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Instituto de Astronomía
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MAPA DE ESTRELLAS PARA EL AÑO 2018

Prefacio, 2018

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° al oeste del meridiano efemérico de Greenwich, y la diferencia entre el tiempo de las efemérides y el Universal se estima en $\Delta T = 69.0s$. Los instantes para los fenómenos astronómicos y las horas del paso por el meridiano 90° 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 los parámetros astronómicos del Brighth Star Catalog de la Universidad de Yale, EUA, Catálogo Hiparco (ESU) y de las efemérides fundamentales del Astronomischen Rechen-Institut Heidelberg y del Fifth Fundamental Catalog (FK6).

Para el cálculo de las declinaciones magnéticas se utilizó la décima generación del modelo del campo magnético terrestre adoptado por la “International Association of Geomagnetic 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 2016, y los números de estrellas NH del Catálogo Hiparco y NY del Catálogo de Estrellas Brillantes de la Universidad de Yale, en la Tabla de Posiciones Medias de Estrellas. En la tabla de posiciones aparentes de la estrella polar se han desglosado las coordenadas ecuatoriales para cada día en sus seis unidades (h,m,s) para ascensión recta y ($^{\circ}$, $'$, $''$). Se ha incluido la Fe de Errata de las posiciones aparentes de la estrella Polar para el año 2016. Las coordenadas que sustituyen a las publicadas en el Anuario para el año 2016, corresponden a la ascensión recta, tanto intermedias como ecuatoriales, dadas en decimales de hora y la declinación 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, 2018

A las 0^h del meridiano 90° W.G.

d	ds	dj	d	ds	dj	d	ds	dj	d	ds	dj
Enero			21	mie	2458170.75	13	vie	2458221.75	3	dom	2458272.75
1	lun	2458119.75	22	jue	2458171.75	14	sab	2458222.75	4	lun	2458273.75
2	mar	2458120.75	23	vie	2458172.75	15	dom	2458223.75	5	mar	2458274.75
3	mie	2458121.75	24	sab	2458173.75	16	lun	2458224.75	6	mie	2458275.75
4	jue	2458122.75	25	dom	2458174.75	17	mar	2458225.75	7	jue	2458276.75
5	vie	2458123.75	26	lun	2458175.75	18	mie	2458226.75	8	vie	2458277.75
6	sab	2458124.75	27	mar	2458176.75	19	jue	2458227.75	9	sab	2458278.75
7	dom	2458125.75	28	mie	2458177.75	20	vie	2458228.75	10	dom	2458279.75
8	lun	2458126.75	Marzo			21	sab	2458229.75	11	lun	2458280.75
9	mar	2458127.75	1	jue	2458178.75	22	dom	2458230.75	12	mar	2458281.75
10	mie	2458128.75	2	vie	2458179.75	23	lun	2458231.75	13	mie	2458282.75
11	jue	2458129.75	3	sab	2458180.75	24	mar	2458232.75	14	jue	2458283.75
12	vie	2458130.75	4	dom	2458181.75	25	mie	2458233.75	15	vie	2458284.75
13	sab	2458131.75	5	lun	2458182.75	26	jue	2458234.75	16	sab	2458285.75
14	dom	2458132.75	6	mar	2458183.75	27	vie	2458235.75	17	dom	2458286.75
15	lun	2458133.75	7	mie	2458184.75	28	sab	2458236.75	18	lun	2458287.75
16	mar	2458134.75	8	jue	2458185.75	29	dom	2458237.75	19	mar	2458288.75
17	mie	2458135.75	9	vie	2458186.75	30	lun	2458238.75	20	mie	2458289.75
18	jue	2458136.75	10	sab	2458187.75	Mayo			21	jue	2458290.75
19	vie	2458137.75	11	dom	2458188.75	1	mar	2458239.75	22	vie	2458291.75
20	sab	2458138.75	12	lun	2458189.75	2	mie	2458240.75	23	sab	2458292.75
21	dom	2458139.75	13	mar	2458190.75	3	jue	2458241.75	24	dom	2458293.75
22	lun	2458140.75	14	mie	2458191.75	4	vie	2458242.75	25	lun	2458294.75
23	mar	2458141.75	15	jue	2458192.75	5	sab	2458243.75	26	mar	2458295.75
24	mie	2458142.75	16	vie	2458193.75	6	dom	2458244.75	27	mie	2458296.75
25	jue	2458143.75	17	sab	2458194.75	7	lun	2458245.75	28	jue	2458297.75
26	vie	2458144.75	18	dom	2458195.75	8	mar	2458246.75	29	vie	2458298.75
27	sab	2458145.75	19	lun	2458196.75	9	mie	2458247.75	30	sab	2458299.75
28	dom	2458146.75	20	mar	2458197.75	10	jue	2458248.75	Julio		
29	lun	2458147.75	21	mie	2458198.75	11	vie	2458249.75	1	dom	2458300.75
30	mar	2458148.75	22	jue	2458199.75	12	sab	2458250.75	2	lun	2458301.75
31	mie	2458149.75	23	vie	2458200.75	13	dom	2458251.75	3	mar	2458302.75
Febrero			24	sab	2458201.75	14	lun	2458252.75	4	mie	2458303.75
1	jue	2458150.75	25	dom	2458202.75	15	mar	2458253.75	5	jue	2458304.75
2	vie	2458151.75	26	lun	2458203.75	16	mie	2458254.75	6	vie	2458305.75
3	sab	2458152.75	27	mar	2458204.75	17	jue	2458255.75	7	sab	2458306.75
4	dom	2458153.75	28	mie	2458205.75	18	vie	2458256.75	8	dom	2458307.75
5	lun	2458154.75	29	jue	2458206.75	19	sab	2458257.75	9	lun	2458308.75
6	mar	2458155.75	30	vie	2458207.75	20	dom	2458258.75	10	mar	2458309.75
7	mie	2458156.75	31	sab	2458208.75	21	lun	2458259.75	11	mie	2458310.75
8	jue	2458157.75	Abril			22	mar	2458260.75	12	jue	2458311.75
9	vie	2458158.75	1	dom	2458209.75	23	mie	2458261.75	13	vie	2458312.75
10	sab	2458159.75	2	lun	2458210.75	24	jue	2458262.75	14	sab	2458313.75
11	dom	2458160.75	3	mar	2458211.75	25	vie	2458263.75	15	dom	2458314.75
12	lun	2458161.75	4	mie	2458212.75	26	sab	2458264.75	16	lun	2458315.75
13	mar	2458162.75	5	jue	2458213.75	27	dom	2458265.75	17	mar	2458316.75
14	mie	2458163.75	6	vie	2458214.75	28	lun	2458266.75	18	mie	2458317.75
15	jue	2458164.75	7	sab	2458215.75	29	mar	2458267.75	19	jue	2458318.75
16	vie	2458165.75	8	dom	2458216.75	30	mie	2458268.75	20	vie	2458319.75
17	sab	2458166.75	9	lun	2458217.75	31	jue	2458269.75	21	sab	2458320.75
18	dom	2458167.75	10	mar	2458218.75	Junio			22	dom	2458321.75
19	lun	2458168.75	11	mie	2458219.75	1	vie	2458270.75	23	lun	2458322.75
20	mar	2458169.75	12	jue	2458220.75	2	sab	2458271.75	24	mar	2458323.75

d	ds	dj	d	ds	dj	d	ds	dj	d	ds	dj
25	mie	2458324.75	3	lun	2458364.75	14	dom	2458405.75	24	sab	2458446.75
26	jue	2458325.75	4	mar	2458365.75	15	lun	2458406.75	25	dom	2458447.75
27	vie	2458326.75	5	mie	2458366.75	16	mar	2458407.75	26	lun	2458448.75
28	sab	2458327.75	6	jue	2458367.75	17	mie	2458408.75	27	mar	2458449.75
29	dom	2458328.75	7	vie	2458368.75	18	jue	2458409.75	28	mie	2458450.75
30	lun	2458329.75	8	sab	2458369.75	19	vie	2458410.75	29	jue	2458451.75
31	mar	2458330.75	9	dom	2458370.75	20	sab	2458411.75	30	vie	2458452.75
Agosto			10	lun	2458371.75	21	dom	2458412.75	Diciembre		
1	mie	2458331.75	11	mar	2458372.75	22	lun	2458413.75	1	sab	2458453.75
2	jue	2458332.75	12	mie	2458373.75	23	mar	2458414.75	2	dom	2458454.75
3	vie	2458333.75	13	jue	2458374.75	24	mie	2458415.75	3	lun	2458455.75
4	sab	2458334.75	14	vie	2458375.75	25	jue	2458416.75	4	mar	2458456.75
5	dom	2458335.75	15	sab	2458376.75	26	vie	2458417.75	5	mie	2458457.75
6	lun	2458336.75	16	dom	2458377.75	27	sab	2458418.75	6	jue	2458458.75
7	mar	2458337.75	17	lun	2458378.75	28	dom	2458419.75	7	vie	2458459.75
8	mie	2458338.75	18	mar	2458379.75	29	lun	2458420.75	8	sab	2458460.75
9	jue	2458339.75	19	mie	2458380.75	30	mar	2458421.75	9	dom	2458461.75
10	vie	2458340.75	20	jue	2458381.75	31	mie	2458422.75	10	lun	2458462.75
11	sab	2458341.75	21	vie	2458382.75	Noviembre			11	mar	2458463.75
12	dom	2458342.75	22	sab	2458383.75	1	jue	2458423.75	12	mie	2458464.75
13	lun	2458343.75	23	dom	2458384.75	2	vie	2458424.75	13	jue	2458465.75
14	mar	2458344.75	24	lun	2458385.75	3	sab	2458425.75	14	vie	2458466.75
15	mie	2458345.75	25	mar	2458386.75	4	dom	2458426.75	15	sab	2458467.75
16	jue	2458346.75	26	mie	2458387.75	5	lun	2458427.75	16	dom	2458468.75
17	vie	2458347.75	27	jue	2458388.75	6	mar	2458428.75	17	lun	2458469.75
18	sab	2458348.75	28	vie	2458389.75	7	mie	2458429.75	18	mar	2458470.75
19	dom	2458349.75	29	sab	2458390.75	8	jue	2458430.75	19	mie	2458471.75
20	lun	2458350.75	30	dom	2458391.75	9	vie	2458431.75	20	jue	2458472.75
21	mar	2458351.75	Octubre			10	sab	2458432.75	21	vie	2458473.75
22	mie	2458352.75	1	lun	2458392.75	11	dom	2458433.75	22	sab	2458474.75
23	jue	2458353.75	2	mar	2458393.75	12	lun	2458434.75	23	dom	2458475.75
24	vie	2458354.75	3	mie	2458394.75	13	mar	2458435.75	24	lun	2458476.75
25	sab	2458355.75	4	jue	2458395.75	14	mie	2458436.75	25	mar	2458477.75
26	dom	2458356.75	5	vie	2458396.75	15	jue	2458437.75	26	mie	2458478.75
27	lun	2458357.75	6	sab	2458397.75	16	vie	2458438.75	27	jue	2458479.75
28	mar	2458358.75	7	dom	2458398.75	17	sab	2458439.75	28	vie	2458480.75
29	mie	2458359.75	8	lun	2458399.75	18	dom	2458440.75	29	sab	2458481.75
30	jue	2458360.75	9	mar	2458400.75	19	lun	2458441.75	30	dom	2458482.75
31	vie	2458361.75	10	mie	2458401.75	20	mar	2458442.75	31	lun	2458483.75
Septiembre			11	jue	2458402.75	21	mie	2458443.75			
1	sab	2458362.75	12	vie	2458403.75	22	jue	2458444.75			
2	dom	2458363.75	13	sab	2458404.75	23	vie	2458445.75			

Eras y ciclos cronológicos: 2018

Calendario Gregoriano

Cómputo

Letra Dominical	G
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Eras

El año 2018, es el octavo del siglo XXI de la era Cristiana.

El 14 de enero del año 2018, corresponde al 1 de enero del año 6731 del Período Juliano.

El 1 de enero del año 2008 del Calendario Juliano, corresponde al 14 de enero.

El año 2018 corresponde al 2793 de las olimpiadas.ⁱⁱii

Año	Era		Inicia
2771	Romana	enero	14
2678	Japonesa	enero	1
5779	Judia	septiembre	9
2330	Griega	septiembre	14
1440	Hégira	septiembre	11
7527	Bizantina	septiembre	14
	China	febrero	16

Fiestas y aniversarios para el año 2018

Año Nuevo	lunes	1 de enero
Epifanía	sábado	6 de enero
Septuagésima	domingo	28 de enero
Proclamación de la Constitución de 1917	lunes	5 de febrero
Quincuagésima	domingo	11 de febrero
Carnaval	martes	13 de febrero
Miércoles de ceniza	miércoles	14 de febrero
Día de la Bandera	sábado	24 de febrero
Aniversario del Natalicio de Benito Juárez	miércoles	21 de marzo
Domingo de Ramos	domingo	25 de marzo
Viernes Santo	viernes	30 de marzo
Pascua	domingo	1 de abril
Día del Trabajo	martes	1 de mayo
Aniversario de la Batalla de Puebla	sábado	5 de mayo
Ascensión	jueves	10 de mayo
Primer día del Ramadán	miércoles	16 de mayo
Pentecostés	domingo	20 de mayo
Trinidad	domingo	27 de mayo
Corpus	jueves	31 de mayo
Domingo de Corpus	domingo	3 de junio
San Pedro y San Pablo	viernes	29 de junio
Aniversario de la Muerte de Benito Juárez	miércoles	18 de julio
Aniversario de la Muerte de Miguel Hidalgo	lunes	30 de julio
Año Nuevo Judío	lunes	10 de septiembre
Año Nuevo Islámico	miércoles	12 de septiembre
Aniversario de la Independencia de México	domingo	16 de septiembre
Yom Kipur	miércoles	19 de septiembre
Día de la Raza	viernes	12 de octubre
Conmemoración de los Difuntos	viernes	2 de noviembre
Aniversario de la Revolución Mexicana	martes	20 de noviembre
Adviento	domingo	2 de diciembre
Navidad	martes	25 de diciembre

Estaciones del año, 2018

Hora del meridiano 90° W.G.

mes	día	h	m	longitud eclíptica (°)	Constelación
<u>Invierno</u>					
enero	17	19	55	300	Capricornio
febrero	16	7	28	330	acuario
<u>Primavera</u>					
marzo equinoccio	20	10	15	0	Piscis
abril	22	2	48	30	Aries
mayo	23	0	21	60	Tauro
<u>Verano</u>					
junio solsticio	21	4	7	90	Géminis
julio	20	10	29	120	Cáncer
agosto	20	15	49	150	Leo
<u>Otoño</u>					
septiembre equinoccio	22	19	54	180	Virgo
octubre	25	9	55	210	Libra
noviembre	23	4	38	240	Escorpión
<u>Invierno</u>					
diciembre solsticio	21	16	22	270	Sagitario

Hora sideral, 2018

A las 0^h del meridiano 90° W.G.

d	dj	h	m	s	d	dj	h	m	s	d	dj	h	m	s
Enero					19	2458168.75	9	56	33.47	8	2458216.75	13	5	47.99
1	2458119.75	6	43	22.25	20	2458169.75	10	0	30.02	9	2458217.75	13	9	44.55
2	2458120.75	6	47	18.81	21	2458170.75	10	4	26.57	10	2458218.75	13	13	41.10
3	2458121.75	6	51	15.38	22	2458171.75	10	8	23.13	11	2458219.75	13	17	37.65
4	2458122.75	6	55	11.94	23	2458172.75	10	12	19.68	12	2458220.75	13	21	34.20
5	2458123.75	6	59	8.50	24	2458173.75	10	16	16.23	13	2458221.75	13	25	30.75
6	2458124.75	7	3	5.05	25	2458174.75	10	20	12.79	14	2458222.75	13	29	27.30
7	2458125.75	7	7	1.60	26	2458175.75	10	24	9.35	15	2458223.75	13	33	23.85
8	2458126.75	7	10	58.15	27	2458176.75	10	28	5.91	16	2458224.75	13	37	20.40
9	2458127.75	7	14	54.71	28	2458177.75	10	32	2.47	17	2458225.75	13	41	16.95
10	2458128.75	7	18	51.26						18	2458226.75	13	45	13.49
11	2458129.75	7	22	47.82	Marzo					19	2458227.75	13	49	10.05
12	2458130.75	7	26	44.37	1	2458178.75	10	35	59.02	20	2458228.75	13	53	6.61
13	2458131.75	7	30	40.93	2	2458179.75	10	39	55.57	21	2458229.75	13	57	3.18
14	2458132.75	7	34	37.49	3	2458180.75	10	43	52.11	22	2458230.75	14	0	59.74
15	2458133.75	7	38	34.05	4	2458181.75	10	47	48.66	23	2458231.75	14	4	56.30
16	2458134.75	7	42	30.61	5	2458182.75	10	51	45.21	24	2458232.75	14	8	52.85
17	2458135.75	7	46	27.17	6	2458183.75	10	55	41.76	25	2458233.75	14	12	49.40
18	2458136.75	7	50	23.73	7	2458184.75	10	59	38.31	26	2458234.75	14	16	45.95
19	2458137.75	7	54	20.29	8	2458185.75	11	3	34.87	27	2458235.75	14	20	42.50
20	2458138.75	7	58	16.84	9	2458186.75	11	7	31.42	28	2458236.75	14	24	39.04
21	2458139.75	8	2	13.39	10	2458187.75	11	11	27.98	29	2458237.75	14	28	35.60
22	2458140.75	8	6	9.94	11	2458188.75	11	15	24.53	30	2458238.75	14	32	32.15
23	2458141.75	8	10	6.49	12	2458189.75	11	19	21.08	Mayo				
24	2458142.75	8	14	3.04	13	2458190.75	11	23	17.64	1	2458239.75	14	36	28.71
25	2458143.75	8	17	59.60	14	2458191.75	11	27	14.19	2	2458240.75	14	40	25.26
26	2458144.75	8	21	56.15	15	2458192.75	11	31	10.75	3	2458241.75	14	44	21.82
27	2458145.75	8	25	52.71	16	2458193.75	11	35	7.30	4	2458242.75	14	48	18.37
28	2458146.75	8	29	49.27	17	2458194.75	11	39	3.85	5	2458243.75	14	52	14.93
29	2458147.75	8	33	45.84	18	2458195.75	11	43	0.39	6	2458244.75	14	56	11.49
30	2458148.75	8	37	42.40	19	2458196.75	11	46	56.93	7	2458245.75	15	0	8.05
31	2458149.75	8	41	38.96	20	2458197.75	11	50	53.48	8	2458246.75	15	4	4.61
					21	2458198.75	11	54	50.03	9	2458247.75	15	8	1.16
					22	2458199.75	11	58	46.59	10	2458248.75	15	11	57.71
					23	2458200.75	12	2	43.14	11	2458249.75	15	15	54.26
					24	2458201.75	12	6	39.70	12	2458250.75	15	19	50.80
					25	2458202.75	12	10	36.26	13	2458251.75	15	23	47.35
					26	2458203.75	12	14	32.81	14	2458252.75	15	27	43.91
					27	2458204.75	12	18	29.37	15	2458253.75	15	31	40.47
					28	2458205.75	12	22	25.93	16	2458254.75	15	35	37.02
					29	2458206.75	12	26	22.48	17	2458255.75	15	39	33.59
					30	2458207.75	12	30	19.02	18	2458256.75	15	43	30.15
					31	2458208.75	12	34	15.57	19	2458257.75	15	47	26.71
					Abril					20	2458258.75	15	51	23.27
					1	2458209.75	12	38	12.12	21	2458259.75	15	55	19.83
					2	2458210.75	12	42	8.67	22	2458260.75	15	59	16.39
					3	2458211.75	12	46	5.21	23	2458261.75	16	3	12.94
					4	2458212.75	12	50	1.77	24	2458262.75	16	7	9.49
					5	2458213.75	12	53	58.32	25	2458263.75	16	11	6.04
					6	2458214.75	12	57	54.88	26	2458264.75	16	15	2.60
					7	2458215.75	13	1	51.44	27	2458265.75	16	18	59.14

Hora sideral, 2018

A las 0^h del meridiano 90° W.G.

d	dj	h	m	s	d	dj	h	m	s	d	dj	h	m	s
28	2458266.75	16	22	55.70	14	2458313.75	19	28	13.90	Septiembre				
29	2458267.75	16	26	52.25	15	2458314.75	19	32	10.46	1	2458362.75	22	41	25.05
30	2458268.75	16	30	48.82	16	2458315.75	19	36	7.02	2	2458363.75	22	45	21.61
31	2458269.75	16	34	45.38	17	2458316.75	19	40	3.57	3	2458364.75	22	49	18.16
Junio					18	2458317.75	19	44	0.12	4	2458365.75	22	53	14.72
1	2458270.75	16	38	41.94	19	2458318.75	19	47	56.67	5	2458366.75	22	57	11.28
2	2458271.75	16	42	38.51	20	2458319.75	19	51	53.22	6	2458367.75	23	1	7.84
3	2458272.75	16	46	35.05	21	2458320.75	19	55	49.78	7	2458368.75	23	5	4.40
4	2458273.75	16	50	31.62	22	2458321.75	19	59	46.33	8	2458369.75	23	9	0.95
5	2458274.75	16	54	28.17	23	2458322.75	20	3	42.89	9	2458370.75	23	12	57.50
6	2458275.75	16	58	24.72	24	2458323.75	20	7	39.45	10	2458371.75	23	16	54.05
7	2458276.75	17	2	21.28	25	2458324.75	20	11	36.01	11	2458372.75	23	20	50.59
8	2458277.75	17	6	17.83	26	2458325.75	20	15	32.57	12	2458373.75	23	24	47.14
9	2458278.75	17	10	14.39	27	2458326.75	20	19	29.13	13	2458374.75	23	28	43.69
10	2458279.75	17	14	10.94	28	2458327.75	20	23	25.69	14	2458375.75	23	32	40.24
11	2458280.75	17	18	7.49	29	2458328.75	20	27	22.24	15	2458376.75	23	36	36.79
12	2458281.75	17	22	4.05	30	2458329.75	20	31	18.80	16	2458377.75	23	40	33.35
13	2458282.75	17	26	0.61	31	2458330.75	20	35	15.35	17	2458378.75	23	44	29.91
14	2458283.75	17	29	57.17	Agosto					18	2458379.75	23	48	26.46
15	2458284.75	17	33	53.74	1	2458331.75	20	39	11.90	19	2458380.75	23	52	23.02
16	2458285.75	17	37	50.31	2	2458332.75	20	43	8.45	20	2458381.75	23	56	19.57
17	2458286.75	17	41	46.87	3	2458333.75	20	47	5.00	21	2458382.75	0	0	16.13
18	2458287.75	17	45	43.42	4	2458334.75	20	51	1.55	22	2458383.75	0	4	12.68
19	2458288.75	17	49	39.97	5	2458335.75	20	54	58.10	23	2458384.75	0	8	9.23
20	2458289.75	17	53	36.53	6	2458336.75	20	58	54.66	24	2458385.75	0	12	5.77
21	2458290.75	17	57	33.08	7	2458337.75	21	2	51.22	25	2458386.75	0	16	2.32
22	2458291.75	18	1	29.63	8	2458338.75	21	6	47.78	26	2458387.75	0	19	58.87
23	2458292.75	18	5	26.19	9	2458339.75	21	10	44.34	27	2458388.75	0	23	55.41
24	2458293.75	18	9	22.74	10	2458340.75	21	14	40.90	28	2458389.75	0	27	51.96
25	2458294.75	18	13	19.30	11	2458341.75	21	18	37.46	29	2458390.75	0	31	48.52
26	2458295.75	18	17	15.86	12	2458342.75	21	22	34.01	30	2458391.75	0	35	45.07
27	2458296.75	18	21	12.42	13	2458343.75	21	26	30.57	Octubre				
28	2458297.75	18	25	8.98	14	2458344.75	21	30	27.11	1	2458392.75	0	39	41.63
29	2458298.75	18	29	5.54	15	2458345.75	21	34	23.66	2	2458393.75	0	43	38.19
30	2458299.75	18	33	2.10	16	2458346.75	21	38	20.21	3	2458394.75	0	47	34.75
Julio					17	2458347.75	21	42	16.76	4	2458395.75	0	51	31.30
1	2458300.75	18	36	58.66	18	2458348.75	21	46	13.32	5	2458396.75	0	55	27.86
2	2458301.75	18	40	55.22	19	2458349.75	21	50	9.87	6	2458397.75	0	59	24.41
3	2458302.75	18	44	51.77	20	2458350.75	21	54	6.43	7	2458398.75	1	3	20.96
4	2458303.75	18	48	48.33	21	2458351.75	21	58	2.98	8	2458399.75	1	7	17.50
5	2458304.75	18	52	44.88	22	2458352.75	22	1	59.54	9	2458400.75	1	11	14.05
6	2458305.75	18	56	41.43	23	2458353.75	22	5	56.10	10	2458401.75	1	15	10.60
7	2458306.75	19	0	37.98	24	2458354.75	22	9	52.65	11	2458402.75	1	19	7.15
8	2458307.75	19	4	34.53	25	2458355.75	22	13	49.21	12	2458403.75	1	23	3.70
9	2458308.75	19	8	31.09	26	2458356.75	22	17	45.76	13	2458404.75	1	27	0.26
10	2458309.75	19	12	27.65	27	2458357.75	22	21	42.31	14	2458405.75	1	30	56.81
11	2458310.75	19	16	24.21	28	2458358.75	22	25	38.86	15	2458406.75	1	34	53.37
12	2458311.75	19	20	20.78	29	2458359.75	22	29	35.40	16	2458407.75	1	38	49.93
13	2458312.75	19	24	17.34	30	2458360.75	22	33	31.95	17	2458408.75	1	42	46.49
					31	2458361.75	22	37	28.50	18	2458409.75	1	46	43.04

Hora sideral, 2018

A las 0^h del meridiano 90° W.G.

d	dj	h	m	s	d	dj	h	m	s	d	dj	h	m	s
19	2458410.75	1	50	39.60	14	2458436.75	3	33	10.01	10	2458462.75	5	15	40.48
20	2458411.75	1	54	36.14	15	2458437.75	3	37	6.56	11	2458463.75	5	19	37.04
21	2458412.75	1	58	32.69	16	2458438.75	3	41	3.12	12	2458464.75	5	23	33.60
22	2458413.75	2	2	29.24	17	2458439.75	3	44	59.67	13	2458465.75	5	27	30.16
23	2458414.75	2	6	25.79	18	2458440.75	3	48	56.22	14	2458466.75	5	31	26.71
24	2458415.75	2	10	22.34	19	2458441.75	3	52	52.77	15	2458467.75	5	35	23.27
25	2458416.75	2	14	18.89	20	2458442.75	3	56	49.32	16	2458468.75	5	39	19.82
26	2458417.75	2	18	15.44	21	2458443.75	4	0	45.87	17	2458469.75	5	43	16.37
27	2458418.75	2	22	12.00	22	2458444.75	4	4	42.43	18	2458470.75	5	47	12.92
28	2458419.75	2	26	8.56	23	2458445.75	4	8	38.98	19	2458471.75	5	51	9.48
29	2458420.75	2	30	5.11	24	2458446.75	4	12	35.55	20	2458472.75	5	55	6.04
30	2458421.75	2	34	1.68	25	2458447.75	4	16	32.11	21	2458473.75	5	59	2.59
31	2458422.75	2	37	58.23	26	2458448.75	4	20	28.68	22	2458474.75	6	2	59.16
Noviembre					27	2458449.75	4	24	25.24	23	2458475.75	6	6	55.73
1	2458423.75	2	41	54.79	28	2458450.75	4	28	21.80	24	2458476.75	6	10	52.29
2	2458424.75	2	45	51.35	29	2458451.75	4	32	18.36	25	2458477.75	6	14	48.86
3	2458425.75	2	49	47.90	30	2458452.75	4	36	14.91	26	2458478.75	6	18	45.42
4	2458426.75	2	53	44.45	Diciembre					27	2458479.75	6	22	41.97
5	2458427.75	2	57	41.00	1	2458453.75	4	40	11.46	28	2458480.75	6	26	38.52
6	2458428.75	3	1	37.55	2	2458454.75	4	44	8.01	29	2458481.75	6	30	35.08
7	2458429.75	3	5	34.10	3	2458455.75	4	48	4.57	30	2458482.75	6	34	31.63
8	2458430.75	3	9	30.65	4	2458456.75	4	52	1.12	31	2458483.75	6	38	28.18
9	2458431.75	3	13	27.21	5	2458457.75	4	55	57.68	Enero				
10	2458432.75	3	17	23.77	6	2458458.75	4	59	54.24	1	2458484.75	6	42	24.74
11	2458433.75	3	21	20.33	7	2458459.75	5	3	50.79	2	2458485.75	6	46	21.30
12	2458434.75	3	25	16.89	8	2458460.75	5	7	47.36					
13	2458435.75	3	29	13.45	9	2458461.75	5	11	43.92					

Sol, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	α			vh s	δ °	“ ”		dis UA	hp			
			h	m	s			h	m		s			
ene	1	2458119.75	18	46	49.11	11.0	-22	59	55.62	12.9	0.98330	12	3	35.9
ene	2	2458120.75	18	51	13.72	11.0	-22	54	45.87	14.0	0.98329	12	4	3.9
ene	3	2458121.75	18	55	37.97	11.0	-22	49	8.77	15.2	0.98328	12	4	31.6
ene	4	2458122.75	19	0	1.86	11.0	-22	43	4.48	16.3	0.98329	12	4	58.9
ene	5	2458123.75	19	4	25.35	11.0	-22	36	33.16	17.4	0.98330	12	5	25.8
ene	6	2458124.75	19	8	48.41	10.9	-22	29	35.00	18.5	0.98331	12	5	52.4
ene	7	2458125.75	19	13	11.03	10.9	-22	22	10.18	19.6	0.98334	12	6	18.4
ene	8	2458126.75	19	17	33.18	10.9	-22	14	18.93	20.7	0.98336	12	6	44.0
ene	9	2458127.75	19	21	54.83	10.9	-22	6	1.45	21.8	0.98340	12	7	9.1
ene	10	2458128.75	19	26	15.97	10.9	-21	57	17.99	22.9	0.98343	12	7	33.7
ene	11	2458129.75	19	30	36.56	10.8	-21	48	8.82	23.9	0.98348	12	7	57.7
ene	12	2458130.75	19	34	56.58	10.8	-21	38	34.18	25.0	0.98352	12	8	21.2
ene	13	2458131.75	19	39	16.01	10.8	-21	28	34.37	26.0	0.98357	12	8	44.1
ene	14	2458132.75	19	43	34.83	10.8	-21	18	9.66	27.1	0.98363	12	9	6.3
ene	15	2458133.75	19	47	53.00	10.7	-21	7	20.37	28.1	0.98369	12	9	27.9
ene	16	2458134.75	19	52	10.51	10.7	-20	56	6.78	29.1	0.98375	12	9	48.9
ene	17	2458135.75	19	56	27.34	10.7	-20	44	29.24	30.0	0.98382	12	10	9.2
ene	18	2458136.75	20	0	43.46	10.6	-20	32	28.05	31.0	0.98389	12	10	28.7
ene	19	2458137.75	20	4	58.85	10.6	-20	20	3.54	32.0	0.98396	12	10	47.6
ene	20	2458138.75	20	9	13.50	10.6	-20	7	16.07	32.9	0.98404	12	11	5.7
ene	21	2458139.75	20	13	27.39	10.5	-19	54	5.98	33.8	0.98412	12	11	23.0
ene	22	2458140.75	20	17	40.51	10.5	-19	40	33.61	34.8	0.98421	12	11	39.6
ene	23	2458141.75	20	21	52.83	10.5	-19	26	39.33	35.7	0.98430	12	11	55.3
ene	24	2458142.75	20	26	4.37	10.4	-19	12	23.51	36.5	0.98439	12	12	10.3
ene	25	2458143.75	20	30	15.09	10.4	-18	57	46.53	37.4	0.98449	12	12	24.5
ene	26	2458144.75	20	34	25.00	10.4	-18	42	48.75	38.3	0.98460	12	12	37.8
ene	27	2458145.75	20	38	34.09	10.3	-18	27	30.58	39.1	0.98471	12	12	50.4
ene	28	2458146.75	20	42	42.36	10.3	-18	11	52.41	39.9	0.98482	12	13	2.1
ene	29	2458147.75	20	46	49.81	10.3	-17	55	54.64	40.7	0.98494	12	13	13.0
ene	30	2458148.75	20	50	56.43	10.2	-17	39	37.66	41.5	0.98506	12	13	23.0
ene	31	2458149.75	20	55	2.22	10.2	-17	23	1.87	42.3	0.98520	12	13	32.3
feb	1	2458150.75	20	59	7.19	10.2	-17	6	7.65	43.0	0.98533	12	13	40.7
feb	2	2458151.75	21	3	11.35	10.1	-16	48	55.39	43.7	0.98548	12	13	48.3
feb	3	2458152.75	21	7	14.70	10.1	-16	31	25.45	44.5	0.98563	12	13	55.1
feb	4	2458153.75	21	11	17.24	10.1	-16	13	38.24	45.2	0.98578	12	14	1.1
feb	5	2458154.75	21	15	18.99	10.0	-15	55	34.15	45.9	0.98594	12	14	6.3
feb	6	2458155.75	21	19	19.96	10.0	-15	37	13.56	46.5	0.98611	12	14	10.7
feb	7	2458156.75	21	23	20.14	10.0	-15	18	36.90	47.2	0.98628	12	14	14.3
feb	8	2458157.75	21	27	19.55	9.9	-14	59	44.58	47.8	0.98645	12	14	17.2
feb	9	2458158.75	21	31	18.18	9.9	-14	40	37.00	48.4	0.98663	12	14	19.3
feb	10	2458159.75	21	35	16.06	9.9	-14	21	14.60	49.0	0.98681	12	14	20.6
feb	11	2458160.75	21	39	13.17	9.8	-14	1	37.80	49.6	0.98700	12	14	21.1
feb	12	2458161.75	21	43	9.53	9.8	-13	41	47.01	50.2	0.98718	12	14	20.9
feb	13	2458162.75	21	47	5.15	9.8	-13	21	42.67	50.7	0.98737	12	14	20.0
feb	14	2458163.75	21	51	0.03	9.8	-13	1	25.19	51.3	0.98757	12	14	18.3
feb	15	2458164.75	21	54	54.18	9.7	-12	40	55.01	51.8	0.98776	12	14	15.9

