9	29.7	35	10	59.5	52	12	38.1	60	3.14	68
Calvillo	9	29.5	35	10	58.8	51	12	37.0	60	3.13	67
Puertecito	9	29.6	35	10	59.4	52	12	38.0	60	3.14	68
Rincon de Romos	9	29.1	35	10	58.8	51	12	37.4	60	3.14	69
<b>Baja California</b>											
Bailador Isla	9	10.1	16	10	28.0	31	11	55.2	44	2.75	68
Cedros Isla	9	14.4	19	10	32.2	34	11	59.5	48	2.75	58
Ensenada	9	10.0	16	10	27.5	30	11	54.2	44	2.74	67
Gpe Isla	9	12.2	16	10	27.5	31	11	52.1	45	2.66	56
Mexicali	9	9.8	16	10	28.3	31	11	56.0	44	2.77	71
San Benito Isla	9	14.0	19	10	31.5	34	11	58.4	47	2.74	58
San Pedro Martir	9	11.1	17	10	29.3	32	11	56.9	45	2.76	66
<b>Baja California Sur</b>											
Asuncion Isla	9	15.9	21	10	34.3	36	12	2.2	50	2.77	57
Jose del Cabo	9	23.7	28	10	45.7	44	12	17.2	57	2.89	54
La Paz	9	21.6	26	10	43.2	42	12	14.4	55	2.88	56
Muleje	9	17.1	23	10	37.9	39	12	8.3	52	2.85	61
Roca Alijos Isla	9	19.1	22	10	37.4	38	12	5.0	52	2.76	52
San Marcos Isla	9	16.5	22	10	37.1	38	12	7.2	51	2.85	61
Tortugas Isla	9	16.3	22	10	37.1	38	12	7.5	51	2.85	62
<b>Campeche</b>											
Carmen Isla	9	45.7	49	11	24.7	62	13	9.4	57	3.39	87
Escarcega	9	47.3	50	11	26.9	63	13	11.9	56	3.41	89
Lerma	9	48.0	50	11	27.9	63	13	13.0	56	3.42	89
Palizada	9	44.6	48	11	23.2	62	13	7.8	57	3.39	87
<b>Chiapas</b>											
Cacahuanton	9	52.4	52	11	32.0	66	13	16.8	59	3.41	78
Catazaja	9	47.1	49	11	26.2	63	13	11.0	58	3.40	84
Comitan	9	49.8	51	11	29.3	65	13	14.1	59	3.41	81
Chiapa de Corzo	9	47.9	49	11	26.5	64	13	11.0	59	3.39	80
Jaltenango	9	49.9	50	11	28.9	65	13	13.5	59	3.39	79
Las Margaritas	9	50.1	50	11	28.9	65	13	13.4	60	3.39	77
Ocosingo	9	48.6	50	11	27.9	64	13	12.7	58	3.40	83
Pichucalco	9	46.2	48	11	24.5	63	13	9.0	59	3.38	81
Puerto Madero	9	51.5	51	11	30.1	66	13	14.3	60	3.38	74
Suchiate	9	53.1	52	11	32.8	66	13	17.5	59	3.41	77
Tuxtla Gutierrez	9	47.7	49	11	26.2	64	13	10.7	59	3.38	79
<b>Chihuahua</b>											
Ahumada	9	15.9	25	10	41.0	40	12	15.5	50	2.99	82
Camargo	9	19.6	28	10	46.3	44	12	22.3	54	3.04	77
Ciudad Juarez	9	15.1	25	10	40.0	39	12	14.1	49	2.98	85

# Eclipse anular de sol (fase parcial) 14 de octubre de 2023

(Hora del meridian 90°W.G.)

ESTADO Población	ini		alt		cen		alt		fin		alt		dur h	gra %
	h	m	°	h	m	°	h	m	°	h	m	°		
Cusihuiriachi	9	18.0	27	10	43.2	42	12	17.9	53	3.00	74			
Chihuahua	9	18.0	27	10	43.8	42	12	19.0	52	3.02	77			
Guadalupe Y Calvo	9	20.5	28	10	45.7	44	12	20.4	55	3.00	68			
Ojinaga	9	18.3	28	10	45.2	43	12	21.2	52	3.05	83			
Parral Hidalgo del Valle del Rosario	9	20.2	28	10	46.5	44	12	22.3	54	3.03	73			
9	19.3	28	10	45.1	43	12	20.3	54	3.02	73				
<b>Ciudad de México</b>														
Atzacapotzalco	9	36.4	41	11	9.2	57	12	50.2	61	3.23	70			
Ciudad Universitaria	9	36.7	41	11	9.5	57	12	50.5	62	3.23	69			
Chapultepec	9	36.5	41	11	9.4	57	12	50.3	62	3.23	70			
Ixtapalapa	9	36.7	41	11	9.7	57	12	50.7	62	3.23	70			
Mexico	9	36.5	41	11	9.4	57	12	50.4	61	3.23	70			
Tacubaya	9	36.5	41	11	9.4	57	12	50.3	62	3.23	70			
Tlalpam	9	36.7	41	11	9.6	57	12	50.6	62	3.23	69			
Xochimilco	9	36.9	41	11	9.8	57	12	50.8	62	3.23	69			
<b>Coahuila</b>														
Acuna	9	21.5	31	10	50.6	46	12	28.5	52	3.12	89			
Cuatro Cienegas	9	22.8	32	10	52.0	47	12	30.1	55	3.12	81			
Laguna de Jaco	9	20.3	29	10	47.8	45	12	24.5	54	3.07	80			
Monclova	9	23.5	32	10	53.1	48	12	31.7	55	3.14	83			
Parras	9	24.6	33	10	54.0	48	12	32.5	56	3.13	77			
Piedras Negras	9	22.4	32	10	52.1	46	12	30.4	53	3.13	89			
Saltillo	9	25.6	34	10	55.9	49	12	35.1	56	3.16	80			
Torreon	9	23.5	32	10	51.8	47	12	29.4	56	3.10	75			
Viesca	9	24.2	32	10	53.1	48	12	31.2	56	3.12	76			
<b>Colima</b>														
Colima	9	33.7	36	11	1.7	53	12	38.5	62	3.08	58			
Manzanillo	9	33.7	36	11	1.0	53	12	37.1	63	3.06	56			
Socorro Isla	9	31.9	30	10	50.4	46	12	17.7	60	2.76	40			
<b>Durango</b>														
Ciudad Lerdo	9	23.4	31	10	51.7	47	12	29.2	56	3.10	74			
Durango	9	24.7	32	10	52.1	48	12	28.8	57	3.07	68			
Gomez Palacio	9	23.4	31	10	51.7	47	12	29.2	56	3.10	75			
Nazas	9	23.4	31	10	51.2	47	12	28.3	56	3.08	72			
Santa Maria Ocotlan	9	26.5	32	10	54.0	49	12	30.6	59	3.07	65			
Santiago Papasquiaro	9	22.8	30	10	49.4	46	12	25.5	56	3.05	69			
Tepehuanes	9	22.1	30	10	48.4	45	12	24.2	56	3.03	69			
Tlahualilo	9	22.8	31	10	51.0	47	12	28.5	56	3.10	76			
<b>Guerrero</b>														
Acapulco	9	41.1	42	11	13.2	59	12	53.1	64	3.20	62			
Coyuca de Catalan	9	37.5	40	11	8.9	57	12	48.4	63	3.18	63			
Chilpancingo	9	39.9	42	11	12.5	59	12	52.9	63	3.22	64			



# Eclipse anular de sol (fase parcial) 14 de octubre de 2023

(Hora del meridian 90°W.G.)

ESTADO	ini	alt	cen	alt	fin	alt	dur	gra			
Población	h	m	°	h	m	°	h	m	h	%	
Petatlan	9	38.7	40	11	9.3	57	12	48.1	64	3.16	60
S.marcos	9	41.6	43	11	14.3	60	12	54.7	64	3.22	63
Taxco	9	37.8	41	11	10.3	58	12	50.8	62	3.22	66
Teloloapan	9	38.0	41	11	10.2	58	12	50.4	63	3.21	65
Zihuatanejo	9	38.3	40	11	8.6	57	12	47.1	64	3.15	59
Zirandaro	9	36.9	40	11	8.0	57	12	47.3	63	3.17	63
<b>Guanajuato</b>											
Abasolo	9	33.5	38	11	5.0	55	12	45.0	61	3.19	69
Celaya	9	33.2	38	11	4.4	54	12	44.1	61	3.18	68
Dolores Hidalgo	9	32.0	37	11	3.0	54	12	42.7	60	3.18	69
Guanajuato	9	32.0	37	11	2.7	54	12	42.2	61	3.17	68
Irapuato	9	32.5	37	11	3.2	54	12	42.5	61	3.17	67
Leon	9	31.5	37	11	1.8	53	12	40.9	61	3.16	67
Salamanca	9	32.8	38	11	3.7	54	12	43.1	61	3.17	67
S.miguel de Allende	9	32.5	38	11	3.8	54	12	43.6	61	3.18	69
Xichu	9	32.5	38	11	4.3	54	12	44.7	60	3.20	72
Yuriria	9	34.3	39	11	6.2	55	12	46.4	61	3.20	69
<b>Hidalgo</b>											
Apan	9	36.7	41	11	10.3	57	12	51.8	61	3.25	72
Huichapan	9	34.4	39	11	6.7	56	12	47.4	61	3.22	71
Nopala	9	35.4	40	11	8.7	56	12	50.1	61	3.24	73
Pachuca	9	35.6	40	11	8.8	57	12	50.1	61	3.24	72
Pisaflores	9	33.6	39	11	6.4	55	12	47.4	60	3.23	74
Real del Monte	9	35.6	40	11	8.9	57	12	50.2	61	3.24	73
Tezontepec	9	36.0	41	11	9.1	57	12	50.4	61	3.24	72
Tulancingo	9	36.0	41	11	9.6	57	12	51.1	61	3.25	73
Zimapan	9	34.0	39	11	6.5	55	12	47.4	60	3.22	72
<b>Jalisco</b>											
Cihuatlan	9	33.2	36	11	0.3	52	12	36.1	62	3.05	56
Cocula	9	31.4	35	10	59.4	52	12	36.4	61	3.08	60
Colotlan	9	28.7	34	10	57.5	51	12	35.2	60	3.11	66
Guadalajara	9	31.1	35	10	59.6	52	12	37.1	61	3.10	62
Lagos de Moreno	9	30.9	36	11	1.0	53	12	39.9	60	3.15	67
Puerto Vallarta	9	30.2	34	10	56.7	50	12	32.3	61	3.04	58
Tecatitlan	9	33.4	37	11	2.0	53	12	39.3	62	3.10	59
Tequila	9	30.4	35	10	58.6	51	12	35.6	61	3.09	62
<b>México</b>											
Amecameca	9	37.4	41	11	10.7	58	12	51.9	62	3.24	70
Atlacomulco	9	36.0	41	11	9.2	57	12	50.4	61	3.24	71
Chalco	9	37.0	41	11	10.2	57	12	51.3	62	3.24	70
Huexotla	9	36.7	41	11	9.8	57	12	51.0	61	3.24	71
Ixtapan de la Sal	9	37.2	41	11	9.6	57	12	50.1	62	3.22	67
Naucalpan	9	36.3	41	11	9.2	57	12	50.1	61	3.23	70

# Eclipse anular de sol (fase parcial) 14 de octubre de 2023

(Hora del meridian 90°W.G.)

ESTADO Población	ini			cen			fin			dur h	gra %
	h	m	°	h	m	°	h	m	°		
Otumba	9	36.3	41	11	9.6	57	12	50.9	61	3.24	71
Ozumba	9	37.5	41	11	10.8	58	12	52.0	62	3.24	70
Popocatepetl	9	37.6	42	11	11.1	58	12	52.5	62	3.25	70
S.antonio del Rosario	9	37.6	40	11	9.3	57	12	49.2	63	3.19	64
Tecamac	9	36.1	41	11	9.2	57	12	50.3	61	3.24	71
Tenancingo	9	37.0	41	11	9.5	57	12	50.1	62	3.22	67
Texcoco	9	36.6	41	11	9.7	57	12	50.9	61	3.24	71
Tlalmanalco	9	37.2	41	11	10.4	57	12	51.7	62	3.24	70
Tlalnepantla	9	36.3	40	11	9.1	57	12	50.1	61	3.23	70
Toluca	9	36.3	40	11	8.7	57	12	49.3	62	3.22	68
<b>Michoacán</b>											
Cotija	9	33.2	37	11	2.4	54	12	40.4	62	3.12	62
Janitzio	9	34.3	38	11	4.7	55	12	43.6	62	3.15	64
Maravatio	9	34.6	39	11	6.2	55	12	46.2	61	3.19	68
Morelia	9	34.4	38	11	5.2	55	12	44.6	62	3.17	65
Patzcuaro	9	34.4	38	11	4.8	55	12	43.7	62	3.16	64
Tacambaro	9	35.1	39	11	5.7	55	12	44.7	62	3.16	63
Uruapan	9	34.3	38	11	4.3	55	12	42.8	62	3.14	62
Zacapu	9	33.7	38	11	4.0	54	12	42.8	62	3.15	64
Zitacuaro	9	35.5	39	11	7.2	56	12	47.2	62	3.20	67
<b>Morelos</b>											
Cuautla	9	37.9	41	11	11.0	58	12	52.1	62	3.24	69
Cuernavaca	9	37.4	41	11	10.3	57	12	51.1	62	3.23	68
Huitzilac	9	37.2	41	11	10.0	57	12	50.8	62	3.23	68
Oaxtepec	9	37.7	41	11	10.8	58	12	51.8	62	3.24	69
Yautepec	9	37.6	41	11	10.6	58	12	51.6	62	3.23	69
<b>Nayarit</b>											
Acaponeta	9	26.8	32	10	53.4	48	12	29.3	59	3.04	62
Ixtlan del Rio	9	29.9	34	10	57.4	51	12	34.0	61	3.07	61
Mezcaltitan	9	27.7	32	10	54.2	49	12	29.8	60	3.04	60
S.blas	9	28.4	33	10	55.1	49	12	30.8	60	3.04	60
Tepic	9	28.7	33	10	55.7	50	12	31.9	60	3.05	61
Tuxpan	9	28.5	34	10	56.4	50	12	33.3	60	3.08	64
<b>Nuevo León</b>											
Cerralvo	9	26.0	35	10	57.2	50	12	37.0	56	3.18	85
Galeana	9	27.2	35	10	58.4	51	12	38.3	57	3.18	81
Linares	9	27.6	36	10	59.2	51	12	39.3	57	3.20	82
Montemorelos	9	26.9	35	10	58.2	50	12	38.1	56	3.19	82
Monterrey	9	25.9	34	10	56.7	50	12	36.2	56	3.17	82
Vallecillo	9	25.0	34	10	55.8	49	12	35.2	55	3.17	85
Villaldama	9	24.8	34	10	55.3	49	12	34.5	55	3.16	84
Zaragoza	9	28.9	36	11	0.7	52	12	41.1	58	3.20	79

## Eclipse anular de sol (fase parcial) 14 de octubre de 2023

(Hora del meridian 90°W.G.)

ESTADO	ini	alt	cen	alt	fin	alt	dur	gra			
Población	h	m	°	h	m	°	h	m	°	h	%
<b>Oaxaca</b>											
Etla	9	42.9	45	11	18.2	61	13	0.7	62	3.30	71
Guichicovi	9	44.9	47	11	21.7	62	13	5.1	61	3.34	74
Guelatao	9	42.9	45	11	18.5	61	13	1.2	62	3.30	72
Huatulco	9	46.2	47	11	22.1	63	13	4.7	63	3.31	69
Huautla	9	41.0	44	11	16.2	60	12	58.7	61	3.30	73
Juchitlan de Zaragoza	9	46.2	48	11	23.2	63	13	6.7	61	3.34	74
Miahuatlan	9	44.9	46	11	20.4	62	13	2.9	62	3.30	69
Oaxaca de Juarez	9	43.3	45	11	18.7	61	13	1.2	62	3.30	70
Ocotepc	9	42.1	45	11	17.7	61	13	0.5	61	3.31	73
Puertoangel	9	46.4	47	11	22.1	63	13	4.5	63	3.30	68
Putla	9	42.3	44	11	16.5	61	12	58.1	63	3.26	67
Salinas Cruz	9	46.6	48	11	23.5	63	13	6.9	61	3.34	72
Tehuantepec	9	46.2	47	11	23.1	63	13	6.4	61	3.34	73
Tlaxiaco	9	42.0	44	11	16.4	60	12	58.3	62	3.27	68
Valle Nacional	9	42.4	45	11	18.2	61	13	1.0	61	3.31	73
Yalalag	9	43.5	46	11	19.4	62	13	2.3	62	3.31	72
<b>Puebla</b>											
Atlixco	9	38.1	42	11	11.7	58	12	53.2	62	3.25	70
Cuautlancingo	9	37.9	42	11	11.7	58	12	53.3	61	3.26	71
Chila Asuncion	9	40.4	43	11	14.7	60	12	56.5	62	3.27	70
Cholula	9	37.9	42	11	11.7	58	12	53.2	61	3.26	71
Huauchinango	9	36.1	41	11	10.0	57	12	51.7	60	3.26	74
Huejotzingo	9	37.6	42	11	11.3	58	12	52.8	61	3.25	71
Izucar de Matamoros	9	38.7	42	11	12.3	58	12	53.7	62	3.25	69
Popocatepetl	9	37.6	42	11	11.1	58	12	52.5	62	3.25	70
Puebla de Zaragoza	9	38.0	42	11	11.9	58	12	53.5	61	3.26	71
S. Martin Texmelucan	9	37.4	41	11	11.0	58	12	52.5	61	3.25	71
Tecali	9	38.5	42	11	12.6	58	12	54.4	61	3.26	71
Tepeji Rodriguez	9	39.2	43	11	13.3	59	12	55.1	62	3.27	71
Tlaltenango	9	37.7	42	11	11.4	58	12	52.9	61	3.25	71
Tonantzintla	9	38.0	42	11	11.7	58	12	53.3	61	3.25	71
Zacatlán de las Manzanas	9	36.6	41	11	10.6	57	12	52.4	61	3.26	74
<b>Querétaro</b>											
Arroyo Seco	9	32.4	38	11	4.5	54	12	45.1	60	3.21	74
Cadereyta	9	33.7	39	11	5.8	55	12	46.4	61	3.21	71
Jalpan	9	33.1	39	11	5.5	55	12	46.3	60	3.22	73
Queretaro	9	33.4	38	11	5.1	55	12	45.1	61	3.19	69
San Juan del Rio	9	34.1	39	11	6.1	55	12	46.5	61	3.21	70
Tequisquiapan	9	33.9	39	11	6.0	55	12	46.5	61	3.21	70
<b>Quintana Roo</b>											
Cabo Catoche	9	48.1	50	11	27.8	60	13	11.8	52	3.39	83
Carrillo Puerto	9	49.6	51	11	30.2	62	13	15.1	53	3.42	90
Cozumel	9	50.0	52	11	30.4	61	13	14.8	52	3.41	85
Kantunil Kin.	9	48.2	51	11	28.1	61	13	12.4	52	3.40	85

# Eclipse anular de sol (fase parcial) 14 de octubre de 2023

(Hora del meridian 90°W.G.)

ESTADO	ini	alt	cen	alt	fin	alt	dur	gra			
Población	h	m	°	h	m	°	h	m	°	h	%
<b>San Luis Potosí</b>											
Arista	9	29.6	36	11	0.6	52	12	40.3	59	3.18	73
Matehuala	9	28.3	36	10	59.3	51	12	39.1	58	3.18	76
Rio Verde	9	31.5	38	11	3.3	54	12	43.7	60	3.20	74
San Luis Potosi	9	30.3	37	11	1.2	53	12	40.9	59	3.18	72
Tamazunchale	9	33.6	39	11	6.6	55	12	47.8	60	3.24	75
Tamuín	9	34.1	40	11	7.1	56	12	48.4	60	3.24	74
<b>Sinaloa</b>											
Altata	9	22.0	28	10	46.2	44	12	20.0	56	2.97	62
Badiraguato	9	21.1	28	10	45.8	44	12	20.0	55	2.98	65
Culiacan	9	22.0	28	10	46.8	44	12	21.0	56	2.98	64
La Laguna	9	19.0	26	10	42.9	42	12	16.3	54	2.96	67
Mazatlan	9	25.0	31	10	50.6	47	12	25.6	58	3.01	62
Mocorito	9	20.7	27	10	45.1	43	12	18.9	55	2.97	65
Rosario	9	25.7	31	10	51.8	48	12	27.3	58	3.03	62
Sta. Maria	9	20.0	26	10	43.1	42	12	15.8	54	2.93	62
Sinaloa	9	20.1	27	10	44.2	43	12	17.8	54	2.96	65
Topolobampo	9	20.0	26	10	43.3	42	12	16.1	54	2.93	63
<b>Sonora</b>											
Agua Prieta	9	13.5	22	10	36.3	37	12	8.6	48	2.92	78
Alamos	9	18.2	25	10	41.7	41	12	14.7	53	2.94	67
Altar	9	12.9	21	10	34.1	36	12	4.8	48	2.87	72
Arizpe	9	14.0	22	10	36.4	37	12	8.4	49	2.91	74
Baroyeca	9	17.2	25	10	40.2	40	12	12.8	52	2.93	67
Cananea	9	13.4	22	10	35.7	37	12	7.5	48	2.90	75
Ciudad Obregón	9	17.1	24	10	39.7	40	12	11.9	52	2.91	66
Guaymas	9	16.2	23	10	37.9	39	12	9.3	51	2.89	65
Hermosillo	9	14.8	22	10	36.7	38	12	8.0	50	2.89	69
Huatabampo	9	18.1	25	10	40.9	41	12	13.3	53	2.92	65
Macoyahui	9	17.8	25	10	41.3	41	12	14.4	53	2.94	68
Navojoa	9	17.9	25	10	40.9	41	12	13.5	53	2.93	66
Nogales	9	12.8	21	10	34.6	36	12	5.8	48	2.88	75
Sahuaripa	9	15.7	24	10	39.0	39	12	11.8	51	2.93	72
Santa Clara	9	10.9	18	10	30.0	32	11	58.5	45	2.79	70
Soyopa	9	15.8	24	10	38.7	39	12	11.2	51	2.92	70
Tiburón	9	14.4	21	10	34.7	36	12	4.5	49	2.84	64
Yabaras	9	18.3	25	10	41.2	41	12	13.7	53	2.92	65
<b>Tabasco</b>											
Astapa	9	45.8	48	11	24.3	63	13	8.7	59	3.38	82
Comalcalco	9	44.7	48	11	22.8	62	13	7.2	59	3.37	83
Ignacio Allende	9	44.9	48	11	23.3	62	13	7.7	58	3.38	84
Tapijulapa	9	46.7	49	11	25.3	63	13	9.9	59	3.39	82
Tierra Colorada	9	45.9	48	11	24.6	63	13	9.2	58	3.39	83
Villahermosa	9	45.5	48	11	24.0	62	13	8.5	58	3.38	83
Xicotencatl	9	46.7	49	11	25.4	63	13	10.0	58	3.39	82

## Eclipse anular de sol (fase parcial) 14 de octubre de 2023

(Hora del meridian 90°W.G.)

ESTADO	ini		alt		cen		alt		fin		alt		dur	gra
Población	h	m	°	h	m	°	h	m	°	h	m	°	h	%
<b>Tamaulipas</b>														
Camargo	9	26.5	35	10	58.1	50	12	38.2	55	3.19			87	
Ciudad Victoria	9	29.5	37	11	1.7	52	12	42.4	58	3.21			80	
Cruillas	9	28.7	37	11	1.1	52	12	41.8	57	3.22			84	
Guemes	9	29.4	37	11	1.6	52	12	42.3	57	3.22			81	
Guerrero	9	25.5	34	10	56.6	49	12	36.3	55	3.18			87	
Jaumave	9	29.8	37	11	1.9	53	12	42.4	58	3.21			79	
Matamoros	9	28.4	37	11	1.0	51	12	41.7	55	3.22			89	
Mendez	9	28.2	36	11	0.4	51	12	41.0	56	3.21			85	
Mier	9	26.1	35	10	57.4	50	12	37.3	55	3.19			87	
Miquihuana	9	29.1	37	11	0.9	52	12	41.2	58	3.20			78	
Ocampo	9	33.9	39	11	6.4	55	12	47.3	60	3.22			73	
Reynosa	9	27.3	36	10	59.4	51	12	39.7	55	3.21			88	
Tampico	9	33.0	40	11	6.6	55	12	48.2	59	3.25			80	
<b>Tlaxcala</b>														
Cuauhutotihuatlan	9	37.9	42	11	11.8	58	12	53.5	61	3.26			71	
Huamantla	9	37.8	42	11	11.8	58	12	53.7	61	3.27			73	
Tlaxcala	9	37.5	42	11	11.3	58	12	52.9	61	3.26			72	
S. Martín Tezmelucan	9	37.4	41	11	11.0	58	12	52.5	61	3.25			71	
<b>Veracruz</b>														
Actopan	9	38.7	43	11	13.9	59	12	56.5	60	3.30			76	
Alvarado	9	40.9	45	11	16.9	60	13	0.1	60	3.32			77	
Coatzacoalcos	9	43.5	47	11	20.8	62	13	4.6	60	3.35			79	
Coatzintla	9	36.2	41	11	10.5	57	12	52.6	60	3.27			77	
Córdoba	9	39.5	43	11	14.5	59	12	57.0	61	3.29			74	
Chicontepec	9	34.7	40	11	8.3	56	12	49.9	60	3.25			76	
Huatusco	9	39.0	43	11	14.0	59	12	56.4	61	3.29			75	
Ixcatepec	9	34.4	40	11	8.1	56	12	49.8	59	3.26			77	
Jalapa	9	38.4	43	11	13.3	59	12	55.8	60	3.29			76	
Martínez de la Torre	9	37.3	42	11	12.0	58	12	54.4	60	3.28			77	
Minatitlán	9	43.7	47	11	20.9	62	13	4.7	60	3.35			78	
Orizaba	9	39.4	43	11	14.3	59	12	56.7	61	3.29			74	
Papantla	9	36.4	42	11	10.8	57	12	53.0	60	3.28			77	
Pico Orizaba	9	38.9	43	11	13.6	59	12	55.9	61	3.28			74	
Pl. Vicente	9	42.6	45	11	18.8	61	13	1.9	61	3.32			75	
Rizo	9	40.2	44	11	16.1	60	12	59.1	60	3.31			77	
Tamarindo	9	40.3	44	11	15.8	60	12	58.6	61	3.31			75	
Tantoyucan	9	34.0	40	11	7.5	56	12	49.0	59	3.25			77	
Tehuipango	9	40.1	44	11	15.0	60	12	57.4	61	3.29			73	
Tierra Blanca	9	40.9	44	11	16.5	60	12	59.3	61	3.31			75	
Tihuatlán	9	35.7	41	11	9.9	57	12	51.9	60	3.27			77	
Tlacotalpan	9	41.3	45	11	17.4	60	13	0.7	60	3.32			77	
Tuxpan	9	35.5	41	11	9.7	57	12	51.8	59	3.27			78	
Veracruz	9	39.7	44	11	15.4	59	12	58.3	60	3.31			77	
Zongolica	9	39.9	43	11	14.9	59	12	57.3	61	3.29			73	

# Eclipse anular de sol (fase parcial) 14 de octubre de 2023

(Hora del meridian 90°W.G.)

ESTADO Población	ini			cen			fin			dur	gra
	h	m	°	h	m	°	h	m	°		
<b>Yucatán</b>											
Chavihau	9	45.2	49	11	24.4	60	13	8.6	54	3.39	89
Merida	9	45.0	49	11	24.1	60	13	8.5	54	3.39	90
Progreso	9	44.5	48	11	23.4	60	13	7.7	54	3.39	90
Telchac	9	45.0	49	11	24.1	60	13	8.4	54	3.39	89
Tzimin	9	47.1	50	11	26.7	60	13	11.0	53	3.40	87
Yalkubul	9	45.8	49	11	25.0	60	13	9.2	53	3.39	87
<b>Zacatecas</b>											
Calera	9	27.7	34	10	57.0	50	12	35.3	59	3.13	70
Concepción del Oro	9	26.3	34	10	56.4	50	12	35.5	57	3.15	77
Fresnillo	9	27.2	34	10	56.3	50	12	34.5	59	3.12	70
Jerez	9	28.0	34	10	57.0	50	12	35.1	59	3.12	68
Juchipila	9	30.0	35	10	58.9	52	12	36.7	60	3.11	65
Nochistlan	9	30.2	35	10	59.4	52	12	37.5	60	3.12	65
Observatorio Astronómico	9	28.2	35	10	57.6	51	12	36.0	59	3.13	69
Panuco	9	27.9	34	10	57.4	51	12	35.8	59	3.13	70
Sombrerete	9	26.0	33	10	54.4	49	12	31.9	58	3.10	69
Villanueva	9	28.5	35	10	57.7	51	12	35.8	59	3.12	68
Zacateca	9	28.1	34	10	57.5	51	12	35.9	59	3.13	70

Abreviaturas:

alt altura

gra porcentaje de ocultamiento

ini inicia la fase parcial

cen centralidad del eclipse

fin fin de la fase parcial

dur duración

# Eclipse anular de sol (fase anular) 14 de octubre de 2023

(Hora del meridiano 90°W.G.)

λ	Limite norte				centralidad				Limite sur				fra	dur	alt	
	φ	Tn	φ	Tc	φ	Ts	fra	dur	alt							
°	'	°	h	m	°	'	h	m	°	'	h	m	km	min	°	
90	57	22	16.0	11	19.2	20	56.9	11	21.7	19	38.1	11	24.5	184.5	5.2	62.1
90	54	22	12.5	11	19.4	20	53.4	11	21.9	19	34.5	11	24.7	184.5	5.2	62.2
90	51	22	9.0	11	19.6	20	49.9	11	22.1	19	31.0	11	24.9	184.5	5.2	62.3
90	48	22	5.5	11	19.9	20	46.3	11	22.3	19	27.5	11	25.2	184.4	5.2	62.4
90	45	22	2.0	11	20.1	20	42.8	11	22.5	19	23.9	11	25.4	184.4	5.2	62.5
90	42	21	58.5	11	20.3	20	39.3	11	22.7	19	20.3	11	25.6	184.4	5.2	62.5
90	39	21	55.0	11	20.5	20	35.8	11	22.9	19	16.8	11	25.8	184.4	5.2	62.6
90	36	21	51.5	11	20.7	20	32.2	11	23.2	19	13.2	11	26.0	184.4	5.2	62.7
90	33	21	48.0	11	20.9	20	28.7	11	23.4	19	9.7	11	26.3	184.4	5.2	62.8
90	30	21	44.5	11	21.1	20	25.2	11	23.6	19	6.1	11	26.5	184.4	5.2	62.8
90	27	21	41.0	11	21.3	20	21.6	11	23.8	19	2.5	11	26.7	184.3	5.2	62.9
90	24	21	37.5	11	21.5	20	18.1	11	24.0	18	58.9	11	26.9	184.3	5.2	63.0
90	21	21	33.9	11	21.7	20	14.5	11	24.2	18	55.4	11	27.2	184.3	5.2	63.1
90	18	21	30.4	11	22.0	20	10.9	11	24.5	18	51.8	11	27.4	184.3	5.2	63.2
90	15	21	26.9	11	22.2	20	7.4	11	24.7	18	48.2	11	27.6	184.3	5.2	63.2
90	12	21	23.3	11	22.4	20	3.8	11	24.9	18	44.6	11	27.8	184.3	5.2	63.3
90	9	21	19.8	11	22.6	20	0.2	11	25.1	18	41.0	11	28.1	184.3	5.2	63.4
90	6	21	16.3	11	22.8	19	56.7	11	25.3	18	37.4	11	28.3	184.3	5.2	63.5
90	3	21	12.7	11	23.0	19	53.1	11	25.6	18	33.8	11	28.5	184.3	5.2	63.5
90	0	21	9.2	11	23.2	19	49.5	11	25.8	18	30.2	11	28.7	184.2	5.2	63.6
89	57	21	5.6	11	23.5	19	45.9	11	26.0	18	26.6	11	29.0	184.2	5.2	63.7
89	54	21	2.0	11	23.7	19	42.3	11	26.2	18	23.0	11	29.2	184.2	5.2	63.8
89	51	20	58.5	11	23.9	19	38.8	11	26.4	18	19.4	11	29.4	184.2	5.2	63.8
89	48	20	54.9	11	24.1	19	35.2	11	26.7	18	15.7	11	29.6	184.2	5.2	63.9
89	45	20	51.3	11	24.3	19	31.6	11	26.9	18	12.1	11	29.9	184.2	5.2	64.0
89	42	20	47.8	11	24.5	19	28.0	11	27.1	18	8.5	11	30.1	184.2	5.2	64.1
89	39	20	44.2	11	24.8	19	24.4	11	27.3	18	4.9	11	30.3	184.2	5.2	64.1
89	36	20	40.6	11	25.0	19	20.8	11	27.6	18	1.2	11	30.6	184.2	5.2	64.2
89	33	20	37.0	11	25.2	19	17.1	11	27.8	17	57.6	11	30.8	184.2	5.2	64.3
89	30	20	33.4	11	25.4	19	13.5	11	28.0	17	54.0	11	31.0	184.2	5.2	64.4
89	27	20	29.8	11	25.6	19	9.9	11	28.2	17	50.3	11	31.3	184.2	5.2	64.4
89	24	20	26.2	11	25.9	19	6.3	11	28.5	17	46.7	11	31.5	184.2	5.2	64.5
89	21	20	22.6	11	26.1	19	2.7	11	28.7	17	43.0	11	31.7	184.2	5.2	64.6
89	18	20	19.0	11	26.3	18	59.0	11	28.9	17	39.4	11	32.0	184.2	5.2	64.7
89	15	20	15.4	11	26.5	18	55.4	11	29.2	17	35.7	11	32.2	184.2	5.2	64.7
89	12	20	11.8	11	26.8	18	51.8	11	29.4	17	32.1	11	32.4	184.2	5.2	64.8
89	9	20	8.2	11	27.0	18	48.1	11	29.6	17	28.4	11	32.7	184.2	5.2	64.9
89	6	20	4.6	11	27.2	18	44.5	11	29.8	17	24.8	11	32.9	184.2	5.2	64.9
89	3	20	1.0	11	27.4	18	40.8	11	30.1	17	21.1	11	33.1	184.2	5.2	65.0
89	0	19	57.3	11	27.6	18	37.2	11	30.3	17	17.4	11	33.4	184.2	5.2	65.1
88	57	19	53.7	11	27.9	18	33.6	11	30.5	17	13.8	11	33.6	184.2	5.2	65.1
88	54	19	50.1	11	28.1	18	29.9	11	30.8	17	10.1	11	33.8	184.2	5.2	65.2
88	51	19	46.4	11	28.3	18	26.2	11	31.0	17	6.4	11	34.1	184.2	5.2	65.3
88	48	19	42.8	11	28.5	18	22.6	11	31.2	17	2.8	11	34.3	184.2	5.2	65.4
88	45	19	39.2	11	28.8	18	18.9	11	31.5	16	59.1	11	34.6	184.2	5.2	65.4
88	42	19	35.5	11	29.0	18	15.3	11	31.7	16	55.4	11	34.8	184.2	5.2	65.5
88	39	19	31.9	11	29.2	18	11.6	11	31.9	16	51.7	11	35.0	184.2	5.2	65.6
88	36	19	28.2	11	29.5	18	7.9	11	32.2	16	48.0	11	35.3	184.2	5.2	65.6
88	33	19	24.6	11	29.7	18	4.3	11	32.4	16	44.4	11	35.5	184.2	5.2	65.7
88	30	19	20.9	11	29.9	18	0.6	11	32.6	16	40.7	11	35.7	184.2	5.2	65.8
88	27	19	17.3	11	30.1	17	56.9	11	32.9	16	37.0	11	36.0	184.2	5.2	65.8
88	24	19	13.6	11	30.4	17	53.2	11	33.1	16	33.3	11	36.2	184.2	5.2	65.9

## Eclipse anular de sol (fase anular) 14 de octubre de 2023

(Hora del meridiano 90°W.G.)

$\lambda$ °	Límite norte		centralidad				Límite sur		Ts h	m	fra km	dur min	alt °			
	$\varphi$ '	$\varphi$ °	Tn h	m	$\varphi$ °	Tc h	m	$\varphi$ °						'		
88	21	19	9.9	11	30.6	17	49.6	11	33.3	16	29.6	11	36.5	184.2	5.2	66.0
88	18	19	6.3	11	30.8	17	45.9	11	33.6	16	25.9	11	36.7	184.2	5.2	66.0
88	15	19	2.6	11	31.1	17	42.2	11	33.8	16	22.2	11	36.9	184.2	5.2	66.1
88	12	18	58.9	11	31.3	17	38.5	11	34.0	16	18.5	11	37.2	184.2	5.2	66.1
88	9	18	55.3	11	31.5	17	34.8	11	34.3	16	14.8	11	37.4	184.2	5.2	66.2
88	6	18	51.6	11	31.8	17	31.1	11	34.5	16	11.1	11	37.7	184.3	5.2	66.3
88	3	18	47.9	11	32.0	17	27.4	11	34.8	16	7.4	11	37.9	184.3	5.2	66.3
88	0	18	44.2	11	32.2	17	23.8	11	35.0	16	3.7	11	38.2	184.3	5.2	66.4

### Abreviaturas

$\lambda$  longitud

$\varphi$  latitud

Tn instante del paso del paso en el límite norte

Tc instante del paso del paso en la centralidad

Ts instante del paso del paso en el límite sur

fra anchura del la franja de anularidad

dur duración

alt altura



## Poblaciones de la República Mexicana, 2023

Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	δm		Δδm ‘/año
	°	′	“	°	′	“		°	′	
<b>Aguascalientes</b>										
Aguascalientes	21	52	43	102	18	4	1888	5	21	-7
Asientos	22	14	18	102	5	29	2164	5	16	-7
Calvillo	21	50	45	102	44	14	1702	5	31	-7
Jesús María	21	57	45	102	20	48	1907	5	22	-7
Puertecito	21	57	52	102	15	15	2052	5	20	-7
Rincón de Romos	22	13	49	102	19	22	1957	5	22	-7
<b>Baja California</b>										
Bailador Isla	31	56	56	116	5	12	0	10	47	-5
Cedros Isla	28	3	53	115	11	35	0	9	54	-5
Ensenada	31	51	10	116	38	9	2	10	53	-5
Granito Isla	29	33	0	113	32	0	0	9	44	-5
Guadalupe Isla	29	10	45	118	19	30	0	10	44	-4
Mejía Isla	29	33	8	113	35	18	0	9	45	-5
Mexicali	32	40	0	115	27	0	0	10	45	-5
Miramar Isla	30	2	30	114	31	30	0	10	4	-5
Salsipuedes Isla	28	44	0	112	50	30	0	9	25	-5
San Benito Isla	28	18	8	115	36	12	0	10	2	-5
San Felipe	31	1	36	114	49	46	0	10	19	-5
San Jerónimo Isla	29	47	20	115	48	14	0	10	20	-5
San Pedro Mártir	31	2	39	115	27	49	2800	10	28	-5
San Quintin	30	22	16	115	59	10	0	10	28	-5
<b>Baja California Sur</b>										
Asunción Isla	27	6	21	114	18	15	0	9	32	-5
Catalina Isla	25	35	35	110	47	48	0	8	26	-5
Cerralvo Isla	24	22	0	109	55	29	0	8	3	-6
Coronados Isla	26	6	12	111	15	38	0	8	37	-5
Danaznte Isla	25	48	0	111	12	0	0	8	34	-5
El Triunfo	23	48	13	110	8	41	432	8	3	-6
Espíritu Santo Isla	24	34	43	110	21	30	0	8	11	-6
José del Cabo	23	4	8	109	40	36	7	7	51	-6
La Paz	24	9	41	110	20	44	10	8	8	-5
Miraflores	23	22	25	109	48	33	183	7	55	-6
Muleje	26	53	33	111	46	41	35	8	52	-5
Roca Alijos Isla	24	58	6	113	44	47	0	9	5	-5
San Bartolo	23	44	16	109	52	15	353	7	58	-6
San Marcos Isla	27	14	35	112	5	23	0	9	0	-5
Santa Inés Isla	27	2	34	111	53	28	0	8	55	-5
Santiago	23	28	24	109	43	21	98	7	54	-6
Tortugas Isla	27	26	59	111	52	59	0	8	59	-5
<b>Campeche</b>										
Becal	20	26	34	90	1	36	12	0	-32	-8
Bolonchenticul	20	0	21	89	44	53	14	0	-39	-8
Calkiní	20	22	21	90	3	3	52	0	-31	-8
Campeche	19	50	47	90	32	14	5	0	-11	-8
Carmen	18	38	22	91	50	16	3	0	39	-8
Carmen Isla	18	38	44	91	50	16	0	0	39	-8
Champotón	19	21	4	90	43	0	27	0	-2	-8
Dzibalchen	19	27	41	89	43	55	100	0	-36	-8

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ESTADO Población	latitud			longitud			alt m	$\delta m$		$\Delta \delta m$ '/año
	°	'	“	°	'	“		°	'	
Escárcega	18	36	25	90	43	55	75	0	4	-8
Hontún	19	34	49	90	11	12	50	0	-21	-8
Holpechén	19	44	47	89	50	35	56	0	-34	-8
Iturbide	19	34	58	89	36	4	110	0	-41	-8
Lerma	18	15	39	90	36	12	5	0	2	-8
Palizada	19	6	13	92	4	42	46	0	44	-8
Pital	18	33	3	91	7	41	20	0	17	-8
Río Desempeño	18	29	50	89	54	6	200	0	-23	-8
Sabancury	18	58	34	91	10	51	2	0	16	-8
Xicalango	18	37	55	91	53	38	2	0	41	-8
<b>Coahuila</b>										
Acuña	29	19	33	100	55	51	200	4	57	-7
Allende	28	20	36	100	51	6	374	4	53	-7
Cuatro Ciénegas	26	58	19	102	4	9	742	5	24	-7
Jiménez	29	4	21	100	40	21	290	4	49	-7
Laguna de Jaco	27	57	28	103	57	6	1350	6	16	-7
Monclova	26	54	14	101	25	8	586	5	6	-7
Muzquiz	27	52	51	101	30	56	504	5	11	-7
Parras	25	27	0	102	10	0	1683	5	23	-7
Piedras Negras	28	42	25	100	31	2	220	4	44	-7
Sabinas	27	50	34	101	7	23	340	5	0	-7
Saltillo	25	26	37	100	59	22	1599	4	52	-7
San Pedro de Colonias	25	45	24	102	59	1	1103	5	44	-7
Sierra Mojada	27	17	8	103	42	7	1256	6	7	-7
Torreón	25	32	18	103	27	55	1140	5	56	-7
Unión	28	14	0	100	44	30	0	4	49	-7
Viesca	25	20	46	102	48	19	1093	5	39	-7
Zaragoza	28	30	36	100	52	8	540	4	54	-7
<b>Colima</b>										
Colima	19	14	29	103	43	47	508	5	50	-7
Madrid	19	4	57	103	52	38	120	5	53	-7
Manzanillo	19	3	15	104	19	46	3	6	2	-6
Socorro Isla	18	42	57	110	56	53	0	7	46	-5
Tecomán	18	54	31	103	52	38	80	5	53	-7
<b>Chiapas</b>										
Acapetahua	15	16	20	92	41	59	23	1	29	-8
Arista	15	56	8	93	48	41	0	1	57	-8
Cacahuanton	14	59	31	92	9	46	630	1	15	-8
Catazajá	17	43	56	92	1	57	7	0	52	-8
Cintalapa	16	41	58	93	43	24	545	1	50	-8
Comitan	16	15	12	92	7	41	1530	1	5	-8
Chiapa De Corzo	16	42	28	93	1	5	415	1	29	-8
Escuintla	15	18	53	92	39	58	110	1	28	-8
Huixtla	15	7	41	92	28	34	28	1	23	-8
Jaltenango	15	52	12	92	43	35	677	1	26	-8
Juárez	17	39	8	93	9	47	152	1	27	-8
La Grandeza	15	30	46	92	13	38	1950	1	13	-8
Las Margaritas	15	32	35	93	5	46	1512	1	39	-8
Mapastepec	15	25	52	92	54	27	85	1	34	-8
Mazatan	14	51	43	92	25	59	35	1	24	-8