Sol, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	vh s	δ °	"	”	dis UA	h	hp m	s	
feb	16	2458165.75	21	58	47.60	9.7	-12	20	12.55	52.3	0.98796	12	14	12.8
feb	17	2458166.75	22	2	40.31	9.7	-11	59	18.23	52.7	0.98816	12	14	8.9
feb	18	2458167.75	22	6	32.31	9.6	-11	38	12.49	53.2	0.98837	12	14	4.4
feb	19	2458168.75	22	10	23.62	9.6	-11	16	55.73	53.6	0.98857	12	13	59.1
feb	20	2458169.75	22	14	14.24	9.6	-10	55	28.39	54.1	0.98878	12	13	53.2
feb	21	2458170.75	22	18	4.19	9.6	-10	33	50.88	54.5	0.98899	12	13	46.6
feb	22	2458171.75	22	21	53.49	9.5	-10	12	3.62	54.9	0.98920	12	13	39.4
feb	23	2458172.75	22	25	42.14	9.5	-9	50	7.05	55.2	0.98942	12	13	31.5
feb	24	2458173.75	22	29	30.17	9.5	-9	28	1.57	55.6	0.98964	12	13	22.9
feb	25	2458174.75	22	33	17.58	9.5	-9	5	47.60	55.9	0.98986	12	13	13.8
feb	26	2458175.75	22	37	4.40	9.4	-8	43	25.57	56.2	0.99009	12	13	4.0
feb	27	2458176.75	22	40	50.64	9.4	-8	20	55.87	56.5	0.99032	12	12	53.7
feb	28	2458177.75	22	44	36.32	9.4	-7	58	18.91	56.8	0.99055	12	12	42.8
mar	1	2458178.75	22	48	21.46	9.4	-7	35	35.06	57.1	0.99079	12	12	31.4
mar	2	2458179.75	22	52	6.09	9.3	-7	12	44.70	57.4	0.99103	12	12	19.5
mar	3	2458180.75	22	55	50.23	9.3	-6	49	48.19	57.6	0.99128	12	12	7.1
mar	4	2458181.75	22	59	33.90	9.3	-6	26	45.90	57.8	0.99153	12	11	54.2
mar	5	2458182.75	23	3	17.14	9.3	-6	3	38.18	58.0	0.99178	12	11	40.9
mar	6	2458183.75	23	6	59.95	9.3	-5	40	25.41	58.2	0.99204	12	11	27.2
mar	7	2458184.75	23	10	42.37	9.3	-5	17	7.96	58.4	0.99230	12	11	13.1
mar	8	2458185.75	23	14	24.42	9.2	-4	53	46.21	58.6	0.99257	12	10	58.6
mar	9	2458186.75	23	18	6.11	9.2	-4	30	20.54	58.7	0.99283	12	10	43.7
mar	10	2458187.75	23	21	47.46	9.2	-4	6	51.33	58.8	0.99310	12	10	28.5
mar	11	2458188.75	23	25	28.49	9.2	-3	43	18.97	59.0	0.99337	12	10	13.0
mar	12	2458189.75	23	29	9.23	9.2	-3	19	43.83	59.1	0.99364	12	9	57.1
mar	13	2458190.75	23	32	49.68	9.2	-2	56	6.30	59.1	0.99391	12	9	41.0
mar	14	2458191.75	23	36	29.87	9.2	-2	32	26.76	59.2	0.99419	12	9	24.7
mar	15	2458192.75	23	40	9.82	9.2	-2	8	45.61	59.3	0.99446	12	9	8.1
mar	16	2458193.75	23	43	49.53	9.1	-1	45	3.21	59.3	0.99474	12	8	51.2
mar	17	2458194.75	23	47	29.04	9.1	-1	21	19.95	59.3	0.99501	12	8	34.2
mar	18	2458195.75	23	51	8.35	9.1	-0	57	36.22	59.3	0.99529	12	8	17.0
mar	19	2458196.75	23	54	47.49	9.1	-0	33	52.39	59.3	0.99556	12	7	59.6
mar	20	2458197.75	23	58	26.47	9.1	-0	10	8.85	59.3	0.99584	12	7	42.0
mar	21	2458198.75	0	2	5.31	9.1	+0	13	34.03	59.2	0.99611	12	7	24.3
mar	22	2458199.75	0	5	44.03	9.1	+0	37	15.87	59.2	0.99639	12	7	6.4
mar	23	2458200.75	0	9	22.64	9.1	+1	0	56.28	59.1	0.99666	12	6	48.5
mar	24	2458201.75	0	13	1.17	9.1	+1	24	34.88	59.0	0.99694	12	6	30.5
mar	25	2458202.75	0	16	39.62	9.1	+1	48	11.31	58.9	0.99721	12	6	12.4
mar	26	2458203.75	0	20	18.03	9.1	+2	11	45.18	58.8	0.99749	12	5	54.2
mar	27	2458204.75	0	23	56.40	9.1	+2	35	16.13	58.7	0.99777	12	5	36.0
mar	28	2458205.75	0	27	34.77	9.1	+2	58	43.81	58.5	0.99805	12	5	17.8
mar	29	2458206.75	0	31	13.15	9.1	+3	22	7.87	58.3	0.99833	12	4	59.7
mar	30	2458207.75	0	34	51.57	9.1	+3	45	28.00	58.2	0.99861	12	4	41.5
mar	31	2458208.75	0	38	30.05	9.1	+4	8	43.85	58.0	0.99890	12	4	23.5
abr	1	2458209.75	0	42	8.62	9.1	+4	31	55.12	57.8	0.99919	12	4	5.5
abr	2	2458210.75	0	45	47.31	9.1	+4	55	1.48	57.5	0.99947	12	3	47.6

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	α			vh s	δ °	“ ”		dis UA	hp			
			h	m	s			h	m		s	h	m	s
abr	3	2458211.75	0	49	26.13	9.1	+5	18	2.62	57.3	0.99976	12	3	29.9
abr	4	2458212.75	0	53	5.11	9.1	+5	40	58.21	57.1	1.00005	12	3	12.3
abr	5	2458213.75	0	56	44.27	9.1	+6	3	47.91	56.8	1.00035	12	2	54.9
abr	6	2458214.75	1	0	23.62	9.1	+6	26	31.40	56.5	1.00064	12	2	37.7
abr	7	2458215.75	1	4	3.20	9.2	+6	49	8.33	56.3	1.00093	12	2	20.8
abr	8	2458216.75	1	7	43.01	9.2	+7	11	38.37	56.0	1.00122	12	2	4.0
abr	9	2458217.75	1	11	23.07	9.2	+7	34	1.18	55.6	1.00151	12	1	47.5
abr	10	2458218.75	1	15	3.41	9.2	+7	56	16.41	55.3	1.00180	12	1	31.3
abr	11	2458219.75	1	18	44.02	9.2	+8	18	23.71	55.0	1.00209	12	1	15.4
abr	12	2458220.75	1	22	24.94	9.2	+8	40	22.74	54.6	1.00238	12	0	59.7
abr	13	2458221.75	1	26	6.18	9.2	+9	2	13.15	54.2	1.00267	12	0	44.4
abr	14	2458222.75	1	29	47.74	9.2	+9	23	54.60	53.8	1.00295	12	0	29.4
abr	15	2458223.75	1	33	29.65	9.3	+9	45	26.74	53.4	1.00324	12	0	14.8
abr	16	2458224.75	1	37	11.91	9.3	+10	6	49.21	53.0	1.00352	12	0	0.5
abr	17	2458225.75	1	40	54.55	9.3	+10	28	1.68	52.6	1.00380	11	59	46.6
abr	18	2458226.75	1	44	37.56	9.3	+10	49	3.77	52.1	1.00407	11	59	33.1
abr	19	2458227.75	1	48	20.96	9.3	+11	9	55.16	51.7	1.00434	11	59	19.9
abr	20	2458228.75	1	52	4.76	9.3	+11	30	35.47	51.2	1.00461	11	59	7.2
abr	21	2458229.75	1	55	48.97	9.4	+11	51	4.34	50.7	1.00488	11	58	54.8
abr	22	2458230.75	1	59	33.60	9.4	+12	11	21.44	50.2	1.00515	11	58	42.9
abr	23	2458231.75	2	3	18.65	9.4	+12	31	26.39	49.7	1.00541	11	58	31.4
abr	24	2458232.75	2	7	4.14	9.4	+12	51	18.87	49.2	1.00567	11	58	20.3
abr	25	2458233.75	2	10	50.08	9.4	+13	10	58.54	48.6	1.00593	11	58	9.7
abr	26	2458234.75	2	14	36.48	9.5	+13	30	25.08	48.0	1.00619	11	57	59.5
abr	27	2458235.75	2	18	23.36	9.5	+13	49	38.17	47.5	1.00645	11	57	49.9
abr	28	2458236.75	2	22	10.73	9.5	+14	8	37.52	46.9	1.00671	11	57	40.7
abr	29	2458237.75	2	25	58.61	9.5	+14	27	22.83	46.3	1.00697	11	57	32.0
abr	30	2458238.75	2	29	47.01	9.5	+14	45	53.80	45.7	1.00723	11	57	23.9
may	1	2458239.75	2	33	35.95	9.6	+15	4	10.13	45.1	1.00748	11	57	16.2
may	2	2458240.75	2	37	25.42	9.6	+15	22	11.54	44.4	1.00774	11	57	9.2
may	3	2458241.75	2	41	15.45	9.6	+15	39	57.72	43.8	1.00799	11	57	2.6
may	4	2458242.75	2	45	6.04	9.6	+15	57	28.38	43.1	1.00824	11	56	56.7
may	5	2458243.75	2	48	57.20	9.7	+16	14	43.20	42.4	1.00850	11	56	51.3
may	6	2458244.75	2	52	48.93	9.7	+16	31	41.90	41.8	1.00874	11	56	46.4
may	7	2458245.75	2	56	41.24	9.7	+16	48	24.16	41.1	1.00899	11	56	42.2
may	8	2458246.75	3	0	34.13	9.7	+17	4	49.69	40.4	1.00924	11	56	38.5
may	9	2458247.75	3	4	27.60	9.8	+17	20	58.17	39.6	1.00948	11	56	35.4
may	10	2458248.75	3	8	21.67	9.8	+17	36	49.32	38.9	1.00972	11	56	33.0
may	11	2458249.75	3	12	16.32	9.8	+17	52	22.83	38.1	1.00995	11	56	31.1
may	12	2458250.75	3	16	11.56	9.8	+18	7	38.39	37.4	1.01018	11	56	29.8
may	13	2458251.75	3	20	7.38	9.9	+18	22	35.73	36.6	1.01041	11	56	29.0
may	14	2458252.75	3	24	3.79	9.9	+18	37	14.54	35.8	1.01063	11	56	28.9
may	15	2458253.75	3	28	0.77	9.9	+18	51	34.53	35.0	1.01085	11	56	29.3
may	16	2458254.75	3	31	58.33	9.9	+19	5	35.43	34.2	1.01107	11	56	30.3
may	17	2458255.75	3	35	56.45	9.9	+19	19	16.94	33.4	1.01128	11	56	31.9
may	18	2458256.75	3	39	55.12	10.0	+19	32	38.77	32.6	1.01148	11	56	34.0

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α		vh s	°	δ	"	vh "	dis UA	hp		
				m	s							m	s	
may	19	2458257.75	3	43	54.34	10.0	+19	45	40.63	31.7	1.01168	11	56	36.6
may	20	2458258.75	3	47	54.07	10.0	+19	58	22.25	30.9	1.01188	11	56	39.8
may	21	2458259.75	3	51	54.33	10.0	+20	10	43.33	30.0	1.01207	11	56	43.5
may	22	2458260.75	3	55	55.09	10.1	+20	22	43.63	29.1	1.01225	11	56	47.7
may	23	2458261.75	3	59	56.36	10.1	+20	34	22.88	28.2	1.01244	11	56	52.4
may	24	2458262.75	4	3	58.11	10.1	+20	45	40.84	27.4	1.01262	11	56	57.6
may	25	2458263.75	4	8	0.36	10.1	+20	56	37.29	26.4	1.01280	11	57	3.3
may	26	2458264.75	4	12	3.08	10.1	+21	7	12.02	25.5	1.01297	11	57	9.5
may	27	2458265.75	4	16	6.27	10.2	+21	17	24.82	24.6	1.01314	11	57	16.1
may	28	2458266.75	4	20	9.93	10.2	+21	27	15.49	23.7	1.01331	11	57	23.2
may	29	2458267.75	4	24	14.05	10.2	+21	36	43.85	22.7	1.01348	11	57	30.8
may	30	2458268.75	4	28	18.60	10.2	+21	45	49.72	21.8	1.01364	11	57	38.8
may	31	2458269.75	4	32	23.59	10.2	+21	54	32.90	20.8	1.01381	11	57	47.2
jun	1	2458270.75	4	36	29.00	10.2	+22	2	53.23	19.9	1.01397	11	57	56.1
jun	2	2458271.75	4	40	34.81	10.3	+22	10	50.54	18.9	1.01412	11	58	5.3
jun	3	2458272.75	4	44	41.02	10.3	+22	18	24.65	17.9	1.01427	11	58	15.0
jun	4	2458273.75	4	48	47.60	10.3	+22	25	35.41	17.0	1.01442	11	58	25.0
jun	5	2458274.75	4	52	54.54	10.3	+22	32	22.66	16.0	1.01457	11	58	35.4
jun	6	2458275.75	4	57	1.82	10.3	+22	38	46.26	15.0	1.01471	11	58	46.1
jun	7	2458276.75	5	1	9.42	10.3	+22	44	46.05	14.0	1.01485	11	58	57.1
jun	8	2458277.75	5	5	17.33	10.3	+22	50	21.91	13.0	1.01498	11	59	8.5
jun	9	2458278.75	5	9	25.53	10.4	+22	55	33.72	12.0	1.01511	11	59	20.1
jun	10	2458279.75	5	13	33.99	10.4	+23	0	21.36	11.0	1.01524	11	59	32.1
jun	11	2458280.75	5	17	42.70	10.4	+23	4	44.72	10.0	1.01535	11	59	44.2
jun	12	2458281.75	5	21	51.62	10.4	+23	8	43.70	8.9	1.01547	11	59	56.6
jun	13	2458282.75	5	26	0.75	10.4	+23	12	18.21	7.9	1.01557	12	0	9.1
jun	14	2458283.75	5	30	10.04	10.4	+23	15	28.07	6.9	1.01568	12	0	21.9
jun	15	2458284.75	5	34	19.44	10.4	+23	18	13.16	5.9	1.01577	12	0	34.7
jun	16	2458285.75	5	38	28.94	10.4	+23	20	34.27	4.8	1.01586	12	0	47.6
jun	17	2458286.75	5	42	38.54	10.4	+23	22	30.48	3.8	1.01594	12	1	0.7
jun	18	2458287.75	5	46	48.18	10.4	+23	24	1.80	2.8	1.01602	12	1	13.8
jun	19	2458288.75	5	50	57.84	10.4	+23	25	8.27	1.7	1.01609	12	1	26.9
jun	20	2458289.75	5	55	7.50	10.4	+23	25	49.88	0.7	1.01616	12	1	40.0
jun	21	2458290.75	5	59	17.13	10.4	+23	26	6.64	-0.3	1.01622	12	1	53.1
jun	22	2458291.75	6	3	26.71	10.4	+23	25	58.55	-1.4	1.01628	12	2	6.1
jun	23	2458292.75	6	7	36.22	10.4	+23	25	25.64	-2.4	1.01633	12	2	19.0
jun	24	2458293.75	6	11	45.64	10.4	+23	24	27.93	-3.4	1.01638	12	2	31.9
jun	25	2458294.75	6	15	54.94	10.4	+23	23	5.48	-4.5	1.01643	12	2	44.6
jun	26	2458295.75	6	20	4.12	10.4	+23	21	18.33	-5.5	1.01647	12	2	57.3
jun	27	2458296.75	6	24	13.15	10.4	+23	19	6.55	-6.5	1.01651	12	3	9.7
jun	28	2458297.75	6	28	22.00	10.4	+23	16	30.20	-7.5	1.01655	12	3	22.0
jun	29	2458298.75	6	32	30.67	10.4	+23	13	29.36	-8.6	1.01658	12	3	34.1
jun	30	2458299.75	6	36	39.12	10.3	+23	10	4.12	-9.6	1.01661	12	3	46.0
jul	1	2458300.75	6	40	47.34	10.3	+23	6	14.56	-10.6	1.01663	12	3	57.7
jul	2	2458301.75	6	44	55.31	10.3	+23	2	0.77	-11.6	1.01665	12	4	9.1
jul	3	2458302.75	6	49	3.01	10.3	+22	57	22.86	-12.6	1.01667	12	4	20.2

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mes	día	dj	α			vh s	δ °	“ ”		dis UA	h	hp		
			h	m	s			“	”			m	s	
jul	4	2458303.75	6	53	10.43	10.3	+22	52	20.94	-13.6	1.01668	12	4	31.1
jul	5	2458304.75	6	57	17.54	10.3	+22	46	55.12	-14.6	1.01669	12	4	41.7
jul	6	2458305.75	7	1	24.34	10.3	+22	41	5.54	-15.6	1.01670	12	4	51.9
jul	7	2458306.75	7	5	30.79	10.3	+22	34	52.33	-16.5	1.01670	12	5	1.8
jul	8	2458307.75	7	9	36.89	10.2	+22	28	15.63	-17.5	1.01669	12	5	11.4
jul	9	2458308.75	7	13	42.62	10.2	+22	21	15.61	-18.5	1.01668	12	5	20.5
jul	10	2458309.75	7	17	47.95	10.2	+22	13	52.44	-19.4	1.01666	12	5	29.3
jul	11	2458310.75	7	21	52.87	10.2	+22	6	6.29	-20.4	1.01664	12	5	37.7
jul	12	2458311.75	7	25	57.36	10.2	+21	57	57.37	-21.3	1.01661	12	5	45.6
jul	13	2458312.75	7	30	1.40	10.1	+21	49	25.87	-22.2	1.01658	12	5	53.1
jul	14	2458313.75	7	34	4.95	10.1	+21	40	31.99	-23.2	1.01654	12	6	0.0
jul	15	2458314.75	7	38	8.00	10.1	+21	31	15.94	-24.1	1.01649	12	6	6.5
jul	16	2458315.75	7	42	10.53	10.1	+21	21	37.91	-25.0	1.01644	12	6	12.5
jul	17	2458316.75	7	46	12.53	10.1	+21	11	38.12	-25.9	1.01638	12	6	18.0
jul	18	2458317.75	7	50	13.98	10.0	+21	1	16.79	-26.8	1.01631	12	6	22.9
jul	19	2458318.75	7	54	14.86	10.0	+20	50	34.15	-27.7	1.01624	12	6	27.2
jul	20	2458319.75	7	58	15.18	10.0	+20	39	30.43	-28.5	1.01617	12	6	31.0
jul	21	2458320.75	8	2	14.93	10.0	+20	28	5.88	-29.4	1.01609	12	6	34.2
jul	22	2458321.75	8	6	14.09	9.9	+20	16	20.75	-30.2	1.01600	12	6	36.8
jul	23	2458322.75	8	10	12.66	9.9	+20	4	15.31	-31.1	1.01592	12	6	38.8
jul	24	2458323.75	8	14	10.63	9.9	+19	51	49.80	-31.9	1.01582	12	6	40.2
jul	25	2458324.75	8	18	8.01	9.9	+19	39	4.50	-32.7	1.01573	12	6	41.0
jul	26	2458325.75	8	22	4.79	9.8	+19	25	59.66	-33.5	1.01563	12	6	41.2
jul	27	2458326.75	8	26	0.96	9.8	+19	12	35.55	-34.3	1.01553	12	6	40.8
jul	28	2458327.75	8	29	56.53	9.8	+18	58	52.44	-35.1	1.01542	12	6	39.8
jul	29	2458328.75	8	33	51.50	9.8	+18	44	50.58	-35.8	1.01532	12	6	38.3
jul	30	2458329.75	8	37	45.86	9.7	+18	30	30.26	-36.6	1.01521	12	6	36.1
jul	31	2458330.75	8	41	39.62	9.7	+18	15	51.74	-37.4	1.01509	12	6	33.3
ago	1	2458331.75	8	45	32.78	9.7	+18	0	55.29	-38.1	1.01497	12	6	29.9
ago	2	2458332.75	8	49	25.35	9.7	+17	45	41.17	-38.8	1.01485	12	6	25.9
ago	3	2458333.75	8	53	17.33	9.6	+17	30	9.68	-39.5	1.01473	12	6	21.3
ago	4	2458334.75	8	57	8.72	9.6	+17	14	21.08	-40.2	1.01460	12	6	16.2
ago	5	2458335.75	9	0	59.53	9.6	+16	58	15.67	-40.9	1.01447	12	6	10.4
ago	6	2458336.75	9	4	49.77	9.6	+16	41	53.73	-41.6	1.01433	12	6	4.1
ago	7	2458337.75	9	8	39.43	9.5	+16	25	15.57	-42.3	1.01419	12	5	57.2
ago	8	2458338.75	9	12	28.52	9.5	+16	8	21.50	-42.9	1.01404	12	5	49.7
ago	9	2458339.75	9	16	17.04	9.5	+15	51	11.82	-43.5	1.01389	12	5	41.7
ago	10	2458340.75	9	20	5.00	9.5	+15	33	46.88	-44.2	1.01373	12	5	33.1
ago	11	2458341.75	9	23	52.38	9.5	+15	16	6.98	-44.8	1.01357	12	5	23.9
ago	12	2458342.75	9	27	39.19	9.4	+14	58	12.45	-45.4	1.01340	12	5	14.2
ago	13	2458343.75	9	31	25.43	9.4	+14	40	3.61	-46.0	1.01323	12	5	3.9
ago	14	2458344.75	9	35	11.11	9.4	+14	21	40.77	-46.5	1.01305	12	4	53.0
ago	15	2458345.75	9	38	56.23	9.4	+14	3	4.25	-47.1	1.01286	12	4	41.6
ago	16	2458346.75	9	42	40.81	9.3	+13	44	14.38	-47.6	1.01267	12	4	29.6
ago	17	2458347.75	9	46	24.84	9.3	+13	25	11.47	-48.2	1.01248	12	4	17.1
ago	18	2458348.75	9	50	8.35	9.3	+13	5	55.85	-48.7	1.01228	12	4	4.0

Sol, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	vh s	δ °	"	vh "	dis UA	h	hp m	s
ago	19	2458349.75	9	53	51.34	9.3	+12	46	27.85 -49.2	1.01208	12	3	50.5
ago	20	2458350.75	9	57	33.83	9.2	+12	26	47.79 -49.7	1.01188	12	3	36.4
ago	21	2458351.75	10	1	15.83	9.2	+12	6	55.99 -50.1	1.01167	12	3	21.8
ago	22	2458352.75	10	4	57.34	9.2	+11	46	52.77 -50.6	1.01146	12	3	6.8
ago	23	2458353.75	10	8	38.40	9.2	+11	26	38.44 -51.0	1.01125	12	2	51.3
ago	24	2458354.75	10	12	19.00	9.2	+11	6	13.32 -51.5	1.01104	12	2	35.3
ago	25	2458355.75	10	15	59.17	9.2	+10	45	37.73 -51.9	1.01082	12	2	19.0
ago	26	2458356.75	10	19	38.93	9.1	+10	24	51.96 -52.3	1.01060	12	2	2.2
ago	27	2458357.75	10	23	18.29	9.1	+10	3	56.33 -52.7	1.01038	12	1	45.0
ago	28	2458358.75	10	26	57.28	9.1	+9	42	51.13 -53.1	1.01016	12	1	27.4
ago	29	2458359.75	10	30	35.90	9.1	+9	21	36.66 -53.5	1.00994	12	1	9.5
ago	30	2458360.75	10	34	14.19	9.1	+9	0	13.23 -53.8	1.00971	12	0	51.2
ago	31	2458361.75	10	37	52.15	9.1	+8	38	41.13 -54.2	1.00948	12	0	32.7
sep	1	2458362.75	10	41	29.82	9.1	+8	17	0.66 -54.5	1.00925	12	0	13.8
sep	2	2458363.75	10	45	7.22	9.0	+7	55	12.13 -54.8	1.00902	11	59	54.6
sep	3	2458364.75	10	48	44.35	9.0	+7	33	15.85 -55.2	1.00879	11	59	35.2
sep	4	2458365.75	10	52	21.24	9.0	+7	11	12.15 -55.5	1.00855	11	59	15.5
sep	5	2458366.75	10	55	57.90	9.0	+6	49	1.33 -55.7	1.00831	11	58	55.6
sep	6	2458367.75	10	59	34.36	9.0	+6	26	43.74 -56.0	1.00807	11	58	35.5
sep	7	2458368.75	11	3	10.61	9.0	+6	4	19.72 -56.3	1.00782	11	58	15.2
sep	8	2458369.75	11	6	46.69	9.0	+5	41	49.62 -56.5	1.00757	11	57	54.7
sep	9	2458370.75	11	10	22.59	9.0	+5	19	13.76 -56.7	1.00732	11	57	34.1
sep	10	2458371.75	11	13	58.34	9.0	+4	56	32.50 -56.9	1.00706	11	57	13.3
sep	11	2458372.75	11	17	33.94	9.0	+4	33	46.18 -57.1	1.00680	11	56	52.3
sep	12	2458373.75	11	21	9.43	9.0	+4	10	55.15 -57.3	1.00653	11	56	31.3
sep	13	2458374.75	11	24	44.80	9.0	+3	47	59.73 -57.5	1.00627	11	56	10.1
sep	14	2458375.75	11	28	20.09	9.0	+3	25	0.29 -57.6	1.00600	11	55	48.8
sep	15	2458376.75	11	31	55.30	9.0	+3	1	57.16 -57.8	1.00572	11	55	27.5
sep	16	2458377.75	11	35	30.46	9.0	+2	38	50.70 -57.9	1.00545	11	55	6.1
sep	17	2458378.75	11	39	5.59	9.0	+2	15	41.25 -58.0	1.00517	11	54	44.7
sep	18	2458379.75	11	42	40.70	9.0	+1	52	29.14 -58.1	1.00489	11	54	23.2
sep	19	2458380.75	11	46	15.82	9.0	+1	29	14.71 -58.2	1.00461	11	54	1.8
sep	20	2458381.75	11	49	50.97	9.0	+1	5	58.31 -58.3	1.00433	11	53	40.4
sep	21	2458382.75	11	53	26.16	9.0	+0	42	40.27 -58.3	1.00405	11	53	19.0
sep	22	2458383.75	11	57	1.42	9.0	+0	19	20.91 -58.3	1.00377	11	52	57.7
sep	23	2458384.75	12	0	36.78	9.0	-0	3	59.43 -58.4	1.00348	11	52	36.6
sep	24	2458385.75	12	4	12.25	9.0	-0	27	20.42 -58.4	1.00320	11	52	15.5
sep	25	2458386.75	12	7	47.86	9.0	-0	50	41.76 -58.4	1.00292	11	51	54.5
sep	26	2458387.75	12	11	23.63	9.0	-1	14	3.11 -58.4	1.00264	11	51	33.8
sep	27	2458388.75	12	14	59.60	9.0	-1	37	24.17 -58.4	1.00236	11	51	13.2
sep	28	2458389.75	12	18	35.78	9.0	-2	0	44.61 -58.3	1.00208	11	50	52.8
sep	29	2458390.75	12	22	12.21	9.0	-2	24	4.11 -58.3	1.00180	11	50	32.7
sep	30	2458391.75	12	25	48.90	9.0	-2	47	22.34 -58.2	1.00152	11	50	12.8
oct	1	2458392.75	12	29	25.87	9.1	-3	10	38.98 -58.1	1.00124	11	49	53.2
oct	2	2458393.75	12	33	3.15	9.1	-3	33	53.69 -58.0	1.00096	11	49	34.0
oct	3	2458394.75	12	36	40.76	9.1	-3	57	6.10 -57.9	1.00068	11	49	15.0

Sol, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	α			vh s	δ °	“		dis UA	hp			
			h	m	s			“	”		h	m	s	
oct	4	2458395.75	12	40	18.71	9.1	-4	20	15.86	-57.8	1.00040	11	48	56.4
oct	5	2458396.75	12	43	57.03	9.1	-4	43	22.61	-57.6	1.00012	11	48	38.2
oct	6	2458397.75	12	47	35.73	9.1	-5	6	25.97	-57.5	0.99983	11	48	20.3
oct	7	2458398.75	12	51	14.82	9.1	-5	29	25.57	-57.3	0.99955	11	48	2.9
oct	8	2458399.75	12	54	54.33	9.2	-5	52	21.02	-57.1	0.99926	11	47	45.8
oct	9	2458400.75	12	58	34.27	9.2	-6	15	11.94	-56.9	0.99898	11	47	29.2
oct	10	2458401.75	13	2	14.66	9.2	-6	37	57.96	-56.7	0.99869	11	47	13.1
oct	11	2458402.75	13	5	55.51	9.2	-7	0	38.68	-56.5	0.99840	11	46	57.4
oct	12	2458403.75	13	9	36.84	9.2	-7	23	13.70	-56.2	0.99811	11	46	42.1
oct	13	2458404.75	13	13	18.66	9.3	-7	45	42.64	-55.9	0.99782	11	46	27.4
oct	14	2458405.75	13	17	0.99	9.3	-8	8	5.11	-55.6	0.99753	11	46	13.2
oct	15	2458406.75	13	20	43.84	9.3	-8	30	20.70	-55.3	0.99724	11	45	59.5
oct	16	2458407.75	13	24	27.24	9.3	-8	52	29.02	-55.0	0.99695	11	45	46.3
oct	17	2458408.75	13	28	11.20	9.4	-9	14	29.69	-54.7	0.99666	11	45	33.7
oct	18	2458409.75	13	31	55.73	9.4	-9	36	22.31	-54.3	0.99637	11	45	21.7
oct	19	2458410.75	13	35	40.85	9.4	-9	58	6.48	-54.0	0.99609	11	45	10.3
oct	20	2458411.75	13	39	26.58	9.4	-10	19	41.84	-53.6	0.99580	11	44	59.4
oct	21	2458412.75	13	43	12.94	9.5	-10	41	7.98	-53.2	0.99552	11	44	49.3
oct	22	2458413.75	13	46	59.94	9.5	-11	2	24.53	-52.8	0.99524	11	44	39.7
oct	23	2458414.75	13	50	47.62	9.5	-11	23	31.11	-52.3	0.99496	11	44	30.8
oct	24	2458415.75	13	54	35.97	9.5	-11	44	27.35	-51.9	0.99468	11	44	22.6
oct	25	2458416.75	13	58	25.03	9.6	-12	5	12.88	-51.4	0.99441	11	44	15.1
oct	26	2458417.75	14	2	14.81	9.6	-12	25	47.32	-51.0	0.99414	11	44	8.4
oct	27	2458418.75	14	6	5.33	9.6	-12	46	10.32	-50.5	0.99387	11	44	2.3
oct	28	2458419.75	14	9	56.61	9.7	-13	6	21.48	-50.0	0.99361	11	43	57.1
oct	29	2458420.75	14	13	48.66	9.7	-13	26	20.44	-49.4	0.99334	11	43	52.5
oct	30	2458421.75	14	17	41.49	9.7	-13	46	6.81	-48.9	0.99309	11	43	48.8
oct	31	2458422.75	14	21	35.12	9.8	-14	5	40.18	-48.3	0.99283	11	43	45.9
nov	1	2458423.75	14	25	29.56	9.8	-14	25	0.16	-47.8	0.99258	11	43	43.8
nov	2	2458424.75	14	29	24.81	9.8	-14	44	6.32	-47.2	0.99232	11	43	42.5
nov	3	2458425.75	14	33	20.88	9.9	-15	2	58.27	-46.6	0.99207	11	43	42.0
nov	4	2458426.75	14	37	17.79	9.9	-15	21	35.58	-45.9	0.99183	11	43	42.3
nov	5	2458427.75	14	41	15.52	9.9	-15	39	57.85	-45.3	0.99158	11	43	43.5
nov	6	2458428.75	14	45	14.10	10.0	-15	58	4.64	-44.6	0.99133	11	43	45.6
nov	7	2458429.75	14	49	13.53	10.0	-16	15	55.55	-43.9	0.99109	11	43	48.4
nov	8	2458430.75	14	53	13.79	10.0	-16	33	30.16	-43.2	0.99084	11	43	52.1
nov	9	2458431.75	14	57	14.90	10.1	-16	50	48.05	-42.5	0.99060	11	43	56.7
nov	10	2458432.75	15	1	16.85	10.1	-17	7	48.79	-41.8	0.99036	11	44	2.1
nov	11	2458433.75	15	5	19.65	10.2	-17	24	31.98	-41.1	0.99012	11	44	8.3
nov	12	2458434.75	15	9	23.28	10.2	-17	40	57.19	-40.3	0.98988	11	44	15.4
nov	13	2458435.75	15	13	27.74	10.2	-17	57	4.01	-39.5	0.98965	11	44	23.3
nov	14	2458436.75	15	17	33.04	10.3	-18	12	52.03	-38.7	0.98942	11	44	32.0
nov	15	2458437.75	15	21	39.16	10.3	-18	28	20.85	-37.9	0.98919	11	44	41.6
nov	16	2458438.75	15	25	46.11	10.3	-18	43	30.08	-37.1	0.98896	11	44	52.0
nov	17	2458439.75	15	29	53.88	10.4	-18	58	19.33	-36.2	0.98874	11	45	3.2
nov	18	2458440.75	15	34	2.46	10.4	-19	12	48.20	-35.3	0.98852	11	45	15.2