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ESTADO Población	latitud			longitud			alt m	δm		Δδm ‘/año
	°	′	″	°	′	″		°	′	
Ocosingo	16	54	38	92	5	45	908	0	59	-8
Ocozacoautla	16	45	55	93	22	37	864	1	39	-8
Pichucalco	17	31	46	93	7	24	100	1	27	-8
Pueblo Nuevo	15	12	37	92	35	7	28	1	26	-8
Puerto Madero	14	42	59	93	25	37	2	1	54	-8
San Bartolomé	16	19	29	92	33	36	804	1	17	-8
Suchiate	14	40	23	92	9	12	22	1	17	-8
Tonalá	16	5	14	93	45	21	55	1	55	-8
Tuxtla Gutiérrez	16	45	20	93	6	46	528	1	31	-8
Villa Flores	16	14	8	93	16	3	610	1	39	-8
Yajalon	17	10	57	92	20	24	849	1	5	-8
<b>Chihuahua</b>										
Ahumada 30	37	18	106	31	12	1181	7	33	-6	
Camargo	27	41	49	105	10	9	1653	6	45	-6
Ciénaga de Ortiz	28	8	15	106	12	11	1300	7	11	-6
Ciudad Guerrero	28	32	57	107	29	27	2000	7	43	-6
Ciudad Jiménez	27	7	52	104	55	29	1381	6	37	-6
Ciudad Juárez	31	44	19	106	29	15	1144	7	39	-6
Coyame	29	27	42	105	5	44	1062	6	52	-6
Cuchillo Parado	29	26	34	104	52	58	900	6	46	-6
Cusihuirachi	28	14	25	106	50	13	1985	7	26	-6
Chihuahua	28	38	12	106	4	42	1430	7	11	-6
Chinipas	27	23	34	108	32	22	1640	7	57	-6
Galeana	30	6	52	107	37	51	1431	7	56	-6
Guadalupe	31	23	27	106	6	13	1113	7	27	-6
Guadalupe y Calvo	26	6	6	106	58	2	1100	7	17	-6
Guerrero	28	32	57	107	29	18	2000	7	42	-6
Meoqui	28	16	36	105	29	16	1155	6	55	-6
Namiquipa	29	15	5	107	24	34	1828	7	45	-6
Ocampo	28	10	59	108	22	27	1732	7	59	-6
Ojinaga	29	33	53	104	25	23	841	6	35	-7
Parral Hidalgo del	26	56	4	105	39	58	1661	6	53	-6
Placer de Guadalupe	29	9	41	105	22	57	900	6	57	-6
San Buenaventura	29	50	47	107	29	10	1574	7	51	-6
San Ignacio	27	10	21	106	19	28	970	7	9	-6
Santa Bárbara	26	48	13	105	49	1	1969	6	56	-6
Santa Isabel	28	20	34	106	22	1	1630	7	16	-6
Satevo	27	57	17	106	6	32	1368	7	8	-6
Temosachic	28	57	12	107	49	50	1900	7	52	-6
Valle de Zaragoza	27	27	40	105	48	35	900	6	59	-6
Valle del Rosario	27	19	5	106	17	41	1480	7	9	-6
<b>Distrito Federal</b>										
Álamo	19	23	55	99	8	30	2246	4	6	-7
Azcapotzalco	19	28	48	99	11	7	2277	4	7	-7
Ciudad Universitaria	19	20	1	99	10	54	2280	4	7	-7
Ciudad Universitaria	19	19	50	99	11	3	2280	4	7	-7
Coyoacán	19	20	54	99	9	45	2278	4	7	-7
Cuajimalpa	19	21	33	99	18	1	2783	4	10	-7
Chapultepec	19	25	11	99	10	52	2310	4	7	-7
Churubusco	19	21	17	99	8	56	2260	4	6	-7
Guadalupe Hidalgo	19	29	9	99	6	56	2200	4	5	-7

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ESTADO Población	latitud			longitud			alt m	$\delta m$		$\Delta \delta m$ '/año
	°	'	“	°	'	“		°	'	
Ixtacalco	19	23	22	99	7	16	2261	4	6	-7
Ixtapalapa	19	21	22	99	5	30	2280	4	5	-7
La Piedad	19	24	3	99	9	20	2253	4	6	-7
México	19	25	59	99	7	58	2233	4	6	-7
Mixcoac	19	22	37	99	10	55	2200	4	7	-7
Mixquic	19	13	28	98	57	52	2260	4	2	-7
Nativitas	19	23	12	99	8	48	2246	4	6	-7
San Jerónimo	19	19	33	99	13	20	2394	4	8	-7
San Simón	19	22	36	99	8	39	2100	4	6	-7
Tacubaya	19	24	10	99	11	40	2298	4	7	-7
Tláhuac	19	16	6	99	0	16	2264	4	3	-7
Tlalpan	19	17	16	99	9	57	2294	4	7	-7
Villa Obregón	19	20	41	99	11	21	2340	4	7	-7
Xochimilco	19	15	44	99	6	7	2274	4	5	-7
<b>Durango</b>										
Ciudad Lerdo	25	32	14	103	31	28	1135	5	57	-7
Cuencame	24	52	18	103	38	6	1889	5	58	-7
Durango	24	1	31	104	40	11	1889	6	19	-7
Gómez Palacio	25	34	18	103	30	17	1195	5	57	-7
Guanacevi	25	55	59	105	57	31	2230	6	55	-6
Inde	25	54	45	105	10	16	2049	6	37	-6
Llano Grande	23	52	2	105	12	7	2406	6	30	-6
Mezquital	23	28	57	104	22	18	1468	6	11	-7
Nazas	25	13	40	104	6	53	1264	6	10	-7
Nombre de Dios	23	51	4	104	15	25	1855	6	9	-7
Pueblo Nuevo	23	22	35	105	22	18	1982	6	32	-6
San Juan de Guadalupe	24	37	0	102	45	8	1520	5	36	-7
San Juan del Río	24	46	45	104	23	22	1737	6	15	-7
Santa María del Oro	25	56	53	105	19	56	1871	6	41	-6
Santa María Ocotlán	22	54	44	104	36	10	365	6	14	-7
Santiago Papasquiaro	25	2	47	105	25	30	1716	6	39	-6
Tamazula	24	58	11	106	58	13	240	7	12	-6
Tayoltita	24	6	27	105	55	30	500	6	46	-6
Tepehuanaes	25	21	19	105	47	9	1967	6	48	-6
Tizonazo	25	58	4	105	15	33	1981	6	39	-6
Topia	25	12	19	106	34	34	1851	7	5	-6
Tlahualilo	26	6	31	103	26	21	1132	5	57	-7
<b>Guerrero</b>										
Acapulco	16	50	21	99	55	1	82	4	31	-7
Acayahualco	18	13	30	99	28	52	790	4	17	-7
Coahuayutla	18	18	52	101	48	37	358	5	10	-7
Coatepec	18	20	22	99	42	56	1260	4	23	-7
Coyuca de Catalán	18	20	2	100	39	0	210	4	45	-7
Chaucingo	18	18	7	99	6	53	810	4	8	-7
Chilpancingo	17	33	10	99	30	3	1360	4	19	-7
Huamuxtitlán	17	48	37	99	34	2	1125	4	20	-7
Iguana	18	21	1	99	32	24	731	4	18	-7
La Unión	17	58	52	101	48	49	174	5	11	-7
Mayanalan	18	10	29	99	26	1	0	4	16	-7
Mezcala	17	56	13	99	36	6	420	4	21	-7
Pericotepec	17	57	40	100	13	0	770	4	35	-7

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ESTADO Población	latitud			longitud			alt m	δm		Δδm ‘/año
	°	′	“	°	′	“		°	′	
Petatlán	17	32	8	101	17	0	0	5	0	-7
Placeres de Oro	18	14	31	100	53	57	0	4	50	-7
San Jerónimo	17	5	55	100	28	26	0	4	43	-7
San Luis de la Loma	17	15	42	100	53	48	0	4	52	-7
San Marcos	16	47	31	99	20	41	210	4	18	-7
Santa Fetedetlapa	18	33	5	99	25	19	1090	4	15	-7
Taxco	18	33	16	99	36	20	1755	4	19	-7
Teloloapan	18	22	6	99	52	31	1620	4	26	-7
Tonalapa del Río	18	20	38	99	41	6	750	4	22	-7
Tepantitlancoa	18	0	26	100	17	6	820	4	37	-7
Tepecoacuilco	18	17	10	99	27	55	1012	4	17	-7
Tetela del Río	17	59	7	100	4	50	350	4	32	-7
Tlacoztotlán	17	53	29	99	7	51	560	4	10	-7
Tlapehuala	18	14	21	100	31	18	235	4	42	-7
Zihuatanejo	17	38	14	101	33	48	0	5	6	-7
Zirándaro	18	29	4	100	58	0	193	4	51	-7
<b>Guanajuato</b>										
Abasolo	20	26	59	100	31	48	1760	4	39	-7
Acámbaro	20	2	1	100	43	24	1947	4	44	-7
Apaseo	20	32	37	100	41	7	1767	4	43	-7
Apaseo el Alto	20	27	25	100	37	13	1853	4	41	-7
Atarjea	21	16	5	99	43	5	1258	4	18	-7
C. González	21	28	44	101	12	52	2140	4	55	-7
Celaya	20	31	24	100	48	55	1808	4	46	-7
Cerano	20	6	41	101	23	26	1500	5	0	-7
Comonfort	20	43	15	100	45	51	1795	4	44	-7
Coroneo	20	11	42	100	21	59	1998	4	35	-7
Cortazar	20	28	59	100	52	58	1800	4	47	-7
Cubilete E.	21	0	25	101	22	30	2480	4	59	-7
Cuerámara	20	37	36	101	40	23	1785	5	6	-7
Dolores Hidalgo	21	9	32	100	56	0	1987	4	48	-7
Guanajuato	21	1	1	101	15	20	2050	4	56	-7
Huanímaro	20	22	1	101	29	45	2459	5	2	-7
Ibarra	21	28	53	101	32	23	2110	5	3	-7
Irapuato	20	40	28	101	20	51	1795	4	58	-7
Iturbide	21	0	3	100	23	4	1100	4	35	-7
Jaral del Progreso	20	22	11	101	13	45	1743	4	56	-7
Jerécuaro	20	9	3	100	30	43	1100	4	39	-7
León	21	7	22	101	41	0	1885	5	6	-7
Manuel Doblado	20	43	49	101	57	14	1795	5	12	-7
Mora	21	8	47	100	19	0	2128	4	33	-7
Moroleón	20	7	54	101	11	36	1772	4	55	-7
Pénjamo	20	25	44	101	43	22	1700	5	7	-7
Pueblo Nuevo	20	31	35	101	22	18	1714	4	59	-7
Purísima de Bustos	21	1	48	101	52	36	1780	5	11	-7
Romita	20	52	14	101	31	7	1792	5	2	-7
Salamanca	20	34	22	101	11	39	1721	4	55	-7
Salvatierra	20	12	56	100	53	46	1749	4	48	-7
San Diego de la Unión	21	27	56	100	52	25	2080	4	47	-7
San Fco. del Rincón	21	1	2	101	51	36	1721	5	10	-7
San Juan de los Llanos	21	16	47	101	19	4	1000	4	58	-7

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ESTADO Población	latitud			longitud			alt m	$\delta m$		$\Delta \delta m$ '/año
	°	'	"	°	'	"		°	'	
San José	20	56	13	100	58	32	2002	4	49	-7
San Luis de la Paz	21	17	57	100	30	52	2020	4	38	-7
San Miguel de Allende	20	54	52	100	44	47	1870	4	44	-7
Santa Catarina	21	8	27	100	14	10	1845	4	31	-7
Santa Cruz Galeana	20	38	35	100	59	50	1000	4	50	-7
Santiago Maravatio	20	10	28	100	59	38	1790	4	50	-7
Silao	20	56	24	101	25	59	1780	5	0	-7
Tarandacuaro	20	1	14	100	32	3	1920	4	39	-7
Tarimoro	20	17	39	100	45	20	1790	4	44	-7
Tierra Blanca	21	6	9	100	4	44	1760	4	27	-7
Uriangato	20	8	46	100	8	10	1800	4	30	-7
Valle de Santiago	20	23	31	101	11	21	1760	4	55	-7
Victoria	21	12	23	100	13	9	1760	4	31	-7
Villa Ocampo	21	38	52	101	28	50	2420	5	1	-7
Villagrán	20	29	40	100	59	52	1790	4	50	-7
Xichu	21	18	0	100	3	37	1334	4	27	-7
Yuriria	20	12	51	100	8	19	1882	4	30	-7
<b>Hidalgo</b>										
Acayuca	20	1	48	98	50	30	2570	3	57	-7
Actopan	20	16	12	96	56	42	2069	3	5	-8
Ahuehuevo	21	1	43	98	54	24	2500	3	57	-7
Altajayucan	20	24	40	99	20	59	1898	4	9	-7
Apan	19	39	35	98	24	10	2493	3	47	-8
Atotonilco Grande	20	17	6	98	40	13	2138	3	52	-7
Bonanza	20	43	12	99	14	36	1900	4	6	-7
Chapantongo	20	17	16	99	24	50	2145	4	11	-7
Chapulhuacan	21	9	29	98	54	22	1500	3	57	-7
Chicautla	20	19	54	99	13	49	1884	4	7	-7
Epazoyuca	20	1	33	98	37	26	2461	3	51	-7
Huasca	20	12	12	98	34	42	1900	3	50	-7
Huautla	21	2	3	98	16	54	1900	3	40	-8
Huejutla	21	8	43	98	24	58	2490	3	44	-8
Huichapan	20	22	37	99	38	58	2102	4	17	-7
Ixmiquilpan	20	29	4	99	13	5	1745	4	6	-7
Metztitlán	20	35	45	98	45	30	1353	3	54	-7
Mexquilitlán	20	32	0	98	38	27	1421	3	51	-7
Nopala	20	15	19	98	38	52	2437	3	52	-7
Orizatlán	21	10	35	98	36	40	1900	3	49	-7
Pachuca	20	7	44	98	43	54	2426	3	54	-7
Pisa Flores	21	11	44	99	0	15	1900	3	59	-7
Real del Monte	20	8	23	98	40	21	2679	3	52	-7
San Agustín Tlaxiaca	20	7	5	98	53	6	2372	3	58	-7
San Gabriel	19	52	44	98	36	58	1900	3	52	-7
San Juanico	19	54	14	98	40	17	1900	3	53	-7
San Pablo	20	38	38	98	55	21	1900	3	58	-7
Santa Mónica	19	58	55	98	37	16	1900	3	52	-7
Singuilucan	20	1	52	98	19	59	2714	3	44	-8
Tasquillo	20	33	7	99	18	21	1720	4	8	-7
Tepetitlán	20	11	14	99	22	59	2000	4	11	-7
Tezontepec	19	52	44	98	49	10	2326	3	57	-7
Tianguistengo	20	44	0	98	37	34	1687	3	50	-7

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ESTADO Población	latitud			longitud			alt m	δm		Δδm ‘/año
	°	′	“	°	′	“		°	′	
Tulancingo	20	4	58	98	22	8	2222	3	45	-8
Tlaxcoapan	20	5	40	99	13	29	2100	4	7	-7
Yolotepec	20	23	36	99	4	31	1900	4	2	-7
Zempoala	19	54	54	98	40	2	2532	3	53	-7
Zimapán	20	44	20	99	22	58	1813	4	10	-7
<b>Jalisco</b>										
Ameca	20	32	47	104	2	46	1235	5	58	-7
Atoyac	20	0	40	103	31	12	1350	5	46	-7
Autlán de Navarro	19	46	13	104	22	4	688	6	3	-7
Bolaños	21	46	31	103	46	58	910	5	54	-7
Cabo Corriente	20	24	42	105	40	50	81	6	30	-6
Carranza	19	44	46	103	46	18	0	5	51	-7
Cihuatlán	19	14	8	104	33	36	0	6	6	-6
Ciudad Guzmán	19	42	13	103	27	53	1507	5	45	-7
Cocula	20	23	55	103	49	27	1432	5	53	-7
Colotlán	22	6	51	103	16	8	0	5	43	-7
Encarnación de Díaz	21	31	37	102	14	6	1814	5	19	-7
Guachinango	20	34	38	104	22	59	1285	6	5	-7
Guadalajara	20	42	32	103	23	9	1567	5	44	-7
Guerrero	21	59	4	103	35	52	1785	5	50	-7
Hostotipaquillo	21	3	46	104	4	21	1079	5	59	-7
Huejuquilla	22	37	42	103	53	58	1480	5	58	-7
La Barca	20	16	37	102	32	53	1517	5	26	-7
La Rosa	19	45	7	103	10	2	0	5	39	-7
Lagos de Moreno	21	21	20	101	55	24	1942	5	12	-7
Ojuelos	21	52	5	101	35	20	2254	5	4	-7
Puerto Vallarta	20	36	56	105	14	42	5	6	22	-6
San Miguel del Alto	21	1	52	102	24	12	2385	5	23	-7
San Pedro Anasco	21	14	54	103	57	57	0	5	57	-7
Talpa de Allende	20	23	41	104	49	52	1039	6	13	-6
Tapatitlán	20	48	48	102	45	41	1764	5	31	-7
Tecatitlán	19	28	16	103	18	30	1036	5	42	-7
Tecomates	19	33	8	104	29	18	0	6	5	-6
Tecaltiche	21	26	11	102	34	32	2240	5	27	-7
Tequila	20	53	33	103	50	8	1215	5	54	-7
Unión de Tula	19	57	37	104	16	7	1385	6	1	-7
<b>México</b>										
Acambay	19	57	18	99	50	47	2552	4	23	-7
Amecameca	19	7	36	98	46	0	2468	3	57	-7
Analco de Becerra	19	15	34	100	1	26	2511	4	28	-7
Atacomulco	19	48	7	98	52	48	2526	3	59	-7
Ayotla	19	18	55	98	56	8	2251	4	1	-7
Chalco	19	15	53	98	54	12	2280	4	0	-7
Chapa de Mota	19	47	24	99	31	23	3070	4	15	-7
Chicoloapan	19	25	3	98	54	11	2235	4	0	-7
Chimalhuacán	19	25	45	98	56	57	2255	4	1	-7
Coatlinchan	19	27	4	98	52	34	2200	3	59	-7
Ecatzingo de Hidalgo	18	57	2	98	45	29	2340	3	58	-7
Huexotla	19	28	50	98	52	25	2200	3	59	-7
Huixquilucan	19	21	47	99	21	39	2750	4	12	-7
Ixtapan de la Sal	18	50	13	99	40	28	1900	4	21	-7

## Poblaciones de la República Mexicana, 2023

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ESTADO Población	latitud			longitud			alt m	$\delta m$		$\Delta \delta m$ '/año
	°	'	"	°	'	"		°	'	
Ixtlahuaca	19	52	54	98	51	39	2640	3	58	-7
Jilotepec	19	57	13	99	31	45	2525	4	15	-7
Lerma	19	17	16	99	30	34	2599	4	16	-7
Los Reyes	19	21	27	98	52	42	2200	4	0	-7
Naucalpan	19	28	36	99	13	45	2298	4	8	-7
Otumba	19	41	59	98	45	33	2349	3	56	-7
Ozumba	19	2	3	98	47	50	2500	3	58	-7
Progreso Industrial	19	37	37	99	20	32	2449	4	11	-7
Popocatepetl	19	1	17	98	37	34	5452	3	54	-7
Popocatepetl	19	5	3	98	39	12	5450	3	54	-7
Remedios	19	28	25	99	15	2	2383	4	9	-7
San Antonio del Rosario	18	24	4	100	18	43	3350	4	36	-7
San Cristóbal	19	24	24	99	19	40	2239	4	11	-7
San Pedro Atzacapotzaltongo	19	37	38	99	18	54	2420	4	10	-7
San Pedro Atzompa	19	40	56	99	0	36	2243	4	2	-7
Sultepec	18	50	0	99	51	44	2336	4	25	-7
Tecámac	19	42	21	98	58	10	2300	4	1	-7
Temascalapa	19	49	37	98	54	11	2347	3	59	-7
Temascaltepec	19	2	24	100	2	47	1640	4	29	-7
Tenancingo	18	57	51	99	35	45	2022	4	18	-7
Teoloyucan	19	44	48	99	10	53	2280	4	6	-7
Texcoco	19	30	52	98	52	57	2278	3	59	-7
Tlalmanalco	19	12	36	98	48	27	2412	3	58	-7
Tlalnepantla	19	32	20	99	11	39	2278	4	7	-7
Toluca	19	17	33	99	39	38	2680	4	19	-7
<b>Michoacán</b>										
Aguililla	18	44	17	102	44	9	970	5	30	-7
Agostitlán	19	32	6	100	37	13	2500	4	42	-7
Apatzingán	19	4	54	102	15	31	682	5	19	-7
Apo	19	26	38	102	25	2	0	5	23	-7
Ario de Rosales	19	12	21	101	44	19	2050	5	8	-7
Buenavista	19	12	3	102	35	35	586	5	27	-7
Coahuayana	18	45	9	103	40	30	20	5	49	-7
Cotija	19	48	41	102	42	26	1751	5	29	-7
Hidalgo	19	41	19	100	33	23	2360	4	40	-7
Huajumbaro	19	40	52	100	44	29	2390	4	45	-7
Irimbo	19	41	54	100	28	58	2015	4	39	-7
Janitzio	19	34	27	101	39	11	2120	5	6	-7
Jiquilpan	19	59	31	102	43	16	1654	5	29	-7
La Huacana	18	57	36	101	48	39	550	5	10	-7
Los Reyes	19	35	23	102	28	57	1280	5	24	-7
Maravatio	19	53	33	100	26	43	2080	4	37	-7
Morelia	19	42	16	101	11	30	1941	4	55	-7
Ostula	18	29	50	103	28	19	229	5	45	-7
Panindicuaro	19	59	7	102	45	40	1638	5	30	-7
Parácuaro	19	8	46	103	13	32	586	5	40	-7
Paracho	19	38	44	102	3	1	1567	5	15	-7
Pátzcuaro	19	32	24	101	37	0	2174	5	5	-7
Penjamillo	20	6	31	101	55	40	1645	5	12	-7
Piedad de Cavadas	20	20	44	102	1	32	1696	5	14	-7
Pueblo Viejo	19	46	16	101	34	3	2210	5	4	-7