Sol, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	vh s	δ °	"	vh "	dis UA	h	hp m	s
nov	19	2458441.75	15	38	11.86	10.4	-19	26	56.34 -34.5	0.98830	11	45	28.1
nov	20	2458442.75	15	42	22.06	10.5	-19	40	43.37 -33.6	0.98809	11	45	41.7
nov	21	2458443.75	15	46	33.07	10.5	-19	54	8.93 -32.7	0.98788	11	45	56.2
nov	22	2458444.75	15	50	44.88	10.5	-20	7	12.70 -31.7	0.98768	11	46	11.5
nov	23	2458445.75	15	54	57.48	10.6	-20	19	54.32 -30.8	0.98749	11	46	27.5
nov	24	2458446.75	15	59	10.86	10.6	-20	32	13.48 -29.8	0.98730	11	46	44.3
nov	25	2458447.75	16	3	25.02	10.6	-20	44	9.86 -28.9	0.98711	11	47	1.9
nov	26	2458448.75	16	7	39.95	10.7	-20	55	43.14 -27.9	0.98693	11	47	20.3
nov	27	2458449.75	16	11	55.63	10.7	-21	6	52.99 -26.9	0.98675	11	47	39.4
nov	28	2458450.75	16	16	12.05	10.7	-21	17	39.11 -25.9	0.98658	11	47	59.3
nov	29	2458451.75	16	20	29.19	10.7	-21	28	1.17 -24.9	0.98642	11	48	19.8
nov	30	2458452.75	16	24	47.04	10.8	-21	37	58.87 -23.9	0.98626	11	48	41.1
dic	1	2458453.75	16	29	5.58	10.8	-21	47	31.89 -22.8	0.98610	11	49	3.1
dic	2	2458454.75	16	33	24.78	10.8	-21	56	39.96 -21.8	0.98594	11	49	25.8
dic	3	2458455.75	16	37	44.63	10.9	-22	5	22.78 -20.7	0.98579	11	49	49.1
dic	4	2458456.75	16	42	5.11	10.9	-22	13	40.08 -19.6	0.98565	11	50	13.0
dic	5	2458457.75	16	46	26.17	10.9	-22	21	31.61 -18.6	0.98550	11	50	37.5
dic	6	2458458.75	16	50	47.80	10.9	-22	28	57.11 -17.5	0.98536	11	51	2.6
dic	7	2458459.75	16	55	9.97	10.9	-22	35	56.33 -16.4	0.98523	11	51	28.2
dic	8	2458460.75	16	59	32.64	11.0	-22	42	29.06 -15.3	0.98509	11	51	54.3
dic	9	2458461.75	17	3	55.78	11.0	-22	48	35.06 -14.1	0.98496	11	52	20.9
dic	10	2458462.75	17	8	19.37	11.0	-22	54	14.13 -13.0	0.98483	11	52	47.9
dic	11	2458463.75	17	12	43.35	11.0	-22	59	26.07 -11.9	0.98471	11	53	15.3
dic	12	2458464.75	17	17	7.71	11.0	-23	4	10.69 -10.7	0.98459	11	53	43.1
dic	13	2458465.75	17	21	32.40	11.0	-23	8	27.84 -9.6	0.98448	11	54	11.2
dic	14	2458466.75	17	25	57.41	11.1	-23	12	17.36 -8.4	0.98436	11	54	39.7
dic	15	2458467.75	17	30	22.68	11.1	-23	15	39.11 -7.2	0.98426	11	55	8.4
dic	16	2458468.75	17	34	48.20	11.1	-23	18	32.97 -6.1	0.98415	11	55	37.4
dic	17	2458469.75	17	39	13.92	11.1	-23	20	58.84 -4.9	0.98406	11	56	6.5
dic	18	2458470.75	17	43	39.82	11.1	-23	22	56.63 -3.7	0.98396	11	56	35.9
dic	19	2458471.75	17	48	5.86	11.1	-23	24	26.28 -2.6	0.98388	11	57	5.4
dic	20	2458472.75	17	52	32.02	11.1	-23	25	27.74 -1.4	0.98380	11	57	35.0
dic	21	2458473.75	17	56	58.27	11.1	-23	26	0.98 -0.2	0.98372	11	58	4.7
dic	22	2458474.75	18	1	24.57	11.1	-23	26	6.00 1.0	0.98365	11	58	34.4
dic	23	2458475.75	18	5	50.89	11.1	-23	25	42.78 2.1	0.98359	11	59	4.2
dic	24	2458476.75	18	10	17.20	11.1	-23	24	51.35 3.3	0.98354	11	59	33.9
dic	25	2458477.75	18	14	43.48	11.1	-23	23	31.72 4.5	0.98349	12	0	3.6
dic	26	2458478.75	18	19	9.69	11.1	-23	21	43.92 5.7	0.98345	12	0	33.3
dic	27	2458479.75	18	23	35.80	11.1	-23	19	27.99 6.8	0.98341	12	1	2.8
dic	28	2458480.75	18	28	1.78	11.1	-23	16	43.97 8.0	0.98338	12	1	32.3
dic	29	2458481.75	18	32	27.61	11.1	-23	13	31.93 9.2	0.98335	12	2	1.5
dic	30	2458482.75	18	36	53.25	11.1	-23	9	51.96 10.3	0.98333	12	2	30.6
dic	31	2458483.75	18	41	18.66	11.0	-23	5	44.16 11.5	0.98332	12	2	59.5

Luna, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	δ °	"	dis km	sd "	pax "	fas %	hp h	
ene	1	2458119.75	5	54	8.72	19	38	24.30	3570119.24	16.72	61.36	98.2	23.6
ene	2	2458120.75	6	59	16.60	20	0	33.32	3566810.18	16.76	61.50	100.0	****
ene	3	2458121.75	8	3	51.17	18	54	37.47	3583642.49	16.70	61.29	98.7	1.6
ene	4	2458122.75	9	6	7.48	16	29	56.62	3618780.48	16.56	60.76	94.5	2.6
ene	5	2458123.75	10	5	3.59	13	4	29.35	3668397.74	16.35	59.99	87.8	3.5
ene	6	2458124.75	11	0	27.25	8	59	13.12	3727456.61	16.09	59.06	79.2	4.4
ene	7	2458125.75	11	52	42.99	4	33	36.94	3790597.34	15.83	58.08	69.5	5.2
ene	8	2458126.75	12	42	34.60	0	3	42.15	3852892.41	15.57	57.13	59.2	5.9
ene	9	2458127.75	13	30	51.69	-4	18	2.05	3910332.23	15.33	56.26	48.8	6.7
ene	10	2458128.75	14	18	21.74	-8	21	48.15	3960053.34	15.13	55.53	38.8	7.4
ene	11	2458129.75	15	5	45.58	-11	59	31.36	4000347.24	14.97	54.93	29.4	8.1
ene	12	2458130.75	15	53	34.39	-15	4	4.45	4030537.59	14.85	54.49	21.0	8.8
ene	13	2458131.75	16	42	7.24	-17	28	57.56	4050762.45	14.76	54.18	13.8	9.6
ene	14	2458132.75	17	31	29.37	-19	8	24.34	4061721.43	14.72	54.01	7.9	10.3
ene	15	2458133.75	18	21	32.01	-19	57	49.69	4064407.87	14.70	53.95	3.6	11.1
ene	16	2458134.75	19	11	55.19	-19	54	29.59	4059866.33	14.71	53.99	0.9	11.9
ene	17	2458135.75	20	2	13.40	-18	58	4.33	4048997.27	14.74	54.11	0.0	12.7
ene	18	2458136.75	20	52	3.12	-17	10	50.68	4032415.38	14.80	54.32	0.9	13.4
ene	19	2458137.75	21	41	9.67	-14	37	28.24	4010408.94	14.88	54.60	3.6	14.2
ene	20	2458138.75	22	29	31.49	-11	24	26.49	3982982.94	14.97	54.95	8.0	14.9
ene	21	2458139.75	23	17	21.18	-7	39	29.06	3950001.78	15.09	55.39	14.1	15.6
ene	22	2458140.75	0	5	4.34	-3	31	9.99	3911404.53	15.24	55.92	21.8	16.4
ene	23	2458141.75	0	53	17.09	0	51	9.76	3867467.60	15.41	56.54	30.8	17.1
ene	24	2458142.75	1	42	43.06	5	17	2.64	3819084.63	15.60	57.24	40.9	17.9
ene	25	2458143.75	2	34	9.10	9	34	18.14	3767985.86	15.81	58.01	51.7	18.7
ene	26	2458144.75	3	28	18.51	13	28	25.76	3716874.02	16.02	58.81	62.7	19.5
ene	27	2458145.75	4	25	39.96	16	42	28.72	3669359.97	16.24	59.59	73.4	20.4
ene	28	2458146.75	5	26	12.66	18	58	15.27	3629672.75	16.42	60.27	83.1	21.3
ene	29	2458147.75	6	29	13.39	19	59	25.82	3602108.51	16.56	60.79	91.1	22.3
ene	30	2458148.75	7	33	17.33	19	36	8.91	3590282.35	16.64	61.06	96.8	23.3
ene	31	2458149.75	8	36	40.35	17	48	54.21	3596356.14	16.63	61.03	99.7	****
feb	1	2458150.75	9	37	53.45	14	49	3.61	3620494.62	16.54	60.69	99.6	1.3
feb	2	2458151.75	10	36	7.15	10	55	29.40	3660736.92	16.37	60.08	96.6	2.2
feb	3	2458152.75	11	31	14.56	6	29	33.95	3713337.88	16.15	59.27	91.2	3.0
feb	4	2458153.75	12	23	39.41	1	51	8.13	3773452.62	15.90	58.34	83.7	3.8
feb	5	2458154.75	13	14	1.12	-2	43	26.69	3835896.76	15.64	57.39	74.9	4.6
feb	6	2458155.75	14	3	3.55	-7	1	31.71	3895839.32	15.39	56.49	65.3	5.4
feb	7	2458156.75	14	51	27.87	-10	53	29.13	3949269.93	15.18	55.69	55.3	6.1
feb	8	2458157.75	15	39	48.44	-14	11	46.67	3993256.54	15.00	55.04	45.4	6.8
feb	9	2458158.75	16	28	30.04	-16	50	13.17	4026020.74	14.86	54.55	35.9	7.6
feb	10	2458159.75	17	17	45.91	-18	43	35.43	4046872.68	14.78	54.23	27.0	8.3
feb	11	2458160.75	18	7	36.93	-19	47	39.79	4056072.44	14.73	54.07	19.1	9.1
feb	12	2458161.75	18	57	52.67	-19	59	32.28	4054619.24	14.73	54.06	12.2	9.9
feb	13	2458162.75	19	48	14.93	-19	18	7.74	4044018.40	14.76	54.17	6.8	10.7
feb	14	2458163.75	20	38	23.38	-17	44	34.71	4026035.93	14.82	54.39	2.8	11.4
feb	15	2458164.75	21	28	1.79	-15	22	25.04	4002451.74	14.90	54.70	0.5	12.2

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	δ °	"	dis km	sd "	pax "	fas %	hp h	
feb	16	2458165.75	22	17	3.03	-12	17	25.00	3974847.88	15.00	55.07	0.1	12.9
feb	17	2458166.75	23	5	31.71	-8	37	13.69	3944461.29	15.12	55.48	1.6	13.7
feb	18	2458167.75	23	53	44.29	-4	30	57.55	3912123.58	15.24	55.93	5.1	14.4
feb	19	2458168.75	0	42	7.63	0	8	51.56	3878302.98	15.37	56.42	10.5	15.2
feb	20	2458169.75	1	31	16.24	4	17	49.18	3843248.57	15.51	56.93	17.8	15.9
feb	21	2458170.75	2	21	48.82	8	36	44.73	3807221.99	15.66	57.46	26.7	16.7
feb	22	2458171.75	3	14	23.08	12	34	20.33	3770755.08	15.81	58.02	36.8	17.5
feb	23	2458172.75	4	9	28.11	15	55	46.88	3734899.05	15.96	58.58	47.8	18.3
feb	24	2458173.75	5	7	14.12	18	25	37.08	3701373.98	16.11	59.12	59.1	19.2
feb	25	2458174.75	6	7	22.08	19	49	25.87	3672555.81	16.24	59.61	70.1	20.2
feb	26	2458175.75	7	8	59.89	19	56	37.99	3651275.30	16.35	59.99	80.2	21.1
feb	27	2458176.75	8	10	51.64	18	43	33.96	3640399.09	16.41	60.22	88.7	22.1
feb	28	2458177.75	9	11	39.45	16	15	16.97	3642273.10	16.41	60.24	95.1	23.1
mar	1	2458178.75	10	10	26.25	12	44	51.79	3658151.42	16.36	60.03	98.9	****
mar	2	2458179.75	11	6	46.98	8	30	33.39	3687807.64	16.24	59.60	100.0	0.8
mar	3	2458180.75	12	0	46.10	3	52	14.98	3729410.46	16.07	58.97	98.3	1.7
mar	4	2458181.75	12	52	47.63	0	51	22.79	3779760.06	15.86	58.21	94.3	2.5
mar	5	2458182.75	13	43	24.65	-5	24	26.08	3834744.10	15.64	57.38	88.1	3.3
mar	6	2458183.75	14	33	11.28	-9	34	14.27	3889911.72	15.41	56.56	80.4	4.0
mar	7	2458184.75	15	22	37.58	-13	11	2.36	3941015.46	15.21	55.80	71.7	4.8
mar	8	2458185.75	16	12	6.23	-16	7	27.81	3984422.05	15.03	55.16	62.3	5.5
mar	9	2458186.75	17	1	50.69	-18	17	58.54	4017397.81	14.90	54.67	52.7	6.3
mar	10	2458187.75	17	51	54.53	-19	38	34.06	4038236.28	14.81	54.35	43.1	7.1
mar	11	2458188.75	18	42	12.36	-20	6	40.61	4046289.00	14.77	54.20	33.9	7.8
mar	12	2458189.75	19	32	32.53	-19	41	17.56	4041915.11	14.77	54.22	25.3	8.6
mar	13	2458190.75	20	22	41.27	-18	23	8.20	4026353.25	14.82	54.39	17.6	9.4
mar	14	2458191.75	21	12	27.40	-16	14	48.51	4001548.27	14.90	54.70	10.9	10.2
mar	15	2458192.75	22	1	46.33	-13	20	51.59	3969918.72	15.02	55.11	5.6	10.9
mar	16	2458193.75	22	50	42.44	-9	47	47.06	3934099.96	15.15	55.61	1.9	11.7
mar	17	2458194.75	23	39	29.67	-5	43	58.26	3896656.42	15.30	56.14	0.1	12.4
mar	18	2458195.75	0	28	30.57	-1	19	37.31	3859827.29	15.44	56.68	0.4	13.2
mar	19	2458196.75	1	18	14.08	3	13	20.65	3825320.73	15.59	57.20	3.0	13.9
mar	20	2458197.75	2	9	12.35	7	41	27.19	3794221.38	15.72	57.68	7.7	14.7
mar	21	2458198.75	3	1	55.87	11	49	57.15	3767032.51	15.84	58.11	14.6	15.5
mar	22	2458199.75	3	56	46.82	15	23	21.02	3743831.11	15.94	58.49	23.3	16.4
mar	23	2458200.75	4	53	50.83	18	6	23.37	3724536.19	16.02	58.81	33.5	17.2
mar	24	2458201.75	5	52	49.56	19	45	37.73	3709177.48	16.10	59.07	44.6	18.2
mar	25	2458202.75	6	52	59.00	20	11	33.18	3698111.21	16.15	59.26	56.0	19.1
mar	26	2458203.75	7	53	17.46	19	20	35.50	3692123.02	16.18	59.38	67.1	20.0
mar	27	2458204.75	8	52	42.31	17	16	10.19	3692339.19	16.19	59.41	77.4	21.0
mar	28	2458205.75	9	50	27.11	14	8	12.33	3700003.33	16.16	59.31	86.3	21.9
mar	29	2458206.75	10	46	10.76	10	11	20.37	3716120.81	16.10	59.09	93.1	22.7
mar	30	2458207.75	11	39	56.42	5	42	39.58	3741090.49	16.00	58.73	97.7	23.6
mar	31	2458208.75	12	32	4.25	0	59	40.53	3774409.47	15.87	58.24	99.9	****
abr	1	2458209.75	13	23	2.82	-3	41	9.26	3814569.72	15.71	57.64	99.5	1.1
abr	2	2458210.75	14	13	21.89	-8	5	18.93	3859128.08	15.53	56.98	96.8	1.9

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α		°	δ	"	dis km	sd "	pax "	fas %	hp h
				m	s								
abr	3	2458211.75	15	3	27.22	-12	0	39.63	3904964.02	15.34	56.31	92.0	2.7
abr	4	2458212.75	15	53	37.10	-15	17	31.04	3948625.15	15.17	55.67	85.7	3.5
abr	5	2458213.75	16	44	0.51	-17	48	37.53	3986716.53	15.02	55.12	78.0	4.2
abr	6	2458214.75	17	34	36.82	-19	28	59.87	4016233.61	14.90	54.68	69.4	5.0
abr	7	2458215.75	18	25	17.47	-20	15	46.41	4034836.23	14.82	54.39	60.3	5.8
abr	8	2458216.75	19	15	49.38	-20	8	4.33	4041036.84	14.79	54.26	50.9	6.6
abr	9	2458217.75	20	5	59.49	-19	6	48.60	4034311.76	14.80	54.31	41.5	7.3
abr	10	2458218.75	20	55	39.21	-17	14	30.64	4015138.30	14.86	54.53	32.3	8.1
abr	11	2458219.75	21	44	47.66	-14	35	8.58	3984976.20	14.96	54.91	23.7	8.8
abr	12	2458220.75	22	33	33.22	-11	14	5.45	3946156.62	15.10	55.42	15.9	9.6
abr	13	2458221.75	23	22	13.50	-7	18	16.13	3901701.21	15.27	56.03	9.3	10.3
abr	14	2458222.75	0	11	14.02	-2	56	25.03	3855059.36	15.45	56.71	4.2	11.1
abr	15	2458223.75	1	1	6.07	1	40	32.75	3809758.53	15.64	57.39	1.0	11.9
abr	16	2458224.75	1	52	23.34	6	19	15.71	3769018.74	15.81	58.03	0.0	12.6
abr	17	2458225.75	2	45	36.90	10	44	0.38	3735382.72	15.96	58.58	1.5	13.5
abr	18	2458226.75	3	41	7.79	14	37	21.89	3710446.38	16.08	59.01	5.5	14.3
abr	19	2458227.75	4	38	57.83	17	41	43.46	3694754.73	16.16	59.30	12.0	15.2
abr	20	2458228.75	5	38	41.79	19	41	36.88	3687925.56	16.20	59.44	20.4	16.2
abr	21	2458229.75	6	39	26.75	20	26	26.18	3688914.97	16.20	59.46	30.5	17.1
abr	22	2458230.75	7	40	3.13	19	52	36.34	3696405.34	16.18	59.36	41.6	18.0
abr	23	2458231.75	8	39	24.49	18	4	5.22	3709158.05	16.13	59.18	53.0	19.0
abr	24	2458232.75	9	36	45.84	15	11	4.79	3726254.96	16.06	58.93	64.2	19.9
abr	25	2458233.75	10	31	51.25	11	27	40.06	3747186.09	15.97	58.61	74.5	20.7
abr	26	2458234.75	11	24	50.54	7	9	33.99	3771767.74	15.87	58.24	83.5	21.5
abr	27	2458235.75	12	16	10.34	2	32	35.49	3799947.96	15.76	57.82	90.8	22.3
abr	28	2458236.75	13	6	24.86	-2	8	10.00	3831541.66	15.63	57.35	96.1	23.1
abr	29	2458237.75	13	56	8.52	-6	38	43.64	3866006.57	15.49	56.85	99.2	23.9
abr	30	2458238.75	14	45	50.67	-10	46	27.67	3902270.32	15.35	56.32	100.0	****
may	1	2458239.75	15	35	51.69	-14	20	21.14	3938701.07	15.20	55.80	98.6	1.4
may	2	2458240.75	16	26	20.48	-17	11	19.37	3973182.12	15.07	55.30	95.3	2.2
may	3	2458241.75	17	17	13.75	-19	12	33.99	4003296.83	14.95	54.87	90.3	2.9
may	4	2458242.75	18	8	17.68	-20	19	49.09	4026567.68	14.86	54.52	83.8	3.7
may	5	2458243.75	18	59	12.34	-20	31	25.68	4040707.41	14.80	54.30	76.2	4.5
may	6	2458244.75	19	49	37.80	-19	48	9.58	4043884.09	14.77	54.21	67.7	5.3
may	7	2458245.75	20	39	20.18	-18	12	45.17	4034927.61	14.79	54.29	58.6	6.1
may	8	2458246.75	21	28	15.91	-15	49	23.72	4013513.23	14.86	54.54	49.1	6.8
may	9	2458247.75	22	16	33.30	-12	43	18.30	3980279.11	14.98	54.96	39.6	7.5
may	10	2458248.75	23	4	32.18	-9	0	35.59	3936898.75	15.13	55.53	30.2	8.3
may	11	2458249.75	23	52	42.11	-4	48	28.77	3886048.62	15.32	56.23	21.4	9.0
may	12	2458250.75	0	41	39.97	0	15	50.38	3831282.42	15.54	57.03	13.5	9.8
may	13	2458251.75	1	32	6.91	4	26	3.42	3776766.79	15.76	57.85	7.0	10.5
may	14	2458252.75	2	24	43.50	9	2	53.42	3726876.02	15.98	58.65	2.4	11.3
may	15	2458253.75	3	20	2.01	13	17	9.45	3685660.83	16.17	59.34	0.2	12.2
may	16	2458254.75	4	18	14.98	16	49	8.74	3656296.40	16.31	59.87	0.6	13.1
may	17	2458255.75	5	19	2.69	19	19	29.35	3640615.21	16.40	60.19	3.8	14.1
may	18	2458256.75	6	21	27.02	20	33	4.21	3638894.34	16.42	60.27	9.6	15.0

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Efemérides a las 0^h del meridiano 90° W.G.

mes	dia	dj	h	α m	s	δ °	"	dis km	sd "	pax "	fas %	hp h	
may	19	2458257.75	7	24	1.16	20	22	51.27	3649946.19	16.39	60.14	17.7	16.0
may	20	2458258.75	8	25	15.52	18	51	35.26	3671503.82	16.30	59.83	27.5	17.0
may	21	2458259.75	9	24	5.54	16	10	19.63	3700772.07	16.18	59.38	38.4	17.9
may	22	2458260.75	10	20	5.22	12	34	54.58	3734952.23	16.04	58.85	49.7	18.7
may	23	2458261.75	11	13	23.56	8	22	27.40	3771647.49	15.88	58.28	60.8	19.6
may	24	2458262.75	12	4	32.28	3	49	13.15	3809076.74	15.73	57.71	71.1	20.4
may	25	2458263.75	12	54	13.39	0	50	11.42	3846070.41	15.57	57.15	80.3	21.1
may	26	2458264.75	13	43	10.02	-5	22	44.50	3881946.66	15.43	56.62	88.0	21.9
may	27	2458265.75	14	32	0.38	-9	36	40.66	3916289.90	15.29	56.11	93.9	22.6
may	28	2458266.75	15	21	13.43	-13	21	18.83	3948716.59	15.16	55.64	97.9	23.4
may	29	2458267.75	16	11	5.58	-16	27	8.53	3978666.36	15.05	55.21	99.8	****
may	30	2458268.75	17	1	38.61	-18	46	13.07	4005288.22	14.94	54.83	99.7	0.9
may	31	2458269.75	17	52	40.01	-20	12	44.63	4027383.04	14.85	54.51	97.8	1.7
jun	1	2458270.75	18	43	46.46	-20	43	34.89	4043482.87	14.79	54.27	94.1	2.5
jun	2	2458271.75	19	34	30.65	-20	18	28.13	4051972.10	14.75	54.13	88.8	3.3
jun	3	2458272.75	20	24	29.27	-18	59	46.10	4051279.74	14.74	54.11	82.2	4.0
jun	4	2458273.75	21	13	29.63	-16	51	50.49	4040102.86	14.77	54.22	74.4	4.8
jun	5	2458274.75	22	1	33.07	-14	0	19.18	4017642.10	14.85	54.48	65.8	5.5
jun	6	2458275.75	22	48	55.14	-10	31	31.93	3983808.50	14.96	54.91	56.4	6.2
jun	7	2458276.75	23	36	3.88	-6	32	19.41	3939423.24	15.12	55.49	46.6	7.0
jun	8	2458277.75	0	23	37.32	-2	10	19.03	3886348.04	15.32	56.22	36.7	7.7
jun	9	2458278.75	1	12	20.70	2	25	25.07	3827528.57	15.55	57.06	27.0	8.4
jun	10	2458279.75	2	3	2.89	7	3	25.16	3766910.66	15.80	57.98	18.0	9.2
jun	11	2458280.75	2	56	30.46	11	28	54.73	3709174.84	16.05	58.90	10.2	10.0
jun	12	2458281.75	3	53	17.21	15	23	30.44	3659262.58	16.28	59.74	4.3	10.9
jun	13	2458282.75	4	53	28.85	18	26	22.05	3621722.07	16.46	60.41	0.8	11.9
jun	14	2458283.75	5	56	27.45	20	17	34.63	3599974.84	16.58	60.85	0.1	12.8
jun	15	2458284.75	7	0	48.26	20	43	18.94	3595713.57	16.62	60.99	2.3	13.8
jun	16	2458285.75	8	4	40.34	19	40	25.00	3608615.14	16.58	60.84	7.4	14.8
jun	17	2458286.75	9	6	24.15	17	17	19.32	3636503.26	16.47	60.43	14.9	15.8
jun	18	2458287.75	10	5	1.65	13	50	46.40	3675883.79	16.30	59.83	24.3	16.7
jun	19	2458288.75	11	0	22.56	9	40	42.72	3722666.19	16.10	59.10	34.8	17.6
jun	20	2458289.75	11	52	52.02	5	6	16.05	3772853.75	15.89	58.32	45.8	18.4
jun	21	2458290.75	12	43	13.81	0	23	54.97	3823035.29	15.68	57.54	56.7	19.2
jun	22	2458291.75	13	32	17.10	-4	12	40.98	3870643.98	15.48	56.82	67.0	19.9
jun	23	2458292.75	14	20	48.18	-8	32	4.97	3913994.10	15.31	56.17	76.4	20.7
jun	24	2458293.75	15	9	25.33	-12	24	20.27	3952158.81	15.15	55.61	84.4	21.4
jun	25	2458294.75	15	58	35.06	-15	40	34.28	3984757.80	15.02	55.14	91.0	22.2
jun	26	2458295.75	16	48	29.28	-18	12	57.98	4011711.10	14.92	54.74	95.8	22.9
jun	27	2458296.75	17	39	3.95	-19	55	10.39	4033002.01	14.83	54.44	98.8	23.7
jun	28	2458297.75	18	30	0.52	-20	42	56.20	4048496.91	14.77	54.21	100.0	****
jun	29	2458298.75	19	20	51.21	-20	34	40.62	4057832.56	14.73	54.06	99.3	1.3
jun	30	2458299.75	20	11	7.08	-19	31	41.46	4060387.47	14.71	54.00	97.0	2.0
jul	1	2458300.75	21	0	26.36	-17	37	50.43	4055337.01	14.73	54.04	92.9	2.8
jul	2	2458301.75	21	48	40.30	-14	58	51.62	4041784.65	14.77	54.19	87.3	3.5
jul	3	2458302.75	22	35	55.38	-11	41	34.19	4018952.84	14.84	54.47	80.3	4.2

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ ‘	“	dis km	sd “	pax “	fas %	hp h
jul	4	2458303.75	23	22	32.41	-7	53	18.45	3986411.14	14.95	54.88	72.2	5.0
jul	5	2458304.75	0	9	4.25	-3	41	45.03	3944311.28	15.10	55.43	63.0	5.7
jul	6	2458305.75	0	56	13.17	0	44	48.66	3893625.52	15.29	56.12	53.0	6.4
jul	7	2458306.75	1	44	48.10	5	16	47.99	3836321.42	15.51	56.94	42.7	7.1
jul	8	2458307.75	2	35	40.72	9	42	24.78	3775457.30	15.76	57.84	32.3	7.9
jul	9	2458308.75	3	29	38.65	13	46	43.38	3715117.68	16.02	58.79	22.4	8.7
jul	10	2458309.75	4	27	13.27	17	11	26.40	3660133.02	16.27	59.70	13.6	9.6
jul	11	2458310.75	5	28	22.56	19	36	17.76	3615557.18	16.48	60.48	6.5	10.6
jul	12	2458311.75	6	32	15.76	20	42	50.05	3585921.92	16.64	61.05	1.9	11.6
jul	13	2458312.75	7	37	14.85	20	19	57.77	3574407.23	16.71	61.33	0.0	12.6
jul	14	2458313.75	8	41	22.42	18	28	24.04	3582195.41	16.70	61.28	1.2	13.6
jul	15	2458314.75	9	43	2.59	15	20	48.92	3608216.80	16.60	60.91	5.4	14.6
jul	16	2458315.75	10	41	27.39	11	17	32.79	3649411.41	16.42	60.27	12.0	15.5
jul	17	2458316.75	11	36	36.73	6	40	56.55	3701388.84	16.20	59.46	20.7	16.3
jul	18	2458317.75	12	29	2.51	1	51	18.37	3759251.88	15.96	58.56	30.6	17.1
jul	19	2458318.75	13	19	31.25	-2	54	44.11	3818338.16	15.71	57.65	41.1	17.9
jul	20	2458319.75	14	8	51.73	-7	24	6.31	3874736.76	15.48	56.79	51.8	18.7
jul	21	2458320.75	14	57	47.59	-11	26	26.48	3925547.28	15.27	56.03	62.0	19.4
jul	22	2458321.75	15	46	52.77	-14	53	13.19	3968913.42	15.09	55.39	71.5	20.2
jul	23	2458322.75	16	36	28.26	-17	37	13.59	4003916.98	14.95	54.88	79.9	20.9
jul	24	2458323.75	17	26	40.06	-19	32	28.76	4030362.46	14.85	54.49	87.1	21.7
jul	25	2458324.75	18	17	19.10	-20	34	33.90	4048543.60	14.77	54.21	92.8	22.5
jul	26	2458325.75	19	8	4.28	-20	41	10.94	4058997.45	14.73	54.05	96.9	23.3
jul	27	2458326.75	19	58	28.74	-19	52	34.85	4062274.82	14.71	53.98	99.3	****
jul	28	2458327.75	20	48	7.81	-18	11	38.44	4058798.58	14.72	54.00	100.0	0.8
jul	29	2458328.75	21	36	46.02	-15	43	31.88	4048747.44	14.75	54.12	98.9	1.6
jul	30	2458329.75	22	24	21.22	-12	35	3.71	4032057.42	14.80	54.32	96.0	2.3
jul	31	2458330.75	23	11	5.35	-8	54	1.37	4008488.44	14.88	54.61	91.4	3.0
ago	1	2458331.75	23	57	23.00	-4	48	43.56	3977776.07	14.99	55.01	85.2	3.7
ago	2	2458332.75	0	43	49.09	0	27	52.48	3939834.13	15.13	55.51	77.5	4.4
ago	3	2458333.75	1	31	6.37	3	59	11.35	3895008.93	15.29	56.12	68.5	5.1
ago	4	2458334.75	2	20	2.49	8	21	55.08	3844321.28	15.49	56.84	58.6	5.9
ago	5	2458335.75	3	11	25.59	12	27	49.79	3789669.57	15.71	57.65	47.9	6.7
ago	6	2458336.75	4	5	56.50	16	1	55.75	3733946.44	15.94	58.51	37.0	7.5
ago	7	2458337.75	5	3	56.19	18	46	53.08	3680976.71	16.18	59.37	26.5	8.4
ago	8	2458338.75	6	5	10.28	20	24	47.84	3635228.76	16.39	60.15	16.9	9.4
ago	9	2458339.75	7	8	39.18	20	40	58.79	3601279.45	16.56	60.77	8.9	10.4
ago	10	2458340.75	8	12	46.48	19	28	47.84	3583064.39	16.66	61.15	3.2	11.4
ago	11	2458341.75	9	15	48.50	16	52	54.17	3583082.32	16.68	61.23	0.3	12.4
ago	12	2458342.75	10	16	28.35	13	8	33.62	3601821.05	16.62	60.99	0.4	13.3
ago	13	2458343.75	11	14	13.22	8	37	25.45	3637594.68	16.47	60.45	3.5	14.2
ago	14	2458344.75	12	9	10.08	3	42	26.90	3686853.06	16.26	59.69	9.1	15.0
ago	15	2458345.75	13	1	50.70	-1	15	45.03	3744876.59	16.02	58.79	16.7	15.9
ago	16	2458346.75	13	52	56.97	-6	0	26.24	3806562.35	15.76	57.84	25.8	16.6
ago	17	2458347.75	14	43	10.62	-10	18	44.66	3867127.98	15.51	56.92	35.7	17.4
ago	18	2458348.75	15	33	6.80	-14	0	55.65	3922596.30	15.28	56.09	45.9	18.2

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	δ °	"	dis km	sd "	pax "	fas %	hp h	
ago	19	2458349.75	16	23	10.19	-16	59	33.36	3970039.51	15.09	55.39	56.0	18.9
ago	20	2458350.75	17	13	32.69	-19	8	58.59	4007641.84	14.94	54.83	65.5	19.7
ago	21	2458351.75	18	4	12.80	-20	25	10.31	4034604.66	14.83	54.43	74.3	20.5
ago	22	2458352.75	18	54	57.44	-20	45	55.63	4050986.10	14.76	54.17	82.2	21.3
ago	23	2458353.75	19	45	26.46	-20	11	6.45	4057475.50	14.73	54.05	88.8	22.1
ago	24	2458354.75	20	35	18.90	-18	42	50.11	4055156.69	14.73	54.06	94.0	22.8
ago	25	2458355.75	21	24	19.35	-16	25	24.83	4045288.34	14.76	54.16	97.7	23.6
ago	26	2458356.75	22	12	22.45	-13	25	0.30	4029075.28	14.81	54.36	99.7	****
ago	27	2458357.75	22	59	34.71	-9	49	11.26	4007531.52	14.89	54.63	99.8	1.0
ago	28	2458358.75	23	46	14.10	-5	46	32.46	3981386.03	14.98	54.98	98.1	1.7
ago	29	2458359.75	0	32	48.40	-1	26	23.26	3951081.46	15.09	55.38	94.5	2.5
ago	30	2458360.75	1	19	52.90	3	1	15.74	3916863.89	15.22	55.85	89.0	3.2
ago	31	2458361.75	2	8	7.87	7	25	32.19	3878946.65	15.36	56.38	81.8	3.9
sep	1	2458362.75	2	58	15.01	11	34	22.96	3837752.50	15.53	56.98	73.1	4.7
sep	2	2458363.75	3	50	51.88	15	14	15.91	3794146.62	15.70	57.62	63.1	5.5
sep	3	2458364.75	4	46	23.29	18	10	13.41	3749655.52	15.89	58.30	52.3	6.3
sep	4	2458365.75	5	44	50.11	20	6	45.82	3706591.20	16.07	58.99	41.1	7.3
sep	5	2458366.75	6	45	39.83	20	50	3.52	3667999.81	16.25	59.63	30.1	8.2
sep	6	2458367.75	7	47	46.92	20	11	14.33	3637406.41	16.40	60.17	20.0	9.2
sep	7	2458368.75	8	49	48.58	18	9	33.87	3618334.69	16.50	60.54	11.4	10.1
sep	8	2458369.75	9	50	30.23	14	53	41.55	3613666.00	16.54	60.69	4.9	11.1
sep	9	2458370.75	10	49	6.06	10	40	11.24	3625001.25	16.50	60.56	1.0	12.0
sep	10	2458371.75	11	45	24.40	5	50	6.87	3652201.51	16.40	60.17	0.0	12.9
sep	11	2458372.75	12	39	40.37	0	45	19.69	3693309.91	16.23	59.55	1.9	13.7
sep	12	2458373.75	13	32	23.81	-4	14	16.10	3744832.59	16.01	58.77	6.2	14.5
sep	13	2458374.75	14	24	8.51	-8	52	8.61	3802312.72	15.77	57.89	12.7	15.3
sep	14	2458375.75	15	15	24.67	-12	55	26.80	3860991.28	15.53	57.01	20.7	16.1
sep	15	2458376.75	16	6	34.03	-16	14	42.01	3916399.61	15.31	56.18	29.7	16.9
sep	16	2458377.75	16	57	47.32	-18	43	17.21	3964794.04	15.11	55.46	39.3	17.7
sep	17	2458378.75	17	49	3.77	-20	17	2.03	4003413.41	14.96	54.89	49.1	18.5
sep	18	2458379.75	18	40	12.94	-20	53	58.17	4030565.65	14.85	54.48	58.6	19.3
sep	19	2458380.75	19	30	58.73	-20	34	11.61	4045606.41	14.78	54.24	67.8	20.0
sep	20	2458381.75	20	21	4.81	-19	19	45.88	4048839.00	14.76	54.16	76.2	20.8
sep	21	2458382.75	21	10	19.71	-17	14	32.37	4041337.10	14.78	54.22	83.7	21.6
sep	22	2458383.75	21	58	40.55	-14	23	56.72	4024740.56	14.83	54.42	90.1	22.3
sep	23	2458384.75	22	46	14.50	-10	54	46.41	4001028.97	14.91	54.72	95.1	23.0
sep	24	2458385.75	23	33	18.50	-6	55	1.67	3972271.85	15.01	55.10	98.4	23.8
sep	25	2458386.75	0	20	17.83	-2	33	52.92	3940401.77	15.13	55.53	99.9	****
sep	26	2458387.75	1	7	44.08	1	58	17.87	3907039.86	15.26	56.00	99.4	1.2
sep	27	2458388.75	1	56	12.68	6	29	53.56	3873372.26	15.39	56.49	96.8	1.9
sep	28	2458389.75	2	46	19.50	10	47	58.91	3840164.45	15.52	56.97	92.0	2.7
sep	29	2458390.75	3	38	35.80	14	38	27.48	3807835.84	15.66	57.46	85.3	3.5
sep	30	2458391.75	4	33	21.07	17	46	26.98	3776671.44	15.79	57.94	76.7	4.4
oct	1	2458392.75	5	30	34.41	19	57	21.34	3747060.93	15.91	58.40	66.8	5.2
oct	2	2458393.75	6	29	48.09	20	58	37.93	3719727.98	16.03	58.84	55.9	6.2
oct	3	2458394.75	7	30	8.71	20	42	7.86	3695897.27	16.14	59.24	44.6	7.1

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Efermídes a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α		δ		dis	sd	pax	fas	hp	
				m	s	°	'	km	"	"	%	h	
oct	4	2458395.75	8	30	29.45	19	6	13.05	3677305.43	16.23	59.56	33.4	8.0
oct	5	2458396.75	9	29	49.46	16	16	38.58	3666043.98	16.29	59.78	22.9	9.0
oct	6	2458397.75	10	27	29.92	12	25	47.28	3664218.53	16.31	59.85	13.9	9.9
oct	7	2458398.75	11	23	19.72	7	50	40.51	3673483.86	16.28	59.75	6.8	10.7
oct	8	2458399.75	12	17	30.90	2	50	37.69	3694582.52	16.20	59.45	2.2	11.6
oct	9	2458400.75	13	10	29.27	-2	14	49.30	3727027.73	16.07	58.98	0.1	12.4
oct	10	2458401.75	14	2	44.94	-7	7	32.27	3769010.10	15.90	58.35	0.7	13.2
oct	11	2458402.75	14	54	44.74	-11	31	50.70	3817564.13	15.70	57.63	3.7	14.0
oct	12	2458403.75	15	46	46.75	-15	15	7.95	3868960.49	15.50	56.87	8.8	14.8
oct	13	2458404.75	16	38	57.31	-18	8	6.99	3919170.90	15.29	56.13	15.6	15.6
oct	14	2458405.75	17	31	10.50	-20	4	50.67	3964341.88	15.11	55.46	23.5	16.4
oct	15	2458406.75	18	23	10.66	-21	2	31.41	4001161.56	14.96	54.92	32.3	17.2
oct	16	2458407.75	19	14	37.61	-21	1	11.09	4027127.67	14.86	54.53	41.6	18.0
oct	17	2458408.75	20	5	12.94	-20	3	11.47	4040708.15	14.80	54.30	51.1	18.8
oct	18	2458409.75	20	54	45.49	-18	12	39.46	4041394.10	14.78	54.25	60.4	19.5
oct	19	2458410.75	21	43	14.55	-15	34	56.22	4029676.03	14.81	54.37	69.4	20.3
oct	20	2458411.75	22	30	50.53	-12	16	16.88	4006963.88	14.89	54.64	77.8	21.0
oct	21	2458412.75	23	17	53.91	-8	23	46.27	3975427.87	15.00	55.04	85.3	21.7
oct	22	2458413.75	0	4	53.17	-4	5	30.32	3937784.21	15.14	55.55	91.6	22.4
oct	23	2458414.75	0	52	22.64	0	29	2.47	3897031.73	15.29	56.12	96.4	23.2
oct	24	2458415.75	1	40	59.81	5	8	35.98	3856135.97	15.45	56.72	99.2	23.9
oct	25	2458416.75	2	31	21.77	9	39	50.36	3817724.26	15.61	57.30	100.0	****
oct	26	2458417.75	3	23	59.77	13	47	26.56	3783814.47	15.76	57.83	98.3	1.5
oct	27	2458418.75	4	19	11.22	17	14	48.75	3755658.14	15.88	58.28	94.3	2.3
oct	28	2458419.75	5	16	50.55	19	45	37.30	3733743.66	15.98	58.65	88.0	3.2
oct	29	2458420.75	6	16	22.96	21	6	11.60	3717922.08	16.05	58.92	79.8	4.2
oct	30	2458421.75	7	16	47.56	21	8	9.10	3707688.87	16.10	59.10	69.9	5.1
oct	31	2458422.75	8	16	52.61	19	50	17.74	3702502.34	16.13	59.20	59.1	6.0
nov	1	2458423.75	9	15	36.86	17	18	43.94	3702043.73	16.14	59.23	47.7	7.0
nov	2	2458424.75	10	12	25.47	13	45	21.04	3706373.19	16.13	59.18	36.4	7.8
nov	3	2458425.75	11	7	13.58	9	25	33.44	3715927.28	16.09	59.05	25.9	8.7
nov	4	2458426.75	12	0	20.01	4	36	18.96	3731345.85	16.03	58.83	16.6	9.5
nov	5	2458427.75	12	52	17.15	0	25	8.76	3753182.96	15.95	58.52	9.1	10.3
nov	6	2458428.75	13	43	41.35	-5	22	5.87	3781585.95	15.83	58.10	3.7	11.1
nov	7	2458429.75	14	35	5.20	-9	58	52.07	3816026.84	15.70	57.60	0.7	11.9
nov	8	2458430.75	15	26	51.54	-14	1	25.16	3855156.94	15.54	57.03	0.1	12.7
nov	9	2458431.75	16	19	9.12	-17	18	2.24	3896838.46	15.37	56.42	1.7	13.5
nov	10	2458432.75	17	11	50.74	-19	40	1.33	3938323.46	15.21	55.82	5.4	14.3
nov	11	2458433.75	18	4	35.08	-21	2	13.58	3976537.84	15.06	55.27	10.8	15.1
nov	12	2458434.75	18	56	52.86	-21	23	11.91	4008405.12	14.93	54.81	17.5	15.9
nov	13	2458435.75	19	48	15.37	-20	44	48.35	4031172.16	14.84	54.46	25.4	16.7
nov	14	2458436.75	20	38	22.77	-19	11	25.06	4042676.64	14.79	54.27	34.1	17.5
nov	15	2458437.75	21	27	8.96	-16	48	55.32	4041554.20	14.78	54.24	43.2	18.2
nov	16	2458438.75	22	14	42.63	-13	43	54.91	4027388.67	14.82	54.39	52.7	19.0
nov	17	2458439.75	23	1	25.55	-10	3	17.10	4000788.58	14.91	54.71	62.1	19.7
nov	18	2458440.75	23	47	49.66	-5	54	14.71	3963393.62	15.04	55.19	71.3	20.4

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	δ °	"	dis km	sd "	pax "	fas %	hp h	
nov	19	2458441.75	0	34	34.32	-1	24	46.37	3917803.71	15.21	55.80	79.8	21.1
nov	20	2458442.75	1	22	23.55	3	15	39.93	3867414.06	15.40	56.52	87.4	21.8
nov	21	2458443.75	2	12	2.77	7	55	18.34	3816132.60	15.61	57.27	93.6	22.6
nov	22	2458444.75	3	4	13.42	12	19	29.19	3767991.17	15.81	58.02	97.9	23.4
nov	23	2458445.75	3	59	24.14	16	10	43.15	3726676.02	15.99	58.69	99.9	****
nov	24	2458446.75	4	57	38.42	19	9	59.87	3695055.54	16.14	59.23	99.4	1.1
nov	25	2458447.75	5	58	23.09	20	59	42.73	3674816.07	16.24	59.60	96.2	2.1
nov	26	2458448.75	7	0	27.04	21	27	38.17	3666311.49	16.29	59.78	90.5	3.1
nov	27	2458449.75	8	2	17.99	20	30	17.81	3668673.40	16.29	59.79	82.5	4.0
nov	28	2458450.75	9	2	32.04	18	13	45.25	3680158.62	16.25	59.63	72.9	5.0
nov	29	2458451.75	10	0	18.42	14	51	22.14	3698632.50	16.17	59.36	62.1	5.9
nov	30	2458452.75	10	55	26.38	10	40	11.64	3722024.73	16.08	59.00	50.8	6.7
dic	1	2458453.75	11	48	17.02	5	57	55.54	3748664.23	15.97	58.59	39.5	7.5
dic	2	2458454.75	12	39	29.66	1	1	17.84	3777440.67	15.85	58.16	29.0	8.3
dic	3	2458455.75	13	29	49.91	-3	54	19.96	3807762.57	15.72	57.70	19.6	9.1
dic	4	2458456.75	14	20	0.88	-8	34	50.43	3839380.74	15.59	57.23	11.8	9.9
dic	5	2458457.75	15	10	36.85	-12	47	10.62	3872131.73	15.46	56.75	5.8	10.6
dic	6	2458458.75	16	1	57.94	-16	19	31.59	3905668.68	15.33	56.26	1.9	11.4
dic	7	2458459.75	16	54	6.39	-19	1	53.12	3939260.50	15.20	55.78	0.1	12.2
dic	8	2458460.75	17	46	45.63	-20	46	55.92	3971685.03	15.07	55.32	0.4	13.0
dic	9	2458461.75	18	39	24.31	-21	30	50.60	4001245.90	14.96	54.90	2.7	13.9
dic	10	2458462.75	19	31	24.99	-21	13	38.30	4025888.84	14.86	54.54	6.7	14.7
dic	11	2458463.75	20	22	15.12	-19	58	48.29	4043409.24	14.79	54.28	12.2	15.4
dic	12	2458464.75	21	11	35.76	-17	52	18.00	4051697.87	14.75	54.14	19.0	16.2
dic	13	2458465.75	21	59	25.42	-15	1	22.11	4048998.28	14.75	54.14	26.9	16.9
dic	14	2458466.75	22	45	59.46	-11	33	35.70	4034154.41	14.79	54.30	35.7	17.6
dic	15	2458467.75	23	31	46.94	-7	36	26.97	4006828.47	14.88	54.62	45.0	18.3
dic	16	2458468.75	0	17	27.15	-3	17	22.25	3967659.17	15.02	55.12	54.7	19.0
dic	17	2458469.75	1	3	46.71	1	15	40.97	3918389.07	15.20	55.78	64.5	19.7
dic	18	2458470.75	1	51	36.91	5	53	20.22	3861871.43	15.42	56.57	73.9	20.5
dic	19	2458471.75	2	41	50.02	10	23	44.53	3801974.95	15.66	57.45	82.7	21.2
dic	20	2458472.75	3	35	12.31	14	31	42.09	3743321.46	15.90	58.36	90.1	22.1
dic	21	2458473.75	4	32	12.05	17	58	37.39	3690831.61	16.14	59.22	95.8	22.9
dic	22	2458474.75	5	32	42.72	20	24	11.49	3649108.57	16.33	59.94	99.2	23.9
dic	23	2458475.75	6	35	49.54	21	30	21.64	3621732.45	16.47	60.45	99.9	****
dic	24	2458476.75	7	39	53.66	21	6	43.14	3610683.72	16.54	60.71	97.7	1.9
dic	25	2458477.75	8	43	1.53	19	14	20.94	3616031.76	16.53	60.68	92.7	2.9
dic	26	2458478.75	9	43	44.36	16	5	29.44	3636040.08	16.46	60.40	85.3	3.8
dic	27	2458479.75	10	41	21.42	11	59	21.05	3667651.17	16.33	59.92	76.0	4.7
dic	28	2458480.75	11	35	58.21	7	17	1.70	3707166.43	16.16	59.31	65.4	5.6
dic	29	2458481.75	12	28	10.44	2	18	4.68	3750920.37	15.97	58.62	54.3	6.4
dic	30	2458482.75	13	18	47.21	-2	40	45.67	3795786.39	15.79	57.93	43.2	7.1
dic	31	2458483.75	14	8	39.05	-7	25	25.30	3839444.18	15.60	57.26	32.7	7.9
ene	1	2458484.75	14	58	30.02	-11	43	49.45	3880421.48	15.44	56.65	23.2	8.7
ene	2	2458485.75	15	48	52.25	-15	25	19.69	3917960.45	15.28	56.09	15.1	9.4

Mercurio, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
ene	1	2458119.75	17	9	24.80	-20	56	54.70	1.0038	10.4
ene	2	2458120.75	17	13	38.57	-21	10	25.59	1.0241	10.4
ene	3	2458121.75	17	18	6.86	-21	23	52.62	1.0439	10.4
ene	4	2458122.75	17	22	48.23	-21	37	6.98	1.0632	10.5
ene	5	2458123.75	17	27	41.38	-21	50	0.84	1.0819	10.5
ene	6	2458124.75	17	32	45.19	-22	2	27.27	1.1000	10.5
ene	7	2458125.75	17	37	58.63	-22	14	20.14	1.1176	10.5
ene	8	2458126.75	17	43	20.82	-22	25	34.03	1.1347	10.5
ene	9	2458127.75	17	48	50.96	-22	36	4.11	1.1511	10.6
ene	10	2458128.75	17	54	28.32	-22	45	46.13	1.1670	10.6
ene	11	2458129.75	18	0	12.28	-22	54	36.29	1.1823	10.6
ene	12	2458130.75	18	6	2.26	-23	2	31.19	1.1971	10.7
ene	13	2458131.75	18	11	57.76	-23	9	27.82	1.2113	10.7
ene	14	2458132.75	18	17	58.30	-23	15	23.47	1.2249	10.7
ene	15	2458133.75	18	24	3.47	-23	20	15.70	1.2380	10.8
ene	16	2458134.75	18	30	12.90	-23	24	2.31	1.2506	10.8
ene	17	2458135.75	18	36	26.23	-23	26	41.33	1.2626	10.8
ene	18	2458136.75	18	42	43.16	-23	28	10.97	1.2742	10.9
ene	19	2458137.75	18	49	3.39	-23	28	29.59	1.2852	10.9
ene	20	2458138.75	18	55	26.66	-23	27	35.71	1.2957	11.0
ene	21	2458139.75	19	1	52.73	-23	25	27.98	1.3056	11.0
ene	22	2458140.75	19	8	21.39	-23	22	5.16	1.3151	11.0
ene	23	2458141.75	19	14	52.41	-23	17	26.12	1.3241	11.1
ene	24	2458142.75	19	21	25.62	-23	11	29.82	1.3326	11.1
ene	25	2458143.75	19	28	0.85	-23	4	15.30	1.3407	11.2
ene	26	2458144.75	19	34	37.92	-22	55	41.68	1.3482	11.2
ene	27	2458145.75	19	41	16.71	-22	45	48.18	1.3553	11.3
ene	28	2458146.75	19	47	57.06	-22	34	34.03	1.3618	11.3
ene	29	2458147.75	19	54	38.85	-22	21	58.56	1.3680	11.3
ene	30	2458148.75	20	1	21.98	-22	8	1.13	1.3736	11.4
ene	31	2458149.75	20	8	6.32	-21	52	41.15	1.3787	11.4
feb	1	2458150.75	20	14	51.79	-21	35	58.06	1.3834	11.5
feb	2	2458151.75	20	21	38.29	-21	17	51.34	1.3876	11.5
feb	3	2458152.75	20	28	25.75	-20	58	20.53	1.3913	11.6
feb	4	2458153.75	20	35	14.10	-20	37	25.17	1.3945	11.6
feb	5	2458154.75	20	42	3.28	-20	15	4.91	1.3972	11.7
feb	6	2458155.75	20	48	53.23	-19	51	19.38	1.3994	11.7
feb	7	2458156.75	20	55	43.89	-19	26	8.31	1.4010	11.8
feb	8	2458157.75	21	2	35.21	-18	59	31.46	1.4022	11.8
feb	9	2458158.75	21	9	27.16	-18	31	28.65	1.4027	11.9
feb	10	2458159.75	21	16	19.70	-18	1	59.76	1.4027	11.9
feb	11	2458160.75	21	23	12.78	-17	31	4.74	1.4021	12.0
feb	12	2458161.75	21	30	6.37	-16	58	43.63	1.4009	12.0
feb	13	2458162.75	21	37	0.44	-16	24	56.56	1.3991	12.1
feb	14	2458163.75	21	43	54.95	-15	49	43.76	1.3966	12.1
feb	15	2458164.75	21	50	49.85	-15	13	5.63	1.3934	12.2

Mercurio, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	dia	dj	h	α m	s	°	δ "	"	dis UA	hp h
feb	16	2458165.75	21	57	45.10	-14	35	2.70	1.3895	12.2
feb	17	2458166.75	22	4	40.64	-13	55	35.69	1.3849	12.3
feb	18	2458167.75	22	11	36.39	-13	14	45.55	1.3795	12.3
feb	19	2458168.75	22	18	32.28	-12	32	33.52	1.3733	12.4
feb	20	2458169.75	22	25	28.18	-11	49	1.20	1.3662	12.4
feb	21	2458170.75	22	32	23.95	-11	4	10.53	1.3582	12.5
feb	22	2458171.75	22	39	19.42	-10	18	3.92	1.3493	12.5
feb	23	2458172.75	22	46	14.36	-9	30	44.31	1.3395	12.6
feb	24	2458173.75	22	53	8.50	-8	42	15.30	1.3286	12.6
feb	25	2458174.75	23	0	1.50	-7	52	41.18	1.3166	12.7
feb	26	2458175.75	23	6	52.94	-7	2	7.07	1.3036	12.7
feb	27	2458176.75	23	13	42.33	-6	10	39.04	1.2894	12.8
feb	28	2458177.75	23	20	29.07	-5	18	24.20	1.2740	12.8
mar	1	2458178.75	23	27	12.47	-4	25	30.77	1.2575	12.9
mar	2	2458179.75	23	33	51.69	-3	32	8.22	1.2397	12.9
mar	3	2458180.75	23	40	25.80	-2	38	27.31	1.2208	12.9
mar	4	2458181.75	23	46	53.72	-1	44	40.15	1.2006	13.0
mar	5	2458182.75	23	53	14.22	0	51	0.16	1.1792	13.0
mar	6	2458183.75	23	59	25.97	+0	2	17.95	1.1567	13.1
mar	7	2458184.75	0	5	27.49	+0	54	58.31	1.1331	13.1
mar	8	2458185.75	0	11	17.20	+1	46	44.04	1.1086	13.1
mar	9	2458186.75	0	16	53.42	+2	37	17.54	1.0831	13.2
mar	10	2458187.75	0	22	14.42	+3	26	20.67	1.0569	13.2
mar	11	2458188.75	0	27	18.43	+4	13	35.11	1.0301	13.2
mar	12	2458189.75	0	32	3.69	+4	58	42.64	1.0028	13.2
mar	13	2458190.75	0	36	28.48	+5	41	25.43	0.9752	13.2
mar	14	2458191.75	0	40	31.15	+6	21	26.28	0.9475	13.2
mar	15	2458192.75	0	44	10.18	+6	58	28.86	0.9199	13.2
mar	16	2458193.75	0	47	24.17	+7	32	17.87	0.8925	13.2
mar	17	2458194.75	0	50	11.93	+8	2	39.19	0.8655	13.2
mar	18	2458195.75	0	52	32.46	+8	29	19.95	0.8391	13.2
mar	19	2458196.75	0	54	25.00	+8	52	8.69	0.8135	13.1
mar	20	2458197.75	0	55	49.08	+9	10	55.49	0.7888	13.1
mar	21	2458198.75	0	56	44.53	+9	25	32.07	0.7651	13.0
mar	22	2458199.75	0	57	11.51	+9	35	52.10	0.7425	13.0
mar	23	2458200.75	0	57	10.55	+9	41	51.42	0.7213	12.9
mar	24	2458201.75	0	56	42.57	+9	43	28.44	0.7014	12.8
mar	25	2458202.75	0	55	48.92	+9	40	44.45	0.6830	12.8
mar	26	2458203.75	0	54	31.35	+9	33	44.13	0.6661	12.7
mar	27	2458204.75	0	52	52.05	+9	22	35.82	0.6508	12.6
mar	28	2458205.75	0	50	53.59	+9	7	31.86	0.6372	12.5
mar	29	2458206.75	0	48	38.89	+8	48	48.76	0.6252	12.4
mar	30	2458207.75	0	46	11.19	+8	26	47.07	0.6149	12.3
mar	31	2458208.75	0	43	33.92	+8	1	51.21	0.6063	12.2
abr	1	2458209.75	0	40	50.64	+7	34	28.87	0.5994	12.0
abr	2	2458210.75	0	38	4.93	+7	5	10.32	0.5941	11.9

Mercurio, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
abr	3	2458211.75	0	35	20.28	+6	34	27.49	0.5904	11.8
abr	4	2458212.75	0	32	40.01	+6	2	52.95	0.5883	11.7
abr	5	2458213.75	0	30	7.18	+5	30	58.90	0.5877	11.6
abr	6	2458214.75	0	27	44.53	+4	59	16.18	0.5884	11.5
abr	7	2458215.75	0	25	34.43	+4	28	13.49	0.5906	11.4
abr	8	2458216.75	0	23	38.84	+3	58	16.72	0.5940	11.3
abr	9	2458217.75	0	21	59.34	+3	29	48.50	0.5986	11.2
abr	10	2458218.75	0	20	37.14	+3	3	8.04	0.6042	11.1
abr	11	2458219.75	0	19	33.06	+2	38	31.03	0.6109	11.0
abr	12	2458220.75	0	18	47.62	+2	16	9.80	0.6185	11.0
abr	13	2458221.75	0	18	21.06	+1	56	13.56	0.6270	10.9
abr	14	2458222.75	0	18	13.36	+1	38	48.69	0.6363	10.8
abr	15	2458223.75	0	18	24.32	+1	23	59.11	0.6462	10.8
abr	16	2458224.75	0	18	53.57	+1	11	46.66	0.6568	10.7
abr	17	2458225.75	0	19	40.64	+1	2	11.44	0.6680	10.6
abr	18	2458226.75	0	20	44.96	+0	55	12.14	0.6797	10.6
abr	19	2458227.75	0	22	5.90	+0	50	46.34	0.6919	10.5
abr	20	2458228.75	0	23	42.80	+0	48	50.80	0.7045	10.5
abr	21	2458229.75	0	25	34.98	+0	49	21.62	0.7175	10.5
abr	22	2458230.75	0	27	41.76	+0	52	14.48	0.7309	10.4
abr	23	2458231.75	0	30	2.48	+0	57	24.78	0.7446	10.4
abr	24	2458232.75	0	32	36.49	+1	4	47.75	0.7586	10.4
abr	25	2458233.75	0	35	23.19	+1	14	18.53	0.7728	10.4
abr	26	2458234.75	0	38	22.01	+1	25	52.26	0.7873	10.4
abr	27	2458235.75	0	41	32.41	+1	39	24.14	0.8020	10.3
abr	28	2458236.75	0	44	53.88	+1	54	49.44	0.8169	10.3
abr	29	2458237.75	0	48	25.99	+2	12	3.53	0.8320	10.3
abr	30	2458238.75	0	52	8.32	+2	31	1.89	0.8473	10.3
may	1	2458239.75	0	56	0.50	+2	51	40.14	0.8627	10.3
may	2	2458240.75	1	0	2.21	+3	13	54.00	0.8782	10.3
may	3	2458241.75	1	4	13.15	+3	37	39.35	0.8939	10.3
may	4	2458242.75	1	8	33.09	+4	2	52.15	0.9097	10.3
may	5	2458243.75	1	13	1.82	+4	29	28.49	0.9256	10.3
may	6	2458244.75	1	17	39.17	+4	57	24.55	0.9416	10.4
may	7	2458245.75	1	22	25.03	+5	26	36.58	0.9576	10.4
may	8	2458246.75	1	27	19.30	+5	57	0.93	0.9738	10.4
may	9	2458247.75	1	32	21.93	+6	28	33.94	0.9899	10.4
may	10	2458248.75	1	37	32.91	+7	1	12.04	1.0061	10.4
may	11	2458249.75	1	42	52.27	+7	34	51.60	1.0224	10.4
may	12	2458250.75	1	48	20.05	+8	9	29.01	1.0386	10.5
may	13	2458251.75	1	53	56.33	+8	45	0.57	1.0548	10.5
may	14	2458252.75	1	59	41.25	+9	21	22.51	1.0710	10.5
may	15	2458253.75	2	5	34.94	+9	58	30.94	1.0871	10.6
may	16	2458254.75	2	11	37.58	+10	36	21.80	1.1031	10.6
may	17	2458255.75	2	17	49.36	+11	14	50.83	1.1190	10.6
may	18	2458256.75	2	24	10.50	+11	53	53.50	1.1347	10.7

Mercurio, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	dia	dj	h	α m	s	°	δ "	"	dis UA	hp h
may	19	2458257.75	2	30	41.23	+12	33	25.01	1.1502	10.7
may	20	2458258.75	2	37	21.80	+13	13	20.17	1.1655	10.8
may	21	2458259.75	2	44	12.46	+13	53	33.41	1.1805	10.8
may	22	2458260.75	2	51	13.46	+14	33	58.70	1.1952	10.9
may	23	2458261.75	2	58	25.06	+15	14	29.47	1.2094	10.9
may	24	2458262.75	3	5	47.48	+15	54	58.58	1.2232	11.0
may	25	2458263.75	3	13	20.91	+16	35	18.28	1.2364	11.0
may	26	2458264.75	3	21	5.49	+17	15	20.10	1.2490	11.1
may	27	2458265.75	3	29	1.31	+17	54	54.92	1.2609	11.2
may	28	2458266.75	3	37	8.36	+18	33	52.87	1.2720	11.2
may	29	2458267.75	3	45	26.54	+19	12	3.41	1.2822	11.3
may	30	2458268.75	3	53	55.62	+19	49	15.40	1.2914	11.4
may	31	2458269.75	4	2	35.24	+20	25	17.13	1.2995	11.5
jun	1	2458270.75	4	11	24.89	+20	59	56.55	1.3066	11.5
jun	2	2458271.75	4	20	23.88	+21	33	1.45	1.3123	11.6
jun	3	2458272.75	4	29	31.36	+22	4	19.67	1.3168	11.7
jun	4	2458273.75	4	38	46.31	+22	33	39.41	1.3199	11.8
jun	5	2458274.75	4	48	7.57	+23	0	49.59	1.3216	11.9
jun	6	2458275.75	4	57	33.82	+23	25	40.06	1.3218	12.0
jun	7	2458276.75	5	7	3.64	+23	48	1.64	1.3206	12.1
jun	8	2458277.75	5	16	35.51	+24	7	47.21	1.3180	12.2
jun	9	2458278.75	5	26	7.91	+24	24	50.95	1.3139	12.3
jun	10	2458279.75	5	35	39.29	+24	39	8.91	1.3085	12.4
jun	11	2458280.75	5	45	8.14	+24	50	38.96	1.3017	12.5
jun	12	2458281.75	5	54	33.02	+24	59	20.74	1.2938	12.5
jun	13	2458282.75	6	3	52.57	+25	5	15.54	1.2847	12.6
jun	14	2458283.75	6	13	5.56	+25	8	26.18	1.2745	12.7
jun	15	2458284.75	6	22	10.87	+25	8	56.76	1.2634	12.8
jun	16	2458285.75	6	31	7.53	+25	6	52.45	1.2514	12.9
jun	17	2458286.75	6	39	54.69	+25	2	19.31	1.2386	13.0
jun	18	2458287.75	6	48	31.65	+24	55	24.07	1.2251	13.0
jun	19	2458288.75	6	56	57.80	+24	46	13.92	1.2110	13.1
jun	20	2458289.75	7	5	12.67	+24	34	56.42	1.1964	13.2
jun	21	2458290.75	7	13	15.88	+24	21	39.26	1.1814	13.3
jun	22	2458291.75	7	21	7.15	+24	6	30.26	1.1660	13.3
jun	23	2458292.75	7	28	46.24	+23	49	37.19	1.1502	13.4
jun	24	2458293.75	7	36	13.02	+23	31	7.75	1.1343	13.4
jun	25	2458294.75	7	43	27.37	+23	11	9.51	1.1181	13.5
jun	26	2458295.75	7	50	29.22	+22	49	49.85	1.1017	13.6
jun	27	2458296.75	7	57	18.54	+22	27	15.99	1.0853	13.6
jun	28	2458297.75	8	3	55.31	+22	3	34.93	1.0687	13.6
jun	29	2458298.75	8	10	19.53	+21	38	53.46	1.0521	13.7
jun	30	2458299.75	8	16	31.20	+21	13	18.21	1.0355	13.7
jul	1	2458300.75	8	22	30.34	+20	46	55.59	1.0189	13.8
jul	2	2458301.75	8	28	16.95	+20	19	51.84	1.0024	13.8
jul	3	2458302.75	8	33	51.02	+19	52	13.08	0.9858	13.8

Mercurio, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
jul	4	2458303.75	8	39	12.53	+19	24	5.26	0.9694	13.8
jul	5	2458304.75	8	44	21.46	+18	55	34.25	0.9530	13.9
jul	6	2458305.75	8	49	17.76	+18	26	45.82	0.9368	13.9
jul	7	2458306.75	8	54	1.34	+17	57	45.69	0.9206	13.9
jul	8	2458307.75	8	58	32.11	+17	28	39.53	0.9046	13.9
jul	9	2458308.75	9	2	49.95	+16	59	33.03	0.8887	13.9
jul	10	2458309.75	9	6	54.70	+16	30	31.89	0.8730	13.9
jul	11	2458310.75	9	10	46.16	+16	1	41.87	0.8574	13.9
jul	12	2458311.75	9	14	24.13	+15	33	8.81	0.8420	13.9
jul	13	2458312.75	9	17	48.34	+15	4	58.63	0.8269	13.9
jul	14	2458313.75	9	20	58.50	+14	37	17.41	0.8119	13.9
jul	15	2458314.75	9	23	54.29	+14	10	11.36	0.7971	13.9
jul	16	2458315.75	9	26	35.36	+13	43	46.84	0.7826	13.8
jul	17	2458316.75	9	29	1.33	+13	18	10.41	0.7684	13.8
jul	18	2458317.75	9	31	11.80	+12	53	28.83	0.7545	13.8
jul	19	2458318.75	9	33	6.36	+12	29	49.07	0.7408	13.8
jul	20	2458319.75	9	34	44.56	+12	7	18.30	0.7275	13.7
jul	21	2458320.75	9	36	5.98	+11	46	3.90	0.7146	13.7
jul	22	2458321.75	9	37	10.18	+11	26	13.42	0.7021	13.6
jul	23	2458322.75	9	37	56.76	+11	7	54.55	0.6900	13.6
jul	24	2458323.75	9	38	25.36	+10	51	15.06	0.6784	13.5
jul	25	2458324.75	9	38	35.65	+10	36	22.69	0.6673	13.4
jul	26	2458325.75	9	38	27.40	+10	23	25.11	0.6568	13.4
jul	27	2458326.75	9	38	0.48	+10	12	29.69	0.6469	13.3
jul	28	2458327.75	9	37	14.92	+10	3	43.40	0.6377	13.2
jul	29	2458328.75	9	36	10.88	+9	57	12.60	0.6293	13.1
jul	30	2458329.75	9	34	48.75	+9	53	2.75	0.6216	13.1
jul	31	2458330.75	9	33	9.15	+9	51	18.22	0.6149	13.0
ago	1	2458331.75	9	31	12.98	+9	52	1.98	0.6090	12.9
ago	2	2458332.75	9	29	1.44	+9	55	15.31	0.6042	12.8
ago	3	2458333.75	9	26	36.03	+10	0	57.55	0.6005	12.7
ago	4	2458334.75	9	23	58.64	+10	9	5.86	0.5979	12.5
ago	5	2458335.75	9	21	11.44	+10	19	35.03	0.5966	12.4
ago	6	2458336.75	9	18	16.96	+10	32	17.42	0.5966	12.3
ago	7	2458337.75	9	15	18.01	+10	47	2.90	0.5979	12.2
ago	8	2458338.75	9	12	17.65	+11	3	39.03	0.6007	12.1
ago	9	2458339.75	9	9	19.14	+11	21	51.20	0.6049	12.0
ago	10	2458340.75	9	6	25.84	+11	41	22.99	0.6106	11.9
ago	11	2458341.75	9	3	41.15	+12	1	56.53	0.6179	11.8
ago	12	2458342.75	9	1	8.42	+12	23	12.94	0.6268	11.6
ago	13	2458343.75	8	58	50.90	+12	44	52.79	0.6372	11.5
ago	14	2458344.75	8	56	51.60	+13	6	36.51	0.6492	11.4
ago	15	2458345.75	8	55	13.32	+13	28	4.77	0.6628	11.3
ago	16	2458346.75	8	53	58.52	+13	48	58.80	0.6779	11.3
ago	17	2458347.75	8	53	9.32	+14	9	0.64	0.6945	11.2
ago	18	2458348.75	8	52	47.47	+14	27	53.27	0.7125	11.1