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ESTADO Población	latitud			longitud			alt m	δm		Δδm ‘/año
	°	′	″	°	′	″		°	′	
Puruándiro	20	5	21	101	30	59	1994	5	2	-7
San Pedro Jacuaro	19	43	1	100	38	49	2004	4	42	-7
Senguio	19	44	11	100	21	31	2030	4	36	-7
Tacámbaro	19	13	52	101	27	34	1577	5	2	-7
Tequicheo	18	54	0	100	44	21	440	4	46	-7
Tepalcatepec	19	11	31	102	50	35	320	5	32	-7
Tumbiscatio	18	31	33	102	22	28	820	5	22	-7
Turicato	19	3	0	101	25	14	795	5	1	-7
Tuzantla	19	12	19	100	34	39	640	4	41	-7
Uruapan	19	24	56	102	3	46	1634	5	15	-7
Villa Madero	19	23	30	101	16	34	800	4	57	-7
Zacapu	19	49	11	101	47	34	1980	5	9	-7
Zamora	19	59	17	102	18	52	1567	5	20	-7
Zinapécuaro	19	53	5	100	40	32	1920	4	43	-7
Zitácuaro	19	25	51	100	21	50	1781	4	36	-7
<b>Morelos</b>										
Acapatzingo	18	54	11	99	13	17	1465	4	9	-7
Acatlipa	18	49	30	99	13	42	1215	4	10	-7
Ahuacatlán	18	58	42	99	15	19	1955	4	10	-7
Atlatlahuacan	18	56	5	98	53	53	1656	4	1	-7
Coatetelco	18	43	55	99	19	48	1029	4	12	-7
Cuajomulco	19	2	2	99	12	17	2651	4	9	-7
Cuautla	18	48	20	98	57	13	1309	4	3	-7
Cuernavaca	18	54	54	99	14	14	1542	4	10	-7
Chapultepec	18	55	11	99	12	49	1492	4	9	-7
Huautla	18	26	24	99	1	44	1075	4	6	-7
Huitzilac	19	1	39	99	16	2	2540	4	10	-7
Itzamatlán	18	53	58	99	1	30	1235	4	4	-7
Jojutla	18	36	39	99	10	52	890	4	9	-7
Oaxtepec	18	54	2	98	58	11	1385	4	3	-7
San Miguel	18	41	42	98	48	40	1403	4	0	-7
Tejalpa	18	53	43	99	9	57	1337	4	8	-7
Tepalcingo	18	35	34	98	50	43	1220	4	1	-7
Tetelcingo	18	51	55	98	55	47	1425	4	2	-7
Xiutepec	18	52	31	99	10	27	1355	4	8	-7
Xochitepec	18	47	4	99	13	50	1154	4	10	-7
Yautepec	18	52	38	99	3	46	1282	4	5	-7
Yecapixtla	18	52	56	98	51	55	1603	4	0	-7
<b>Nayarit</b>										
Acaponeta	22	29	21	105	21	41	30	6	29	-6
Amatlán de Jara	21	23	9	104	8	47	1150	6	1	-7
Huajimic	21	41	29	104	18	18	1170	6	5	-7
Ixtapan	21	18	16	105	9	44	0	6	22	-6
Ixtlán del Río	21	2	9	104	22	16	1042	6	5	-7
Jesús María	22	15	9	104	31	10	610	6	11	-7
Mezcaltitán	21	54	18	105	28	39	0	6	30	-6
Ruiz	21	57	29	105	8	35	24	6	23	-6
San Blas	21	32	27	105	17	16	2	6	25	-6
San Martín de Bolaños	21	29	42	104	1	35	0	5	59	-7
Tepic	21	30	47	104	53	42	915	6	17	-6
Tuxpan	21	54	10	104	8	6	39	6	2	-7

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ESTADO Población	latitud			longitud			alt m	$\delta m$	$\Delta \delta m$ '/año	
	°	'	“	°	'	“		°	'	
<b>Nuevo León</b>										
Agualeguas	26	18	38	99	33	3	207	4	12	-7
Aramberri	24	6	10	99	49	3	1076	4	19	-7
Cadereyta Jiménez	25	35	34	99	59	54	360	4	25	-7
Cerralvo	26	5	32	99	36	29	345	4	14	-7
China	25	42	30	99	13	55	163	4	3	-7
Doctor Arroyo	23	40	23	100	10	52	1766	4	29	-7
Galeana	24	49	41	100	3	53	1654	4	26	-7
García	25	48	49	100	35	21	697	4	41	-7
Lampazos de Naranjo	27	1	32	100	30	33	340	4	41	-7
Linares	24	51	39	99	34	5	684	4	12	-7
Los Aldamas	26	3	58	99	11	30	288	4	2	-7
Mier y Noriega	23	25	19	100	7	11	1681	4	27	-7
Montemorelos	25	11	34	99	49	31	432	4	20	-7
Monterrey	25	40	11	100	18	26	538	4	33	-7
Parras	26	30	5	99	31	5	165	4	11	-7
Sabinas Hidalgo	26	29	59	100	10	9	313	4	30	-7
Salinas Victoria	25	57	34	100	18	0	464	4	33	-7
Santiago Huajuco	25	25	35	100	8	17	445	4	28	-7
Vallecillo	26	39	41	99	58	2	274	4	25	-7
Villa Aldama	26	29	49	100	25	50	469	4	38	-7
Zaragoza	23	50	52	99	36	19	1377	4	13	-7
<b>Oaxaca</b>										
Ayutla	18	1	48	96	39	46	733	3	6	-8
Ayoquezco	16	41	13	96	50	2	0	3	16	-8
Ayotzintepec	17	40	38	96	8	17	64	2	53	-8
Coatzopan	18	2	56	96	45	31	1922	3	8	-8
Colotepec	15	53	33	96	56	28	0	3	23	-8
Cuicatlán	17	48	11	96	57	36	595	3	15	-8
Chacalapa	15	55	20	95	55	48	555	2	56	-8
Chalcatongo	17	1	57	97	34	24	2365	3	34	-8
Ecatepec	16	17	8	95	52	39	1690	2	53	-8
Ejutla de Crespo	16	33	48	96	43	44	1440	3	14	-8
Etla	17	12	17	96	47	49	1640	3	13	-8
Guichicovi	16	58	35	95	13	52	297	2	31	-8
Guelatao	17	19	15	96	29	34	1698	3	4	-8
Guelatao	17	19	10	96	29	31	1600	3	4	-8
Huajuapán de León	17	48	30	97	46	31	1680	3	36	-8
Huamelulas Pedro	16	1	39	95	40	1	1030	2	49	-8
Huatulco	15	49	44	96	19	11	325	3	7	-8
Huautla	18	7	53	96	50	45	1714	3	10	-8
Jamiltepec	16	16	33	97	49	23	240	3	43	-8
Juchitlán de Zaragoza	16	25	56	95	1	31	38	2	29	-8
Juguila	16	14	6	97	17	45	1500	3	30	-8
Juxtlahuaca	17	20	11	98	0	56	1650	3	44	-8
Lachiguiri	16	23	9	97	20	8	1780	3	31	-8
Loxicha	16	0	31	96	37	20	1885	3	14	-8
Mazatlán	17	2	11	95	26	48	642	2	37	-8
Miahuatlán	16	20	1	96	35	44	1607	3	12	-8
Nejapa	16	36	50	95	58	48	1000	2	54	-8
Niltepec	16	33	47	94	36	48	110	2	16	-8

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ESTADO Población	latitud			longitud			alt m	δm		Δδm ‘/año
	°	′	″	°	′	″		°	′	
Nochixtlán	17	27	33	97	13	29	2200	3	23	-8
Oaxaca de Juárez	17	3	43	96	43	18	1550	3	12	-8
Ocotepéc	17	47	53	96	23	47	1636	3	0	-8
Ojitlán	18	3	42	96	23	31	0	2	58	-8
Ojitlán	18	3	35	96	23	34	233	2	58	-8
Pluma Hidalgo	15	54	50	96	25	30	1475	3	9	-8
Pochutla	15	44	21	96	27	57	163	3	11	-8
Puerto Ángel	15	39	24	96	29	35	20	3	13	-8
Putla	17	1	28	97	56	2	1248	3	43	-8
Quiéchapa	16	25	34	96	14	54	1900	3	2	-8
Quiotepec	17	54	8	96	59	0	845	3	15	-8
Salinas Cruz	16	9	37	95	12	11	70	2	35	-8
San Jerónimo Ixtepec	16	33	58	95	6	1	121	2	30	-8
San Miguel Peras	16	56	22	97	0	16	50	3	20	-8
San Vicente Coatlán	16	23	15	96	50	42	0	3	18	-8
Santa María del Mar	16	13	24	94	51	33	0	2	25	-8
Silacayoapan	17	30	14	98	8	38	1720	3	47	-8
Soladevega	16	31	1	96	58	22	1580	3	21	-8
Soyaltepec	18	12	12	96	28	57	0	3	0	-8
Suchixtepec	17	58	28	97	39	26	2842	3	32	-8
Tamazulapan	17	40	30	97	34	19	0	3	31	-8
Tecomavaca	17	57	34	97	1	5	660	3	16	-8
Tehuantepec	16	19	57	95	13	46	100	2	35	-8
Teotitlán del Camino	18	7	53	97	4	26	1067	3	16	-8
Teposcolula	17	30	45	97	29	16	2155	3	30	-8
Tequisistlán	16	24	21	95	36	2	1000	2	45	-8
Teutla	17	59	0	96	42	54	1338	3	7	-8
Tezoatlán	17	40	24	97	48	42	1500	3	37	-8
Tlaxiaco	17	15	59	97	40	58	1210	3	36	-8
Tlucula de Matamoros	16	57	19	96	28	43	1650	3	6	-8
Tololapan	16	40	4	96	18	12	0	3	2	-8
Tuxtepec	18	5	24	96	6	50	91	2	51	-8
Valle Nacional	17	40	43	96	17	59	65	2	58	-8
Villa Alta	17	20	41	96	9	8	1138	2	55	-8
Yacuane	17	14	25	97	27	3	0	3	30	-8
Yautepec	16	25	52	95	58	11	1100	2	55	-8
Yautepec	16	30	15	96	6	18	1000	2	58	-8
Yalalag	17	11	20	96	10	48	1186	2	57	-8
Zaniza	16	39	7	97	20	19	0	3	30	-8
Zimatlán	16	52	0	96	46	34	1609	3	14	-8
<b>Puebla</b>										
Acatepec	19	1	16	98	18	24	2174	3	46	-8
Acatlán de Osorio	18	12	6	98	3	6	1213	3	42	-8
Ahuatempan	18	24	47	98	0	58	1810	3	40	-8
Atezcal	18	23	51	97	43	28	1847	3	33	-8
Atlixco	18	54	32	98	26	27	1881	3	50	-8
Cacalotepec	19	0	3	98	17	28	2337	3	45	-8
Canoa	19	8	55	98	6	4	2000	3	40	-8
Canal de Morelos	18	44	8	97	25	20	2337	3	23	-8
Coronanc	19	7	11	98	17	58	2230	3	45	-8
Coxcatlán	18	15	55	97	8	55	1217	3	18	-8

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Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	$\delta m$		$\Delta \delta m$ '/año
	°	'	"	°	'	"		°	'	
Oyotzingo	19	11	49	98	26	18	2322	3	49	-8
Cuautlancingo	19	5	16	98	16	14	2118	3	45	-8
Chachapa	19	2	47	98	5	35	2298	3	40	-8
Chiautla de Tapia	18	17	28	98	35	55	1025	3	55	-7
Chila Asunción	17	58	26	97	51	11	1676	3	37	-8
Cholula	19	3	45	98	18	15	2150	3	46	-8
Huauchinango	20	10	51	98	2	58	1472	3	36	-8
Huejotzingo	19	9	29	98	24	22	2291	3	48	-8
Hueyotlipan	19	5	6	98	12	32	2195	3	43	-8
Ixtaccihuatl	19	11	11	98	38	38	5146	3	54	-7
Izúcar de Matamoros	18	36	6	98	27	42	1326	3	51	-7
La Malinche	19	13	48	98	1	47	4461	3	38	-8
Loreto	19	3	24	98	11	5	2221	3	43	-8
Molcaxac	18	44	9	97	54	8	1874	3	36	-8
Momoxpan	19	4	13	98	15	54	2159	3	45	-8
Moyotzingo	19	14	35	98	24	11	2271	3	48	-8
Nextetelco	19	7	13	98	20	21	1500	3	46	-8
Nopalucan	19	12	59	97	49	10	2490	3	32	-8
Ocotlán	19	8	37	98	17	3	2243	3	45	-8
Ocoyucan	18	58	30	98	17	58	2152	3	46	-8
Pantepec	20	31	29	97	56	14	738	3	32	-8
Petlaltzingo	18	4	59	97	55	12	1325	3	39	-8
Popocatepetl	19	1	17	98	37	34	5452	3	54	-7
Puebla de Zaragoza	19	2	30	98	11	48	2162	3	43	-8
Resurrección	19	6	4	98	7	36	2366	3	41	-8
San Andrés Chalchico	18	59	10	97	26	52	2540	3	23	-8
San Antonio	19	6	3	98	9	31	2296	3	42	-8
San Aparicio	18	29	42	97	16	51	1771	3	21	-8
San Baltazar	19	1	24	98	12	18	2142	3	43	-8
Sanctorum	19	5	51	98	15	8	2000	3	44	-8
San Juan de los Llanos	19	27	54	97	41	3	2380	3	28	-8
San Martín Texmelucan	19	16	59	98	25	59	2278	3	48	-8
San Salvador el Seco	19	8	7	97	38	32	2450	3	28	-8
Santa María Chiamecatí	18	38	47	98	4	46	2000	3	41	-8
Santa Rita Tlahuapan	19	19	56	98	35	9	2291	3	52	-7
Santiago Xalitzintla	19	4	36	98	30	53	2000	3	51	-7
Tecali	18	53	58	97	57	59	2240	3	37	-8
Tecamachalco	18	52	57	97	43	49	2055	3	31	-8
Tehuacán de las Gran	18	27	51	97	23	20	1676	3	24	-8
Temextatiloyan	19	5	22	98	12	46	2183	3	43	-8
Tepeaca	18	57	43	97	54	8	2257	3	35	-8
Tepeji Rodríguez	18	34	47	97	55	45	1746	3	37	-8
Tetela de Ocampo	19	49	15	97	48	10	1790	3	30	-8
Teziutlán	19	49	30	97	21	17	1990	3	18	-8
Tlacotepec	18	40	54	97	39	9	1977	3	30	-8
Tlaltenango	19	10	10	98	20	36	2246	3	46	-8
Tlancualpican	18	25	41	98	41	41	1100	3	57	-7
Tlaxcalanzingo	19	1	44	98	16	24	2173	3	45	-8
Tonantzintla	19	1	58	98	18	50	2147	3	46	-8
Xalmimilulco	18	12	32	98	22	46	2248	3	50	-8
Xochimehuacan	19	5	23	98	11	51	2200	3	43	-8
Xonacatepec	19	5	12	98	6	8	2209	3	40	-8

## Poblaciones de la República Mexicana, 2023

Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	δm		Δδm ‘/año
	°	′	″	°	′	″		°	′	
Zacapoaxtla	19	52	49	97	35	2	2045	3	24	-8
Zacatlán de las Manzanas	19	56	7	97	57	27	2059	3	34	-8
Zapotitlán	18	19	56	97	28	23	2407	3	26	-8
Zautla	19	43	6	97	40	21	2020	3	27	-8
Zinacatepec	18	19	57	97	14	41	1139	3	20	-8
<b>Querétaro</b>										
Amealco	20	11	17	100	8	38	2075	4	30	-7
Arroyo Seco	21	32	54	99	41	13	1008	4	17	-7
Boye	20	40	58	99	44	47	1000	4	19	-7
Cadereyta	20	41	41	99	48	58	2077	4	21	-7
Ezequiel Montes	20	40	2	99	53	54	1000	4	23	-7
Huimilpan	20	22	39	100	16	32	2307	4	33	-7
Jalpan	21	13	8	99	28	16	860	4	11	-7
Querétaro	20	35	36	100	23	11	1000	4	35	-7
San Juan del Río	20	23	30	99	59	49	1978	4	26	-7
Tequisquiapan	20	31	26	99	53	42	1717	4	23	-7
Tolimán	20	54	35	99	55	45	1535	4	24	-7
<b>Quintana Roo</b>										
Ascensión	19	46	31	87	28	0	0	-1	57	-8
Cabo Catoche	21	36	25	87	6	21	157	-2	24	-8
Carrillo Puerto	19	34	50	88	2	38	30	-1	35	-8
Contoy	21	31	45	86	48	12	0	-2	34	-8
Cozumel	20	31	20	86	57	12	0	-2	21	-8
Chetumal	18	29	39	88	17	56	0	-1	18	-8
Filomeno Mata	19	52	8	88	23	47	0	-1	25	-8
Icaiche	18	4	17	89	10	7	183	0	-45	-8
Kantunil Kin	21	6	14	87	29	12	20	-2	6	-8
Leona Vicario	20	59	23	87	12	22	0	-2	15	-8
Polyuc	19	36	50	88	33	58	0	-1	17	-8
Put	19	39	8	89	24	46	0	0	-48	-8
Saban	20	2	12	88	32	16	0	-1	21	-8
Santa Cruz Chico	18	56	3	88	9	44	0	-1	26	-8
Tulum	20	12	34	87	25	34	150	-2	2	-8
Vigía Chico	19	46	27	87	35	2	0	-1	53	-8
Xkalak	18	13	32	87	50	50	0	-1	31	-8
Xkanha	19	6	13	89	20	5	0	0	-47	-8
<b>San Luis Potosí</b>										
Ahualco	22	23	56	101	9	58	1902	4	54	-7
Alaquines	22	7	41	99	35	27	1300	4	14	-7
Arista	22	38	46	100	51	2	1560	4	46	-7
Arriaga	21	54	44	101	22	58	2660	4	59	-7
Cárdenas	21	59	49	99	38	28	1201	4	15	-7
Catorce	23	41	34	100	53	23	2756	4	47	-7
Cerritos	22	25	55	100	16	51	1153	4	32	-7
Ciudad del Maíz	22	24	8	99	36	9	1239	4	14	-7
Charcas	23	7	47	101	6	37	2057	4	53	-7
Guadalcázar	22	37	1	100	23	56	1673	4	35	-7
Matehuala	23	38	41	100	38	26	1615	4	41	-7
Moctezuma	22	45	7	101	5	0	1777	4	52	-7
Pastora	22	8	2	100	3	25	920	4	26	-7

## Poblaciones de la República Mexicana, 2023

Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	δm		Δδm '/año
	°	'	“	°	'	“		°	'	
Ramos	22	49	59	101	55	3	2210	5	13	-7
Rio Verde	21	55	52	99	59	38	991	4	24	-7
Salinas de Puente Blanco	22	37	44	101	43	0	2099	5	8	-7
San Luis Potosí	22	9	10	100	58	38	1877	4	49	-7
Santa Catarina	21	39	37	99	29	36	898	4	12	-7
Santa María del Río	21	48	4	100	44	9	1703	4	43	-7
Santo Domingo	23	19	35	101	44	6	1971	5	9	-7
Tamazunchale	21	16	0	98	47	18	206	3	53	-7
Tamuín	21	0	18	98	46	30	275	3	54	-7
Tancanhuitz	21	36	11	98	57	57	241	3	58	-7
Valles	21	59	4	99	0	58	95	3	59	-7
Vieja	22	2	29	99	25	16	10	4	9	-7
Villa de Reyes	21	48	19	100	56	0	1819	4	48	-7
Zaragozas José de	22	2	8	100	43	53	1925	4	43	-7
<b>Sinaloa</b>										
Altata	24	38	0	107	55	53	2	7	29	-6
Badiraguato	25	21	40	107	33	7	300	7	25	-6
Cosalá	24	24	38	106	41	44	300	7	3	-6
Culiacán	24	48	36	107	23	57	84	7	19	-6
El Fuerte	26	25	14	108	39	0	0	7	53	-6
La Laguna	26	34	58	108	27	25	600	7	50	-6
Mazatlán	23	11	55	106	25	20	3	6	53	-6
Mocorito	25	29	0	107	55	13	838	7	33	-6
Navolato	24	45	57	107	41	48	12	7	25	-6
Rosario	22	59	29	105	51	13	32	6	41	-6
San Blas	26	4	38	108	45	53	37	7	53	-6
San José de Gracia	26	8	38	107	53	38	750	7	36	-6
Santa María	25	33	56	109	10	26	46	7	57	-6
Sinaloa	25	49	26	108	13	29	55	7	41	-6
Soyatita	25	44	21	107	18	36	1200	7	22	-6
Topolobampo	25	36	1	109	2	52	3	7	55	-6
<b>Sonora</b>										
Agua Prieta	31	19	42	109	33	44	1050	8	47	-6
Aguiabampo	26	21	58	109	8	59	7	8	2	-6
Álamos	27	1	16	108	56	2	410	8	2	-6
Altar	30	42	46	111	44	12	0	9	24	-5
Antimonio	30	44	34	112	36	49	61	9	40	-5
Arizpe	30	20	9	110	10	22	870	8	51	-6
Bacanora	28	59	2	109	23	21	446	8	25	-6
Bacerac	30	21	41	108	49	25	937	8	24	-6
Baroyeca	27	38	32	109	29	33	0	8	18	-6
Buenavista	27	51	3	109	52	24	111	8	26	-6
Caborca	30	41	50	112	9	29	305	9	31	-5
Cananea	30	58	57	110	18	1	1489	8	59	-6
Carbo	29	41	0	110	57	29	464	9	1	-6
Carbón	29	41	0	110	57	29	464	9	1	-6
Cedros	27	45	39	109	17	26	475	8	14	-6
Ciudad Obregón	27	29	35	109	56	0	100	8	25	-6
Conicarit	27	14	18	109	5	5	145	8	7	-6
Cucurpe	30	19	51	110	42	18	803	9	1	-6
Guaymas	27	55	28	110	53	31	0	8	45	-5