Mercurio, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	dia	dj	h	α m	s	°	δ "	"	dis UA	hp h
ago	19	2458349.75	8	52	54.36	+14	45	20.67	0.7320	11.0
ago	20	2458350.75	8	53	31.00	+15	1	7.90	0.7527	11.0
ago	21	2458351.75	8	54	38.04	+15	15	1.08	0.7747	10.9
ago	22	2458352.75	8	56	15.78	+15	26	47.34	0.7978	10.9
ago	23	2458353.75	8	58	24.20	+15	36	14.83	0.8220	10.9
ago	24	2458354.75	9	1	2.95	+15	43	12.76	0.8471	10.9
ago	25	2458355.75	9	4	11.41	+15	47	31.40	0.8730	10.8
ago	26	2458356.75	9	7	48.65	+15	49	2.14	0.8995	10.8
ago	27	2458357.75	9	11	53.50	+15	47	37.68	0.9265	10.8
ago	28	2458358.75	9	16	24.56	+15	43	12.08	0.9538	10.8
ago	29	2458359.75	9	21	20.19	+15	35	41.01	0.9813	10.9
ago	30	2458360.75	9	26	38.56	+15	25	1.84	1.0087	10.9
ago	31	2458361.75	9	32	17.68	+15	11	13.82	1.0360	10.9
sep	1	2458362.75	9	38	15.45	+14	54	18.17	1.0630	10.9
sep	2	2458363.75	9	44	29.65	+14	34	18.09	1.0893	11.0
sep	3	2458364.75	9	50	58.06	+14	11	18.79	1.1151	11.0
sep	4	2458365.75	9	57	38.43	+13	45	27.26	1.1400	11.1
sep	5	2458366.75	10	4	28.59	+13	16	52.18	1.1639	11.1
sep	6	2458367.75	10	11	26.47	+12	45	43.60	1.1868	11.2
sep	7	2458368.75	10	18	30.12	+12	12	12.63	1.2086	11.2
sep	8	2458369.75	10	25	37.76	+11	36	31.14	1.2292	11.3
sep	9	2458370.75	10	32	47.79	+10	58	51.41	1.2486	11.3
sep	10	2458371.75	10	39	58.82	+10	19	25.84	1.2667	11.4
sep	11	2458372.75	10	47	9.64	+9	38	26.68	1.2836	11.4
sep	12	2458373.75	10	54	19.25	+8	56	5.83	1.2992	11.5
sep	13	2458374.75	11	1	26.80	+8	12	34.66	1.3136	11.5
sep	14	2458375.75	11	8	31.64	+7	28	3.87	1.3267	11.6
sep	15	2458376.75	11	15	33.25	+6	42	43.46	1.3387	11.6
sep	16	2458377.75	11	22	31.24	+5	56	42.66	1.3496	11.7
sep	17	2458378.75	11	29	25.33	+5	10	9.91	1.3593	11.7
sep	18	2458379.75	11	36	15.35	+4	23	12.90	1.3680	11.8
sep	19	2458380.75	11	43	1.21	+3	35	58.62	1.3758	11.8
sep	20	2458381.75	11	49	42.88	+2	48	33.34	1.3825	11.9
sep	21	2458382.75	11	56	20.39	+2	1	2.69	1.3884	11.9
sep	22	2458383.75	12	2	53.81	+1	13	31.72	1.3934	12.0
sep	23	2458384.75	12	9	23.23	+0	26	5.03	1.3976	12.0
sep	24	2458385.75	12	15	48.80	-0	21	13.31	1.4009	12.1
sep	25	2458386.75	12	22	10.67	-1	8	19.66	1.4036	12.1
sep	26	2458387.75	12	28	29.01	-1	55	10.73	1.4055	12.1
sep	27	2458388.75	12	34	43.99	-2	41	43.59	1.4067	12.2
sep	28	2458389.75	12	40	55.81	-3	27	55.58	1.4073	12.2
sep	29	2458390.75	12	47	4.65	-4	13	44.29	1.4072	12.3
sep	30	2458391.75	12	53	10.70	-4	59	7.54	1.4065	12.3
oct	1	2458392.75	12	59	14.14	-5	44	3.31	1.4052	12.3
oct	2	2458393.75	13	5	15.15	-6	28	29.76	1.4034	12.4
oct	3	2458394.75	13	11	13.91	-7	12	25.18	1.4010	12.4

Mercurio, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
oct	4	2458395.75	13	17	10.59	-7	55	47.95	1.3981	12.4
oct	5	2458396.75	13	23	5.34	-8	38	36.57	1.3946	12.5
oct	6	2458397.75	13	28	58.32	-9	20	49.62	1.3906	12.5
oct	7	2458398.75	13	34	49.67	-10	2	25.71	1.3861	12.5
oct	8	2458399.75	13	40	39.53	-10	43	23.55	1.3812	12.6
oct	9	2458400.75	13	46	28.01	-11	23	41.86	1.3757	12.6
oct	10	2458401.75	13	52	15.25	-12	3	19.40	1.3697	12.6
oct	11	2458402.75	13	58	1.32	-12	42	14.95	1.3633	12.6
oct	12	2458403.75	14	3	46.33	-13	20	27.27	1.3564	12.7
oct	13	2458404.75	14	9	30.33	-13	57	55.16	1.3490	12.7
oct	14	2458405.75	14	15	13.40	-14	34	37.39	1.3412	12.7
oct	15	2458406.75	14	20	55.57	-15	10	32.70	1.3328	12.8
oct	16	2458407.75	14	26	36.87	-15	45	39.85	1.3241	12.8
oct	17	2458408.75	14	32	17.30	-16	19	57.53	1.3148	12.8
oct	18	2458409.75	14	37	56.85	-16	53	24.44	1.3051	12.9
oct	19	2458410.75	14	43	35.49	-17	25	59.22	1.2948	12.9
oct	20	2458411.75	14	49	13.16	-17	57	40.47	1.2841	12.9
oct	21	2458412.75	14	54	49.77	-18	28	26.76	1.2730	12.9
oct	22	2458413.75	15	0	25.21	-18	58	16.58	1.2613	13.0
oct	23	2458414.75	15	5	59.33	-19	27	8.40	1.2492	13.0
oct	24	2458415.75	15	11	31.96	-19	55	0.62	1.2365	13.0
oct	25	2458416.75	15	17	2.87	-20	21	51.56	1.2234	13.0
oct	26	2458417.75	15	22	31.80	-20	47	39.51	1.2098	13.1
oct	27	2458418.75	15	27	58.43	-21	12	22.65	1.1956	13.1
oct	28	2458419.75	15	33	22.39	-21	35	59.10	1.1810	13.1
oct	29	2458420.75	15	38	43.25	-21	58	26.87	1.1658	13.1
oct	30	2458421.75	15	44	0.49	-22	19	43.88	1.1501	13.2
oct	31	2458422.75	15	49	13.53	-22	39	47.96	1.1339	13.2
nov	1	2458423.75	15	54	21.70	-22	58	36.78	1.1172	13.2
nov	2	2458424.75	15	59	24.22	-23	16	7.93	1.1000	13.2
nov	3	2458425.75	16	4	20.21	-23	32	18.82	1.0822	13.2
nov	4	2458426.75	16	9	8.66	-23	47	6.73	1.0640	13.3
nov	5	2458427.75	16	13	48.42	-24	0	28.76	1.0452	13.3
nov	6	2458428.75	16	18	18.18	-24	12	21.79	1.0260	13.3
nov	7	2458429.75	16	22	36.47	-24	22	42.49	1.0064	13.3
nov	8	2458430.75	16	26	41.63	-24	31	27.24	0.9863	13.3
nov	9	2458431.75	16	30	31.78	-24	38	32.10	0.9658	13.3
nov	10	2458432.75	16	34	4.86	-24	43	52.74	0.9450	13.3
nov	11	2458433.75	16	37	18.54	-24	47	24.38	0.9240	13.3
nov	12	2458434.75	16	40	10.28	-24	49	1.72	0.9027	13.2
nov	13	2458435.75	16	42	37.35	-24	48	38.88	0.8813	13.2
nov	14	2458436.75	16	44	36.78	-24	46	9.29	0.8599	13.2
nov	15	2458437.75	16	46	5.48	-24	41	25.70	0.8387	13.1
nov	16	2458438.75	16	47	0.30	-24	34	20.21	0.8178	13.1
nov	17	2458439.75	16	47	18.15	-24	24	44.33	0.7974	13.0
nov	18	2458440.75	16	46	56.18	-24	12	29.35	0.7776	13.0

Mercurio, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	dia	dj	h	α m	s	°	δ "	"	dis UA	hp h
nov	19	2458441.75	16	45	52.00	-23	57	26.87	0.7589	12.9
nov	20	2458442.75	16	44	4.00	-23	39	29.71	0.7413	12.8
nov	21	2458443.75	16	41	31.68	-23	18	33.22	0.7253	12.7
nov	22	2458444.75	16	38	16.03	-22	54	37.09	0.7111	12.6
nov	23	2458445.75	16	34	19.84	-22	27	47.48	0.6991	12.4
nov	24	2458446.75	16	29	47.96	-21	58	19.27	0.6895	12.3
nov	25	2458447.75	16	24	47.36	-21	26	37.87	0.6827	12.1
nov	26	2458448.75	16	19	26.90	-20	53	20.17	0.6788	12.0
nov	27	2458449.75	16	13	56.95	-20	19	13.83	0.6781	11.8
nov	28	2458450.75	16	8	28.59	-19	45	14.78	0.6806	11.7
nov	29	2458451.75	16	3	12.89	-19	12	23.01	0.6862	11.5
nov	30	2458452.75	15	58	19.98	-18	41	37.43	0.6949	11.4
dic	1	2458453.75	15	53	58.43	-18	13	50.70	0.7065	11.2
dic	2	2458454.75	15	50	14.84	-17	49	45.19	0.7208	11.1
dic	3	2458455.75	15	47	13.62	-17	29	50.52	0.7373	11.0
dic	4	2458456.75	15	44	57.14	-17	14	23.01	0.7559	10.9
dic	5	2458457.75	15	43	25.98	-17	3	26.61	0.7760	10.8
dic	6	2458458.75	15	42	39.27	-16	56	54.91	0.7975	10.7
dic	7	2458459.75	15	42	35.10	-16	54	33.54	0.8200	10.6
dic	8	2458460.75	15	43	10.87	-16	56	2.66	0.8433	10.6
dic	9	2458461.75	15	44	23.57	-17	0	59.12	0.8669	10.5
dic	10	2458462.75	15	46	10.03	-17	8	58.31	0.8908	10.5
dic	11	2458463.75	15	48	27.10	-17	19	35.43	0.9148	10.5
dic	12	2458464.75	15	51	11.72	-17	32	26.45	0.9386	10.5
dic	13	2458465.75	15	54	21.04	-17	47	8.73	0.9622	10.4
dic	14	2458466.75	15	57	52.44	-18	3	21.36	0.9854	10.4
dic	15	2458467.75	16	1	43.55	-18	20	45.29	1.0081	10.4
dic	16	2458468.75	16	5	52.23	-18	39	3.34	1.0304	10.4
dic	17	2458469.75	16	10	16.59	-18	58	0.19	1.0521	10.5
dic	18	2458470.75	16	14	54.97	-19	17	22.21	1.0731	10.5
dic	19	2458471.75	16	19	45.89	-19	36	57.35	1.0936	10.5
dic	20	2458472.75	16	24	48.06	-19	56	34.97	1.1133	10.5
dic	21	2458473.75	16	30	0.35	-20	16	5.69	1.1325	10.5
dic	22	2458474.75	16	35	21.77	-20	35	21.25	1.1509	10.5
dic	23	2458475.75	16	40	51.44	-20	54	14.34	1.1686	10.6
dic	24	2458476.75	16	46	28.62	-21	12	38.53	1.1857	10.6
dic	25	2458477.75	16	52	12.62	-21	30	28.10	1.2021	10.6
dic	26	2458478.75	16	58	2.87	-21	47	37.98	1.2179	10.7
dic	27	2458479.75	17	3	58.83	-22	4	3.65	1.2330	10.7
dic	28	2458480.75	17	10	0.07	-22	19	41.08	1.2474	10.7
dic	29	2458481.75	17	16	6.15	-22	34	26.66	1.2612	10.8
dic	30	2458482.75	17	22	16.73	-22	48	17.16	1.2744	10.8
dic	31	2458483.75	17	28	31.48	-23	1	9.65	1.2870	10.8
ene	1	2458484.75	17	34	50.10	-23	13	1.50	1.2990	17.6
ene	2	2458485.75	17	41	12.32	-23	23	50.29	1.3103	17.7

Venus, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	\circ	δ '	"	dis UA	hp h
ene	1	2458119.75	18	38	36.98	-23	37	10.92	1.7092	11.9
ene	2	2458120.75	18	44	6.35	-23	34	1.85	1.7096	11.9
ene	3	2458121.75	18	49	35.41	-23	30	8.94	1.7099	12.0
ene	4	2458122.75	18	55	4.10	-23	25	32.35	1.7102	12.0
ene	5	2458123.75	19	0	32.36	-23	20	12.26	1.7105	12.0
ene	6	2458124.75	19	6	0.13	-23	14	8.88	1.7107	12.0
ene	7	2458125.75	19	11	27.37	-23	7	22.45	1.7108	12.1
ene	8	2458126.75	19	16	54.00	-22	59	53.25	1.7110	12.1
ene	9	2458127.75	19	22	19.99	-22	51	41.55	1.7111	12.1
ene	10	2458128.75	19	27	45.28	-22	42	47.70	1.7111	12.1
ene	11	2458129.75	19	33	9.82	-22	33	12.10	1.7111	12.2
ene	12	2458130.75	19	38	33.55	-22	22	55.20	1.7111	12.2
ene	13	2458131.75	19	43	56.43	-22	11	57.42	1.7110	12.2
ene	14	2458132.75	19	49	18.41	-22	0	19.24	1.7109	12.2
ene	15	2458133.75	19	54	39.45	-21	48	1.14	1.7108	12.3
ene	16	2458134.75	19	59	59.52	-21	35	3.63	1.7106	12.3
ene	17	2458135.75	20	5	18.56	-21	21	27.24	1.7104	12.3
ene	18	2458136.75	20	10	36.54	-21	7	12.52	1.7101	12.3
ene	19	2458137.75	20	15	53.44	-20	52	20.06	1.7098	12.4
ene	20	2458138.75	20	21	9.20	-20	36	50.45	1.7094	12.4
ene	21	2458139.75	20	26	23.82	-20	20	44.30	1.7090	12.4
ene	22	2458140.75	20	31	37.27	-20	4	2.24	1.7086	12.4
ene	23	2458141.75	20	36	49.51	-19	46	44.91	1.7081	12.4
ene	24	2458142.75	20	42	0.54	-19	28	52.98	1.7076	12.5
ene	25	2458143.75	20	47	10.34	-19	10	27.13	1.7071	12.5
ene	26	2458144.75	20	52	18.90	-18	51	28.05	1.7065	12.5
ene	27	2458145.75	20	57	26.21	-18	31	56.44	1.7059	12.5
ene	28	2458146.75	21	2	32.26	-18	11	53.03	1.7052	12.5
ene	29	2458147.75	21	7	37.04	-17	51	18.54	1.7045	12.6
ene	30	2458148.75	21	12	40.56	-17	30	13.72	1.7037	12.6
ene	31	2458149.75	21	17	42.81	-17	8	39.31	1.7030	12.6
feb	1	2458150.75	21	22	43.80	-16	46	36.04	1.7021	12.6
feb	2	2458151.75	21	27	43.54	-16	24	4.64	1.7013	12.6
feb	3	2458152.75	21	32	42.03	-16	1	5.86	1.7004	12.7
feb	4	2458153.75	21	37	39.30	-15	37	40.45	1.6994	12.7
feb	5	2458154.75	21	42	35.34	-15	13	49.15	1.6985	12.7
feb	6	2458155.75	21	47	30.19	-14	49	32.72	1.6974	12.7
feb	7	2458156.75	21	52	23.86	-14	24	51.94	1.6964	12.7
feb	8	2458157.75	21	57	16.36	-13	59	47.58	1.6953	12.7
feb	9	2458158.75	22	2	7.71	-13	34	20.42	1.6941	12.7
feb	10	2458159.75	22	6	57.94	-13	8	31.23	1.6930	12.8
feb	11	2458160.75	22	11	47.07	-12	42	20.80	1.6917	12.8
feb	12	2458161.75	22	16	35.11	-12	15	49.92	1.6905	12.8
feb	13	2458162.75	22	21	22.09	-11	48	59.36	1.6892	12.8
feb	14	2458163.75	22	26	8.04	-11	21	49.92	1.6878	12.8
feb	15	2458164.75	22	30	52.98	-10	54	22.36	1.6864	12.8

Venus, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	\circ	δ "	"	dis UA	hp h
feb	16	2458165.75	22	35	36.94	-10	26	37.49	1.6850	12.8
feb	17	2458166.75	22	40	19.96	-9	58	36.06	1.6835	12.9
feb	18	2458167.75	22	45	2.05	-9	30	18.87	1.6820	12.9
feb	19	2458168.75	22	49	43.25	-9	1	46.67	1.6804	12.9
feb	20	2458169.75	22	54	23.60	-8	33	0.26	1.6788	12.9
feb	21	2458170.75	22	59	3.12	-8	4	0.39	1.6771	12.9
feb	22	2458171.75	23	3	41.87	-7	34	47.84	1.6754	12.9
feb	23	2458172.75	23	8	19.86	-7	5	23.38	1.6737	12.9
feb	24	2458173.75	23	12	57.14	-6	35	47.77	1.6719	12.9
feb	25	2458174.75	23	17	33.74	-6	6	1.79	1.6701	13.0
feb	26	2458175.75	23	22	9.71	-5	36	6.21	1.6682	13.0
feb	27	2458176.75	23	26	45.07	-5	6	1.78	1.6663	13.0
feb	28	2458177.75	23	31	19.88	-4	35	49.26	1.6643	13.0
mar	1	2458178.75	23	35	54.16	-4	5	29.40	1.6623	13.0
mar	2	2458179.75	23	40	27.98	-3	35	2.92	1.6603	13.0
mar	3	2458180.75	23	45	1.36	-3	4	30.56	1.6582	13.0
mar	4	2458181.75	23	49	34.36	-2	33	53.04	1.6561	13.0
mar	5	2458182.75	23	54	7.02	-2	3	11.08	1.6539	13.0
mar	6	2458183.75	23	58	39.39	-1	32	25.40	1.6517	13.0
mar	7	2458184.75	0	3	11.51	-1	1	36.73	1.6494	13.1
mar	8	2458185.75	0	7	43.42	-0	30	45.81	1.6471	13.1
mar	9	2458186.75	0	12	15.18	+0	0	6.63	1.6447	13.1
mar	10	2458187.75	0	16	46.81	+0	30	59.87	1.6423	13.1
mar	11	2458188.75	0	21	18.36	+1	1	53.15	1.6399	13.1
mar	12	2458189.75	0	25	49.88	+1	32	45.75	1.6374	13.1
mar	13	2458190.75	0	30	21.41	+2	3	36.93	1.6348	13.1
mar	14	2458191.75	0	34	52.98	+2	34	25.94	1.6322	13.1
mar	15	2458192.75	0	39	24.64	+3	5	12.05	1.6296	13.1
mar	16	2458193.75	0	43	56.44	+3	35	54.51	1.6269	13.1
mar	17	2458194.75	0	48	28.40	+4	6	32.60	1.6242	13.2
mar	18	2458195.75	0	53	0.57	+4	37	5.56	1.6214	13.2
mar	19	2458196.75	0	57	32.99	+5	7	32.66	1.6185	13.2
mar	20	2458197.75	1	2	5.71	+5	37	53.16	1.6156	13.2
mar	21	2458198.75	1	6	38.75	+6	8	6.31	1.6127	13.2
mar	22	2458199.75	1	11	12.17	+6	38	11.38	1.6097	13.2
mar	23	2458200.75	1	15	45.99	+7	8	7.60	1.6067	13.2
mar	24	2458201.75	1	20	20.25	+7	37	54.24	1.6036	13.2
mar	25	2458202.75	1	24	54.98	+8	7	30.52	1.6005	13.2
mar	26	2458203.75	1	29	30.23	+8	36	55.71	1.5973	13.2
mar	27	2458204.75	1	34	6.03	+9	6	9.04	1.5941	13.3
mar	28	2458205.75	1	38	42.41	+9	35	9.77	1.5908	13.3
mar	29	2458206.75	1	43	19.41	+10	3	57.14	1.5874	13.3
mar	30	2458207.75	1	47	57.07	+10	32	30.42	1.5841	13.3
mar	31	2458208.75	1	52	35.42	+11	0	48.88	1.5806	13.3
abr	1	2458209.75	1	57	14.50	+11	28	51.78	1.5771	13.3
abr	2	2458210.75	2	1	54.35	+11	56	38.41	1.5736	13.3

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	'	δ "	"	dis UA	hp h
abr	3	2458211.75	2	6	34.99	+12	24	8.03	1.5700	13.3
abr	4	2458212.75	2	11	16.46	+12	51	19.91	1.5664	13.4
abr	5	2458213.75	2	15	58.79	+13	18	13.31	1.5627	13.4
abr	6	2458214.75	2	20	42.01	+13	44	47.49	1.5590	13.4
abr	7	2458215.75	2	25	26.14	+14	11	1.70	1.5552	13.4
abr	8	2458216.75	2	30	11.20	+14	36	55.22	1.5514	13.4
abr	9	2458217.75	2	34	57.22	+15	2	27.27	1.5475	13.4
abr	10	2458218.75	2	39	44.22	+15	27	37.13	1.5436	13.4
abr	11	2458219.75	2	44	32.21	+15	52	24.05	1.5396	13.4
abr	12	2458220.75	2	49	21.22	+16	16	47.28	1.5356	13.5
abr	13	2458221.75	2	54	11.25	+16	40	46.08	1.5315	13.5
abr	14	2458222.75	2	59	2.33	+17	4	19.71	1.5274	13.5
abr	15	2458223.75	3	3	54.45	+17	27	27.43	1.5232	13.5
abr	16	2458224.75	3	8	47.63	+17	50	8.51	1.5189	13.5
abr	17	2458225.75	3	13	41.88	+18	12	22.24	1.5147	13.5
abr	18	2458226.75	3	18	37.20	+18	34	7.88	1.5103	13.6
abr	19	2458227.75	3	23	33.59	+18	55	24.73	1.5059	13.6
abr	20	2458228.75	3	28	31.03	+19	16	12.07	1.5015	13.6
abr	21	2458229.75	3	33	29.54	+19	36	29.19	1.4970	13.6
abr	22	2458230.75	3	38	29.08	+19	56	15.40	1.4924	13.6
abr	23	2458231.75	3	43	29.66	+20	15	29.99	1.4878	13.6
abr	24	2458232.75	3	48	31.27	+20	34	12.28	1.4831	13.7
abr	25	2458233.75	3	53	33.88	+20	52	21.60	1.4784	13.7
abr	26	2458234.75	3	58	37.49	+21	9	57.32	1.4736	13.7
abr	27	2458235.75	4	3	42.07	+21	26	58.78	1.4688	13.7
abr	28	2458236.75	4	8	47.61	+21	43	25.40	1.4640	13.7
abr	29	2458237.75	4	13	54.09	+21	59	16.57	1.4590	13.8
abr	30	2458238.75	4	19	1.48	+22	14	31.73	1.4541	13.8
may	1	2458239.75	4	24	9.77	+22	29	10.32	1.4491	13.8
may	2	2458240.75	4	29	18.91	+22	43	11.81	1.4440	13.8
may	3	2458241.75	4	34	28.89	+22	56	35.68	1.4389	13.8
may	4	2458242.75	4	39	39.65	+23	9	21.43	1.4337	13.9
may	5	2458243.75	4	44	51.18	+23	21	28.58	1.4285	13.9
may	6	2458244.75	4	50	3.42	+23	32	56.67	1.4233	13.9
may	7	2458245.75	4	55	16.33	+23	43	45.26	1.4179	13.9
may	8	2458246.75	5	0	29.87	+23	53	53.93	1.4126	13.9
may	9	2458247.75	5	5	43.99	+24	3	22.29	1.4072	14.0
may	10	2458248.75	5	10	58.64	+24	12	9.96	1.4017	14.0
may	11	2458249.75	5	16	13.77	+24	20	16.62	1.3962	14.0
may	12	2458250.75	5	21	29.33	+24	27	41.94	1.3907	14.0
may	13	2458251.75	5	26	45.26	+24	34	25.64	1.3850	14.0
may	14	2458252.75	5	32	1.50	+24	40	27.48	1.3794	14.1
may	15	2458253.75	5	37	18.00	+24	45	47.22	1.3737	14.1
may	16	2458254.75	5	42	34.69	+24	50	24.68	1.3679	14.1
may	17	2458255.75	5	47	51.52	+24	54	19.71	1.3621	14.1
may	18	2458256.75	5	53	8.40	+24	57	32.17	1.3563	14.2

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	\circ	δ "	"	dis UA	hp h
may	19	2458257.75	5	58	25.26	+25	0	1.97	1.3504	14.2
may	20	2458258.75	6	3	42.05	+25	1	49.04	1.3445	14.2
may	21	2458259.75	6	8	58.69	+25	2	53.32	1.3385	14.2
may	22	2458260.75	6	14	15.10	+25	3	14.80	1.3324	14.2
may	23	2458261.75	6	19	31.23	+25	2	53.50	1.3263	14.3
may	24	2458262.75	6	24	47.00	+25	1	49.48	1.3202	14.3
may	25	2458263.75	6	30	2.36	+25	0	2.83	1.3140	14.3
may	26	2458264.75	6	35	17.24	+24	57	33.66	1.3078	14.3
may	27	2458265.75	6	40	31.58	+24	54	22.16	1.3015	14.4
may	28	2458266.75	6	45	45.31	+24	50	28.50	1.2952	14.4
may	29	2458267.75	6	50	58.38	+24	45	52.93	1.2889	14.4
may	30	2458268.75	6	56	10.73	+24	40	35.68	1.2825	14.4
may	31	2458269.75	7	1	22.29	+24	34	37.05	1.2761	14.4
jun	1	2458270.75	7	6	33.02	+24	27	57.33	1.2696	14.5
jun	2	2458271.75	7	11	42.85	+24	20	36.88	1.2631	14.5
jun	3	2458272.75	7	16	51.73	+24	12	36.03	1.2565	14.5
jun	4	2458273.75	7	21	59.62	+24	3	55.19	1.2499	14.5
jun	5	2458274.75	7	27	6.45	+23	54	34.74	1.2433	14.5
jun	6	2458275.75	7	32	12.19	+23	44	35.13	1.2366	14.6
jun	7	2458276.75	7	37	16.79	+23	33	56.79	1.2299	14.6
jun	8	2458277.75	7	42	20.20	+23	22	40.20	1.2232	14.6
jun	9	2458278.75	7	47	22.39	+23	10	45.86	1.2164	14.6
jun	10	2458279.75	7	52	23.32	+22	58	14.27	1.2096	14.6
jun	11	2458280.75	7	57	22.95	+22	45	5.98	1.2027	14.7
jun	12	2458281.75	8	2	21.24	+22	31	21.54	1.1958	14.7
jun	13	2458282.75	8	7	18.16	+22	17	1.54	1.1889	14.7
jun	14	2458283.75	8	12	13.68	+22	2	6.58	1.1819	14.7
jun	15	2458284.75	8	17	7.76	+21	46	37.28	1.1749	14.7
jun	16	2458285.75	8	22	0.36	+21	30	34.27	1.1679	14.7
jun	17	2458286.75	8	26	51.46	+21	13	58.20	1.1608	14.8
jun	18	2458287.75	8	31	41.03	+20	56	49.70	1.1537	14.8
jun	19	2458288.75	8	36	29.04	+20	39	9.45	1.1465	14.8
jun	20	2458289.75	8	41	15.48	+20	20	58.09	1.1393	14.8
jun	21	2458290.75	8	46	0.32	+20	2	16.30	1.1321	14.8
jun	22	2458291.75	8	50	43.56	+19	43	4.77	1.1249	14.8
jun	23	2458292.75	8	55	25.17	+19	23	24.19	1.1176	14.8
jun	24	2458293.75	9	0	5.16	+19	3	15.25	1.1103	14.8
jun	25	2458294.75	9	4	43.51	+18	42	38.68	1.1030	14.9
jun	26	2458295.75	9	9	20.23	+18	21	35.16	1.0956	14.9
jun	27	2458296.75	9	13	55.30	+18	0	5.43	1.0882	14.9
jun	28	2458297.75	9	18	28.73	+17	38	10.19	1.0808	14.9
jun	29	2458298.75	9	23	0.52	+17	15	50.15	1.0733	14.9
jun	30	2458299.75	9	27	30.67	+16	53	6.03	1.0659	14.9
jul	1	2458300.75	9	31	59.19	+16	29	58.54	1.0584	14.9
jul	2	2458301.75	9	36	26.08	+16	6	28.38	1.0508	14.9
jul	3	2458302.75	9	40	51.35	+15	42	36.27	1.0433	14.9

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	'	δ "	"	dis UA	hp h
jul	4	2458303.75	9	45	15.02	+15	18	22.89	1.0357	14.9
jul	5	2458304.75	9	49	37.09	+14	53	48.95	1.0281	14.9
jul	6	2458305.75	9	53	57.58	+14	28	55.15	1.0205	15.0
jul	7	2458306.75	9	58	16.50	+14	3	42.17	1.0129	15.0
jul	8	2458307.75	10	2	33.87	+13	38	10.71	1.0052	15.0
jul	9	2458308.75	10	6	49.70	+13	12	21.47	0.9976	15.0
jul	10	2458309.75	10	11	4.02	+12	46	15.12	0.9899	15.0
jul	11	2458310.75	10	15	16.82	+12	19	52.38	0.9822	15.0
jul	12	2458311.75	10	19	28.13	+11	53	13.94	0.9744	15.0
jul	13	2458312.75	10	23	37.96	+11	26	20.53	0.9667	15.0
jul	14	2458313.75	10	27	46.31	+10	59	12.84	0.9589	15.0
jul	15	2458314.75	10	31	53.19	+10	31	51.59	0.9511	15.0
jul	16	2458315.75	10	35	58.62	+10	4	17.48	0.9433	15.0
jul	17	2458316.75	10	40	2.60	+9	36	31.20	0.9355	15.0
jul	18	2458317.75	10	44	5.14	+9	8	33.45	0.9276	15.0
jul	19	2458318.75	10	48	6.27	+8	40	24.91	0.9198	15.0
jul	20	2458319.75	10	52	5.98	+8	12	6.26	0.9119	15.0
jul	21	2458320.75	10	56	4.31	+7	43	38.19	0.9040	15.0
jul	22	2458321.75	11	0	1.24	+7	15	1.38	0.8961	15.0
jul	23	2458322.75	11	3	56.81	+6	46	16.50	0.8882	15.0
jul	24	2458323.75	11	7	51.03	+6	17	24.22	0.8803	15.0
jul	25	2458324.75	11	11	43.90	+5	48	25.20	0.8723	15.0
jul	26	2458325.75	11	15	35.43	+5	19	20.11	0.8644	15.0
jul	27	2458326.75	11	19	25.65	+4	50	9.59	0.8564	15.0
jul	28	2458327.75	11	23	14.56	+4	20	54.29	0.8485	15.0
jul	29	2458328.75	11	27	2.18	+3	51	34.85	0.8405	15.0
jul	30	2458329.75	11	30	48.52	+3	22	11.90	0.8325	15.0
jul	31	2458330.75	11	34	33.58	+2	52	46.07	0.8245	15.0
ago	1	2458331.75	11	38	17.39	+2	23	17.96	0.8166	15.0
ago	2	2458332.75	11	41	59.94	+1	53	48.20	0.8086	15.0
ago	3	2458333.75	11	45	41.26	+1	24	17.39	0.8006	15.0
ago	4	2458334.75	11	49	21.35	+0	54	46.12	0.7926	15.0
ago	5	2458335.75	11	53	0.22	+0	25	14.99	0.7846	15.0
ago	6	2458336.75	11	56	37.87	-0	4	15.40	0.7766	15.0
ago	7	2458337.75	12	0	14.31	-0	33	44.46	0.7686	15.0
ago	8	2458338.75	12	3	49.53	-1	3	11.59	0.7606	15.0
ago	9	2458339.75	12	7	23.54	-1	32	36.16	0.7526	14.9
ago	10	2458340.75	12	10	56.32	-2	1	57.58	0.7446	14.9
ago	11	2458341.75	12	14	27.86	-2	31	15.19	0.7366	14.9
ago	12	2458342.75	12	17	58.15	-3	0	28.38	0.7286	14.9
ago	13	2458343.75	12	21	27.17	-3	29	36.50	0.7206	14.9
ago	14	2458344.75	12	24	54.89	-3	58	38.91	0.7126	14.9
ago	15	2458345.75	12	28	21.30	-4	27	34.97	0.7046	14.9
ago	16	2458346.75	12	31	46.37	-4	56	24.03	0.6966	14.9
ago	17	2458347.75	12	35	10.06	-5	25	5.43	0.6886	14.9
ago	18	2458348.75	12	38	32.35	-5	53	38.54	0.6807	14.9

Venus, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
ago	19	2458349.75	12	41	53.21	-6	22	2.67	0.6727	14.9
ago	20	2458350.75	12	45	12.59	-6	50	17.19	0.6647	14.9
ago	21	2458351.75	12	48	30.46	-7	18	21.43	0.6568	14.8
ago	22	2458352.75	12	51	46.77	-7	46	14.73	0.6489	14.8
ago	23	2458353.75	12	55	1.48	-8	13	56.43	0.6409	14.8
ago	24	2458354.75	12	58	14.54	-8	41	25.87	0.6330	14.8
ago	25	2458355.75	13	1	25.89	-9	8	42.38	0.6251	14.8
ago	26	2458356.75	13	4	35.48	-9	35	45.30	0.6172	14.8
ago	27	2458357.75	13	7	43.24	-10	2	33.97	0.6094	14.8
ago	28	2458358.75	13	10	49.13	-10	29	7.73	0.6015	14.8
ago	29	2458359.75	13	13	53.06	-10	55	25.90	0.5937	14.7
ago	30	2458360.75	13	16	54.98	-11	21	27.83	0.5859	14.7
ago	31	2458361.75	13	19	54.80	-11	47	12.85	0.5781	14.7
sep	1	2458362.75	13	22	52.45	-12	12	40.29	0.5704	14.7
sep	2	2458363.75	13	25	47.84	-12	37	49.47	0.5627	14.7
sep	3	2458364.75	13	28	40.87	-13	2	39.71	0.5550	14.7
sep	4	2458365.75	13	31	31.46	-13	27	10.31	0.5473	14.6
sep	5	2458366.75	13	34	19.49	-13	51	20.53	0.5397	14.6
sep	6	2458367.75	13	37	4.84	-14	15	9.65	0.5320	14.6
sep	7	2458368.75	13	39	47.40	-14	38	36.89	0.5245	14.6
sep	8	2458369.75	13	42	27.03	-15	1	41.45	0.5169	14.6
sep	9	2458370.75	13	45	3.59	-15	24	22.50	0.5094	14.5
sep	10	2458371.75	13	47	36.92	-15	46	39.15	0.5020	14.5
sep	11	2458372.75	13	50	6.87	-16	8	30.51	0.4946	14.5
sep	12	2458373.75	13	52	33.26	-16	29	55.61	0.4872	14.5
sep	13	2458374.75	13	54	55.91	-16	50	53.48	0.4798	14.4
sep	14	2458375.75	13	57	14.64	-17	11	23.06	0.4726	14.4
sep	15	2458376.75	13	59	29.24	-17	31	23.27	0.4653	14.4
sep	16	2458377.75	14	1	39.51	-17	50	52.98	0.4581	14.4
sep	17	2458378.75	14	3	45.23	-18	9	51.00	0.4510	14.3
sep	18	2458379.75	14	5	46.20	-18	28	16.09	0.4439	14.3
sep	19	2458380.75	14	7	42.17	-18	46	6.96	0.4369	14.3
sep	20	2458381.75	14	9	32.92	-19	3	22.25	0.4300	14.2
sep	21	2458382.75	14	11	18.21	-19	20	0.55	0.4231	14.2
sep	22	2458383.75	14	12	57.79	-19	36	0.36	0.4164	14.1
sep	23	2458384.75	14	14	31.43	-19	51	20.13	0.4096	14.1
sep	24	2458385.75	14	15	58.86	-20	5	58.22	0.4030	14.1
sep	25	2458386.75	14	17	19.85	-20	19	52.94	0.3965	14.0
sep	26	2458387.75	14	18	34.14	-20	33	2.50	0.3900	14.0
sep	27	2458388.75	14	19	41.48	-20	45	25.05	0.3837	13.9
sep	28	2458389.75	14	20	41.64	-20	56	58.64	0.3775	13.9
sep	29	2458390.75	14	21	34.37	-21	7	41.26	0.3713	13.8
sep	30	2458391.75	14	22	19.44	-21	17	30.82	0.3653	13.8
oct	1	2458392.75	14	22	56.64	-21	26	25.13	0.3594	13.7
oct	2	2458393.75	14	23	25.74	-21	34	21.95	0.3536	13.7
oct	3	2458394.75	14	23	46.56	-21	41	18.93	0.3480	13.6

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
oct	4	2458395.75	14	23	58.91	-21	47	13.67	0.3425	13.5
oct	5	2458396.75	14	24	2.64	-21	52	3.71	0.3372	13.5
oct	6	2458397.75	14	23	57.62	-21	55	46.55	0.3320	13.4
oct	7	2458398.75	14	23	43.73	-21	58	19.64	0.3269	13.3
oct	8	2458399.75	14	23	20.91	-21	59	40.47	0.3221	13.3
oct	9	2458400.75	14	22	49.13	-21	59	46.53	0.3174	13.2
oct	10	2458401.75	14	22	8.40	-21	58	35.41	0.3129	13.1
oct	11	2458402.75	14	21	18.79	-21	56	4.80	0.3086	13.0
oct	12	2458403.75	14	20	20.42	-21	52	12.61	0.3045	13.0
oct	13	2458404.75	14	19	13.48	-21	46	56.96	0.3005	12.9
oct	14	2458405.75	14	17	58.22	-21	40	16.33	0.2969	12.8
oct	15	2458406.75	14	16	34.98	-21	32	9.57	0.2934	12.7
oct	16	2458407.75	14	15	4.16	-21	22	36.02	0.2902	12.6
oct	17	2458408.75	14	13	26.23	-21	11	35.57	0.2872	12.5
oct	18	2458409.75	14	11	41.77	-20	59	8.73	0.2844	12.4
oct	19	2458410.75	14	9	51.39	-20	45	16.69	0.2820	12.3
oct	20	2458411.75	14	7	55.80	-20	30	1.39	0.2797	12.2
oct	21	2458412.75	14	5	55.76	-20	13	25.56	0.2778	12.1
oct	22	2458413.75	14	3	52.10	-19	55	32.75	0.2761	12.0
oct	23	2458414.75	14	1	45.70	-19	36	27.33	0.2747	11.9
oct	24	2458415.75	13	59	37.46	-19	16	14.51	0.2737	11.8
oct	25	2458416.75	13	57	28.33	-18	55	0.26	0.2729	11.7
oct	26	2458417.75	13	55	19.25	-18	32	51.29	0.2723	11.6
oct	27	2458418.75	13	53	11.18	-18	9	54.93	0.2721	11.5
oct	28	2458419.75	13	51	5.06	-17	46	19.05	0.2722	11.4
oct	29	2458420.75	13	49	1.79	-17	22	11.92	0.2726	11.3
oct	30	2458421.75	13	47	2.24	-16	57	42.07	0.2732	11.2
oct	31	2458422.75	13	45	7.23	-16	32	58.15	0.2742	11.1
nov	1	2458423.75	13	43	17.51	-16	8	8.83	0.2754	11.0
nov	2	2458424.75	13	41	33.78	-15	43	22.60	0.2770	10.9
nov	3	2458425.75	13	39	56.64	-15	18	47.69	0.2788	10.8
nov	4	2458426.75	13	38	26.65	-14	54	32.00	0.2808	10.7
nov	5	2458427.75	13	37	4.28	-14	30	42.93	0.2832	10.7
nov	6	2458428.75	13	35	49.92	-14	7	27.37	0.2858	10.6
nov	7	2458429.75	13	34	43.91	-13	44	51.65	0.2886	10.5
nov	8	2458430.75	13	33	46.51	-13	23	1.45	0.2917	10.4
nov	9	2458431.75	13	32	57.92	-13	2	1.87	0.2950	10.3
nov	10	2458432.75	13	32	18.27	-12	41	57.32	0.2986	10.2
nov	11	2458433.75	13	31	47.66	-12	22	51.63	0.3023	10.2
nov	12	2458434.75	13	31	26.12	-12	4	48.00	0.3063	10.1
nov	13	2458435.75	13	31	13.65	-11	47	49.05	0.3105	10.0
nov	14	2458436.75	13	31	10.20	-11	31	56.84	0.3149	10.0
nov	15	2458437.75	13	31	15.71	-11	17	12.91	0.3194	9.9
nov	16	2458438.75	13	31	30.05	-11	3	38.31	0.3242	9.8
nov	17	2458439.75	13	31	53.11	-10	51	13.68	0.3291	9.8
nov	18	2458440.75	13	32	24.71	-10	39	59.21	0.3341	9.7

Venus, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
nov	19	2458441.75	13	33	4.70	-10	29	54.78	0.3393	9.7
nov	20	2458442.75	13	33	52.89	-10	20	59.93	0.3447	9.6
nov	21	2458443.75	13	34	49.08	-10	13	13.93	0.3502	9.6
nov	22	2458444.75	13	35	53.07	-10	6	35.81	0.3558	9.5
nov	23	2458445.75	13	37	4.64	-10	1	4.39	0.3616	9.5
nov	24	2458446.75	13	38	23.59	-9	56	38.29	0.3675	9.4
nov	25	2458447.75	13	39	49.69	-9	53	15.97	0.3735	9.4
nov	26	2458448.75	13	41	22.71	-9	50	55.74	0.3796	9.3
nov	27	2458449.75	13	43	2.44	-9	49	35.80	0.3858	9.3
nov	28	2458450.75	13	44	48.64	-9	49	14.23	0.3921	9.3
nov	29	2458451.75	13	46	41.10	-9	49	49.04	0.3985	9.2
nov	30	2458452.75	13	48	39.58	-9	51	18.17	0.4049	9.2
dic	1	2458453.75	13	50	43.87	-9	53	39.52	0.4115	9.2
dic	2	2458454.75	13	52	53.77	-9	56	51.00	0.4181	9.1
dic	3	2458455.75	13	55	9.06	-10	0	50.47	0.4248	9.1
dic	4	2458456.75	13	57	29.56	-10	5	35.81	0.4316	9.1
dic	5	2458457.75	13	59	55.07	-10	11	4.93	0.4384	9.1
dic	6	2458458.75	14	2	25.41	-10	17	15.73	0.4453	9.0
dic	7	2458459.75	14	5	0.40	-10	24	6.16	0.4522	9.0
dic	8	2458460.75	14	7	39.89	-10	31	34.20	0.4592	9.0
dic	9	2458461.75	14	10	23.72	-10	39	37.84	0.4662	9.0
dic	10	2458462.75	14	13	11.73	-10	48	15.15	0.4733	9.0
dic	11	2458463.75	14	16	3.80	-10	57	24.21	0.4804	8.9
dic	12	2458464.75	14	18	59.79	-11	7	3.15	0.4876	8.9
dic	13	2458465.75	14	21	59.58	-11	17	10.14	0.4948	8.9
dic	14	2458466.75	14	25	3.06	-11	27	43.39	0.5020	8.9
dic	15	2458467.75	14	28	10.11	-11	38	41.17	0.5093	8.9
dic	16	2458468.75	14	31	20.65	-11	50	1.76	0.5166	8.9
dic	17	2458469.75	14	34	34.56	-12	1	43.49	0.5240	8.9
dic	18	2458470.75	14	37	51.77	-12	13	44.73	0.5313	8.8
dic	19	2458471.75	14	41	12.20	-12	26	3.91	0.5387	8.8
dic	20	2458472.75	14	44	35.76	-12	38	39.46	0.5461	8.8
dic	21	2458473.75	14	48	2.39	-12	51	29.85	0.5536	8.8
dic	22	2458474.75	14	51	32.01	-13	4	33.61	0.5610	8.8
dic	23	2458475.75	14	55	4.56	-13	17	49.25	0.5685	8.8
dic	24	2458476.75	14	58	39.97	-13	31	15.31	0.5760	8.8
dic	25	2458477.75	15	2	18.18	-13	44	50.35	0.5835	8.8
dic	26	2458478.75	15	5	59.12	-13	58	32.93	0.5911	8.8
dic	27	2458479.75	15	9	42.74	-14	12	21.63	0.5986	8.8
dic	28	2458480.75	15	13	28.98	-14	26	15.05	0.6062	8.8
dic	29	2458481.75	15	17	17.78	-14	40	11.82	0.6137	8.8
dic	30	2458482.75	15	21	9.08	-14	54	10.59	0.6213	8.8
dic	31	2458483.75	15	25	2.83	-15	8	10.02	0.6289	8.8

Marte, 2018

Efermídes a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
ene	1	2458119.75	14	48	33.28	-15	16	34.10	1.9535	8.1
ene	2	2458120.75	14	51	1.17	-15	27	55.06	1.9447	8.1
ene	3	2458121.75	14	53	29.26	-15	39	9.65	1.9359	8.0
ene	4	2458122.75	14	55	57.58	-15	50	17.79	1.9271	8.0
ene	5	2458123.75	14	58	26.11	-16	1	19.40	1.9182	8.0
ene	6	2458124.75	15	0	54.85	-16	12	14.39	1.9093	8.0
ene	7	2458125.75	15	3	23.81	-16	23	2.68	1.9004	7.9
ene	8	2458126.75	15	5	52.99	-16	33	44.20	1.8914	7.9
ene	9	2458127.75	15	8	22.37	-16	44	18.86	1.8824	7.9
ene	10	2458128.75	15	10	51.96	-16	54	46.58	1.8734	7.9
ene	11	2458129.75	15	13	21.76	-17	5	7.30	1.8644	7.8
ene	12	2458130.75	15	15	51.75	-17	15	20.93	1.8553	7.8
ene	13	2458131.75	15	18	21.95	-17	25	27.40	1.8462	7.8
ene	14	2458132.75	15	20	52.33	-17	35	26.63	1.8370	7.8
ene	15	2458133.75	15	23	22.91	-17	45	18.54	1.8279	7.7
ene	16	2458134.75	15	25	53.66	-17	55	3.05	1.8187	7.7
ene	17	2458135.75	15	28	24.59	-18	4	40.09	1.8094	7.7
ene	18	2458136.75	15	30	55.70	-18	14	9.57	1.8002	7.7
ene	19	2458137.75	15	33	26.97	-18	23	31.42	1.7909	7.7
ene	20	2458138.75	15	35	58.41	-18	32	45.57	1.7817	7.6
ene	21	2458139.75	15	38	30.00	-18	41	51.95	1.7723	7.6
ene	22	2458140.75	15	41	1.75	-18	50	50.50	1.7630	7.6
ene	23	2458141.75	15	43	33.66	-18	59	41.15	1.7537	7.6
ene	24	2458142.75	15	46	5.72	-19	8	23.85	1.7443	7.5
ene	25	2458143.75	15	48	37.93	-19	16	58.56	1.7349	7.5
ene	26	2458144.75	15	51	10.29	-19	25	25.23	1.7255	7.5
ene	27	2458145.75	15	53	42.80	-19	33	43.83	1.7161	7.5
ene	28	2458146.75	15	56	15.46	-19	41	54.32	1.7066	7.4
ene	29	2458147.75	15	58	48.26	-19	49	56.67	1.6972	7.4
ene	30	2458148.75	16	1	21.20	-19	57	50.83	1.6877	7.4
ene	31	2458149.75	16	3	54.28	-20	5	36.77	1.6783	7.4
feb	1	2458150.75	16	6	27.48	-20	13	14.42	1.6688	7.3
feb	2	2458151.75	16	9	0.82	-20	20	43.75	1.6592	7.3
feb	3	2458152.75	16	11	34.27	-20	28	4.70	1.6497	7.3
feb	4	2458153.75	16	14	7.84	-20	35	17.23	1.6402	7.3
feb	5	2458154.75	16	16	41.51	-20	42	21.32	1.6306	7.3
feb	6	2458155.75	16	19	15.29	-20	49	16.91	1.6211	7.2
feb	7	2458156.75	16	21	49.17	-20	56	3.98	1.6115	7.2
feb	8	2458157.75	16	24	23.13	-21	2	42.50	1.6019	7.2
feb	9	2458158.75	16	26	57.16	-21	9	12.44	1.5923	7.2
feb	10	2458159.75	16	29	31.26	-21	15	33.75	1.5827	7.1
feb	11	2458160.75	16	32	5.41	-21	21	46.42	1.5731	7.1
feb	12	2458161.75	16	34	39.61	-21	27	50.42	1.5635	7.1
feb	13	2458162.75	16	37	13.84	-21	33	45.70	1.5539	7.1
feb	14	2458163.75	16	39	48.10	-21	39	32.25	1.5443	7.0
feb	15	2458164.75	16	42	22.36	-21	45	10.04	1.5346	7.0

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	\circ	δ "	"	dis UA	hp h
feb	16	2458165.75	16	44	56.63	-21	50	39.05	1.5250	7.0
feb	17	2458166.75	16	47	30.88	-21	55	59.25	1.5153	7.0
feb	18	2458167.75	16	50	5.13	-22	1	10.62	1.5057	7.0
feb	19	2458168.75	16	52	39.34	-22	6	13.17	1.4960	6.9
feb	20	2458169.75	16	55	13.53	-22	11	6.88	1.4863	6.9
feb	21	2458170.75	16	57	47.67	-22	15	51.75	1.4767	6.9
feb	22	2458171.75	17	0	21.77	-22	20	27.81	1.4670	6.9
feb	23	2458172.75	17	2	55.82	-22	24	55.06	1.4574	6.8
feb	24	2458173.75	17	5	29.80	-22	29	13.52	1.4477	6.8
feb	25	2458174.75	17	8	3.72	-22	33	23.22	1.4381	6.8
feb	26	2458175.75	17	10	37.57	-22	37	24.19	1.4284	6.8
feb	27	2458176.75	17	13	11.34	-22	41	16.44	1.4188	6.8
feb	28	2458177.75	17	15	45.01	-22	44	59.98	1.4091	6.7
mar	1	2458178.75	17	18	18.59	-22	48	34.84	1.3995	6.7
mar	2	2458179.75	17	20	52.06	-22	52	1.04	1.3899	6.7
mar	3	2458180.75	17	23	25.41	-22	55	18.59	1.3803	6.7
mar	4	2458181.75	17	25	58.64	-22	58	27.53	1.3706	6.6
mar	5	2458182.75	17	28	31.74	-23	1	27.89	1.3610	6.6
mar	6	2458183.75	17	31	4.69	-23	4	19.72	1.3514	6.6
mar	7	2458184.75	17	33	37.48	-23	7	3.05	1.3418	6.6
mar	8	2458185.75	17	36	10.09	-23	9	37.92	1.3322	6.5
mar	9	2458186.75	17	38	42.52	-23	12	4.39	1.3226	6.5
mar	10	2458187.75	17	41	14.74	-23	14	22.51	1.3131	6.5
mar	11	2458188.75	17	43	46.74	-23	16	32.31	1.3035	6.5
mar	12	2458189.75	17	46	18.51	-23	18	33.86	1.2939	6.4
mar	13	2458190.75	17	48	50.03	-23	20	27.20	1.2844	6.4
mar	14	2458191.75	17	51	21.27	-23	22	12.38	1.2749	6.4
mar	15	2458192.75	17	53	52.24	-23	23	49.47	1.2653	6.4
mar	16	2458193.75	17	56	22.90	-23	25	18.52	1.2558	6.4
mar	17	2458194.75	17	58	53.26	-23	26	39.60	1.2463	6.3
mar	18	2458195.75	18	1	23.28	-23	27	52.76	1.2368	6.3
mar	19	2458196.75	18	3	52.97	-23	28	58.10	1.2274	6.3
mar	20	2458197.75	18	6	22.31	-23	29	55.68	1.2179	6.3
mar	21	2458198.75	18	8	51.29	-23	30	45.59	1.2085	6.2
mar	22	2458199.75	18	11	19.90	-23	31	27.94	1.1990	6.2
mar	23	2458200.75	18	13	48.12	-23	32	2.82	1.1896	6.2
mar	24	2458201.75	18	16	15.95	-23	32	30.34	1.1803	6.2
mar	25	2458202.75	18	18	43.38	-23	32	50.60	1.1709	6.1
mar	26	2458203.75	18	21	10.39	-23	33	3.72	1.1616	6.1
mar	27	2458204.75	18	23	36.98	-23	33	9.79	1.1522	6.1
mar	28	2458205.75	18	26	3.13	-23	33	8.92	1.1429	6.1
mar	29	2458206.75	18	28	28.83	-23	33	1.22	1.1337	6.0
mar	30	2458207.75	18	30	54.08	-23	32	46.78	1.1244	6.0
mar	31	2458208.75	18	33	18.86	-23	32	25.73	1.1152	6.0
abr	1	2458209.75	18	35	43.16	-23	31	58.20	1.1060	6.0
abr	2	2458210.75	18	38	6.97	-23	31	24.30	1.0968	5.9

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
abr	3	2458211.75	18	40	30.26	-23	30	44.19	1.0876	5.9
abr	4	2458212.75	18	42	53.03	-23	29	57.99	1.0785	5.9
abr	5	2458213.75	18	45	15.25	-23	29	5.86	1.0694	5.9
abr	6	2458214.75	18	47	36.91	-23	28	7.94	1.0603	5.8
abr	7	2458215.75	18	49	57.98	-23	27	4.38	1.0512	5.8
abr	8	2458216.75	18	52	18.44	-23	25	55.34	1.0422	5.8
abr	9	2458217.75	18	54	38.28	-23	24	40.96	1.0332	5.7
abr	10	2458218.75	18	56	57.47	-23	23	21.41	1.0242	5.7
abr	11	2458219.75	18	59	15.99	-23	21	56.83	1.0152	5.7
abr	12	2458220.75	19	1	33.83	-23	20	27.41	1.0063	5.7
abr	13	2458221.75	19	3	50.95	-23	18	53.29	0.9974	5.6
abr	14	2458222.75	19	6	7.34	-23	17	14.64	0.9885	5.6
abr	15	2458223.75	19	8	22.99	-23	15	31.65	0.9797	5.6
abr	16	2458224.75	19	10	37.86	-23	13	44.48	0.9709	5.6
abr	17	2458225.75	19	12	51.96	-23	11	53.33	0.9621	5.5
abr	18	2458226.75	19	15	5.25	-23	9	58.38	0.9534	5.5
abr	19	2458227.75	19	17	17.73	-23	7	59.84	0.9446	5.5
abr	20	2458228.75	19	19	29.37	-23	5	57.91	0.9360	5.4
abr	21	2458229.75	19	21	40.17	-23	3	52.79	0.9273	5.4
abr	22	2458230.75	19	23	50.10	-23	1	44.69	0.9187	5.4
abr	23	2458231.75	19	25	59.15	-22	59	33.82	0.9102	5.4
abr	24	2458232.75	19	28	7.31	-22	57	20.38	0.9016	5.3
abr	25	2458233.75	19	30	14.57	-22	55	4.56	0.8931	5.3
abr	26	2458234.75	19	32	20.89	-22	52	46.58	0.8847	5.3
abr	27	2458235.75	19	34	26.28	-22	50	26.65	0.8763	5.2
abr	28	2458236.75	19	36	30.71	-22	48	5.00	0.8679	5.2
abr	29	2458237.75	19	38	34.17	-22	45	41.85	0.8596	5.2
abr	30	2458238.75	19	40	36.63	-22	43	17.45	0.8513	5.1
may	1	2458239.75	19	42	38.07	-22	40	52.04	0.8430	5.1
may	2	2458240.75	19	44	38.46	-22	38	25.89	0.8348	5.1
may	3	2458241.75	19	46	37.78	-22	35	59.25	0.8266	5.0
may	4	2458242.75	19	48	36.00	-22	33	32.39	0.8185	5.0
may	5	2458243.75	19	50	33.08	-22	31	5.58	0.8104	5.0
may	6	2458244.75	19	52	29.00	-22	28	39.08	0.8023	4.9
may	7	2458245.75	19	54	23.73	-22	26	13.17	0.7943	4.9
may	8	2458246.75	19	56	17.24	-22	23	48.13	0.7864	4.9
may	9	2458247.75	19	58	9.48	-22	21	24.24	0.7784	4.8
may	10	2458248.75	20	0	0.44	-22	19	1.77	0.7706	4.8
may	11	2458249.75	20	1	50.07	-22	16	41.02	0.7627	4.8
may	12	2458250.75	20	3	38.34	-22	14	22.27	0.7549	4.7
may	13	2458251.75	20	5	25.23	-22	12	5.81	0.7472	4.7
may	14	2458252.75	20	7	10.69	-22	9	51.93	0.7395	4.7
may	15	2458253.75	20	8	54.70	-22	7	40.94	0.7319	4.6
may	16	2458254.75	20	10	37.23	-22	5	33.15	0.7243	4.6
may	17	2458255.75	20	12	18.25	-22	3	28.84	0.7168	4.5
may	18	2458256.75	20	13	57.72	-22	1	28.34	0.7093	4.5

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
may	19	2458257.75	20	15	35.63	-21	59	31.95	0.7019	4.5
may	20	2458258.75	20	17	11.93	-21	57	39.97	0.6945	4.4
may	21	2458259.75	20	18	46.62	-21	55	52.68	0.6872	4.4
may	22	2458260.75	20	20	19.64	-21	54	10.38	0.6799	4.4
may	23	2458261.75	20	21	50.99	-21	52	33.36	0.6727	4.3
may	24	2458262.75	20	23	20.62	-21	51	1.93	0.6656	4.3
may	25	2458263.75	20	24	48.52	-21	49	36.37	0.6585	4.2
may	26	2458264.75	20	26	14.63	-21	48	17.01	0.6515	4.2
may	27	2458265.75	20	27	38.94	-21	47	4.17	0.6445	4.1
may	28	2458266.75	20	29	1.40	-21	45	58.16	0.6376	4.1
may	29	2458267.75	20	30	21.97	-21	44	59.33	0.6308	4.1
may	30	2458268.75	20	31	40.60	-21	44	8.00	0.6240	4.0
may	31	2458269.75	20	32	57.25	-21	43	24.51	0.6173	4.0
jun	1	2458270.75	20	34	11.87	-21	42	49.20	0.6106	3.9
jun	2	2458271.75	20	35	24.41	-21	42	22.38	0.6040	3.9
jun	3	2458272.75	20	36	34.82	-21	42	4.40	0.5975	3.8
jun	4	2458273.75	20	37	43.05	-21	41	55.58	0.5910	3.8
jun	5	2458274.75	20	38	49.05	-21	41	56.22	0.5847	3.7
jun	6	2458275.75	20	39	52.76	-21	42	6.64	0.5783	3.7
jun	7	2458276.75	20	40	54.12	-21	42	27.13	0.5721	3.6
jun	8	2458277.75	20	41	53.10	-21	42	57.99	0.5659	3.6
jun	9	2458278.75	20	42	49.63	-21	43	39.50	0.5598	3.5
jun	10	2458279.75	20	43	43.66	-21	44	31.91	0.5538	3.5
jun	11	2458280.75	20	44	35.14	-21	45	35.48	0.5478	3.4
jun	12	2458281.75	20	45	24.02	-21	46	50.45	0.5420	3.4
jun	13	2458282.75	20	46	10.26	-21	48	17.04	0.5362	3.3
jun	14	2458283.75	20	46	53.82	-21	49	55.43	0.5305	3.3
jun	15	2458284.75	20	47	34.65	-21	51	45.81	0.5249	3.2
jun	16	2458285.75	20	48	12.72	-21	53	48.31	0.5193	3.2
jun	17	2458286.75	20	48	47.99	-21	56	3.05	0.5139	3.1
jun	18	2458287.75	20	49	20.42	-21	58	30.10	0.5085	3.1
jun	19	2458288.75	20	49	50.00	-22	1	9.52	0.5032	3.0
jun	20	2458289.75	20	50	16.70	-22	4	1.35	0.4981	2.9
jun	21	2458290.75	20	50	40.48	-22	7	5.59	0.4930	2.9
jun	22	2458291.75	20	51	1.31	-22	10	22.26	0.4880	2.8
jun	23	2458292.75	20	51	19.18	-22	13	51.32	0.4831	2.8
jun	24	2458293.75	20	51	34.04	-22	17	32.74	0.4783	2.7
jun	25	2458294.75	20	51	45.87	-22	21	26.44	0.4736	2.6
jun	26	2458295.75	20	51	54.65	-22	25	32.32	0.4690	2.6
jun	27	2458296.75	20	52	0.34	-22	29	50.25	0.4645	2.5
jun	28	2458297.75	20	52	2.91	-22	34	20.05	0.4602	2.4
jun	29	2458298.75	20	52	2.36	-22	39	1.51	0.4559	2.4
jun	30	2458299.75	20	51	58.65	-22	43	54.38	0.4517	2.3
jul	1	2458300.75	20	51	51.78	-22	48	58.36	0.4476	2.2
jul	2	2458301.75	20	51	41.72	-22	54	13.10	0.4437	2.2
jul	3	2458302.75	20	51	28.48	-22	59	38.19	0.4398	2.1

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Efermídes a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
jul	4	2458303.75	20	51	12.06	-23	5	13.19	0.4361	2.0
jul	5	2458304.75	20	50	52.46	-23	10	57.60	0.4325	2.0
jul	6	2458305.75	20	50	29.70	-23	16	50.86	0.4290	1.9
jul	7	2458306.75	20	50	3.80	-23	22	52.35	0.4256	1.8
jul	8	2458307.75	20	49	34.80	-23	29	1.43	0.4224	1.8
jul	9	2458308.75	20	49	2.74	-23	35	17.35	0.4193	1.7
jul	10	2458309.75	20	48	27.67	-23	41	39.37	0.4163	1.6
jul	11	2458310.75	20	47	49.66	-23	48	6.65	0.4134	1.5
jul	12	2458311.75	20	47	8.79	-23	54	38.32	0.4106	1.4
jul	13	2458312.75	20	46	25.15	-24	1	13.46	0.4080	1.4
jul	14	2458313.75	20	45	38.84	-24	7	51.10	0.4056	1.3
jul	15	2458314.75	20	44	49.98	-24	14	30.24	0.4032	1.2
jul	16	2458315.75	20	43	58.70	-24	21	9.84	0.4010	1.1
jul	17	2458316.75	20	43	5.14	-24	27	48.88	0.3990	1.1
jul	18	2458317.75	20	42	9.42	-24	34	26.29	0.3971	1.0
jul	19	2458318.75	20	41	11.72	-24	41	1.05	0.3953	0.9
jul	20	2458319.75	20	40	12.16	-24	47	32.13	0.3936	0.8
jul	21	2458320.75	20	39	10.92	-24	53	58.51	0.3921	0.7
jul	22	2458321.75	20	38	8.14	-25	0	19.18	0.3908	0.6
jul	23	2458322.75	20	37	4.00	-25	6	33.18	0.3896	0.6
jul	24	2458323.75	20	35	58.66	-25	12	39.53	0.3885	0.5
jul	25	2458324.75	20	34	52.29	-25	18	37.28	0.3876	0.4
jul	26	2458325.75	20	33	45.07	-25	24	25.52	0.3868	0.3
jul	27	2458326.75	20	32	37.17	-25	30	3.37	0.3861	0.2
jul	28	2458327.75	20	31	28.79	-25	35	29.96	0.3856	0.1
jul	29	2458328.75	20	30	20.09	-25	40	44.47	0.3853	0.0
jul	30	2458329.75	20	29	11.28	-25	45	46.13	0.3850	24.0
jul	31	2458330.75	20	28	2.54	-25	50	34.19	0.3850	23.9
ago	1	2458331.75	20	26	54.06	-25	55	7.97	0.3850	23.8
ago	2	2458332.75	20	25	46.03	-25	59	26.80	0.3852	23.7
ago	3	2458333.75	20	24	38.65	-26	3	30.11	0.3856	23.6
ago	4	2458334.75	20	23	32.12	-26	7	17.35	0.3860	23.5
ago	5	2458335.75	20	22	26.62	-26	10	48.03	0.3867	23.5
ago	6	2458336.75	20	21	22.35	-26	14	1.73	0.3874	23.4
ago	7	2458337.75	20	20	19.49	-26	16	58.08	0.3883	23.3
ago	8	2458338.75	20	19	18.25	-26	19	36.76	0.3893	23.2
ago	9	2458339.75	20	18	18.81	-26	21	57.52	0.3905	23.1
ago	10	2458340.75	20	17	21.35	-26	24	0.17	0.3918	23.0
ago	11	2458341.75	20	16	26.04	-26	25	44.56	0.3932	23.0
ago	12	2458342.75	20	15	33.07	-26	27	10.60	0.3948	22.9
ago	13	2458343.75	20	14	42.59	-26	28	18.27	0.3965	22.8
ago	14	2458344.75	20	13	54.74	-26	29	7.60	0.3983	22.7
ago	15	2458345.75	20	13	9.68	-26	29	38.69	0.4002	22.6
ago	16	2458346.75	20	12	27.51	-26	29	51.69	0.4023	22.6
ago	17	2458347.75	20	11	48.35	-26	29	46.81	0.4045	22.5
ago	18	2458348.75	20	11	12.29	-26	29	24.27	0.4068	22.4

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
ago	19	2458349.75	20	10	39.40	-26	28	44.34	0.4092	22.3
ago	20	2458350.75	20	10	9.77	-26	27	47.30	0.4117	22.3
ago	21	2458351.75	20	9	43.44	-26	26	33.47	0.4143	22.2
ago	22	2458352.75	20	9	20.46	-26	25	3.15	0.4171	22.1
ago	23	2458353.75	20	9	0.88	-26	23	16.66	0.4199	22.1
ago	24	2458354.75	20	8	44.71	-26	21	14.34	0.4228	22.0
ago	25	2458355.75	20	8	31.99	-26	18	56.50	0.4259	21.9
ago	26	2458356.75	20	8	22.72	-26	16	23.48	0.4290	21.8
ago	27	2458357.75	20	8	16.91	-26	13	35.58	0.4323	21.8
ago	28	2458358.75	20	8	14.57	-26	10	33.13	0.4356	21.7
ago	29	2458359.75	20	8	15.69	-26	7	16.44	0.4390	21.6
ago	30	2458360.75	20	8	20.26	-26	3	45.79	0.4426	21.6
ago	31	2458361.75	20	8	28.28	-26	0	1.48	0.4462	21.5
sep	1	2458362.75	20	8	39.73	-25	56	3.79	0.4499	21.5
sep	2	2458363.75	20	8	54.58	-25	51	53.00	0.4536	21.4
sep	3	2458364.75	20	9	12.83	-25	47	29.36	0.4575	21.3
sep	4	2458365.75	20	9	34.45	-25	42	53.13	0.4615	21.3
sep	5	2458366.75	20	9	59.41	-25	38	4.56	0.4655	21.2
sep	6	2458367.75	20	10	27.69	-25	33	3.87	0.4696	21.2
sep	7	2458368.75	20	10	59.25	-25	27	51.27	0.4738	21.1
sep	8	2458369.75	20	11	34.07	-25	22	26.98	0.4781	21.0
sep	9	2458370.75	20	12	12.11	-25	16	51.17	0.4824	21.0
sep	10	2458371.75	20	12	53.34	-25	11	4.02	0.4868	20.9
sep	11	2458372.75	20	13	37.71	-25	5	5.73	0.4913	20.9
sep	12	2458373.75	20	14	25.17	-24	58	56.46	0.4959	20.8
sep	13	2458374.75	20	15	15.67	-24	52	36.41	0.5005	20.8
sep	14	2458375.75	20	16	9.15	-24	46	5.74	0.5052	20.7
sep	15	2458376.75	20	17	5.55	-24	39	24.63	0.5100	20.7
sep	16	2458377.75	20	18	4.80	-24	32	33.24	0.5148	20.6
sep	17	2458378.75	20	19	6.84	-24	25	31.71	0.5197	20.6
sep	18	2458379.75	20	20	11.58	-24	18	20.19	0.5246	20.5
sep	19	2458380.75	20	21	18.97	-24	10	58.80	0.5296	20.5
sep	20	2458381.75	20	22	28.94	-24	3	27.66	0.5347	20.4
sep	21	2458382.75	20	23	41.40	-23	55	46.86	0.5398	20.4
sep	22	2458383.75	20	24	56.30	-23	47	56.51	0.5450	20.3
sep	23	2458384.75	20	26	13.56	-23	39	56.69	0.5502	20.3
sep	24	2458385.75	20	27	33.12	-23	31	47.47	0.5555	20.3
sep	25	2458386.75	20	28	54.92	-23	23	28.93	0.5608	20.2
sep	26	2458387.75	20	30	18.88	-23	15	1.13	0.5662	20.2
sep	27	2458388.75	20	31	44.95	-23	6	24.12	0.5716	20.1
sep	28	2458389.75	20	33	13.07	-22	57	37.97	0.5771	20.1
sep	29	2458390.75	20	34	43.18	-22	48	42.71	0.5827	20.0
sep	30	2458391.75	20	36	15.22	-22	39	38.41	0.5883	20.0
oct	1	2458392.75	20	37	49.16	-22	30	25.09	0.5939	20.0
oct	2	2458393.75	20	39	24.92	-22	21	2.81	0.5996	19.9
oct	3	2458394.75	20	41	2.48	-22	11	31.61	0.6053	19.9