## Poblaciones de la República Mexicana, 2023

Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	δm		Δδm ‘/año
	°	′	“	°	′	“		°	′	
Hermosillo	29	4	29	110	57	36	237	8	56	-6
Huatabampo	26	49	36	109	38	46	20	8	15	-6
Imuris	30	46	38	110	51	58	826	9	8	-6
Libertad	29	54	12	112	45	7	0	9	35	-5
Macoyahui	27	19	36	108	54	28	201	8	4	-6
Magdalena	30	37	45	111	3	42	693	9	11	-6
Moctezuma	29	48	10	109	41	41	677	8	37	-6
Minas Nuevas	27	3	29	109	0	33	520	8	4	-6
Movas	28	9	40	109	26	34	260	8	20	-6
Naco	31	19	53	109	57	5	1340	8	55	-6
Nacori Grande	29	3	37	110	2	44	634	8	39	-6
Nacozari	30	22	25	109	41	28	1040	8	42	-6
Navojoa	27	4	52	109	27	13	40	8	13	-6
Nogales	31	19	49	110	56	42	1120	9	14	-6
Nabas	28	27	40	109	31	35	170	8	24	-6
Puerto Libertad	29	54	34	102	40	52	8	5	50	-7
Punta Peñasco	31	18	9	113	32	57	61	10	1	-5
Quiriego	27	31	11	109	15	7	251	8	12	-6
Rayón	29	42	47	110	34	36	560	8	54	-6
Sahuaripa	29	3	18	109	13	31	460	8	22	-6
San José de Pimas	28	42	47	110	21	2	415	8	42	-6
Santa Ana	30	32	38	111	7	26	687	9	11	-6
Santa Clara	31	40	41	114	29	30	0	10	20	-5
Soyopa	28	45	49	109	38	7	272	8	28	-6
Suaqui Grande	28	23	44	109	53	30	272	8	31	-6
Tiburón	28	45	55	112	41	56	0	9	23	-5
Torín	27	34	30	110	13	19	64	8	31	-6
Tubutama	30	53	4	111	28	16	682	9	21	-5
Ures	29	25	45	110	23	29	432	8	48	-6
Yabaros	26	42	12	109	30	45	2	8	11	-6
<b>Tabasco</b>										
Álvaro Obregón	18	13	19	92	40	4	33	1	8	-8
Astapa	17	46	42	92	59	18	134	1	21	-8
Cárdenas	18	0	42	93	22	10	4	1	31	-8
Comalcalco	18	15	54	93	13	7	5	1	25	-8
Francisco I. Madero	18	25	18	92	44	28	72	1	9	-8
Huimanguillo	17	52	10	93	27	31	193	1	35	-8
Ignacio Allende	18	23	10	92	50	51	32	1	13	-8
Tacotalpa	17	35	47	92	49	26	60	1	17	-8
Tapijulapa	17	27	52	92	46	50	0	1	17	-8
Teapa	17	33	14	92	57	12	50	1	21	-8
Tenosique	17	28	45	91	25	33	60	0	34	-8
Tierra Colorada	17	57	22	92	37	46	144	1	9	-8
Villahermosa	17	59	15	92	55	0	10	1	18	-8
Xicoténcatl	17	30	35	92	40	52	206	1	13	-8
<b>Tamaulipas</b>										
Abasolo	24	4	0	98	22	38	61	3	38	-7
Aldama Presas	22	55	6	98	4	12	98	3	31	-8
Altamira	22	23	40	97	55	47	26	3	28	-8
Antiguo Morelos	22	33	3	99	5	9	178	4	0	-7
Burgos	24	57	1	98	46	57	193	3	50	-7

## Poblaciones de la República Mexicana, 2023

Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	$\delta m$		$\Delta \delta m$ '/año
	°	'	"	°	'	"		°	'	
Camargo	26	19	1	98	49	55	68	3	51	-7
Casas	23	43	44	98	44	27	120	3	49	-7
Ciudad Victoria	23	44	6	99	7	51	321	4	0	-7
Cruillas	24	45	32	98	30	59	265	3	42	-7
Güémez	23	55	18	99	0	28	220	3	57	-7
Guerrero	26	46	45	99	20	22	34	4	6	-7
Jaumave	23	24	30	99	22	28	735	4	7	-7
Jiménez	24	12	56	99	28	44	101	4	10	-7
Llera	23	19	11	99	1	15	290	3	57	-7
Magiscatzin	22	48	29	98	42	1	56	3	49	-7
Matamoros	25	52	45	97	31	9	12	3	11	-7
Méndez	25	7	11	98	34	12	128	3	43	-7
Mier	26	25	57	99	8	41	80	4	0	-7
Miquihuana	23	34	15	99	46	32	1892	4	18	-7
Ocampo	20	50	32	99	20	14	348	4	9	-7
Padilla	24	0	39	98	46	27	153	3	50	-7
Reynosa	26	5	50	98	16	42	38	3	34	-7
San Carlos	24	34	50	98	56	26	432	3	54	-7
San Fernando	24	50	56	98	9	30	55	3	31	-7
Tampico	22	13	0	97	51	19	12	3	26	-8
Tula	22	59	50	99	42	55	1173	4	16	-7
Villagrán	24	28	33	99	20	21	363	4	6	-7
Xicoténcatl	22	59	48	98	56	35	131	3	55	-7
<b>Tlaxcala</b>										
Apizaco	19	24	59	98	8	27	2408	3	40	-8
Calpulalpan	19	35	37	98	34	18	2578	3	51	-7
Cuauila	19	36	10	98	38	44	2703	3	53	-7
Cuauhutotihuatlán	19	7	7	98	10	9	2308	3	42	-8
Huamantla	19	18	53	97	55	39	2553	3	35	-8
Tenancingo	19	8	47	98	11	57	2281	3	43	-8
Tlaxcala	19	19	4	98	14	9	2252	3	43	-8
San Aparicio	19	6	0	98	9	30	2293	3	42	-8
San Juan de los Llanos	19	27	54	97	41	0	2448	3	28	-8
San Martín Texmelucan	19	16	59	98	25	59	2278	3	48	-8
<b>Veracruz</b>										
Acayucan	17	56	42	95	54	43	88	2	46	-8
Acayucan	17	56	34	94	54	13	88	2	17	-8
Acayucan	17	56	42	94	54	48	158	2	17	-8
Actopan	19	30	11	96	36	45	311	2	59	-8
Alvarado	18	46	14	95	45	56	9	2	38	-8
Ciudad Azueta	18	4	43	95	42	18	0	2	39	-8
Coatepec	19	27	8	96	57	1	1252	3	8	-8
Coatzacoalcos	18	8	56	94	24	40	2	2	2	-8
Coatzintla	20	29	6	97	26	12	144	3	18	-8
Córdoba	18	53	34	96	55	52	924	3	10	-8
Cosamaloapan	18	21	46	95	48	32	96	2	41	-8
Coscomatepec	19	4	23	97	2	5	1588	3	12	-8
Cuatotolopan	18	7	16	95	18	7	23	2	28	-8
Cuichapa	18	46	28	96	52	8	642	3	8	-8
Chiconamel	21	14	0	98	27	36	158	3	45	-7
Chicontepec	20	58	31	98	9	54	595	3	37	-8



## Poblaciones de la República Mexicana, 2023

Coordenadas geográficas (Anuario del Observatorio 1984)

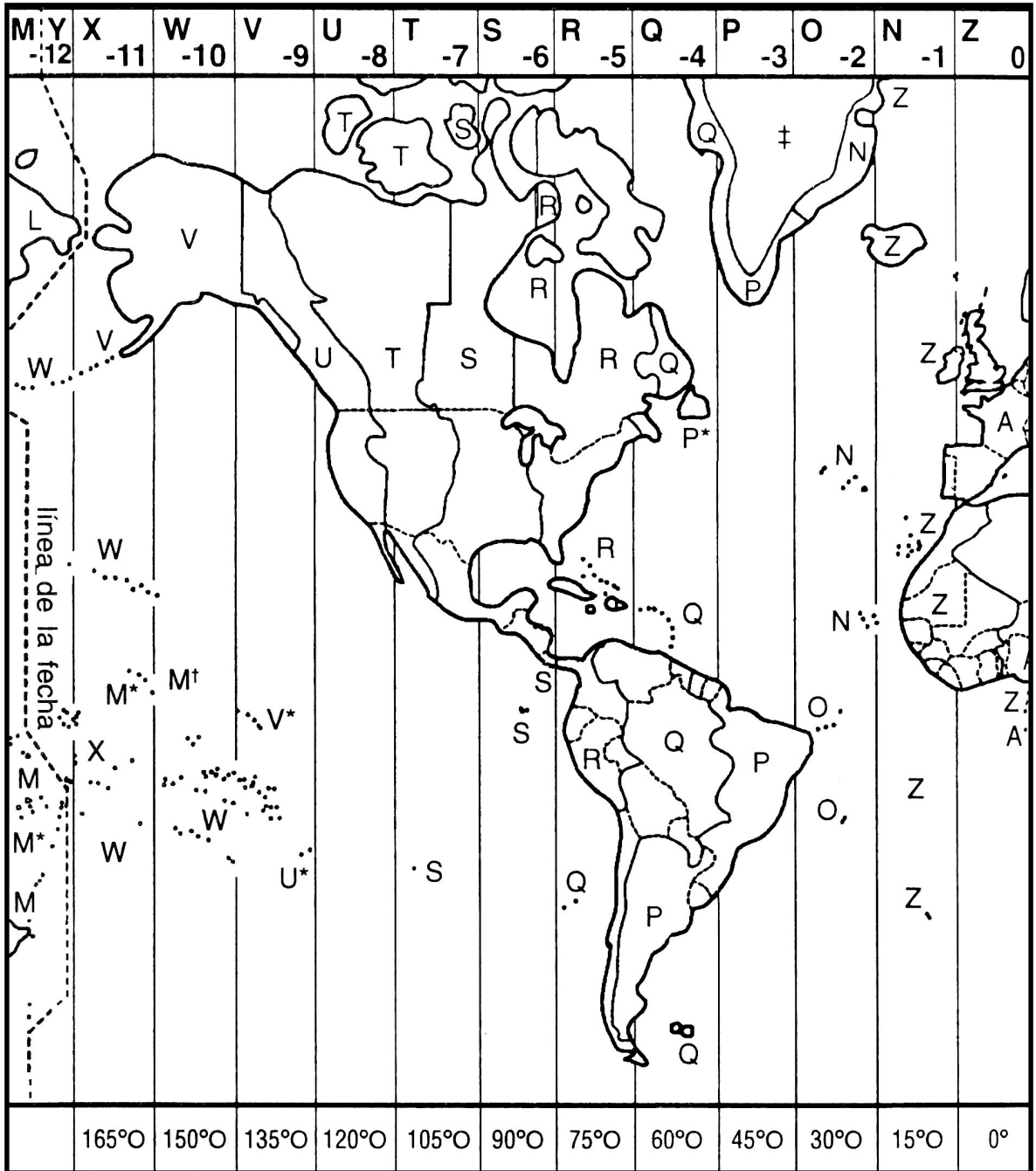
ESTADO Población	latitud			longitud			alt m	$\delta m$		$\Delta \delta m$ ‘/año
	°	′	″	°	′	″		°	′	
General Alemán	18	11	32	96	5	44	18	2	50	-8
Hidalgotitlán	17	46	20	94	38	47	77	2	11	-8
Huatusco	19	9	1	96	57	9	1344	3	9	-8
Huayacocotla	20	32	27	98	28	38	2100	3	46	-7
Inalambrica	19	10	50	96	7	36	0	2	46	-8
Ixcatepec	21	14	23	98	0	14	295	3	32	-8
Ixhuatlán	20	41	30	98	0	35	306	3	34	-8
Jalapa	19	31	35	96	54	51	1427	3	7	-8
Lobos	21	28	0	97	13	3	0	3	10	-8
Martínez de la Torre	20	3	58	97	2	36	151	3	9	-8
Minatitlán	17	58	47	94	32	27	64	2	6	-8
Misantla	19	56	2	96	50	24	410	3	4	-8
Mocayapan	18	12	49	94	50	17	340	2	14	-8
Naolingó	19	39	15	96	51	51	1605	3	5	-8
Nautla	20	12	43	95	45	38	4	2	32	-8
Orizaba	18	50	58	97	5	47	1284	3	14	-8
Ozuluama	21	39	46	97	51	0	229	3	27	-8
Pantepec	20	31	29	97	56	14	738	3	32	-8
Papantla	20	26	53	97	19	7	298	3	15	-8
Perote	19	33	52	97	14	24	2465	3	16	-8
Pico Orizaba	19	2	0	97	15	42	5700	3	18	-8
P. Vicente	17	50	5	95	48	35	95	2	43	-8
Rizo	19	3	17	95	55	8	0	2	41	-8
Rodríguez Clara	17	59	28	95	24	9	148	2	31	-8
Sacrificios	19	10	26	96	5	27	0	2	45	-8
San Andrés Tuxtla	18	26	42	95	11	53	361	2	23	-8
San Andrés Tuxtla	18	26	40	95	13	1	323	2	24	-8
San Carlos	19	24	17	96	21	25	136	2	52	-8
San Juan de Ulua	19	12	26	96	7	46	0	2	46	-8
San Juan Evangelista	17	52	59	95	8	12	88	2	24	-8
San Martín	18	33	48	95	10	48	1738	2	22	-8
Santiagoullo	19	8	29	95	48	23	0	2	37	-8
Tamarindo	18	45	23	96	22	49	80	2	55	-8
Tamiahua	21	16	26	97	26	29	4	3	17	-8
Tantoyucan	21	21	7	98	13	31	217	3	38	-8
Tehuipango	18	31	14	97	3	31	2382	3	15	-8
Teocelo de Díaz	19	23	8	96	57	47	1218	3	9	-8
Tepetzintla	21	10	43	96	49	48	351	2	59	-8
Tesechoacan	18	8	12	95	39	47	0	2	38	-8
Tierra Blanca	18	27	3	96	21	28	60	2	56	-8
Tihuatlán	20	43	26	97	32	23	222	3	21	-8
Tlacojalpan	18	13	57	95	57	13	91	2	46	-8
Tlacotalpan	18	36	40	95	39	54	320	2	36	-8
Tlaliscoyan	18	48	7	96	3	26	84	2	46	-8
Tlapacoyan	19	58	13	97	12	35	504	3	14	-8
Tonayan	19	40	54	96	54	45	0	3	6	-8
Tuxpan	20	57	18	97	23	59	14	3	16	-8
Veracruz	19	12	2	96	8	13	14	2	47	-8
Verde	19	11	50	96	3	59	0	2	45	-8
Xico	19	25	17	97	0	11	0	3	10	-8
Zongolica	18	40	10	96	59	26	1294	3	12	-8

## Poblaciones de la República Mexicana, 2023

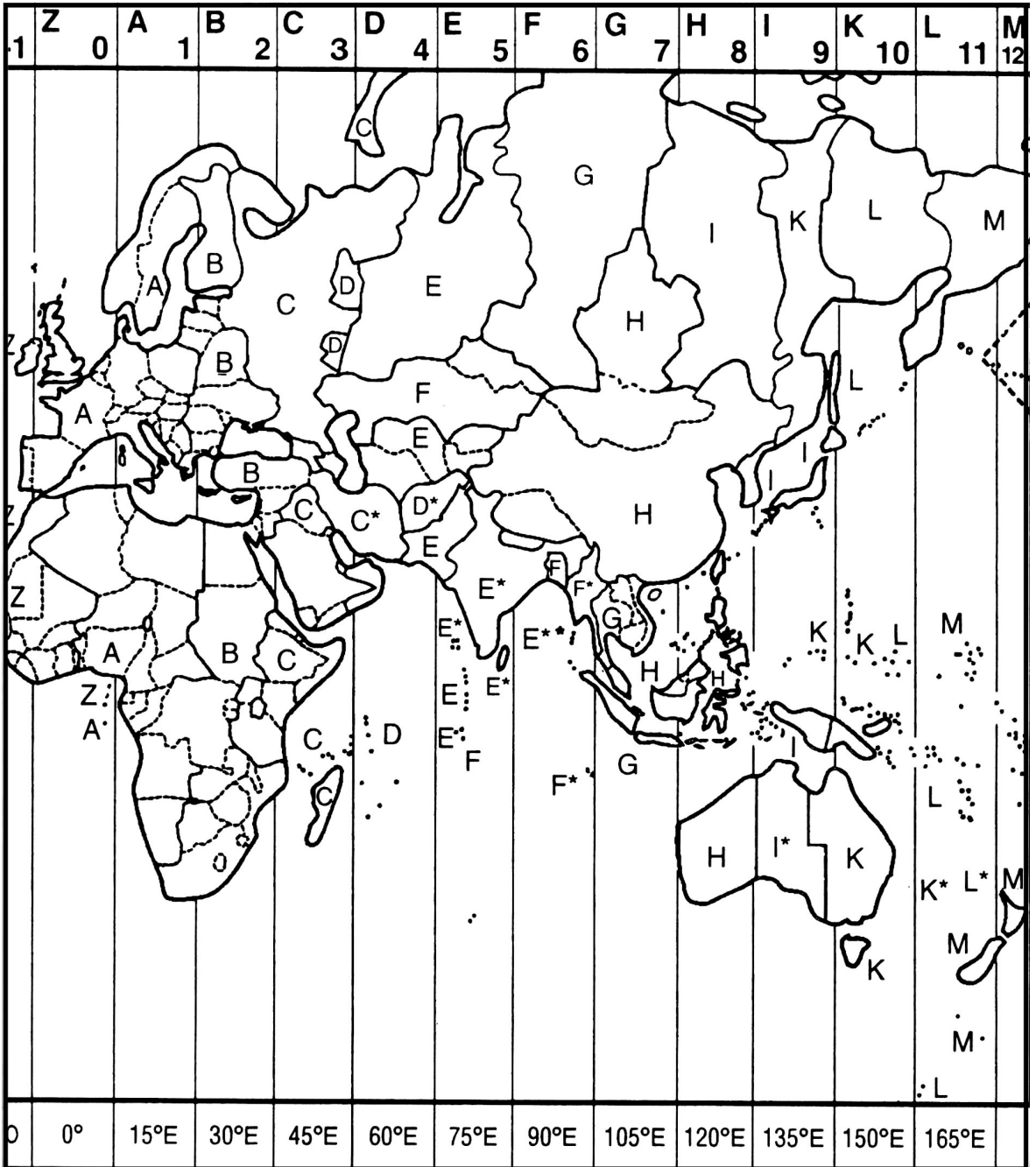
Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	$\delta m$		$\Delta \delta m$ /año
	°	'	"	°	'	"		°	'	
<b>Yucatán</b>										
Becanchen	19	52	32	89	13	3	0	0	-56	-8
Celestum	20	51	36	90	24	5	3	0	-22	-8
Cuyo	21	31	9	87	40	48	8	-2	2	-8
Chancenote	20	59	36	87	46	56	0	-1	55	-8
Chavihau	21	21	28	89	7	7	0	-1	10	-8
Espita	21	0	36	88	18	27	22	-1	36	-8
Halachó	20	28	44	90	4	51	6	0	-31	-8
Huhi	20	43	42	89	10	0	15	-1	4	-8
Izamal	20	56	16	88	57	14	14	-1	13	-8
Maxcanu	20	35	11	89	59	55	8	0	-34	-8
Mérida	20	59	0	89	38	43	9	0	-49	-8
Molas	20	49	0	89	37	48	10	0	-49	-8
Progreso	21	18	0	89	39	30	8	0	-51	-8
San Felipe	21	34	8	88	13	58	0	-1	43	-8
Sisal	21	9	59	90	1	55	0	0	-37	-8
Tekax	20	12	18	98	17	20	35	3	42	-8
Telchac	21	20	35	89	15	50	10	-1	5	-8
Tzimin	21	8	1	88	9	6	17	-1	43	-8
Valladolid	20	41	24	88	12	23	20	-1	38	-8
Yalkubul	21	31	26	88	36	55	0	-1	29	-8
<b>Zacatecas</b>										
Calera	22	57	2	102	42	10	2236	5	32	-7
Concepción del Oro	24	36	54	101	25	43	2070	5	2	-7
Chalchihuites	23	28	42	103	53	15	2321	6	0	-7
Fresnillo	23	10	35	102	52	39	2250	5	36	-7
Guadalupe	22	45	30	102	31	9	2265	5	27	-7
Jerez	22	38	51	102	59	48	2027	5	38	-7
Juchipila	21	24	46	103	7	29	1350	5	39	-7
Nieves	23	59	41	103	1	12	2017	5	41	-7
Nochistlán	21	21	47	102	50	55	1930	5	33	-7
Observatorio Astronómico	22	43	56	102	32	26	2717	5	27	-7
Observatorio Astronómico	22	46	1	102	32	56	2425	5	28	-7
Ojo Caliente	22	34	44	102	15	20	2114	5	21	-7
Ojuelos	21	52	5	101	35	20	2000	5	4	-7
Pánuco	22	52	45	102	32	30	2321	5	28	-7
Pinos	22	17	54	101	34	23	2419	5	4	-7
Río Grande	23	49	40	103	2	17	2000	5	41	-7
San Juan del Mezquital	24	17	28	103	23	47	2000	5	51	-7
Sombrerete	23	37	53	103	38	30	2351	5	55	-7
Tlaltenango	21	47	0	103	18	44	1724	5	44	-7
Valparaíso	22	46	13	103	34	5	2140	5	51	-7
Villa de Cos	23	17	40	102	20	55	2050	5	24	-7
Villanueva	22	21	16	102	53	13	1955	5	35	-7
Zacatecas	22	46	30	102	34	45	2496	5	28	-7

### Mapa de zonas horarias



### Mapa de zonas horarias



## Zonas horarias

Las zonas horarias dividen a la Tierra en 24 franjas de 15° de anchura; las letras representan el código de uso con los que se corrige la hora del Meridiano de Greenwich. Además de señalarse en el encabezado del mapa, en la tabla se indica el número de horas que deberán sumarse, algebraicamente, a la hora del Meridiano de Greenwich. El mapa se tomó del Standard Time Zones, del Astronomical Phenomena, 1998.

° ' zona h m	° ' zona h m	° ' zona h m	° ' zona h m
00 Z 0	+90 F + 6	+180 M + 12	
+15 A + 1	+97 30 F* + 6 30	+187 30 M* + 12 30	-105 T - 7
+30 B + 2	+105 G + 7	-15 N - 1	-120 U - 8
+45 C + 3	+120 H + 8	-30 O - 2	-127 30 U* - 8 30
+52 30 C* + 3 30	+135 I + 9	-45 P - 3	-135 V - 9
+60 D + 4	+142 30 I* + 9 30	-52 30 P* - 3 30	-142 30 V* - 9 30
+67 30 D* + 4 30	+150 K + 10	-60 Q - 4	-150 W - 10
+75 E + 5	+157 30 K* + 10 30	-75 R - 5	-165 X - 11
+82 30 E* + 5 30	+165 L + 11	-90 S - 6	-180 Y - 12

# Hora Legal en los Estados Unidos Mexicanos

Ley de los Husos Horarios en los Estados Unidos Mexicanos. Decreto DOF:28/10/2022

## Capítulo Primero Disposiciones Generales

**Artículo 1.** La presente Ley es de observancia obligatoria en todo el territorio nacional; sus disposiciones son de orden público e interés general; su aplicación y vigilancia está a cargo del Ejecutivo Federal por conducto de las dependencias que conforme a la Ley Orgánica de la Administración Pública Federal tengan asignada competencia sobre la materia que regula el presente ordenamiento.