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
oct	4	2458395.75	20	42	41.77	-22	1	51.50	0.6111	19.9
oct	5	2458396.75	20	44	22.76	-21	52	2.51	0.6169	19.8
oct	6	2458397.75	20	46	5.40	-21	42	4.66	0.6228	19.8
oct	7	2458398.75	20	47	49.64	-21	31	57.97	0.6287	19.7
oct	8	2458399.75	20	49	35.46	-21	21	42.45	0.6347	19.7
oct	9	2458400.75	20	51	22.80	-21	11	18.13	0.6407	19.7
oct	10	2458401.75	20	53	11.63	-21	0	45.05	0.6468	19.6
oct	11	2458402.75	20	55	1.89	-20	50	3.25	0.6529	19.6
oct	12	2458403.75	20	56	53.54	-20	39	12.79	0.6590	19.6
oct	13	2458404.75	20	58	46.53	-20	28	13.73	0.6652	19.5
oct	14	2458405.75	21	0	40.81	-20	17	6.14	0.6714	19.5
oct	15	2458406.75	21	2	36.34	-20	5	50.08	0.6777	19.5
oct	16	2458407.75	21	4	33.06	-19	54	25.64	0.6840	19.4
oct	17	2458408.75	21	6	30.93	-19	42	52.86	0.6903	19.4
oct	18	2458409.75	21	8	29.91	-19	31	11.83	0.6967	19.4
oct	19	2458410.75	21	10	29.94	-19	19	22.60	0.7031	19.3
oct	20	2458411.75	21	12	30.98	-19	7	25.26	0.7096	19.3
oct	21	2458412.75	21	14	33.00	-18	55	19.87	0.7161	19.3
oct	22	2458413.75	21	16	35.95	-18	43	6.50	0.7226	19.2
oct	23	2458414.75	21	18	39.80	-18	30	45.22	0.7292	19.2
oct	24	2458415.75	21	20	44.50	-18	18	16.10	0.7358	19.2
oct	25	2458416.75	21	22	50.03	-18	5	39.22	0.7424	19.1
oct	26	2458417.75	21	24	56.35	-17	52	54.66	0.7491	19.1
oct	27	2458418.75	21	27	3.43	-17	40	2.49	0.7558	19.1
oct	28	2458419.75	21	29	11.25	-17	27	2.79	0.7625	19.1
oct	29	2458420.75	21	31	19.77	-17	13	55.64	0.7693	19.0
oct	30	2458421.75	21	33	28.98	-17	0	41.12	0.7761	19.0
oct	31	2458422.75	21	35	38.85	-16	47	19.29	0.7829	19.0
nov	1	2458423.75	21	37	49.36	-16	33	50.24	0.7898	18.9
nov	2	2458424.75	21	40	0.48	-16	20	14.01	0.7967	18.9
nov	3	2458425.75	21	42	12.21	-16	6	30.67	0.8037	18.9
nov	4	2458426.75	21	44	24.52	-15	52	40.27	0.8107	18.8
nov	5	2458427.75	21	46	37.40	-15	38	42.88	0.8177	18.8
nov	6	2458428.75	21	48	50.83	-15	24	38.57	0.8248	18.8
nov	7	2458429.75	21	51	4.79	-15	10	27.42	0.8319	18.8
nov	8	2458430.75	21	53	19.27	-14	56	9.53	0.8390	18.7
nov	9	2458431.75	21	55	34.24	-14	41	45.00	0.8462	18.7
nov	10	2458432.75	21	57	49.69	-14	27	13.94	0.8533	18.7
nov	11	2458433.75	22	0	5.59	-14	12	36.46	0.8606	18.6
nov	12	2458434.75	22	2	21.92	-13	57	52.69	0.8678	18.6
nov	13	2458435.75	22	4	38.65	-13	43	2.75	0.8751	18.6
nov	14	2458436.75	22	6	55.78	-13	28	6.76	0.8824	18.6
nov	15	2458437.75	22	9	13.27	-13	13	4.84	0.8897	18.5
nov	16	2458438.75	22	11	31.11	-12	57	57.13	0.8971	18.5
nov	17	2458439.75	22	13	49.28	-12	42	43.74	0.9045	18.5
nov	18	2458440.75	22	16	7.77	-12	27	24.80	0.9119	18.5

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
nov	19	2458441.75	22	18	26.54	-12	12	0.44	0.9194	18.4
nov	20	2458442.75	22	20	45.61	-11	56	30.79	0.9269	18.4
nov	21	2458443.75	22	23	4.93	-11	40	55.97	0.9344	18.4
nov	22	2458444.75	22	25	24.51	-11	25	16.11	0.9419	18.3
nov	23	2458445.75	22	27	44.34	-11	9	31.35	0.9495	18.3
nov	24	2458446.75	22	30	4.39	-10	53	41.82	0.9570	18.3
nov	25	2458447.75	22	32	24.66	-10	37	47.66	0.9647	18.3
nov	26	2458448.75	22	34	45.15	-10	21	48.99	0.9723	18.2
nov	27	2458449.75	22	37	5.84	-10	5	45.94	0.9800	18.2
nov	28	2458450.75	22	39	26.73	-9	49	38.63	0.9877	18.2
nov	29	2458451.75	22	41	47.81	-9	33	27.16	0.9954	18.2
nov	30	2458452.75	22	44	9.08	-9	17	11.64	1.0032	18.1
dic	1	2458453.75	22	46	30.54	-9	0	52.16	1.0109	18.1
dic	2	2458454.75	22	48	52.20	-8	44	28.82	1.0188	18.1
dic	3	2458455.75	22	51	14.04	-8	28	1.71	1.0266	18.1
dic	4	2458456.75	22	53	36.06	-8	11	30.95	1.0345	18.0
dic	5	2458457.75	22	55	58.28	-7	54	56.64	1.0423	18.0
dic	6	2458458.75	22	58	20.67	-7	38	18.92	1.0503	18.0
dic	7	2458459.75	23	0	43.24	-7	21	37.90	1.0582	17.9
dic	8	2458460.75	23	3	5.98	-7	4	53.72	1.0662	17.9
dic	9	2458461.75	23	5	28.88	-6	48	6.53	1.0741	17.9
dic	10	2458462.75	23	7	51.94	-6	31	16.45	1.0822	17.9
dic	11	2458463.75	23	10	15.15	-6	14	23.65	1.0902	17.8
dic	12	2458464.75	23	12	38.50	-5	57	28.26	1.0982	17.8
dic	13	2458465.75	23	15	1.99	-5	40	30.43	1.1063	17.8
dic	14	2458466.75	23	17	25.62	-5	23	30.30	1.1144	17.8
dic	15	2458467.75	23	19	49.38	-5	6	28.02	1.1225	17.7
dic	16	2458468.75	23	22	13.25	-4	49	23.72	1.1306	17.7
dic	17	2458469.75	23	24	37.25	-4	32	17.57	1.1388	17.7
dic	18	2458470.75	23	27	1.37	-4	15	9.69	1.1469	17.7
dic	19	2458471.75	23	29	25.60	-3	58	0.24	1.1551	17.6
dic	20	2458472.75	23	31	49.94	-3	40	49.37	1.1633	17.6
dic	21	2458473.75	23	34	14.39	-3	23	37.21	1.1716	17.6
dic	22	2458474.75	23	36	38.94	-3	6	23.93	1.1798	17.6
dic	23	2458475.75	23	39	3.60	-2	49	9.67	1.1881	17.5
dic	24	2458476.75	23	41	28.36	-2	31	54.57	1.1963	17.5
dic	25	2458477.75	23	43	53.23	-2	14	38.79	1.2046	17.5
dic	26	2458478.75	23	46	18.20	-1	57	22.46	1.2129	17.5
dic	27	2458479.75	23	48	43.28	-1	40	5.68	1.2213	17.4
dic	28	2458480.75	23	51	8.47	-1	22 48.56	1.2296 17.4		
dic	29	2458481.75	23	53	33.79	-1	5	31.22	1.2380	17.4
dic	30	2458482.75	23	55	59.23	-0	48	13.74	1.2464	17.4
dic	31	2458483.75	23	58	24.81	-0	30	56.24	1.2548	17.3

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	\circ	δ -	"	dis UA	hp h
ene	1	2458119.75	14	59	17.37	-15	53	45.06	5.9548	8.3
ene	2	2458120.75	14	59	57.60	-15	56	29.54	5.9415	8.2
ene	3	2458121.75	15	0	37.46	-15	59	11.78	5.9281	8.2
ene	4	2458122.75	15	1	16.94	-16	1	51.77	5.9145	8.1
ene	5	2458123.75	15	1	56.03	-16	4	29.47	5.9009	8.0
ene	6	2458124.75	15	2	34.73	-16	7	4.86	5.8871	8.0
ene	7	2458125.75	15	3	13.02	-16	9	37.93	5.8731	7.9
ene	8	2458126.75	15	3	50.91	-16	12	8.66	5.8591	7.9
ene	9	2458127.75	15	4	28.39	-16	14	37.04	5.8449	7.8
ene	10	2458128.75	15	5	5.44	-16	17	3.08	5.8306	7.8
ene	11	2458129.75	15	5	42.06	-16	19	26.74	5.8162	7.7
ene	12	2458130.75	15	6	18.24	-16	21	48.03	5.8017	7.7
ene	13	2458131.75	15	6	53.97	-16	24	6.93	5.7870	7.6
ene	14	2458132.75	15	7	29.25	-16	26	23.42	5.7723	7.5
ene	15	2458133.75	15	8	4.07	-16	28	37.48	5.7574	7.5
ene	16	2458134.75	15	8	38.41	-16	30	49.11	5.7425	7.4
ene	17	2458135.75	15	9	12.26	-16	32	58.27	5.7274	7.4
ene	18	2458136.75	15	9	45.63	-16	35	4.96	5.7123	7.3
ene	19	2458137.75	15	10	18.49	-16	37	9.15	5.6971	7.3
ene	20	2458138.75	15	10	50.85	-16	39	10.81	5.6818	7.2
ene	21	2458139.75	15	11	22.69	-16	41	9.95	5.6664	7.2
ene	22	2458140.75	15	11	54.01	-16	43	6.54	5.6509	7.1
ene	23	2458141.75	15	12	24.80	-16	45	0.58	5.6354	7.0
ene	24	2458142.75	15	12	55.05	-16	46	52.05	5.6197	7.0
ene	25	2458143.75	15	13	24.77	-16	48	40.96	5.6041	6.9
ene	26	2458144.75	15	13	53.93	-16	50	27.31	5.5883	6.9
ene	27	2458145.75	15	14	22.55	-16	52	11.09	5.5725	6.8
ene	28	2458146.75	15	14	50.61	-16	53	52.31	5.5566	6.8
ene	29	2458147.75	15	15	18.10	-16	55	30.97	5.5407	6.7
ene	30	2458148.75	15	15	45.01	-16	57	7.06	5.5247	6.6
ene	31	2458149.75	15	16	11.35	-16	58	40.55	5.5087	6.6
feb	1	2458150.75	15	16	37.08	-17	0	11.44	5.4927	6.5
feb	2	2458151.75	15	17	2.22	-17	1	39.69	5.4766	6.5
feb	3	2458152.75	15	17	26.76	-17	3	5.30	5.4605	6.4
feb	4	2458153.75	15	17	50.68	-17	4	28.26	5.4443	6.3
feb	5	2458154.75	15	18	13.98	-17	5	48.57	5.4281	6.3
feb	6	2458155.75	15	18	36.66	-17	7	6.21	5.4119	6.2
feb	7	2458156.75	15	18	58.70	-17	8	21.19	5.3956	6.2
feb	8	2458157.75	15	19	20.11	-17	9	33.50	5.3794	6.1
feb	9	2458158.75	15	19	40.87	-17	10	43.14	5.3631	6.0
feb	10	2458159.75	15	20	0.97	-17	11	50.09	5.3468	6.0
feb	11	2458160.75	15	20	20.42	-17	12	54.35	5.3306	5.9
feb	12	2458161.75	15	20	39.19	-17	13	55.90	5.3143	5.9
feb	13	2458162.75	15	20	57.28	-17	14	54.73	5.2980	5.8
feb	14	2458163.75	15	21	14.68	-17	15	50.83	5.2818	5.7
feb	15	2458164.75	15	21	31.40	-17	16	44.18	5.2655	5.7

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
feb	16	2458165.75	15	21	47.41	-17	17	34.78	5.2493	5.6
feb	17	2458166.75	15	22	2.72	-17	18	22.61	5.2331	5.6
feb	18	2458167.75	15	22	17.32	-17	19	7.65	5.2169	5.5
feb	19	2458168.75	15	22	31.21	-17	19	49.92	5.2007	5.4
feb	20	2458169.75	15	22	44.38	-17	20	29.40	5.1846	5.4
feb	21	2458170.75	15	22	56.84	-17	21	6.10	5.1685	5.3
feb	22	2458171.75	15	23	8.57	-17	21	40.03	5.1525	5.2
feb	23	2458172.75	15	23	19.57	-17	22	11.20	5.1365	5.2
feb	24	2458173.75	15	23	29.85	-17	22	39.61	5.1206	5.1
feb	25	2458174.75	15	23	39.39	-17	23	5.27	5.1048	5.1
feb	26	2458175.75	15	23	48.19	-17	23	28.18	5.0890	5.0
feb	27	2458176.75	15	23	56.26	-17	23	48.34	5.0733	4.9
feb	28	2458177.75	15	24	3.57	-17	24	5.73	5.0576	4.9
mar	1	2458178.75	15	24	10.14	-17	24	20.34	5.0420	4.8
mar	2	2458179.75	15	24	15.95	-17	24	32.18	5.0265	4.7
mar	3	2458180.75	15	24	21.01	-17	24	41.23	5.0111	4.7
mar	4	2458181.75	15	24	25.32	-17	24	47.49	4.9958	4.6
mar	5	2458182.75	15	24	28.86	-17	24	50.98	4.9806	4.5
mar	6	2458183.75	15	24	31.65	-17	24	51.70	4.9655	4.5
mar	7	2458184.75	15	24	33.68	-17	24	49.66	4.9505	4.4
mar	8	2458185.75	15	24	34.95	-17	24	44.86	4.9355	4.4
mar	9	2458186.75	15	24	35.45	-17	24	37.30	4.9207	4.3
mar	10	2458187.75	15	24	35.18	-17	24	26.99	4.9061	4.2
mar	11	2458188.75	15	24	34.15	-17	24	13.92	4.8915	4.2
mar	12	2458189.75	15	24	32.35	-17	23	58.10	4.8771	4.1
mar	13	2458190.75	15	24	29.78	-17	23	39.52	4.8628	4.0
mar	14	2458191.75	15	24	26.43	-17	23	18.18	4.8486	4.0
mar	15	2458192.75	15	24	22.32	-17	22	54.10	4.8346	3.9
mar	16	2458193.75	15	24	17.44	-17	22	27.26	4.8207	3.8
mar	17	2458194.75	15	24	11.80	-17	21	57.67	4.8070	3.8
mar	18	2458195.75	15	24	5.40	-17	21	25.35	4.7934	3.7
mar	19	2458196.75	15	23	58.24	-17	20	50.31	4.7800	3.6
mar	20	2458197.75	15	23	50.33	-17	20	12.57	4.7668	3.5
mar	21	2458198.75	15	23	41.68	-17	19	32.16	4.7537	3.5
mar	22	2458199.75	15	23	32.29	-17	18	49.10	4.7408	3.4
mar	23	2458200.75	15	23	22.17	-17	18	3.42	4.7281	3.3
mar	24	2458201.75	15	23	11.32	-17	17	15.16	4.7156	3.3
mar	25	2458202.75	15	22	59.75	-17	16	24.33	4.7032	3.2
mar	26	2458203.75	15	22	47.47	-17	15	30.95	4.6911	3.1
mar	27	2458204.75	15	22	34.48	-17	14	35.05	4.6791	3.1
mar	28	2458205.75	15	22	20.78	-17	13	36.62	4.6674	3.0
mar	29	2458206.75	15	22	6.40	-17	12	35.70	4.6558	2.9
mar	30	2458207.75	15	21	51.32	-17	11	32.31	4.6445	2.9
mar	31	2458208.75	15	21	35.57	-17	10	26.46	4.6334	2.8
abr	1	2458209.75	15	21	19.16	-17	9	18.20	4.6224	2.7
abr	2	2458210.75	15	21	2.09	-17	8	7.56	4.6118	2.6

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
abr	3	2458211.75	15	20	44.37	-17	6	54.57	4.6013	2.6
abr	4	2458212.75	15	20	26.02	-17	5	39.28	4.5910	2.5
abr	5	2458213.75	15	20	7.04	-17	4	21.71	4.5810	2.4
abr	6	2458214.75	15	19	47.45	-17	3	1.90	4.5713	2.4
abr	7	2458215.75	15	19	27.25	-17	1	39.89	4.5617	2.3
abr	8	2458216.75	15	19	6.45	-17	0	15.71	4.5524	2.2
abr	9	2458217.75	15	18	45.07	-16	58	49.40	4.5434	2.2
abr	10	2458218.75	15	18	23.12	-16	57	20.98	4.5346	2.1
abr	11	2458219.75	15	18	0.61	-16	55	50.51	4.5260	2.0
abr	12	2458220.75	15	17	37.56	-16	54	18.01	4.5177	1.9
abr	13	2458221.75	15	17	13.98	-16	52	43.54	4.5097	1.9
abr	14	2458222.75	15	16	49.88	-16	51	7.14	4.5019	1.8
abr	15	2458223.75	15	16	25.30	-16	49	28.88	4.4944	1.7
abr	16	2458224.75	15	16	0.24	-16	47	48.80	4.4872	1.6
abr	17	2458225.75	15	15	34.72	-16	46	6.98	4.4803	1.6
abr	18	2458226.75	15	15	8.76	-16	44	23.50	4.4736	1.5
abr	19	2458227.75	15	14	42.39	-16	42	38.42	4.4672	1.4
abr	20	2458228.75	15	14	15.61	-16	40	51.82	4.4610	1.4
abr	21	2458229.75	15	13	48.46	-16	39	3.77	4.4552	1.3
abr	22	2458230.75	15	13	20.94	-16	37	14.34	4.4496	1.2
abr	23	2458231.75	15	12	53.07	-16	35	23.58	4.4444	1.1
abr	24	2458232.75	15	12	24.87	-16	33	31.55	4.4394	1.1
abr	25	2458233.75	15	11	56.37	-16	31	38.33	4.4347	1.0
abr	26	2458234.75	15	11	27.57	-16	29	43.98	4.4303	0.9
abr	27	2458235.75	15	10	58.51	-16	27	48.56	4.4262	0.8
abr	28	2458236.75	15	10	29.21	-16	25	52.17	4.4224	0.8
abr	29	2458237.75	15	9	59.67	-16	23	54.88	4.4189	0.7
abr	30	2458238.75	15	9	29.94	-16	21	56.76	4.4156	0.6
may	1	2458239.75	15	9	0.01	-16	19	57.91	4.4127	0.5
may	2	2458240.75	15	8	29.92	-16	17	58.41	4.4101	0.5
may	3	2458241.75	15	7	59.69	-16	15	58.32	4.4078	0.4
may	4	2458242.75	15	7	29.32	-16	13	57.74	4.4057	0.3
may	5	2458243.75	15	6	58.85	-16	11	56.73	4.4040	0.2
may	6	2458244.75	15	6	28.29	-16	9	55.38	4.4026	0.2
may	7	2458245.75	15	5	57.67	-16	7	53.76	4.4014	0.1
may	8	2458246.75	15	5	27.00	-16	5	51.95	4.4006	0.0
may	9	2458247.75	15	4	56.30	-16	3	50.04	4.4001	23.9
may	10	2458248.75	15	4	25.60	-16	1	48.10	4.3998	23.9
may	11	2458249.75	15	3	54.92	-15	59	46.22	4.3999	23.8
may	12	2458250.75	15	3	24.28	-15	57	44.49	4.4003	23.7
may	13	2458251.75	15	2	53.70	-15	55	43.00	4.4010	23.7
may	14	2458252.75	15	2	23.21	-15	53	41.86	4.4020	23.6
may	15	2458253.75	15	1	52.84	-15	51	41.17	4.4032	23.5
may	16	2458254.75	15	1	22.60	-15	49	41.03	4.4048	23.4
may	17	2458255.75	15	0	52.51	-15	47	41.55	4.4067	23.4
may	18	2458256.75	15	0	22.60	-15	45	42.82	4.4089	23.3

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mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
may	19	2458257.75	14	59	52.89	-15	43	44.93	4.4114	23.2
may	20	2458258.75	14	59	23.39	-15	41	47.96	4.4141	23.1
may	21	2458259.75	14	58	54.12	-15	39	51.99	4.4172	23.1
may	22	2458260.75	14	58	25.10	-15	37	57.11	4.4206	23.0
may	23	2458261.75	14	57	56.36	-15	36	3.38	4.4242	22.9
may	24	2458262.75	14	57	27.91	-15	34	10.91	4.4281	22.8
may	25	2458263.75	14	56	59.77	-15	32	19.76	4.4324	22.8
may	26	2458264.75	14	56	31.96	-15	30	30.03	4.4369	22.7
may	27	2458265.75	14	56	4.50	-15	28	41.81	4.4416	22.6
may	28	2458266.75	14	55	37.41	-15	26	55.18	4.4467	22.5
may	29	2458267.75	14	55	10.69	-15	25	10.21	4.4520	22.5
may	30	2458268.75	14	54	44.37	-15	23	26.99	4.4576	22.4
may	31	2458269.75	14	54	18.45	-15	21	45.59	4.4635	22.3
jun	1	2458270.75	14	53	52.97	-15	20	6.07	4.4696	22.3
jun	2	2458271.75	14	53	27.92	-15	18	28.50	4.4760	22.2
jun	3	2458272.75	14	53	3.33	-15	16	52.95	4.4827	22.1
jun	4	2458273.75	14	52	39.20	-15	15	19.49	4.4896	22.0
jun	5	2458274.75	14	52	15.55	-15	13	48.16	4.4968	22.0
jun	6	2458275.75	14	51	52.40	-15	12	19.04	4.5042	21.9
jun	7	2458276.75	14	51	29.75	-15	10	52.19	4.5119	21.8
jun	8	2458277.75	14	51	7.63	-15	9	27.67	4.5198	21.7
jun	9	2458278.75	14	50	46.05	-15	8	5.55	4.5280	21.7
jun	10	2458279.75	14	50	25.02	-15	6	45.89	4.5364	21.6
jun	11	2458280.75	14	50	4.55	-15	5	28.77	4.5451	21.5
jun	12	2458281.75	14	49	44.66	-15	4	14.26	4.5540	21.5
jun	13	2458282.75	14	49	25.37	-15	3	2.42	4.5631	21.4
jun	14	2458283.75	14	49	6.68	-15	1	53.31	4.5724	21.3
jun	15	2458284.75	14	48	48.59	-15	0	47.00	4.5820	21.2
jun	16	2458285.75	14	48	31.13	-14	59	43.51	4.5918	21.2
jun	17	2458286.75	14	48	14.29	-14	58	42.89	4.6018	21.1
jun	18	2458287.75	14	47	58.08	-14	57	45.16	4.6120	21.0
jun	19	2458288.75	14	47	42.52	-14	56	50.36	4.6224	21.0
jun	20	2458289.75	14	47	27.61	-14	55	58.52	4.6331	20.9
jun	21	2458290.75	14	47	13.36	-14	55	9.68	4.6439	20.8
jun	22	2458291.75	14	46	59.77	-14	54	23.88	4.6549	20.8
jun	23	2458292.75	14	46	46.85	-14	53	41.15	4.6661	20.7
jun	24	2458293.75	14	46	34.61	-14	53	1.53	4.6775	20.6
jun	25	2458294.75	14	46	23.05	-14	52	25.03	4.6890	20.6
jun	26	2458295.75	14	46	12.17	-14	51	51.68	4.7008	20.5
jun	27	2458296.75	14	46	1.99	-14	51	21.51	4.7127	20.4
jun	28	2458297.75	14	45	52.49	-14	50	54.52	4.7247	20.3
jun	29	2458298.75	14	45	43.69	-14	50	30.72	4.7370	20.3
jun	30	2458299.75	14	45	35.58	-14	50	10.12	4.7494	20.2
jul	1	2458300.75	14	45	28.17	-14	49	52.74	4.7619	20.1
jul	2	2458301.75	14	45	21.46	-14	49	38.57	4.7747	20.1
jul	3	2458302.75	14	45	15.45	-14	49	27.62	4.7875	20.0

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mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
jul	4	2458303.75	14	45	10.14	-14	49	19.90	4.8005	19.9
jul	5	2458304.75	14	45	5.55	-14	49	15.41	4.8136	19.9
jul	6	2458305.75	14	45	1.66	-14	49	14.16	4.8269	19.8
jul	7	2458306.75	14	44	58.49	-14	49	16.16	4.8403	19.7
jul	8	2458307.75	14	44	56.03	-14	49	21.41	4.8539	19.7
jul	9	2458308.75	14	44	54.29	-14	49	29.94	4.8675	19.6
jul	10	2458309.75	14	44	53.28	-14	49	41.76	4.8813	19.5
jul	11	2458310.75	14	44	52.98	-14	49	56.86	4.8952	19.5
jul	12	2458311.75	14	44	53.41	-14	50	15.25	4.9092	19.4
jul	13	2458312.75	14	44	54.55	-14	50	36.93	4.9233	19.3
jul	14	2458313.75	14	44	56.41	-14	51	1.87	4.9375	19.3
jul	15	2458314.75	14	44	58.99	-14	51	30.05	4.9518	19.2
jul	16	2458315.75	14	45	2.27	-14	52	1.44	4.9662	19.1
jul	17	2458316.75	14	45	6.27	-14	52	36.04	4.9806	19.1
jul	18	2458317.75	14	45	10.98	-14	53	13.81	4.9952	19.0
jul	19	2458318.75	14	45	16.40	-14	53	54.76	5.0098	19.0
jul	20	2458319.75	14	45	22.52	-14	54	38.87	5.0245	18.9
jul	21	2458320.75	14	45	29.35	-14	55	26.12	5.0393	18.8
jul	22	2458321.75	14	45	36.88	-14	56	16.49	5.0542	18.8
jul	23	2458322.75	14	45	45.10	-14	57	9.96	5.0691	18.7
jul	24	2458323.75	14	45	54.02	-14	58	6.51	5.0840	18.6
jul	25	2458324.75	14	46	3.62	-14	59	6.09	5.0990	18.6
jul	26	2458325.75	14	46	13.91	-15	0	8.69	5.1141	18.5
jul	27	2458326.75	14	46	24.88	-15	1	14.28	5.1292	18.4
jul	28	2458327.75	14	46	36.52	-15	2	22.80	5.1443	18.4
jul	29	2458328.75	14	46	48.83	-15	3	34.24	5.1595	18.3
jul	30	2458329.75	14	47	1.80	-15	4	48.56	5.1747	18.3
jul	31	2458330.75	14	47	15.44	-15	6	5.72	5.1900	18.2
ago	1	2458331.75	14	47	29.74	-15	7	25.69	5.2053	18.1
ago	2	2458332.75	14	47	44.69	-15	8	48.45	5.2205	18.1
ago	3	2458333.75	14	48	0.29	-15	10	13.97	5.2359	18.0
ago	4	2458334.75	14	48	16.55	-15	11	42.22	5.2512	18.0
ago	5	2458335.75	14	48	33.46	-15	13	13.19	5.2665	17.9
ago	6	2458336.75	14	48	51.01	-15	14	46.85	5.2819	17.8
ago	7	2458337.75	14	49	9.20	-15	16	23.18	5.2972	17.8
ago	8	2458338.75	14	49	28.03	-15	18	2.16	5.3126	17.7
ago	9	2458339.75	14	49	47.50	-15	19	43.74	5.3279	17.7
ago	10	2458340.75	14	50	7.59	-15	21	27.89	5.3433	17.6
ago	11	2458341.75	14	50	28.29	-15	23	14.56	5.3586	17.5
ago	12	2458342.75	14	50	49.61	-15	25	3.70	5.3739	17.5
ago	13	2458343.75	14	51	11.54	-15	26	55.27	5.3892	17.4
ago	14	2458344.75	14	51	34.07	-15	28	49.22	5.4045	17.4
ago	15	2458345.75	14	51	57.21	-15	30	45.53	5.4197	17.3
ago	16	2458346.75	14	52	20.94	-15	32	44.16	5.4350	17.2
ago	17	2458347.75	14	52	45.26	-15	34	45.06	5.4501	17.2
ago	18	2458348.75	14	53	10.16	-15	36	48.22	5.4653	17.1

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
ago	19	2458349.75	14	53	35.64	-15	38	53.58	5.4804	17.1
ago	20	2458350.75	14	54	1.70	-15	41	1.11	5.4954	17.0
ago	21	2458351.75	14	54	28.31	-15	43	10.76	5.5104	16.9
ago	22	2458352.75	14	54	55.49	-15	45	22.49	5.5254	16.9
ago	23	2458353.75	14	55	23.22	-15	47	36.24	5.5403	16.8
ago	24	2458354.75	14	55	51.49	-15	49	51.97	5.5551	16.8
ago	25	2458355.75	14	56	20.30	-15	52	9.64	5.5699	16.7
ago	26	2458356.75	14	56	49.64	-15	54	29.19	5.5846	16.7
ago	27	2458357.75	14	57	19.52	-15	56	50.58	5.5993	16.6
ago	28	2458358.75	14	57	49.91	-15	59	13.77	5.6139	16.5
ago	29	2458359.75	14	58	20.83	-16	1	38.72	5.6284	16.5
ago	30	2458360.75	14	58	52.26	-16	4	5.40	5.6428	16.4
ago	31	2458361.75	14	59	24.20	-16	6	33.76	5.6572	16.4
sep	1	2458362.75	14	59	56.65	-16	9	3.77	5.6715	16.3
sep	2	2458363.75	15	0	29.60	-16	11	35.41	5.6857	16.3
sep	3	2458364.75	15	1	3.06	-16	14	8.65	5.6998	16.2
sep	4	2458365.75	15	1	37.00	-16	16	43.45	5.7138	16.1
sep	5	2458366.75	15	2	11.44	-16	19	19.78	5.7278	16.1
sep	6	2458367.75	15	2	46.36	-16	21	57.59	5.7416	16.0
sep	7	2458368.75	15	3	21.75	-16	24	36.83	5.7553	16.0
sep	8	2458369.75	15	3	57.61	-16	27	17.46	5.7690	15.9
sep	9	2458370.75	15	4	33.93	-16	29	59.41	5.7825	15.9
sep	10	2458371.75	15	5	10.71	-16	32	42.65	5.7960	15.8
sep	11	2458372.75	15	5	47.95	-16	35	27.14	5.8093	15.7
sep	12	2458373.75	15	6	25.64	-16	38	12.83	5.8225	15.7
sep	13	2458374.75	15	7	3.77	-16	40	59.69	5.8356	15.6
sep	14	2458375.75	15	7	42.33	-16	43	47.69	5.8486	15.6
sep	15	2458376.75	15	8	21.33	-16	46	36.79	5.8614	15.5
sep	16	2458377.75	15	9	0.76	-16	49	26.94	5.8741	15.5
sep	17	2458378.75	15	9	40.61	-16	52	18.11	5.8867	15.4
sep	18	2458379.75	15	10	20.86	-16	55	10.24	5.8992	15.4
sep	19	2458380.75	15	11	1.53	-16	58	3.30	5.9116	15.3
sep	20	2458381.75	15	11	42.59	-17	0	57.23	5.9238	15.3
sep	21	2458382.75	15	12	24.04	-17	3	51.98	5.9359	15.2
sep	22	2458383.75	15	13	5.88	-17	6	47.52	5.9478	15.1
sep	23	2458384.75	15	13	48.10	-17	9	43.80	5.9596	15.1
sep	24	2458385.75	15	14	30.70	-17	12	40.77	5.9713	15.0
sep	25	2458386.75	15	15	13.67	-17	15	38.39	5.9828	15.0
sep	26	2458387.75	15	15	57.01	-17	18	36.64	5.9942	14.9
sep	27	2458388.75	15	16	40.72	-17	21	35.47	6.0054	14.9
sep	28	2458389.75	15	17	24.79	-17	24	34.86	6.0165	14.8
sep	29	2458390.75	15	18	9.21	-17	27	34.78	6.0274	14.8
sep	30	2458391.75	15	18	53.99	-17	30	35.20	6.0382	14.7
oct	1	2458392.75	15	19	39.12	-17	33	36.10	6.0488	14.7
oct	2	2458393.75	15	20	24.59	-17	36	37.44	6.0593	14.6
oct	3	2458394.75	15	21	10.40	-17	39	39.18	6.0696	14.6

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mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
oct	4	2458395.75	15	21	56.53	-17	42	41.28	6.0798	14.5
oct	5	2458396.75	15	22	43.00	-17	45	43.70	6.0897	14.5
oct	6	2458397.75	15	23	29.78	-17	48	46.39	6.0996	14.4
oct	7	2458398.75	15	24	16.88	-17	51	49.30	6.1092	14.3
oct	8	2458399.75	15	25	4.28	-17	54	52.41	6.1187	14.3
oct	9	2458400.75	15	25	51.99	-17	57	55.67	6.1280	14.2
oct	10	2458401.75	15	26	40.01	-18	0	59.05	6.1372	14.2
oct	11	2458402.75	15	27	28.32	-18	4	2.53	6.1461	14.1
oct	12	2458403.75	15	28	16.92	-18	7	6.07	6.1549	14.1
oct	13	2458404.75	15	29	5.81	-18	10	9.64	6.1635	14.0
oct	14	2458405.75	15	29	54.97	-18	13	13.21	6.1719	14.0
oct	15	2458406.75	15	30	44.41	-18	16	16.74	6.1802	13.9
oct	16	2458407.75	15	31	34.11	-18	19	20.19	6.1882	13.9
oct	17	2458408.75	15	32	24.06	-18	22	23.51	6.1961	13.8
oct	18	2458409.75	15	33	14.27	-18	25	26.67	6.2038	13.8
oct	19	2458410.75	15	34	4.72	-18	28	29.63	6.2113	13.7
oct	20	2458411.75	15	34	55.42	-18	31	32.35	6.2186	13.7
oct	21	2458412.75	15	35	46.35	-18	34	34.79	6.2258	13.6
oct	22	2458413.75	15	36	37.51	-18	37	36.91	6.2327	13.6
oct	23	2458414.75	15	37	28.90	-18	40	38.70	6.2394	13.5
oct	24	2458415.75	15	38	20.51	-18	43	40.11	6.2460	13.5
oct	25	2458416.75	15	39	12.34	-18	46	41.13	6.2523	13.4
oct	26	2458417.75	15	40	4.39	-18	49	41.74	6.2585	13.4
oct	27	2458418.75	15	40	56.65	-18	52	41.91	6.2645	13.3
oct	28	2458419.75	15	41	49.12	-18	55	41.63	6.2702	13.3
oct	29	2458420.75	15	42	41.80	-18	58	40.87	6.2758	13.2
oct	30	2458421.75	15	43	34.67	-19	1	39.61	6.2812	13.2
oct	31	2458422.75	15	44	27.72	-19	4	37.81	6.2863	13.1
nov	1	2458423.75	15	45	20.97	-19	7	35.44	6.2913	13.1
nov	2	2458424.75	15	46	14.39	-19	10	32.45	6.2961	13.0
nov	3	2458425.75	15	47	7.98	-19	13	28.82	6.3006	13.0
nov	4	2458426.75	15	48	1.75	-19	16	24.51	6.3050	12.9
nov	5	2458427.75	15	48	55.67	-19	19	19.49	6.3091	12.9
nov	6	2458428.75	15	49	49.76	-19	22	13.75	6.3131	12.8
nov	7	2458429.75	15	50	44.01	-19	25	7.25	6.3168	12.8
nov	8	2458430.75	15	51	38.40	-19	27	59.98	6.3203	12.7
nov	9	2458431.75	15	52	32.94	-19	30	51.93	6.3236	12.7
nov	10	2458432.75	15	53	27.62	-19	33	43.06	6.3267	12.6
nov	11	2458433.75	15	54	22.43	-19	36	33.34	6.3296	12.6
nov	12	2458434.75	15	55	17.36	-19	39	22.76	6.3322	12.5
nov	13	2458435.75	15	56	12.40	-19	42	11.27	6.3347	12.4
nov	14	2458436.75	15	57	7.56	-19	44	58.85	6.3369	12.4
nov	15	2458437.75	15	58	2.81	-19	47	45.46	6.3390	12.3
nov	16	2458438.75	15	58	58.17	-19	50	31.08	6.3408	12.3
nov	17	2458439.75	15	59	53.62	-19	53	15.68	6.3424	12.2
nov	18	2458440.75	16	0	49.15	-19	55	59.24	6.3437	12.2