**Artículo 2.** Se reconoce para los Estados Unidos Mexicanos la aplicación y vigencia de los husos horarios 75 grados, 90 grados, 105 grados y 120 grados oeste del meridiano de Greenwich, y los horarios que les corresponden conforme a su ubicación, aceptando los acuerdos tomados en la Conferencia Internacional de Meridianos de 1884, que establece el meridiano cero.

**Artículo 3.** Para efectos de esta Ley, se establecen dentro del territorio nacional las siguientes zonas y se reconocen los meridianos que les correspondan:

**I.- Zona Centro:** Referida al meridiano 90 grados al oeste de Greenwich, que comprende la mayor parte del territorio nacional, con la salvedad de lo establecido en las fracciones II, III, IV y V de este artículo;

**II. Zona Pacífico:** Referida al meridiano 105 grados al oeste de Greenwich, que comprende los territorios de los estados de Baja California Sur; Nayarit, con excepción del municipio de Bahía de Banderas, el cual se regirá conforme a la fracción anterior en lo relativo a la zona centro; Sinaloa y Sonora;

**III.-Zona Noroeste:** Referida al meridiano 120 grados al oeste de Greenwich, que comprende el territorio del estado de Baja California;

**IV.- Zona Sureste:** Referida al meridiano 75 grados al oeste de Greenwich, que comprende el territorio del estado de Quintana Roo, y

**V.-Las islas,** arrecifes y cayos quedarán comprendidos dentro del meridiano al cual corresponda su situación geográfica, y de acuerdo con los instrumentos de derecho internacional aceptados.

**Artículo 4.** En el territorio nacional habrá un horario estándar que se establecerá de acuerdo con las zonas horarias que correspondan de conformidad con el artículo anterior. Únicamente se aplicará un horario estacional para los estados y municipios de la frontera norte, conforme a lo señalado por el capítulo segundo de la presente Ley.

## Capítulo Segundo Del Horario Estacional en la Frontera Norte

**Artículo 5.** Únicamente en la frontera norte del territorio nacional se aplicará un horario estacional conforme a las siguientes reglas:

**I.- Para los municipios** de Acuña, Allende, Guerrero, Hidalgo, Jiménez, Morelos, Nava, Ocampo, Piedras Negras, Villa Unión y Zaragoza, en el estado de Coahuila de Zaragoza; Anáhuac, en el estado de Nuevo León; Nuevo Laredo, Guerrero, Mier, Miguel Alemán, Camargo, Gustavo Díaz Ordaz, Reynosa, Río Bravo, Valle Hermoso y Matamoros, en el estado de Tamaulipas, se aplica el meridiano 75 grados al oeste de Greenwich;

**II.- Para el estado** de Baja California se aplica el meridiano 105 grados al oeste de Greenwich.

El horario estacional fronterizo norte surtirá efecto desde las dos horas del segundo domingo de marzo, y concluirá a las dos horas del primer domingo de noviembre.

## Capítulo Tercero De las modificaciones a los husos horarios en las Entidades Federativas y Municipios

**Artículo 6.** Para el caso de que una entidad federativa pretenda adoptar una de las zonas horarias o los horarios estacionales a los que se refiere la presente Ley, el Congreso local correspondiente podrá enviar al Congreso de la Unión, la iniciativa por la [https://dof.gob.mx/nota\\_detalle.php?codigo=5670045&fecha=28/10/2022&print=true](https://dof.gob.mx/nota_detalle.php?codigo=5670045&fecha=28/10/2022&print=true) 1/22/24/23, 1:12 AM DOF - Diario Oficial de la Federación que se modifica la zona horaria o el horario estacional que deba aplicarse a la entidad o municipio.

Para tal efecto, a propuesta de la mayoría de los integrantes del Congreso local o la persona titular del Ejecutivo local de la entidad federativa que así lo solicite, podrán realizar foros y/o consultas ciudadanas, a efecto de conocer la zona horaria o el horario estacional que, conforme a la opinión de la ciudadanía, deba aplicarse a la entidad o municipio.

El Congreso de la Unión, una vez recibidas las iniciativas relacionadas con el párrafo anterior, deberá solicitar la opinión de la Secretaría de Gobernación previo a iniciar el trámite a que se refiere el artículo 72 Constitucional.

Tratándose de entidades federativas o municipios que colinden con otra entidad federativa o demarcación territorial extranjera, con un huso horario distinto de aquel que actualmente le corresponde conforme a la presente Ley, el Congreso de la Unión deberá realizar las modificaciones correspondientes a la Ley de los Husos Horarios en los Estados Unidos Mexicanos, dentro de los noventa días siguientes a la presentación de la iniciativa formulada en términos del presente artículo.

**Artículo 7.** En las iniciativas presentadas de conformidad con las fracciones I y II del artículo 71 Constitucional, por las que se proponga modificar la zona horaria o el horario estacional en donde se ubique alguna entidad federativa o municipio, el Congreso de la Unión deberá requerir la opinión del Congreso local de dicha entidad, la cual será aprobada por la mayoría de sus integrantes.

## Centros astronómicos en la República Mexicana

Centro Astronómico	latitud ° ' "	longitud ° ' "	altura s.n.m.m.	ubicación
<b>Universidad Nacional Autónoma de México Instituto de Astronomía</b>				
BAJA CALIFORNIA				
San Pedro Mártir	31 02 39	115 27 49	2800	Telescopio 2.12 m
	31 02 43	115 28 00	2790	Telescopio 1.50 m
PUEBLA				
Tonantzintla	19 01 58	98 18 50	2147	Telescopio 1 m
<b>Centro de Radioastronomía y Astrofísica, UNAM.</b>				
MICHOACÁN				
Morelia	19 42 16	101 11 30	1941	
<b>Instituto Nacional de Astrofísica, Óptica y Electrónica, SEP.</b>				
PUEBLA				
Tonantzintla	19 01 58	98 18 50	2147	
SONORA				
<b>Observatorio Cananea Guillermo Haro</b>				
	31 03 10	110 18 19	2480	Telescopio 2.1 m
<b>Departamento de Astronomía, Universidad de Guanajuato</b>				
GUANAJUATO				
Guanajuato	21 03 10	101 19 28	2425	Mineral de la Luz
<b>Universidad Autónoma de Zacatecas</b>				
ZACATECAS				
Observatorio astronómico	22 43 56	102 32 26	2425	Cd. Universitaria
Observatorio astronómico	22 46 01	102 32 56	2714	Cerro de la Virgen
<b>Sociedad Astronómica de México</b>				
CIUDAD DE MÉXICO				
Observatorio Luis G. León	19 23 56	99 8 29	2246	Col. Álamos, Cd. de México
ESTADO DE MÉXICO				
<b>Observatorio Chapa de Mota</b>				
	19 47 24	99 31 23	3070	Municipio de Chapa de Mota
<b>Universidad Autónoma de Sinaloa</b>				
SINALOA				
Observatorio Cosala	24 24 5	106 36 36	595	Municipio de Cosala
<b>Instituto de Geofísica</b>				
<b>MEXART*:</b>				
Observatorio de centelleo interplanetario	19 48 39	101 41 39		Michoacán Coeneo
* Mexican Array Radiotelescope				

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## Refracción

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Presentamos un método gráfico para determinar la refracción atmosférica en función de la distancia cenital, temperatura o presión. Las gráficas se obtuvieron mediante interpolación polinomial de quinto, sexto, séptimo y noveno orden, de los valores tabulados y publicados por el Observatorio Pulkovo, en el Anuario Astronómico de la URSS, y por Pulkova, 1956, cuarta edición (Academia de Ciencias de la URSS, Moscú, Leningrado); y Abalakin, 1985, quinta edición (Observatorio Astronómico Central, Academia de Ciencias de la URSS, Leningrado).

De la gráfica de corrección por distancia cenital obtenemos la refracción media  $r$  dada en minutos de arco, en función de la distancia cenital dada en grados. Ésta se obtiene de la regresión polinomial de noveno orden, dada por la ecuación

$$r = a + b_1 z + b_2 z^2 + b_3 z^3 + b_4 z^4 + b_5 z^5 + b_6 z^6 + b_7 z^7 + b_8 z^8 + b_9 z^9,$$

donde  $r$  está dada en minutos de arco, y sus coeficientes son:

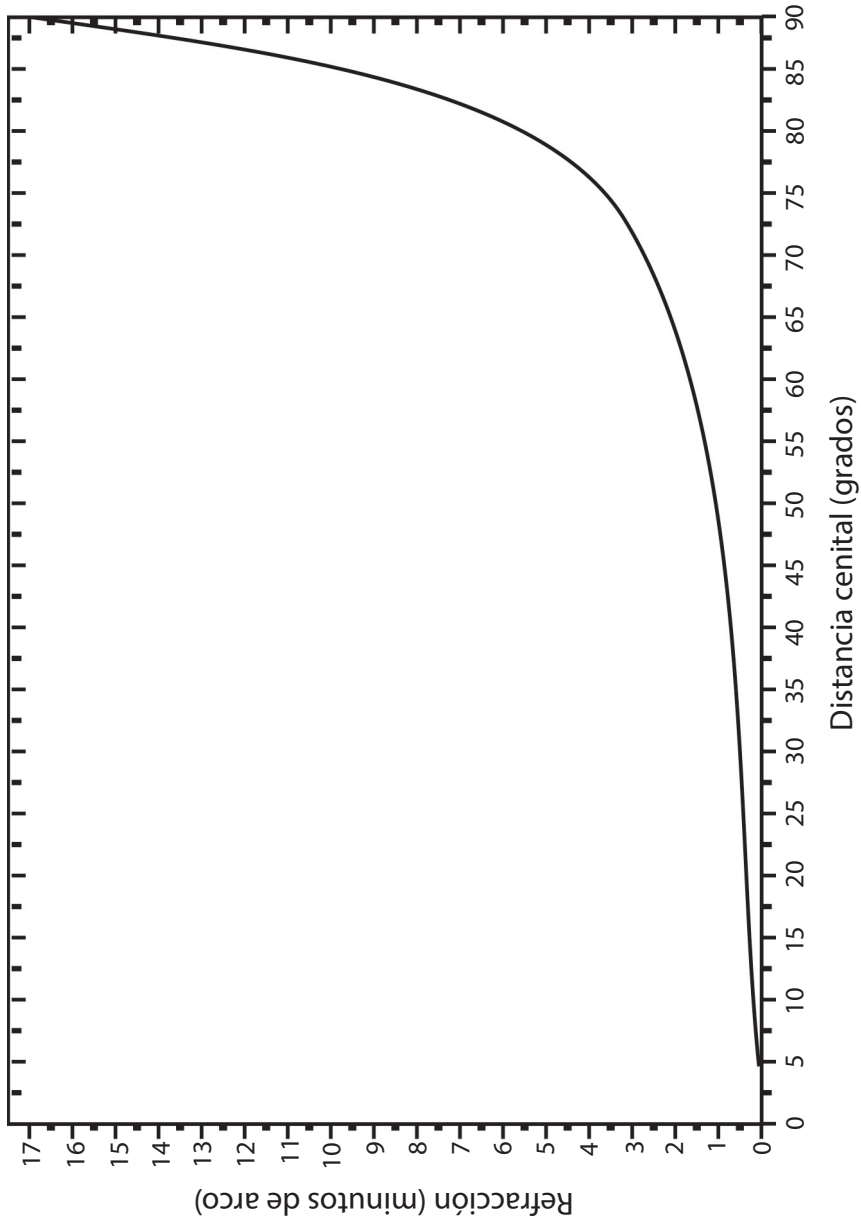
$a$	$-7.64878 \cdot 10^{-4}$	$b_5$	$1.22379 \cdot 10^{-6}$
$b_1$	$0.02752$	$b_6$	$-2.70552 \cdot 10^{-8}$
$b_2$	$-0.00384$	$b_7$	$3.52568 \cdot 10^{-10}$
$b_3$	$5.03936 \cdot 10^{-4}$	$b_8$	$-2.50309 \cdot 10^{-12}$
$b_4$	$-3.28953 \cdot 10^{-5}$	$b_9$	$7.48708 \cdot 10^{-15}$

Con la gráfica de corrección por temperatura, se determina el valor en segundos de arco, que se deberá sumar algebraicamente a la refracción media. Cada curva corresponde a las temperaturas, en grados centígrados, señaladas al extremo derecho de cada una de ellas.

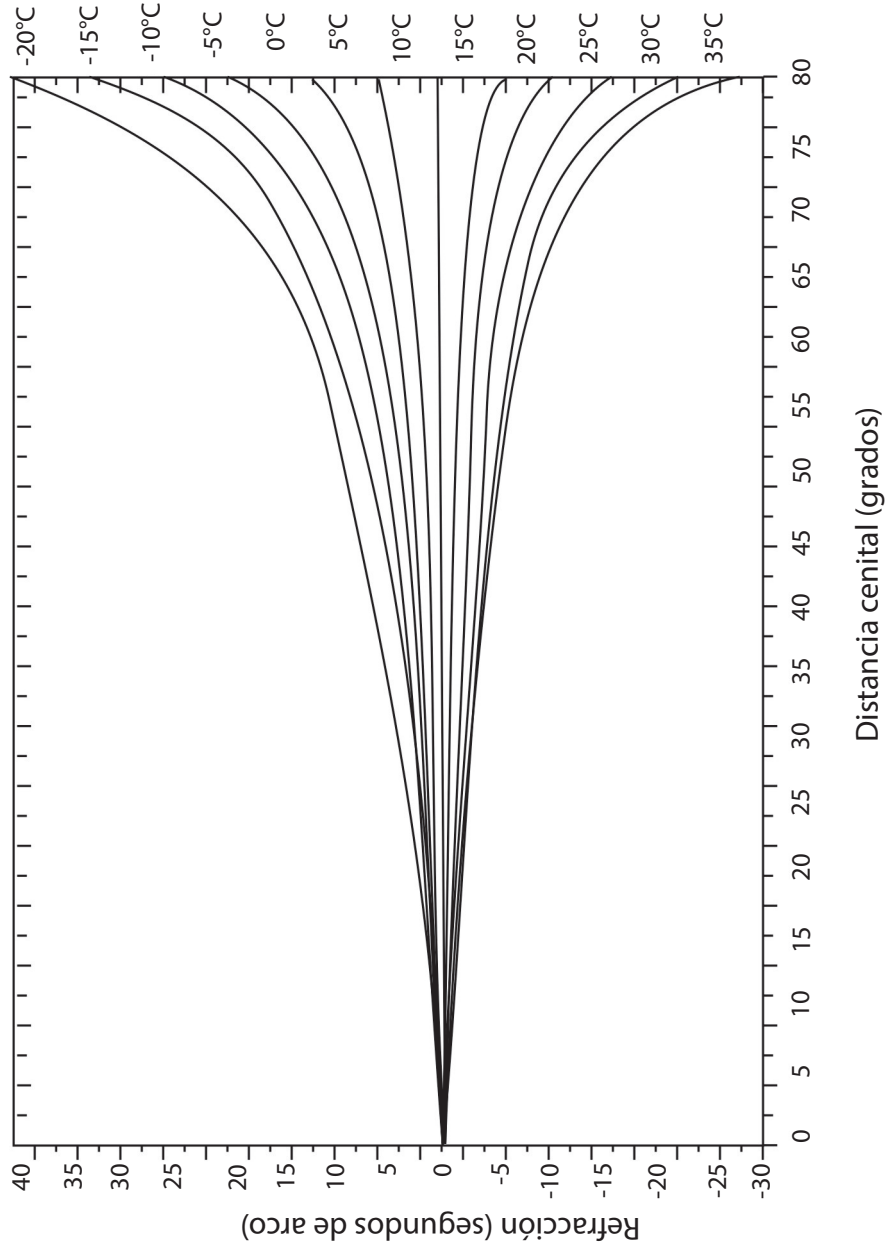
De la gráfica de corrección por presión se obtienen los valores en segundos de arco, que se deberán sumar algebraicamente a la refracción media. A la derecha de cada curva se muestran las variaciones de la refracción en función de la presión barométrica  $B$ , en mm.



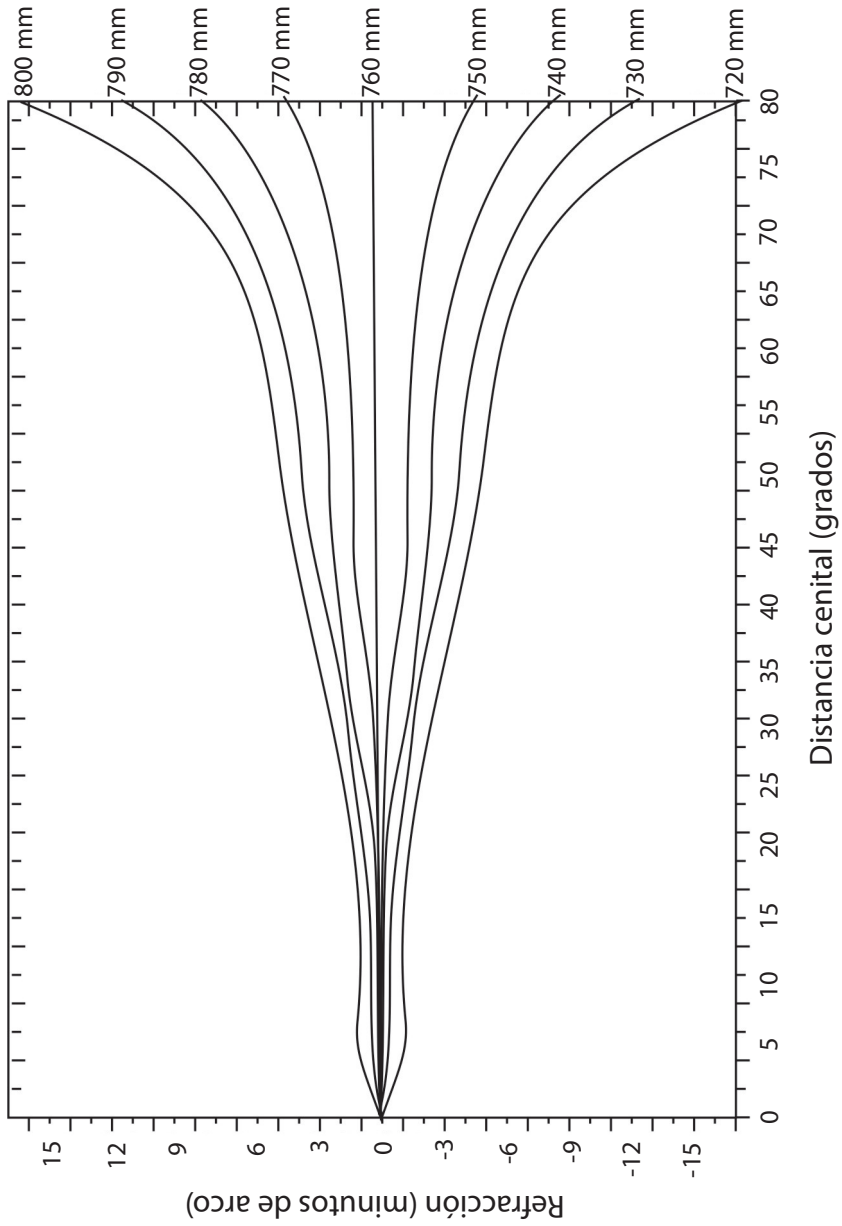
## Corrección por distancia cenital



## Corrección por temperatura



## Corrección por presión



## Abreviaturas

### Día juliano

Abreviaturas:

d: día

ds: día de la semana

dj: día juliano

### Hora sideral

Abreviaturas:

dj: día juliano

### Sol

Abreviaturas:

$\alpha$ : ascensión recta

$\delta$ : declinación

hp: hora del paso por el meridiano

vh: variación horaria

$\Delta$ : distancia geocéntrica

UA: unidad astronómica

### Luna

Abreviaturas:

dj: día juliano

$\alpha$ : ascensión recta

$\delta$ : declinación

hp: hora del paso por el meridiano

$\Delta$ : distancia geocéntrica en radios terrestres

sd: semidiámetro

pax: paralaje horizontal

DT: diámetro terrestre

### Planetas

Abreviaturas:

$\alpha$ : ascensión recta

$\delta$ : declinación

$\Delta$ : distancia geocéntrica

UA: unidad astronómica

hp: hora del paso por el meridiano

### Sistema de constantes y parámetros

Abreviaturas:

$\alpha$ : ascensión recta,  $d$ : declinación,  $f$ : latitud

UA: unidad astronómica, rad: radianes

DJ: día Juliano

lg: aceleración de la gravedad en la superficie terrestre o Normal

### Nomenclatura de las estrellas brillantes

Abreviaturas:

$\alpha$ : ascensión recta

$\delta$ : declinación

N: número del catálogo de estrellas brillantes en el Bright Star Catalog de la Universidad de Yale. E.U.A.

### Posiciones medias de estrellas brillantes

Abreviaturas:

NBSC: número de estrella en: Bright Star Catalog.

Yale University, EUA

NH: número en el Catálogo Hiparco

V: magnitud

SP: tipo espectral

nom: nombre de la estrella en clasificación Bayer

### Posiciones aparentes de estrellas brillantes

Abreviaturas de términos astronómicos:

$\alpha$ : ascensión recta

$\alpha_c$ : ascensión recta en el sistema de referencia intermedio

$\delta$ : declinación

Hp: hora del paso

### Posiciones aparentes de la polar

Abreviaturas:

$\alpha$ : ascensión recta

$\alpha_c$ : ascensión recta coordenadas intermedias

$\delta$ : declinación

hp: hora del paso por el meridiano

### Lluvias de estrellas

Abreviaturas:

$\alpha$ : ascensión recta

$\delta$ : declinación

vel: velocidad de incidencia en km/s

Núm: número de estrellas fugaces por hora

### Eventos planetarios

Abreviaturas:

E: Separación angular al Este (E).

Medida geocéntrica que se refiere a la separación angular entre los centros de los objetos (véase sección de explicaciones).

O: Separación angular al Oeste(O).

AC: acimut

a: altura

\*: ocultación

\*\* : eclipse

### Crepúsculos Salidas y puestas del Sol

AM: inicia el crepúsculo astronómico matutino; CM:

inicia el crepúsculo civil matutino;

SS: salida del Sol; PS: puesta del Sol; CV: termina el crepúsculo civil vespertino;

AV: termina el crepúsculo astronómico vespertino.

(Para el cálculo de la hora legal, véase la sección *Explicaciones*).

### Objetos Messier

Abreviaturas:

M: número de objeto Messier; NGC: número en el Nuevo Catálogo General

const: constelación; v: magnitud; tipo: tipo morfológico;

$\alpha$ : ascensión recta;  $d$ : declinación (ambas para J2000)

E: galaxia elíptica; S: galaxia espiral; SB: galaxia

espiral barrada; Pec: peculiar

ca: cúmulo abierto; cg: cúmulo globular;

rsn: remanente de supernova; np: nebulosa planetaria;

nr: nebulosa de reflexión; ne: nebulosa de emisión;

(véase la sección de explicaciones para obtener r información sobre morfología).

### Poblaciones de la República Mexicana

Abreviaturas:

alt: altura sobre el nivel del mar

$\delta_m$ : declinación magnética para el 1 de del 2006

$\Delta\delta_m$ : Variación de la declinación magnética por año

## Glosario: Términos astronómicos básicos

**Acimut o azimut.** Distancia angular medida hacia el Este, desde el Norte geográfico, hasta el punto definido por la intersección con el horizonte del círculo vertical que pasa por un objeto celeste. También es común referirla al Sur geográfico.

**Adviento.** Período litúrgico de cuatro semanas que precede a la Navidad.

**Afelio.** Punto en el cual un cuerpo en órbita en torno al Sol alcanza su r distancia a éste.

**Altitud o Altura.** Distancia angular entre el horizonte y el cuerpo celeste. Se mide a lo largo del gran círculo que pasa por el objeto astronómico y el cenit del lugar. Es positiva cuando el objeto está sobre el horizonte y negativa cuando está por debajo.

**Ángulo horario.** Distancia angular entre el meridiano del lugar y el círculo horario que pasa por el objeto celeste. Se mide en el plano del ecuador celeste.

**Anuario astronómico.** Guía de posiciones de objetos celestes y acontecimientos astronómicos que se publica cada año.

**Año anomalístico.** Paso sucesivo de la Tierra por su perihelio. Su duración es de 365.25964 días.

**Año civil.** Intervalo de 365 días que rige las actividades civiles, sociales o religiosas de la ría de los países del mundo; y es la parte entera de la duración del año trópico. Para su buen funcionamiento es necesario que en cada año, la posición del Sol en el cielo corresponda al mismo día. Para lograrlo se agrega el día 29 de cada cuatro años, omitiéndose para aquellos años seculares (múltiplos de 100), que no sean divisibles entre 400. (Véase la sección *Explicaciones*, en Calendarios)

**Año sideral.** Tiempo que le toma a la Tierra en dar una vuelta completa alrededor del Sol, respecto de las estrellas fijas. Su duración es de 365.25636 días.

**Año trópico.** Tiempo que transcurre entre los dos equinoccios o bien el tiempo que le toma al Sol pasar dos veces consecutivas por el primer punto de Aries. Su duración es de 365.24219 días.

**Apogeo.** Punto orbital más alejado de un cuerpo, respecto de la Tierra.

**Ascensión recta.** Ángulo en el plano del ecuador celeste, que mide la separación entre los círculos horarios del punto Vernal y de un objeto celeste.

**Asteroides.** Pequeños objetos rocosos del Sistema Solar, cuyos diámetros son del orden de 400 km, en promedio. Se les localiza principalmente en el llamado Cinturón de Asteroides, entre las órbitas de Marte y Júpiter. Otros grupos se identifican como los Apolo, Amor y Trollanos.

**Astrología.** Un sistema de fundamentos subjetivos, no científico, con el que se pretende explicar el carácter y comportamiento humanos, tomando como base las posiciones de los astros.

**Azimut.** Véase Acimut.

**Calendario.** Conjunto de normas establecidas para medir el transcurso del tiempo en años, meses y días.

**Calendario Gregoriano.** Calendario introducido por el Papa Gregorio XIII en 1582, con el que modificó el calendario Juliano. Consiste en agregar un día en todos los años que sean divisibles por cuatro; a estos se les llaman años bisiestos. Se exceptúan aquellos años seculares, o de final de siglo, que no sean divisibles por cuatrocientos. Los años 1800, 1900 y 2100 no son años bisiestos, en cambio 1600 y 2000 sí lo son.

**Calendario Juliano.** Año de 365.25 días exactamente; según la tradición, César lo instituyó en el año 45 a.C. y fue modificado por el papa Gregorio XIII en 1582 d.C.

**Carnaval.** Los tres días que preceden a la cuaresma. Fiestas celebradas durante estos días, consistentes en mascaradas, bailes y otros regocijos bulliciosos.

**Catálogo.** En Astronomía, tabla en la que se enumeran y enlistan objetos astronómicos, y en la que se caracterizan sus propiedades.

**Cenit o Zenit.** Punto de la esfera celeste que se encuentra exactamente encima del observador.

**Ciclo Solar.** Relativo al calendario, es el período de veintiocho años al final del cual el año comienza con el mismo día.

**Ciclo de actividad solar.** Ciclo cuya duración es de 11 años aproximadamente. Se percibe por el aumento en la cantidad de manchas, ráfagas y protuberancias solares.

**Círculo horario.** Gran círculo en la bóveda celeste, que contiene a los polos celestes y algún objeto astronómico.

**Conjunción.** Evento que se produce cuando dos objetos celestes alcanzan la misma longitud eclíptica o ascensión recta.

**Conjunción inferior.** Suceso astronómico de Mercurio o Venus cuando alguno de ellos se encuentra exactamente entre el Sol y la Tierra.

**Conjunción superior.** Evento astronómico de Mercurio o Venus cuando el Sol se encuentra entre el planeta y la Tierra.

**Cometa.** Cuerpo que orbita alrededor del Sol, con núcleo de polvo y hielos de unos 10 km de diámetro. Cuando se acerca al Sol, sus materiales sólidos se su-

## Glosario: Términos astronómicos básicos

bliman, de tal modo que al ser arrastrados por el viento solar producen una cauda cometaria; sus dimensiones pueden alcanzar más de cien millones de kilómetros.

**Constelación.** Grupo de estrellas cuya asociación esquemática o mítica, sirve para identificar cierta región de la esfera celeste; en la actualidad, dichos grupos han sido definidos por la Unión Astronómica Internacional, para delimitar con precisión las regiones de la esfera celeste. El cielo se ha dividido en 88 constelaciones.

**Coordenadas geográficas.** Latitud y longitud de un punto de la superficie terrestre, relativas al centro de la Tierra.

**Coordenadas celestes eclípticas.** Latitud y longitud de un punto de la bóveda celeste relativas al plano de la órbita de la Tierra. Pueden ser geocéntricas o heliocéntricas.

**Coordenadas celestes ecuatoriales.** Ascensión Recta y Declinación de un punto de la bóveda celeste relativas al plano del ecuador terrestre. Pueden ser geocéntricas o heliocéntricas.

**Corona solar.** Región más externa de la atmósfera solar, caracterizada por una temperatura de varios millones de grados. Se logra observar durante los eclipses totales de Sol. Otras estrellas también poseen corona.

**Crepúsculo.** Intervalo de tiempo que precede a la salida del Sol o que sigue después de su puesta, durante el cual el cielo está parcialmente iluminado. Puede ser crepúsculo civil, cuando se habla del tiempo que ocupa el Sol en recorrer la distancia cenital entre 90° y 50' y 96°; náutico entre 96° y 102°, y astronómico, entre 102° y 108°.

**Culminación.** Paso de un objeto celeste por el meridiano del observador. Punto en el que alcanza la máxima altura en su movimiento diurno.

**Cúmulo abierto o galáctico.** Conglomerado estelar de cientos de estrellas cuya distribución tiende hacia el plano de la Galaxia.

**Cúmulo globular.** Grupo estelar de forma casi esférica que se encuentra fuera del plano de la Galaxia. Su número de estrellas va de unos cientos de miles a decenas de millones, muchas de ellas son estrellas tardías.

**Declinación.** Distancia angular en la esfera celeste que se mide desde el ecuador celeste, a lo largo del círculo horario definido por el objeto celeste. Es positiva al norte y negativa al sur.

**Declinación magnética.** Desviación de las líneas del campo magnético de la Tierra, respecto de la línea norte sur geográfica. Esta es una propiedad física que varía con el tiempo y depende del lugar donde se mide.

**Deflexión de la vertical.** Diferencia angular entre el cenit astronómico y el cenit geodésico.

**Día Juliano.** Intervalo de tiempo en días, a partir del 1 de del año 4713 a.C., al medio día del meridiano de Greenwich.

**Día medio.** Tiempo transcurrido entre dos pasos sucesivos del Sol medio o ficticio, por el meridiano. Su duración es de 24 horas.

**Día sideral.** Tiempo que transcurre entre dos pasos sucesivos del punto vernal o de alguna estrella por el meridiano. Su duración es de 23 horas, 56 minutos, 4.098904 segundos.

**Día solar.** Tiempo transcurrido entre dos tránsitos consecutivos del Sol por el meridiano. Por su variación durante el año, se hizo necesario definir el día solar medio. Dicha variación es causada por la irregularidad de la rotación de la Tierra y de su movimiento en torno al Sol.

**Diámetro angular.** Ángulo que subtende el diámetro aparente de un cuerpo celeste cercano. Para la Luna y el Sol dicho ángulo es de 30' aproximadamente.

**Distancia cenital.** Distancia angular de un cuerpo celeste, medida desde el cenit.

**Distancia media.** Parámetro de una órbita elíptica, definido por la longitud del semieje  $r$ .

**Eclipse.** Paso de un cuerpo celeste por la sombra de otro, haciendo que la fuente que lo ilumina quede oculta por el primero.

**Eclipse anular de Sol.** Ocurre cuando el diámetro aparente de la Luna es menor que el solar. Parte del disco solar se muestra como un anillo alrededor de la Luna.

**Eclipse lunar.** Paso de la Luna por la sombra de la Tierra. Puede ser total umbral, cuando la Luna se encuentra dentro de la umbra de la Tierra; parcial umbral cuando parte del disco lunar se encuentra dentro de ella. Será total penumbral, cuando el disco de la Luna sólo se encuentra en la penumbra de la Tierra; y parcial penumbral o simplemente parcial, cuando parte del disco lunar se encuentra en la penumbra terrestre.

**Eclíptica, plano de la.** Plano medio de la órbita de la Tierra alrededor del Sol.

**Eclíptica.** Trayectoria aparente que describe el Sol en la bóveda celeste, a lo largo del año. Es llamada así porque los eclipses ocurren cuando la Luna se encuentra en el plano que la contiene.

**Ecuación del tiempo.** Diferencia entre los ángulos horarios del Sol verdadero y el Sol medio o ficticio. Dife-

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rencia entre el tiempo solar aparente y el tiempo solar medio.

**Ecuador.** Gran círculo en la superficie de un cuerpo, que resulta de la intersección de ésta con el plano que pasa por su centro y es perpendicular al eje de rotación del cuerpo.

**Ecuador celeste.** Proyección del ecuador de la Tierra, en la bóveda celeste.

**Edad de la Luna.** Término dado en astronomía para el número de días transcurridos después de la Luna Nueva.

**Efemérides.** Predicción de la posición de un astro. Lista de posiciones astronómicas y otros datos que cambian con el tiempo.

**Elementos orbitales.** Parámetros que caracterizan la órbita de un cuerpo que se mueve en torno a otro.

**Elongación.** Ángulo geocéntrico entre un planeta y el Sol medido en el plano definido por el planeta, el Sol y la Tierra. Las elongaciones planetarias fluctúan entre 0° y 180°, al Este o al Oeste del Sol.

**Elongación máxima.** Valor máximo de la elongación de un planeta interior.

**Epacta.** Número de días en que el año solar excede al lunar (casi 11 días). Edad de la Luna el 1 de de cada año.

**Epifanía.** Fiesta que celebra la iglesia cristiana el día 6 de , para conmemorar la adoración de Jesucristo por los Reyes Magos. Manifestación de Dios a los paganos.

**Equinoccio Vernal.** Día del año en el que se inicia la primavera en el hemisferio norte. La duración del día y la noche son iguales. Nodo ascendente de la eclíptica sobre el ecuador celeste. Momento en el que la longitud aparente del Sol es cero.

**Era.** Sistema de notación cronológica, relativa a la fecha en que ocurrió algún suceso importante.

**Esfera celeste.** Esfera imaginaria donde parecen estar colocados a la misma distancia todos los objetos celestes. En su centro está la Tierra cuyo plano ecuatorial contiene al ecuador terrestre; sus polos son la intersección de la proyección del eje de rotación de la Tierra con dicha esfera.

**Espectral, tipo.** Clasificación de las estrellas con base en su espectro, de acuerdo con su temperatura superficial. Se han caracterizado los tipos principales: O, B, A, F, G, K, M y además C(R y N) y S. También se puede clasificar por su luminosidad como 0, I, II, III, IV, V, VI y VII.

**Estacionario, punto.** Posición en la cual la variación de la ascensión recta de un planeta es momentáneamente nula.

**Estaciones.** Intervalos del año definidos por el tiempo en que el Sol permanece entre aquellos puntos orbitales caracterizados por los solsticios y equinoccios. Son llamadas Primavera, Verano, Otoño e Invierno. El clima en la Tierra es diferente en cada una de ellas, debido a la inclinación de su eje de rotación respecto del plano de la eclíptica.

**Estrella.** Esfera de gas incandescente cuya fuente de energía son las reacciones termonucleares.

**Excentricidad de una órbita.** Para una órbita elíptica, el cociente de la distancia entre los focos y el diámetro r de la órbita. Parámetro que especifica la forma de una sección cónica.

**Fase.** Se dice del aspecto o forma aparente que presenta un planeta o luna, visto a distancia. Es la fracción del disco iluminado por el Sol.

**Fases de la Luna.** Forma aparente de la Luna. Luna nueva, cuarto creciente, luna llena y cuarto menguante, se definen como los tiempos en los que la longitud de la Luna difieren de las del Sol en 0°, 90°, 180° y 270°, respectivamente.

**Galaxia.** Conglomerado de millones de estrellas, gas y polvo. Se clasifican según su morfología en: elípticas (E), espirales (S) e irregulares (I). Las espirales también pueden presentar núcleos que tienen forma de barra (SB).

**Geocéntrico.** Con referencia o perteneciente al centro de la Tierra.

**Geodesia.** Ciencia que trata de la forma y las medidas de la Tierra.

**Gravitación.** Campo de fuerza al que se debe la atracción de las masas en el Universo.

**Greenwich.** Región conurbada de Londres donde se encontraba el observatorio astronómico. El meridiano de este lugar se toma como origen de los meridianos, por lo que es llamado meridiano cero.

**Hégira o Hégira.** Era de los mahometanos, que se cuenta desde la puesta del Sol del 16 de de año 622 d.C., día en que Mahoma huyó de la Meca al salir hacia la ciudad de Medina.

**Heliocéntrico.** Con referencia o perteneciente al centro del Sol.

**Hora civil o legal.** Hora regida por el Sol medio o ficticio. Hora referida a un meridiano horario o huso horario. La Tierra se divide en 24 husos horarios, que se

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obtienen al dividir entre 15 los  $360^\circ$  de la circunferencia del ecuador.

**Hora local.** Hora regida por la posición del Sol verdadero. Cuando éste pasa por el meridiano del lugar, define las 12 horas o el mediodía locales.

**Hora sideral.** Tiempo transcurrido desde el paso del meridiano del lugar por el primer punto de Aries. El día sideral es 3m 55.91s menor que el día solar. Se refiere al tiempo medido basado en las estrellas fijas. Véase tiempo sideral.

**Hora universal.** Hora local de Greenwich. La hora local de algún punto de la superficie de la Tierra se obtiene restando a la hora de Greenwich la longitud del lugar convertida a horas.

**Horizonte.** Plano perpendicular a la línea que va del observador al cenit del lugar. Gran círculo formado por la intersección de la esfera celeste con el plano perpendicular a la línea que une al observador con el cenit del lugar, llamado horizonte astronómico u horizonte del observador.

**Inclinación.** En Astronomía, ángulo entre el plano de una órbita y otro de referencia. Elemento orbital que especifica la orientación de una órbita.

**Júpiter.** Planeta gigante del Sistema Solar. Después de Venus es el planeta más brillante del sistema solar. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas.

**Latitud celeste.** Distancia angular en la esfera celeste medida al norte o al sur del plano de la eclíptica. Se mide a lo largo del gran círculo que pasa por los polos de la eclíptica y el cuerpo celeste.

**Latitud terrestre.** Distancia angular en la Tierra, medida al norte o al sur del ecuador, a lo largo de algún meridiano.

**Lluvia de estrellas.** Fenómeno luminoso causado por la caída de pequeñísimas partículas dejadas por los cometas. Se observan como estelas luminosas a las que, tradicionalmente, se los nombran estrellas fugaces, las cuales parecen surgir de un punto en el cielo llamado radiante. Se han clasificado unas 18 lluvias de estrellas, las cuales reciben el nombre de la constelación donde se ubica su respectivo radiante.

**Longitud (geográfica).** Distancia angular medida en el plano del ecuador, al Este o al Oeste del meridiano de Greenwich.

**Longitud eclíptica.** Distancia angular de un cuerpo celeste medida sobre el plano de la eclíptica, a partir del primer punto de Aries.

**Luminosidad.** Cantidad total de energía radiada por un cuerpo celeste en la unidad de tiempo.

**Luna.** Satélite natural de la Tierra. Después del Sol es el objeto más brillante del cielo. Véase tabla de satélites de los planetas.

**Lunación.** Periodo de tiempo entre dos lunas nuevas consecutivas. Su duración aproximada es de 29.5 días.

**Luna llena.** Fase durante la cual el disco lunar está totalmente iluminado; ocurre cuando la luna se encuentra en oposición al Sol respecto de la Tierra.

**Luna nueva.** Fase durante la cual el disco lunar no se ve iluminado ocurre cuando la Luna se encuentra en conjunción con el Sol.

**Magnitud.** Medida logarítmica del brillo de un objeto celeste, considerado como una fuente puntual.

**Magnitud de un eclipse de Luna.** Fracción del diámetro lunar oscurecido por la sombra de la Tierra, en el máximo del eclipse lunar.

**Magnitud de un eclipse de Sol.** Fracción del diámetro solar ocultado por la Luna, en el máximo del eclipse de Sol.

**Marte.** Planeta rocoso del Sistema Solar que, a simple vista, se aprecia de color rojizo. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas.

**Masa.** Medida inherente a la cantidad de materia de un cuerpo.

**Mercurio.** Planeta rocoso del Sistema Solar que por su distancia heliocéntrica es el más cercano al Sol. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas.

**Meridiano.** Círculo máximo en la esfera celeste que pasa por los polos y el cenit del observador.

**Meridiano  $90^\circ$  W.G.** Meridiano que atraviesa la Península de Yucatán. Se encuentra  $90^\circ$  al Oeste del meridiano de Greenwich en Inglaterra. Define al huso horario (S) de 6 horas al Oeste de Greenwich, llamado Hora del Centro en la República Mexicana. Difiere de la hora local de la ciudad de México en 36 minutos 37 segundos.

**Meteorito.** Dícese de algún fragmento de roca o metal del medio interplanetario, una vez que ha sufrido una colisión contra un planeta, satélite o, en general, con algún cuerpo del Sistema Solar.

**Messier, catálogo.** Enlistado de aquellos objetos celestes que al ser vistos con telescopios pequeños, son de aspecto difuso. Contiene cúmulos estelares, nebulosas y galaxias. Fue elaborado por Charles Messier.



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**Movimiento directo.** Dirección de la rotación o del movimiento de traslación de un planeta o satélite, visto desde el polo norte de la eclíptica, cuyo sentido es contrario al de las manecillas del reloj.

**Movimiento retrógrado.** Dirección de la rotación de un planeta o satélite visto desde el polo norte de la eclíptica, cuyo sentido es el de las manecillas del reloj.

**Nadir.** Punto de la esfera celeste diametralmente opuesto al cenit. Dicese de aquel punto, del otro lado de la Tierra, ubicado por debajo de nosotros. Nebulosa. Nube de materia interestelar.

**Nebulosa planetaria.** Envoltente de gas alrededor de una estrella con masa parecida a la del Sol, arrojada por ella misma a consecuencia de un estado avanzado de su evolución.

**Neptuno.** Planeta gaseoso del Sistema Solar. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas.

**Nodo.** El punto de intersección entre dos grandes círculos celestes. Los eclipses de Luna y de Sol ocurren cuando ambos se encuentran cerca de los nodos de intersección de sus trayectorias orbitales.

**Número de Oro, o Áureo.** En terminos astronómicos, ciclo lunar de diez y nueve años, al cabo de los cuales las fases de la Luna vuelven a sucederse en los mismos días del año.

**Ocultación.** Efecto de cubrimiento de un objeto celeste por otro de  $r$  diámetro aparente, específicamente el paso de la Luna frente a una estrella o planeta.

**Oposición.** Configuración geocéntrica del Sol y un planeta exterior en la que sus longitudes aparentes difieren en  $180^\circ$ .

**Órbita.** Trayectoria de un cuerpo celeste en torno a otro.

**Paso superior por el meridiano.** Tránsito de un objeto celeste por el meridiano del observador.

**Pentecostés.** Fiesta de los judíos instituida en memoria de la ley de Jehová, que les fue dada en el Monte Sinaí. En la Iglesia Católica festividad de la venida del Espíritu Santo.

**Perigeo.** Punto en el cual un cuerpo en órbita en torno a la Tierra alcanza su menor distancia a ésta.

**Perihelio.** Punto en el cual un cuerpo en órbita en torno al Sol alcanza su menor distancia a éste.

**Penumbra.** Región intermedia entre la sombra y la zona iluminada. También se refiere a la región desde la que un eclipse se ve como parcial. Componente

exterior de la sombra que proyecta un objeto iluminado por una fuente de luz.

**Planeta.** Cuerpo celeste esférico cuyo tamaño es  $r$  de 1000 km de diámetro. No emite luz propia. Su masa es tal que la energía liberada por las reacciones nucleares en su interior no son suficientes para que se convierta en estrella. Actualmente se han encontrado evidencias de la existencia de planetas que orbitan algunas estrellas.

**Plutón.** Planeta del Sistema Solar cuya órbita es la más alejada del Sol. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas. Polar. Estrella Polar (a UMi). Se localiza a sólo 0.9o del Polo Norte Celeste.

**Precesión.** Movimiento progresivo y uniforme del eje de rotación de un cuerpo que rota libremente, sujeto a la torca ejercida por una fuerza gravitatoria externa. En la Tierra, la precesión es causada por la acción de la fuerza gravitatoria del Sol y la Luna sobre su deformación ecuatorial .

**Primer punto de Aries.** Punto imaginario donde se intersectan el ecuador celeste y la eclíptica. Cuando el Sol pasa por dicho punto, su declinación cambia de negativa a positiva. No existe ninguna estrella en esta posición.

**Puesta del Sol.** Momento en que el limbo superior del Sol desaparece bajo el horizonte del observador.

**Polo norte celeste.** Punto de intersección de la proyección del eje de rotación terrestre con la esfera celeste.

**Punto Vernal.** Véase primer punto de Aries.

**Quincuagésima.** Dominica que precede a la Cuaresma.

**Ramadán.** Noveno mes del año lunar de los musulmanes.

**Revolución.** Órbita de un cuerpo alrededor de otro.

**Rosh Hashanah.** Año Nuevo de los Judíos.

**Salida del Sol.** Momento en que el limbo superior del Sol sale por el horizonte del observador.

**Saros.** Ciclo lunar babilónico de 6585.32 días, o 18 años, 11.33 días o 223 lunaciones, después del cual el Sol y la Luna regresan a una misma posición relativa en el cielo. Significa repetición en griego.

**Satélite.** Cuerpo en órbita alrededor de otro. Luna de un planeta.

**Saturno.** Planeta gaseoso del Sistema Solar con un gran número de anillos. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas.

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**Segundo.** En el sistema internacional, duración de 9 192 631 770 ciclos de la radiación dada por la transición entre los dos niveles hiperfinos del estado base del Cesio 133.

**Semana Santa.** Semana que culmina con la Pascua, la cual se festeja en el primer domingo que sigue a la primera luna llena, después del equinoccio de primavera.

**Septuagésima.** Dominica que celebra la Iglesia Católica tres semanas antes de la primera de cuaresma.

**Sidereal.** Relativo a las estrellas.

**Sistema de referencia.** Lugar y tiempo desde donde se mide o registra un evento.

**Sol.** Estrella más cercana a la Tierra.

**Sol medio.** Sol imaginario o ficticio, que se desplaza en la bóveda celeste a velocidad constante. No está sujeto a las variaciones del Sol verdadero debidas a la elipticidad de la órbita terrestre. Se usa para definir el tiempo solar medio.

**Solsticio.** Uno de dos puntos en los cuales el Sol parece estar en sus puntos Norte y Sur más extremos. Puntos de la eclíptica que están a la máxima distancia del ecuador celeste. En el hemisferio norte, el solsticio de verano ocurre alrededor del 21 de y el de invierno cerca del 22 de aproximadamente. Estas fechas corresponden al día más largo y corto del año, respectivamente.

**Sombras volantes.** Franjas de luz y sombra que se observan justo antes y después de la fase de totalidad de un eclipse de Sol.

**Sucot.** Fiesta judía de la cosecha.

**Tiempo atómico internacional.** Escala de tiempo que resulta del análisis de las mediciones de tiempos atómicos en varias ciudades del mundo, regulada por el Bureau International des Poids et Mesures. La unidad de tiempo es el segundo internacional de tiempo.

**Tiempo solar medio.** Medida de tiempo basada en el movimiento diario de Sol medio o ficticio, suponiendo un movimiento de rotación terrestre uniforme.

**Tiempo sideral.** Medida de tiempo basada en el movimiento diario del punto Vernal. Está dado por la razón de rotación terrestre respecto a las estrellas.

**Tiempo universal.** Medida de tiempo basada en el movimiento diario del Sol. Hora local en el meridiano de Greenwich; se determina por la observación del movimiento diario de las estrellas.

**Tierra.** Planeta rocoso del Sistema Solar. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas.

**Tránsito.** Paso de un objeto celeste por un meridiano. Paso de un cuerpo frente a otro de  $r$  diámetro aparente.

**Umbral.** En un eclipse, la región desde donde se observa al cuerpo celeste totalmente oculto. Umbral, en latín, significa sombra.

**Unidad astronómica o U.A.** Distancia media entre la Tierra y el Sol; 150 millones de kilómetros, aproximadamente.

**Urano.** Planeta gaseoso del Sistema Solar con 9 anillos. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas.

**Venus.** Planeta rocoso del Sistema Solar que se muestra desde la Tierra como el de  $r$  brillo. Véanse tablas de parámetros físicos y orbitales de planetas, y satélites de los planetas.

**Yom Kippur.** Día del perdón entre los judíos.

**Zenit o Cenit.** Ver Cenit.

**Zodiaco.** Banda imaginaria de constelaciones a través de la cual se mueve el Sol, la Luna y los planetas durante el año.

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## Apéndice

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### Explicaciones generales al contenido del Anuario

Con la abreviatura W. G., debemos leer Oeste del meridiano de Greenwich, ésta se mantiene en toda la publicación, a menos que se indique otra referencia.

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### Calendario

En un sentido general los calendarios son sistemas de cómputo de días, con ellos se rige la vida social, civil y religiosa de los grupos humanos. Se construyen mediante la combinación de diferentes unidades de tiempo. Se han ideado diversas estructuras funcionales por medio de la aplicación de ciertos algoritmos o procedimientos matemáticos, con los que se pretende seguir la duración de diversos ciclos astronómicos. Ejemplos de ellos son los relacionados al movimiento aparente del Sol, la Luna, Venus o algunas estrellas brillantes, los cuales contienen implícitamente el movimiento de traslación y rotación de la Tierra, así como el de la Luna en torno a la Tierra.

El *año civil*, es el intervalo de 365 días que se utiliza en la ría de los países del mundo, y es la parte entera de la duración del año trópico (el ciclo de las estaciones). Para su buen funcionamiento se requiere que cada año para una fecha dada, la posición aproximada del Sol corresponda a la del año anterior. Para lograrlo se hace necesario corregirlo de acuerdo a las siguientes reglas:

Si el año es divisible exactamente entre 4, durará 366 días, al cual se le llama año *bisiesto*.

Los años seculares (múltiplos de 100) no serán bisiestos, excepto si son divisibles entre 400.

Como ejemplos de ello tenemos que los años 1700, 1800 y 1900 no fueron bisiestos; en cambio el año 1600 y el 2000 sí lo fueron.

Aquellos años contados de acuerdo a la Era Cristiana tienen su origen numérico en el año 1; este y los años subsecuentes se nombran después de Cristo (d. C.) y los precedentes como antes de Cristo (a.C.). En nuestros días, el calendario adoptado por la ría de los países del mundo es el Calendario Gregoriano, instituido por el Papa Gregorio XIII en 1582. En aquel año introdujo la corrección al calendario Juliano en 10 días, al decretar que al día 4 de le seguiría el 15 de .

En Astronomía, con el propósito de manejar los años numéricamente, el año 1 a.C. se define como el año cero. Los años contados antes de la era cristiana serán negativos, con la regla de restar uno al número del año, y el resultado escribirlo sin el sufijo a.C., anteponiendo el signo menos.

Como ejemplos: el año 2 a.C. será -1 en la notación astronómica; el año 23 a.C. será el -22, el año 115 a.C. será el -114, etc. Para los años posteriores a la era cristiana, simplemente se quita el sufijo d.C. y se tendrá la notación astronómica. Con esta representación se pueden manejar numéricamente los años y se puede obtener fácilmente, de acuerdo con el procedimiento ya mencionado, la secuencia de años bisiestos en cualquier época.

En la región geográfica comprendida entre el occidente de la República Mexicana hasta las que se encuentran entre las Repúblicas de Nicaragua y Costa Rica en centro América, a la

que se da el nombre de Mesoamérica, florecieron las culturas americanas desarrolladas por los huicholes, mexicas, huastecos, zapotecos, mayas, olmecas, etc. En ésta región de América se desarrolló un sistema de dos calendarios con los que se contaban, independientemente, intervalos de 365 y 260 días. El primer intervalo se daba mediante la combinación de 18 meses de 20 días, más cinco días adicionales con los que se completaba la cuenta; evidentemente se reproduce el ciclo anual del Sol. El segundo se obtenía mediante la combinación de 13 meses de 20 días, del cual se desconoce una contraparte en ciclos astronómicos. Hasta el momento se conoce con certeza por la existencia de los códices, el calendario mexicana, maya y zapoteca, aunque existen evidencias de la calendárica olmeca, teotihuacana y otras. Entre las épocas más antiguas de esta calendárica, se encuentra la referida por la Estela 12 de Monte alban, para el año -591. Como resultado del estudio del calendario maya, se ha inferido la existencia de una fecha Era que corresponde al 13 de de -3112. Finalmente en base a estudios etnográficos, se ha detectado el uso actual de esta calendárica en las regiones Mixe de Oaxaca y la Maya entre México y Guatemala.

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### **Día Juliano**

Sistema de numeración sucesiva de días, establecido arbitrariamente para que todas las fechas históricas tengan un número progresivo. Así el día juliano queda definido como el número de días solares medios, transcurridos desde el 1 de de -4712, a partir del medio día del meridiano de Greenwich.

En la tabla se dan para cada mes, grupos de tres columnas; el número del día en la primera; en la segunda, el nombre del día y en la tercera el día juliano correspondiente al mediodía del meridiano 90°W.G.

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### **Eras, ciclos cronológicos, cómputo, fiestas y aniversarios**

Las Eras son épocas definidas por algún suceso cultural de importancia, las cuales referimos aquí al calendario gregoriano. Los ciclos cronológicos y el cómputo son reglas eclesiásticas que ordenan las celebraciones religiosas. Se rigen por los ciclos "solar", "número de oro" e "indicción romana", equivalentes a 28, 19 y 15 años respectivamente. La pascua corresponde al primer domingo, en el calendario gregoriano, después de la Luna Llena tabular que ocurre después del equinoccio vernal tabular (21 de ). La Luna Llena tabular o eclesiástica, se basa en el ciclo Metónico de 235 meses sinódicos.

En la tabla de fiestas y aniversarios se dan las fechas de algunos acontecimientos históricos de importancia en la República Mexicana. También se dan algunas fechas de las celebraciones religiosas importantes de diferentes grupos sociales del País.

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### **Estaciones del año**

Se dan los instantes (mes, día, hora y minuto) en los que el Sol inicia su recorrido a través de cada una de las Constelaciones del Zodíaco. Señalamos los intervalos trimestrales de las estaciones del año y las longitudes eclípticas que delimitan cada constelación zodiacal. La primavera se inicia en , en el instante en que ocurre el equinoccio del Nodo Ascendente; el Verano en , en el instante en que ocurre el Solsticio; el Otoño en , en el instante en que ocurre el equinoccio del Nodo Descendente; y el Invierno que se inicia en , en el instante del Solsticio.

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### **Nomenclatura de estrellas**

Se dan los nombres propios de algunas estrellas, la extensión de la clasificación Bayer, y su correspondiente número secuencial del Bright Star Catalog. Conviene señalar que dicha clasificación fue desarrollada por el bávaro John Bayer (1572-1631), cuando publicó su atlas Uranometría en el año de 1603. De acuerdo a los modos de clasificación que él conocía, dio un nombre a las estrellas de acuerdo a seis órdenes de magnitud entre el brillo relativo de las estrellas, para cada constelación. Así a las estrellas más brillantes les asignó una letra griega, además del nombre de la constelación, de acuerdo al mencionado brillo y dependiendo de su posición dentro del grupo de estrellas.

### Clasificación espectral de las estrellas

Clase espectral	Color	Temperatura superficial °K	Carácter
O	Blanco-azul	35 000	Líneas de helio ionizado, nitrógeno, oxígeno e hidrógeno.
B	Blanco-azul	20 000	Líneas de helio neutro.
A	Blanca	10 000	Líneas intensas de hidrógeno, no tiene helio.
F	Blanco-amarillo	7 000	Líneas intensas de calcio y débiles de hidrógeno
G	Amarilla	6 000	Líneas débiles de hidrógeno y líneas intensas de metales. La clase espectral de nuestro Sol es G2V.
K	Naranja	4 000 a 4 700	Espectro muy complejo con líneas de metales.
M	Roja	2 500 a 3 000	Espectro muy complejo con líneas intensas de metales y anchas bandas moleculares, en especial de óxido de titanio.
N y R	Rojo intenso Roja	2 500	Con bandas espectrales de compuestos de carbón. Semejantes a las N, con bandas de óxido de zirconio, y líneas de emisión del hidrógeno.
W	Azul	50 000	Muestran emisión debido a la expansión de sus capas externas y atmósferas muy turbulentas.

#### Subclase

Ia	supergigante brillante
Ib	supergigante poco luminosa
II	gigante brillante
III	gigante normal
IV	subgigante
V	secuencia principal
VI	subenana

### Catálogo Messier

Es una selección de objetos astronómicos brillantes y difusos, creado por Charles Messier, quien pretendía identificarlos plenamente, para evitar confundirlos con los cometas. Messier era conocido por sus observaciones astronómicas en la búsqueda de este tipo de objetos, actividad que desarrolló desde fines del siglo XVIII, hasta su muerte en 1817, llegando a descubrir trece cometas. Los primeros ochenta objetos (del M1 al M80) fueron clasificados por el propio Messier.

Entre los elementos del catálogo se pueden distinguir objetos que pertenecen a nuestra Galaxia, y los que no, son llamados extragalácticos. Como parte de la Galaxia se encuentran los cúmulos abiertos (ca), que son grupos de unos cientos de estrellas ligados gravitatoriamente; cúmulos globulares o galácticos (cg), son conjuntos de cientos de miles de estrellas; remanentes de supernovas (rsn), so restos de estrellas cuyos procesos evolutivos terminan como supernovas; nebulosas planetarias (np), son estrellas cuyos procesos evolutivos terminan con la eyección de materia a velocidades moderadas; nebulosas de reflexión (nr), son aquellas nubes de material interestelar que reflejan la luz de las estrellas vecinas; y nebulosas de emisión (ne), son aquellas nubes que al estar sometidas a la radiación de estrellas muy caliente, ionizan el material interestelar del que están formadas.

Los objetos extragalácticos del catálogo son galaxias del tipo elíptico (E), espirales (S), o espirales barradas (SB).

### Eventos astronómicos

Lluvias de estrellas. Son restos de cometas que al penetrar la atmósfera terrestre, se disuelven en ella dejando una estela luminosa comúnmente conocida como estrella fugaz. Como se trata de enjambres de materiales muy pequeños que inciden sobre la Tierra con trayectorias casi paralelas, las estrellas fugaces parecen surgir del mismo punto en la bóveda celeste, llamado radiante. En esta sección se dan las principales lluvias de estrellas, cuyos nombres se asocian a la constelación en la que se encuentra el radiante;

los días en que se pueden observar; y el número promedio de estrellas fugaces por hora.

Crepúsculos, salidas y puestas del sol y de la luna. Los crepúsculos, salidas y puestas del sol, son eventos astronómicos locales que dependen de la latitud del lugar de observación. La salida o puesta del sol está definida para el instante en el cual el centro del Sol se encuentra a  $0.5^\circ$  bajo el horizonte del observador, de tal manera que considerando la refracción y el semidiámetro solar, el limbo superior del Sol se encuentra a una altura de  $0^\circ$  sobre el horizonte. Los crepúsculos que se dan en estas tablas, son el astronómico y civil que corresponden a la posición del centro del disco solar, se encuentra bajo el horizonte a  $18^\circ$  y  $6^\circ$  respectivamente.

La hora en que ocurre cada evento está dada en *hora local*; la hora legal se obtiene al sumar a la hora local, la diferencia en horas entre la longitud del lugar de observación y el meridiano horario.

Por ejemplo, evaluemos para el meridiano  $90^\circ$  W. G. la salida del Sol el día 6 de , en un lugar cuya latitud es  $30^\circ$  y longitud  $97^\circ 30'$ . En la tabla dada para latitud  $30^\circ$ , la salida del Sol (SS) indicada para el 6 de , es 4h 59m.

La diferencia en longitud (DI) será:

$$\Delta\lambda = (97.5^\circ - 90^\circ)/15$$

$\Delta\lambda = 7.5^\circ/15$  donde obtenemos DI = 30 m; así, la hora de la salida del Sol será:

$$T = 4h\ 59m + 30m \quad \text{es decir} \quad T = 5h\ 29m.$$

### **Hora en la República Mexicana (Hora Legal en México)**

La hora legal se adoptó en la República Mexicana el 1 de de 1922, actualmente se tienen cuatro husos horarios de referencia, los meridianos  $75^\circ$ ,  $90^\circ$ ,  $105^\circ$  y  $120^\circ$  al W. G. El 13 de de 1998 se modificó en México el horario de Verano, decretándose los cuatro husos horarios para la República Mexicana.

Los husos horarios en el mundo (ver mapa de zonas horarias), son franjas de  $15^\circ$  centradas en el meridiano horario de referencia, el meridiano de la ciudad de Greenwich, Inglaterra se ha definido como el meridiano  $0^\circ$ . Los meridianos se miden a partir del meridiano de Greenwich al Este o al Oeste y se escriben las siglas E.G. y W. G. precediéndolas el valor numérico de la longitud geográfica. También con el propósito de manejar numéricamente, los valores de las longitudes geográficas serán positivos para las longitudes medidas al Este de Greenwich y negativos para los que se determinan al Oeste. Por ejemplo el meridiano  $90^\circ$  W.G. se escribe numéricamente como  $-90^\circ$ . Los meridianos horarios hacia el Este o al Oeste son:  $15^\circ$ ,  $30^\circ$ ,  $45^\circ$ ,  $60^\circ$ ,  $75^\circ$ ,  $90^\circ$ ,  $105^\circ$ ,  $120^\circ$ ,  $135^\circ$ ,  $150^\circ$ ,  $165^\circ$ . Al meridiano  $180^\circ$  se le llama Línea Internacional del Tiempo.

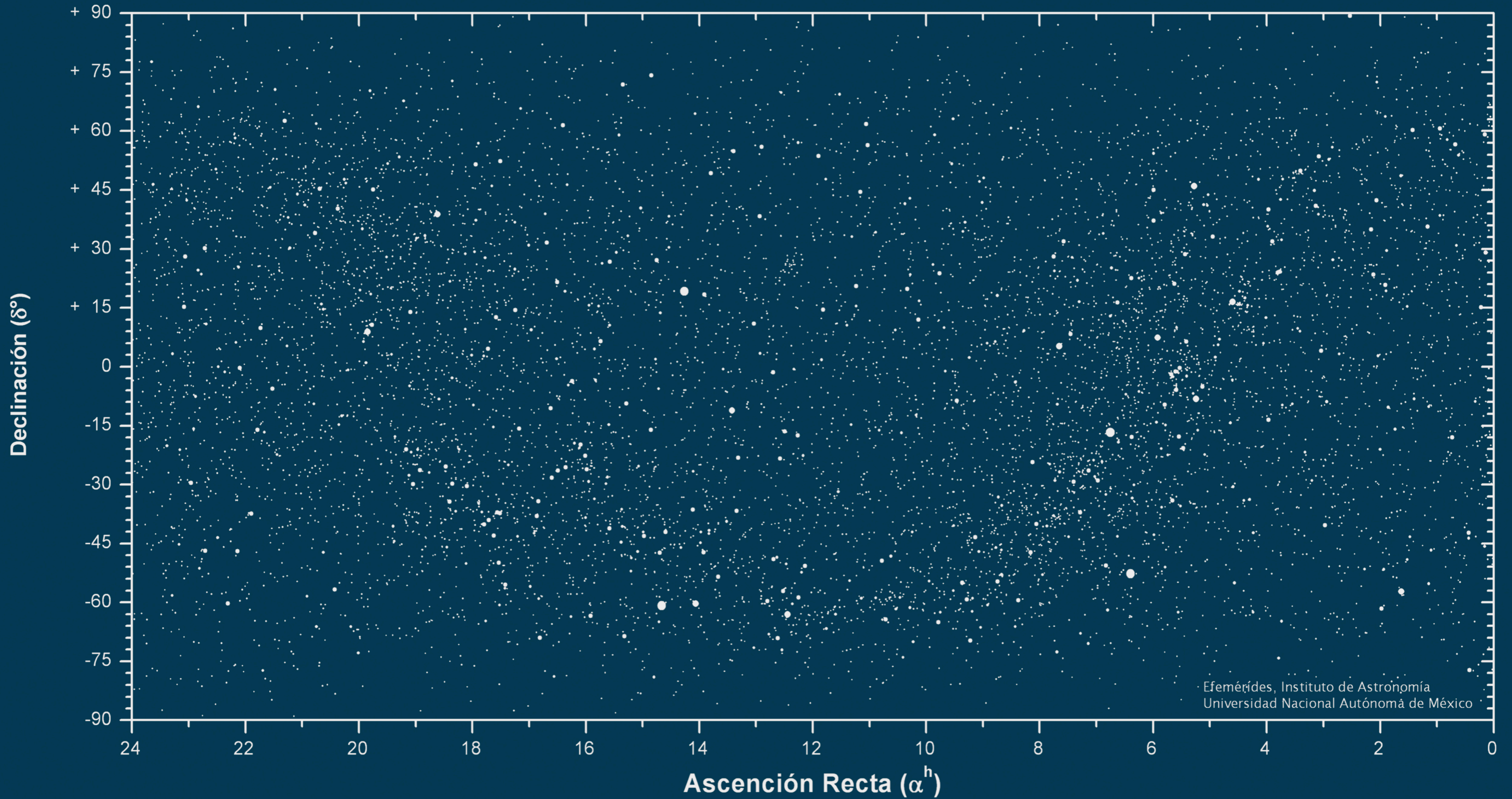
El tiempo referido al meridiano de Greenwich o simplemente meridiano  $0^\circ$ , es llamado Tiempo Universal. Los husos horarios en que se divide la Tierra son adaptados por los países según sus propias necesidades, esto se puede observar en el mapa de zonas horarias, donde las franjas de los husos horarios son modificadas por accidentes orográficos o hidrográficos o bien por las fronteras entre países vecinos o por límites entre sus propias divisiones políticas. La hora así definida es llamada también hora legal o civil. En algunos países, según sea la época del año, se suele modificar los horarios legales que les corresponden, por horarios llamados de Verano o Invierno, con el propósito de aprovechar mejor la iluminación de la luz solar.

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# MAPA DE ESTRELLAS 2023







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