Júpiter, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
nov	19	2458441.75	16	1	44.77	-19	58	41.72	6.3449	12.1
nov	20	2458442.75	16	2	40.46	-20	1	23.12	6.3458	12.1
nov	21	2458443.75	16	3	36.23	-20	4	3.40	6.3466	12.0
nov	22	2458444.75	16	4	32.07	-20	6	42.57	6.3471	12.0
nov	23	2458445.75	16	5	27.98	-20	9	20.60	6.3474	11.9
nov	24	2458446.75	16	6	23.96	-20	11	57.48	6.3475	11.9
nov	25	2458447.75	16	7	19.99	-20	14	33.11	6.3474	11.8
nov	26	2458448.75	16	8	16.05	-20	17	7.32	6.3470	11.8
nov	27	2458449.75	16	9	12.14	-20	19	41.03	6.3465	11.7
nov	28	2458450.75	16	10	8.29	-20	22	13.43	6.3457	11.7
nov	29	2458451.75	16	11	4.47	-20	24	44.47	6.3447	11.6
nov	30	2458452.75	16	12	0.68	-20	27	14.23	6.3435	11.6
dic	1	2458453.75	16	12	56.91	-20	29	42.70	6.3420	11.5
dic	2	2458454.75	16	13	53.14	-20	32	9.87	6.3404	11.5
dic	3	2458455.75	16	14	49.39	-20	34	35.72	6.3385	11.4
dic	4	2458456.75	16	15	45.65	-20	37	0.26	6.3364	11.4
dic	5	2458457.75	16	16	41.90	-20	39	23.46	6.3341	11.3
dic	6	2458458.75	16	17	38.15	-20	41	45.33	6.3316	11.3
dic	7	2458459.75	16	18	34.38	-20	44	5.85	6.3289	11.2
dic	8	2458460.75	16	19	30.58	-20	46	25.01	6.3259	11.2
dic	9	2458461.75	16	20	26.76	-20	48	42.80	6.3227	11.1
dic	10	2458462.75	16	21	22.90	-20	50	59.19	6.3193	11.1
dic	11	2458463.75	16	22	18.99	-20	53	14.17	6.3157	11.0
dic	12	2458464.75	16	23	15.03	-20	55	27.73	6.3119	11.0
dic	13	2458465.75	16	24	11.01	-20	57	39.83	6.3079	10.9
dic	14	2458466.75	16	25	6.93	-20	59	50.48	6.3036	10.9
dic	15	2458467.75	16	26	2.77	-21	1	59.64	6.2991	10.8
dic	16	2458468.75	16	26	58.54	-21	4	7.31	6.2945	10.8
dic	17	2458469.75	16	27	54.22	-21	6	13.49	6.2896	10.7
dic	18	2458470.75	16	28	49.82	-21	8	18.16	6.2845	10.7
dic	19	2458471.75	16	29	45.33	-21	10	21.32	6.2792	10.6
dic	20	2458472.75	16	30	40.73	-21	12	22.97	6.2736	10.6
dic	21	2458473.75	16	31	36.04	-21	14	23.12	6.2679	10.5
dic	22	2458474.75	16	32	31.24	-21	16	21.78	6.2620	10.5
dic	23	2458475.75	16	33	26.33	-21	18	18.94	6.2559	10.4
dic	24	2458476.75	16	34	21.29	-21	20	14.60	6.2495	10.4
dic	25	2458477.75	16	35	16.12	-21	22	8.76	6.2430	10.3
dic	26	2458478.75	16	36	10.82	-21	24	1.39	6.2362	10.3
dic	27	2458479.75	16	37	5.37	-21	25	52.48	6.2293	10.2
dic	28	2458480.75	16	37	59.77	-21	27	42.03	6.2221	10.2
dic	29	2458481.75	16	38	54.02	-21	29	30.02	6.2148	10.1
dic	30	2458482.75	16	39	48.10	-21	31	16.46	6.2072	10.1
dic	31	2458483.75	16	40	42.02	-21	33	1.34	6.1995	10.0

Saturno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
ene	1	2458119.75	18	6	8.80	-22	31	51.23	11.0336	11.4
ene	2	2458120.75	18	6	39.20	-22	31	49.66	11.0307	11.3
ene	3	2458121.75	18	7	9.53	-22	31	47.67	11.0276	11.3
ene	4	2458122.75	18	7	39.81	-22	31	45.27	11.0242	11.2
ene	5	2458123.75	18	8	10.01	-22	31	42.45	11.0206	11.2
ene	6	2458124.75	18	8	40.14	-22	31	39.20	11.0166	11.1
ene	7	2458125.75	18	9	10.19	-22	31	35.52	11.0125	11.0
ene	8	2458126.75	18	9	40.16	-22	31	31.41	11.0081	11.0
ene	9	2458127.75	18	10	10.05	-22	31	26.87	11.0034	10.9
ene	10	2458128.75	18	10	39.85	-22	31	21.92	10.9985	10.9
ene	11	2458129.75	18	11	9.55	-22	31	16.57	10.9933	10.8
ene	12	2458130.75	18	11	39.16	-22	31	10.82	10.9879	10.7
ene	13	2458131.75	18	12	8.66	-22	31	4.69	10.9823	10.7
ene	14	2458132.75	18	12	38.05	-22	30	58.18	10.9763	10.6
ene	15	2458133.75	18	13	7.33	-22	30	51.32	10.9702	10.6
ene	16	2458134.75	18	13	36.48	-22	30	44.09	10.9638	10.5
ene	17	2458135.75	18	14	5.50	-22	30	36.52	10.9571	10.5
ene	18	2458136.75	18	14	34.39	-22	30	28.60	10.9502	10.4
ene	19	2458137.75	18	15	3.14	-22	30	20.34	10.9431	10.3
ene	20	2458138.75	18	15	31.74	-22	30	11.73	10.9357	10.3
ene	21	2458139.75	18	16	0.19	-22	30	2.78	10.9281	10.2
ene	22	2458140.75	18	16	28.49	-22	29	53.49	10.9202	10.2
ene	23	2458141.75	18	16	56.62	-22	29	43.87	10.9122	10.1
ene	24	2458142.75	18	17	24.59	-22	29	33.91	10.9039	10.1
ene	25	2458143.75	18	17	52.40	-22	29	23.64	10.8953	10.0
ene	26	2458144.75	18	18	20.03	-22	29	13.05	10.8866	9.9
ene	27	2458145.75	18	18	47.49	-22	29	2.17	10.8776	9.9
ene	28	2458146.75	18	19	14.77	-22	28	51.02	10.8684	9.8
ene	29	2458147.75	18	19	41.86	-22	28	39.62	10.8589	9.8
ene	30	2458148.75	18	20	8.76	-22	28	27.98	10.8493	9.7
ene	31	2458149.75	18	20	35.47	-22	28	16.11	10.8394	9.6
feb	1	2458150.75	18	21	1.97	-22	28	4.01	10.8294	9.6
feb	2	2458151.75	18	21	28.26	-22	27	51.67	10.8191	9.5
feb	3	2458152.75	18	21	54.34	-22	27	39.10	10.8086	9.5
feb	4	2458153.75	18	22	20.20	-22	27	26.29	10.7979	9.4
feb	5	2458154.75	18	22	45.85	-22	27	13.27	10.7870	9.4
feb	6	2458155.75	18	23	11.27	-22	27	0.03	10.7759	9.3
feb	7	2458156.75	18	23	36.47	-22	26	46.60	10.7646	9.2
feb	8	2458157.75	18	24	1.44	-22	26	32.99	10.7532	9.2
feb	9	2458158.75	18	24	26.18	-22	26	19.23	10.7415	9.1
feb	10	2458159.75	18	24	50.67	-22	26	5.31	10.7296	9.1
feb	11	2458160.75	18	25	14.92	-22	25	51.27	10.7175	9.0
feb	12	2458161.75	18	25	38.91	-22	25	37.11	10.7053	8.9
feb	13	2458162.75	18	26	2.65	-22	25	22.85	10.6929	8.9
feb	14	2458163.75	18	26	26.12	-22	25	8.49	10.6803	8.8
feb	15	2458164.75	18	26	49.33	-22	24	54.03	10.6675	8.8

Saturno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
feb	16	2458165.75	18	27	12.26	-22	24	39.50	10.6545	8.7
feb	17	2458166.75	18	27	34.91	-22	24	24.88	10.6414	8.6
feb	18	2458167.75	18	27	57.27	-22	24	10.19	10.6281	8.6
feb	19	2458168.75	18	28	19.36	-22	23	55.42	10.6147	8.5
feb	20	2458169.75	18	28	41.15	-22	23	40.60	10.6011	8.5
feb	21	2458170.75	18	29	2.65	-22	23	25.73	10.5873	8.4
feb	22	2458171.75	18	29	23.85	-22	23	10.83	10.5734	8.4
feb	23	2458172.75	18	29	44.75	-22	22	55.91	10.5594	8.3
feb	24	2458173.75	18	30	5.35	-22	22	41.00	10.5452	8.2
feb	25	2458174.75	18	30	25.65	-22	22	26.11	10.5308	8.2
feb	26	2458175.75	18	30	45.63	-22	22	11.27	10.5163	8.1
feb	27	2458176.75	18	31	5.29	-22	21	56.49	10.5017	8.0
feb	28	2458177.75	18	31	24.63	-22	21	41.77	10.4870	8.0
mar	1	2458178.75	18	31	43.65	-22	21	27.12	10.4722	7.9
mar	2	2458179.75	18	32	2.33	-22	21	12.53	10.4572	7.9
mar	3	2458180.75	18	32	20.68	-22	20	58.01	10.4421	7.8
mar	4	2458181.75	18	32	38.69	-22	20	43.57	10.4269	7.7
mar	5	2458182.75	18	32	56.37	-22	20	29.21	10.4116	7.7
mar	6	2458183.75	18	33	13.71	-22	20	14.96	10.3962	7.6
mar	7	2458184.75	18	33	30.71	-22	20	0.82	10.3806	7.6
mar	8	2458185.75	18	33	47.36	-22	19	46.83	10.3650	7.5
mar	9	2458186.75	18	34	3.65	-22	19	32.99	10.3493	7.4
mar	10	2458187.75	18	34	19.60	-22	19	19.32	10.3335	7.4
mar	11	2458188.75	18	34	35.18	-22	19	5.84	10.3176	7.3
mar	12	2458189.75	18	34	50.39	-22	18	52.55	10.3016	7.3
mar	13	2458190.75	18	35	5.24	-22	18	39.47	10.2855	7.2
mar	14	2458191.75	18	35	19.72	-22	18	26.60	10.2694	7.1
mar	15	2458192.75	18	35	33.81	-22	18	13.95	10.2532	7.1
mar	16	2458193.75	18	35	47.53	-22	18	1.52	10.2369	7.0
mar	17	2458194.75	18	36	0.86	-22	17	49.32	10.2206	6.9
mar	18	2458195.75	18	36	13.80	-22	17	37.35	10.2042	6.9
mar	19	2458196.75	18	36	26.36	-22	17	25.62	10.1878	6.8
mar	20	2458197.75	18	36	38.52	-22	17	14.12	10.1713	6.8
mar	21	2458198.75	18	36	50.30	-22	17	2.89	10.1548	6.7
mar	22	2458199.75	18	37	1.68	-22	16	51.93	10.1382	6.6
mar	23	2458200.75	18	37	12.67	-22	16	41.25	10.1216	6.6
mar	24	2458201.75	18	37	23.27	-22	16	30.89	10.1050	6.5
mar	25	2458202.75	18	37	33.46	-22	16	20.85	10.0883	6.4
mar	26	2458203.75	18	37	43.25	-22	16	11.15	10.0717	6.4
mar	27	2458204.75	18	37	52.63	-22	16	1.79	10.0550	6.3
mar	28	2458205.75	18	38	1.60	-22	15	52.77	10.0383	6.3
mar	29	2458206.75	18	38	10.16	-22	15	44.09	10.0216	6.2
mar	30	2458207.75	18	38	18.30	-22	15	35.74	10.0049	6.1
mar	31	2458208.75	18	38	26.04	-22	15	27.72	9.9883	6.1
abr	1	2458209.75	18	38	33.36	-22	15	20.05	9.9716	6.0
abr	2	2458210.75	18	38	40.28	-22	15	12.73	9.9549	5.9

Saturno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
abr	3	2458211.75	18	38	46.77	-22	15	5.77	9.9383	5.9
abr	4	2458212.75	18	38	52.86	-22	14	59.19	9.9216	5.8
abr	5	2458213.75	18	38	58.53	-22	14	52.99	9.9050	5.8
abr	6	2458214.75	18	39	3.78	-22	14	47.20	9.8884	5.7
abr	7	2458215.75	18	39	8.61	-22	14	41.81	9.8719	5.6
abr	8	2458216.75	18	39	13.01	-22	14	36.84	9.8554	5.6
abr	9	2458217.75	18	39	16.99	-22	14	32.29	9.8390	5.5
abr	10	2458218.75	18	39	20.55	-22	14	28.16	9.8225	5.4
abr	11	2458219.75	18	39	23.67	-22	14	24.45	9.8062	5.4
abr	12	2458220.75	18	39	26.37	-22	14	21.16	9.7899	5.3
abr	13	2458221.75	18	39	28.63	-22	14	18.28	9.7737	5.2
abr	14	2458222.75	18	39	30.47	-22	14	15.82	9.7575	5.2
abr	15	2458223.75	18	39	31.88	-22	14	13.77	9.7414	5.1
abr	16	2458224.75	18	39	32.86	-22	14	12.12	9.7254	5.0
abr	17	2458225.75	18	39	33.42	-22	14	10.88	9.7095	5.0
abr	18	2458226.75	18	39	33.55	-22	14	10.07	9.6936	4.9
abr	19	2458227.75	18	39	33.26	-22	14	9.69	9.6779	4.8
abr	20	2458228.75	18	39	32.55	-22	14	9.75	9.6623	4.8
abr	21	2458229.75	18	39	31.42	-22	14	10.26	9.6467	4.7
abr	22	2458230.75	18	39	29.87	-22	14	11.22	9.6313	4.6
abr	23	2458231.75	18	39	27.89	-22	14	12.64	9.6160	4.6
abr	24	2458232.75	18	39	25.49	-22	14	14.50	9.6008	4.5
abr	25	2458233.75	18	39	22.68	-22	14	16.80	9.5857	4.4
abr	26	2458234.75	18	39	19.44	-22	14	19.52	9.5707	4.4
abr	27	2458235.75	18	39	15.80	-22	14	22.65	9.5559	4.3
abr	28	2458236.75	18	39	11.74	-22	14	26.19	9.5412	4.2
abr	29	2458237.75	18	39	7.28	-22	14	30.14	9.5267	4.2
abr	30	2458238.75	18	39	2.41	-22	14	34.50	9.5123	4.1
may	1	2458239.75	18	38	57.15	-22	14	39.27	9.4980	4.0
may	2	2458240.75	18	38	51.48	-22	14	44.47	9.4839	4.0
may	3	2458241.75	18	38	45.42	-22	14	50.08	9.4699	3.9
may	4	2458242.75	18	38	38.97	-22	14	56.12	9.4561	3.8
may	5	2458243.75	18	38	32.12	-22	15	2.57	9.4425	3.8
may	6	2458244.75	18	38	24.88	-22	15	9.44	9.4290	3.7
may	7	2458245.75	18	38	17.25	-22	15	16.72	9.4157	3.6
may	8	2458246.75	18	38	9.23	-22	15	24.40	9.4026	3.6
may	9	2458247.75	18	38	0.83	-22	15	32.47	9.3897	3.5
may	10	2458248.75	18	37	52.05	-22	15	40.91	9.3769	3.4
may	11	2458249.75	18	37	42.90	-22	15	49.72	9.3644	3.4
may	12	2458250.75	18	37	33.37	-22	15	58.88	9.3520	3.3
may	13	2458251.75	18	37	23.48	-22	16	8.39	9.3399	3.2
may	14	2458252.75	18	37	13.23	-22	16	18.22	9.3279	3.2
may	15	2458253.75	18	37	2.63	-22	16	28.39	9.3161	3.1
may	16	2458254.75	18	36	51.68	-22	16	38.89	9.3046	3.0
may	17	2458255.75	18	36	40.39	-22	16	49.73	9.2932	3.0
may	18	2458256.75	18	36	28.76	-22	17	0.91	9.2821	2.9

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
may	19	2458257.75	18	36	16.81	-22	17	12.42	9.2712	2.8
may	20	2458258.75	18	36	4.52	-22	17	24.27	9.2606	2.7
may	21	2458259.75	18	35	51.91	-22	17	36.42	9.2501	2.7
may	22	2458260.75	18	35	38.98	-22	17	48.87	9.2399	2.6
may	23	2458261.75	18	35	25.75	-22	18	1.60	9.2300	2.5
may	24	2458262.75	18	35	12.21	-22	18	14.58	9.2202	2.5
may	25	2458263.75	18	34	58.37	-22	18	27.80	9.2107	2.4
may	26	2458264.75	18	34	44.26	-22	18	41.27	9.2015	2.3
may	27	2458265.75	18	34	29.86	-22	18	54.96	9.1925	2.3
may	28	2458266.75	18	34	15.19	-22	19	8.88	9.1838	2.2
may	29	2458267.75	18	34	0.26	-22	19	23.03	9.1753	2.1
may	30	2458268.75	18	33	45.07	-22	19	37.40	9.1670	2.0
may	31	2458269.75	18	33	29.63	-22	19	51.99	9.1590	2.0
jun	1	2458270.75	18	33	13.95	-22	20	6.79	9.1513	1.9
jun	2	2458271.75	18	32	58.02	-22	20	21.79	9.1438	1.8
jun	3	2458272.75	18	32	41.87	-22	20	36.98	9.1367	1.8
jun	4	2458273.75	18	32	25.48	-22	20	52.35	9.1297	1.7
jun	5	2458274.75	18	32	8.88	-22	21	7.88	9.1231	1.6
jun	6	2458275.75	18	31	52.07	-22	21	23.56	9.1167	1.6
jun	7	2458276.75	18	31	35.05	-22	21	39.37	9.1106	1.5
jun	8	2458277.75	18	31	17.84	-22	21	55.30	9.1047	1.4
jun	9	2458278.75	18	31	0.45	-22	22	11.32	9.0992	1.3
jun	10	2458279.75	18	30	42.88	-22	22	27.44	9.0939	1.3
jun	11	2458280.75	18	30	25.15	-22	22	43.64	9.0889	1.2
jun	12	2458281.75	18	30	7.27	-22	22	59.92	9.0842	1.1
jun	13	2458282.75	18	29	49.24	-22	23	16.27	9.0798	1.1
jun	14	2458283.75	18	29	31.08	-22	23	32.72	9.0757	1.0
jun	15	2458284.75	18	29	12.79	-22	23	49.24	9.0718	0.9
jun	16	2458285.75	18	28	54.38	-22	24	5.85	9.0683	0.9
jun	17	2458286.75	18	28	35.86	-22	24	22.51	9.0651	0.8
jun	18	2458287.75	18	28	17.23	-22	24	39.22	9.0621	0.7
jun	19	2458288.75	18	27	58.51	-22	24	55.95	9.0594	0.6
jun	20	2458289.75	18	27	39.72	-22	25	12.69	9.0571	0.6
jun	21	2458290.75	18	27	20.85	-22	25	29.42	9.0550	0.5
jun	22	2458291.75	18	27	1.92	-22	25	46.13	9.0532	0.4
jun	23	2458292.75	18	26	42.94	-22	26	2.83	9.0518	0.4
jun	24	2458293.75	18	26	23.93	-22	26	19.51	9.0506	0.3
jun	25	2458294.75	18	26	4.88	-22	26	36.16	9.0497	0.2
jun	26	2458295.75	18	25	45.82	-22	26	52.79	9.0491	0.1
jun	27	2458296.75	18	25	26.74	-22	27	9.40	9.0488	0.1
jun	28	2458297.75	18	25	7.66	-22	27	25.99	9.0489	24.0
jun	29	2458298.75	18	24	48.59	-22	27	42.54	9.0492	23.9
jun	30	2458299.75	18	24	29.53	-22	27	59.06	9.0498	23.9
jul	1	2458300.75	18	24	10.49	-22	28	15.52	9.0507	23.8
jul	2	2458301.75	18	23	51.48	-22	28	31.93	9.0519	23.7
jul	3	2458302.75	18	23	32.51	-22	28	48.27	9.0534	23.6

Saturno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
jul	4	2458303.75	18	23	13.59	-22	29	4.53	9.0552	23.6
jul	5	2458304.75	18	22	54.73	-22	29	20.69	9.0572	23.5
jul	6	2458305.75	18	22	35.94	-22	29	36.76	9.0596	23.4
jul	7	2458306.75	18	22	17.22	-22	29	52.72	9.0623	23.4
jul	8	2458307.75	18	21	58.60	-22	30	8.56	9.0653	23.3
jul	9	2458308.75	18	21	40.08	-22	30	24.30	9.0685	23.2
jul	10	2458309.75	18	21	21.67	-22	30	39.93	9.0721	23.1
jul	11	2458310.75	18	21	3.39	-22	30	55.46	9.0759	23.1
jul	12	2458311.75	18	20	45.23	-22	31	10.91	9.0801	23.0
jul	13	2458312.75	18	20	27.22	-22	31	26.27	9.0845	22.9
jul	14	2458313.75	18	20	9.34	-22	31	41.54	9.0892	22.9
jul	15	2458314.75	18	19	51.62	-22	31	56.71	9.0942	22.8
jul	16	2458315.75	18	19	34.06	-22	32	11.76	9.0995	22.7
jul	17	2458316.75	18	19	16.68	-22	32	26.68	9.1050	22.7
jul	18	2458317.75	18	18	59.48	-22	32	41.46	9.1109	22.6
jul	19	2458318.75	18	18	42.47	-22	32	56.10	9.1170	22.5
jul	20	2458319.75	18	18	25.66	-22	33	10.60	9.1234	22.4
jul	21	2458320.75	18	18	9.07	-22	33	24.96	9.1301	22.4
jul	22	2458321.75	18	17	52.69	-22	33	39.20	9.1370	22.3
jul	23	2458322.75	18	17	36.54	-22	33	53.32	9.1442	22.2
jul	24	2458323.75	18	17	20.63	-22	34	7.32	9.1516	22.2
jul	25	2458324.75	18	17	4.95	-22	34	21.20	9.1594	22.1
jul	26	2458325.75	18	16	49.52	-22	34	34.98	9.1673	22.0
jul	27	2458326.75	18	16	34.35	-22	34	48.64	9.1756	22.0
jul	28	2458327.75	18	16	19.43	-22	35	2.19	9.1841	21.9
jul	29	2458328.75	18	16	4.78	-22	35	15.61	9.1928	21.8
jul	30	2458329.75	18	15	50.40	-22	35	28.91	9.2018	21.7
jul	31	2458330.75	18	15	36.30	-22	35	42.07	9.2110	21.7
ago	1	2458331.75	18	15	22.48	-22	35	55.10	9.2205	21.6
ago	2	2458332.75	18	15	8.96	-22	36	7.98	9.2302	21.5
ago	3	2458333.75	18	14	55.73	-22	36	20.73	9.2401	21.5
ago	4	2458334.75	18	14	42.82	-22	36	33.33	9.2503	21.4
ago	5	2458335.75	18	14	30.22	-22	36	45.79	9.2607	21.3
ago	6	2458336.75	18	14	17.94	-22	36	58.12	9.2713	21.3
ago	7	2458337.75	18	14	5.99	-22	37	10.34	9.2822	21.2
ago	8	2458338.75	18	13	54.38	-22	37	22.44	9.2933	21.1
ago	9	2458339.75	18	13	43.10	-22	37	34.45	9.3046	21.0
ago	10	2458340.75	18	13	32.17	-22	37	46.36	9.3161	21.0
ago	11	2458341.75	18	13	21.58	-22	37	58.18	9.3278	20.9
ago	12	2458342.75	18	13	11.34	-22	38	9.88	9.3397	20.8
ago	13	2458343.75	18	13	1.46	-22	38	21.46	9.3518	20.8
ago	14	2458344.75	18	12	51.94	-22	38	32.91	9.3641	20.7
ago	15	2458345.75	18	12	42.80	-22	38	44.22	9.3767	20.6
ago	16	2458346.75	18	12	34.02	-22	38	55.40	9.3894	20.6
ago	17	2458347.75	18	12	25.63	-22	39	6.46	9.4022	20.5
ago	18	2458348.75	18	12	17.62	-22	39	17.41	9.4153	20.4

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
ago	19	2458349.75	18	12	9.99	-22	39	28.25	9.4285	20.4
ago	20	2458350.75	18	12	2.76	-22	39	38.99	9.4419	20.3
ago	21	2458351.75	18	11	55.92	-22	39	49.63	9.4555	20.2
ago	22	2458352.75	18	11	49.47	-22	40	0.18	9.4692	20.2
ago	23	2458353.75	18	11	43.42	-22	40	10.64	9.4831	20.1
ago	24	2458354.75	18	11	37.76	-22	40	21.00	9.4972	20.0
ago	25	2458355.75	18	11	32.51	-22	40	31.26	9.5114	20.0
ago	26	2458356.75	18	11	27.65	-22	40	41.41	9.5257	19.9
ago	27	2458357.75	18	11	23.20	-22	40	51.45	9.5402	19.8
ago	28	2458358.75	18	11	19.15	-22	41	1.38	9.5548	19.8
ago	29	2458359.75	18	11	15.51	-22	41	11.18	9.5695	19.7
ago	30	2458360.75	18	11	12.28	-22	41	20.85	9.5844	19.6
ago	31	2458361.75	18	11	9.46	-22	41	30.40	9.5994	19.6
sep	1	2458362.75	18	11	7.06	-22	41	39.83	9.6145	19.5
sep	2	2458363.75	18	11	5.08	-22	41	49.13	9.6297	19.4
sep	3	2458364.75	18	11	3.53	-22	41	58.33	9.6451	19.4
sep	4	2458365.75	18	11	2.39	-22	42	7.42	9.6605	19.3
sep	5	2458366.75	18	11	1.68	-22	42	16.42	9.6761	19.2
sep	6	2458367.75	18	11	1.39	-22	42	25.32	9.6918	19.2
sep	7	2458368.75	18	11	1.52	-22	42	34.13	9.7075	19.1
sep	8	2458369.75	18	11	2.08	-22	42	42.84	9.7233	19.0
sep	9	2458370.75	18	11	3.05	-22	42	51.42	9.7392	19.0
sep	10	2458371.75	18	11	4.45	-22	42	59.87	9.7552	18.9
sep	11	2458372.75	18	11	6.28	-22	43	8.17	9.7713	18.8
sep	12	2458373.75	18	11	8.53	-22	43	16.32	9.7875	18.8
sep	13	2458374.75	18	11	11.22	-22	43	24.34	9.8037	18.7
sep	14	2458375.75	18	11	14.33	-22	43	32.21	9.8199	18.6
sep	15	2458376.75	18	11	17.87	-22	43	39.96	9.8362	18.6
sep	16	2458377.75	18	11	21.84	-22	43	47.57	9.8526	18.5
sep	17	2458378.75	18	11	26.23	-22	43	55.06	9.8690	18.4
sep	18	2458379.75	18	11	31.04	-22	44	2.42	9.8854	18.4
sep	19	2458380.75	18	11	36.28	-22	44	9.65	9.9019	18.3
sep	20	2458381.75	18	11	41.93	-22	44	16.75	9.9184	18.3
sep	21	2458382.75	18	11	48.00	-22	44	23.70	9.9349	18.2
sep	22	2458383.75	18	11	54.49	-22	44	30.49	9.9515	18.1
sep	23	2458384.75	18	12	1.38	-22	44	37.12	9.9681	18.1
sep	24	2458385.75	18	12	8.69	-22	44	43.58	9.9846	18.0
sep	25	2458386.75	18	12	16.41	-22	44	49.86	10.0012	17.9
sep	26	2458387.75	18	12	24.53	-22	44	55.94	10.0178	17.9
sep	27	2458388.75	18	12	33.07	-22	45	1.83	10.0344	17.8
sep	28	2458389.75	18	12	42.01	-22	45	7.51	10.0510	17.7
sep	29	2458390.75	18	12	51.36	-22	45	13.00	10.0676	17.7
sep	30	2458391.75	18	13	1.12	-22	45	18.30	10.0841	17.6
oct	1	2458392.75	18	13	11.28	-22	45	23.41	10.1007	17.6
oct	2	2458393.75	18	13	21.84	-22	45	28.34	10.1172	17.5
oct	3	2458394.75	18	13	32.80	-22	45	33.08	10.1337	17.4

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
oct	4	2458395.75	18	13	44.16	-22	45	37.62	10.1502	17.4
oct	5	2458396.75	18	13	55.90	-22	45	41.96	10.1666	17.3
oct	6	2458397.75	18	14	8.04	-22	45	46.08	10.1830	17.2
oct	7	2458398.75	18	14	20.56	-22	45	49.97	10.1994	17.2
oct	8	2458399.75	18	14	33.46	-22	45	53.61	10.2157	17.1
oct	9	2458400.75	18	14	46.75	-22	45	56.98	10.2319	17.1
oct	10	2458401.75	18	15	0.42	-22	46	0.09	10.2481	17.0
oct	11	2458402.75	18	15	14.48	-22	46	2.94	10.2642	16.9
oct	12	2458403.75	18	15	28.91	-22	46	5.53	10.2803	16.9
oct	13	2458404.75	18	15	43.71	-22	46	7.86	10.2962	16.8
oct	14	2458405.75	18	15	58.88	-22	46	9.94	10.3121	16.8
oct	15	2458406.75	18	16	14.42	-22	46	11.76	10.3280	16.7
oct	16	2458407.75	18	16	30.32	-22	46	13.31	10.3437	16.6
oct	17	2458408.75	18	16	46.57	-22	46	14.59	10.3593	16.6
oct	18	2458409.75	18	17	3.18	-22	46	15.59	10.3749	16.5
oct	19	2458410.75	18	17	20.13	-22	46	16.30	10.3903	16.4
oct	20	2458411.75	18	17	37.42	-22	46	16.70	10.4057	16.4
oct	21	2458412.75	18	17	55.05	-22	46	16.78	10.4210	16.3
oct	22	2458413.75	18	18	13.01	-22	46	16.54	10.4361	16.3
oct	23	2458414.75	18	18	31.31	-22	46	15.96	10.4511	16.2
oct	24	2458415.75	18	18	49.94	-22	46	15.03	10.4660	16.1
oct	25	2458416.75	18	19	8.90	-22	46	13.75	10.4808	16.1
oct	26	2458417.75	18	19	28.18	-22	46	12.12	10.4955	16.0
oct	27	2458418.75	18	19	47.78	-22	46	10.14	10.5101	16.0
oct	28	2458419.75	18	20	7.70	-22	46	7.81	10.5245	15.9
oct	29	2458420.75	18	20	27.94	-22	46	5.14	10.5388	15.8
oct	30	2458421.75	18	20	48.48	-22	46	2.13	10.5529	15.8
oct	31	2458422.75	18	21	9.33	-22	45	58.76	10.5669	15.7
nov	1	2458423.75	18	21	30.47	-22	45	55.04	10.5808	15.7
nov	2	2458424.75	18	21	51.91	-22	45	50.95	10.5945	15.6
nov	3	2458425.75	18	22	13.64	-22	45	46.46	10.6081	15.5
nov	4	2458426.75	18	22	35.65	-22	45	41.57	10.6215	15.5
nov	5	2458427.75	18	22	57.95	-22	45	36.27	10.6348	15.4
nov	6	2458428.75	18	23	20.53	-22	45	30.54	10.6478	15.4
nov	7	2458429.75	18	23	43.39	-22	45	24.39	10.6608	15.3
nov	8	2458430.75	18	24	6.52	-22	45	17.82	10.6735	15.2
nov	9	2458431.75	18	24	29.93	-22	45	10.83	10.6861	15.2
nov	10	2458432.75	18	24	53.59	-22	45	3.43	10.6985	15.1
nov	11	2458433.75	18	25	17.52	-22	44	55.62	10.7108	15.1
nov	12	2458434.75	18	25	41.70	-22	44	47.39	10.7228	15.0
nov	13	2458435.75	18	26	6.12	-22	44	38.74	10.7347	14.9
nov	14	2458436.75	18	26	30.79	-22	44	29.67	10.7464	14.9
nov	15	2458437.75	18	26	55.69	-22	44	20.16	10.7578	14.8
nov	16	2458438.75	18	27	20.82	-22	44	10.20	10.7691	14.8
nov	17	2458439.75	18	27	46.17	-22	43	59.78	10.7802	14.7
nov	18	2458440.75	18	28	11.75	-22	43	48.91	10.7911	14.7

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
nov	19	2458441.75	18	28	37.54	-22	43	37.55	10.8018	14.6
nov	20	2458442.75	18	29	3.54	-22	43	25.72	10.8123	14.5
nov	21	2458443.75	18	29	29.76	-22	43	13.40	10.8226	14.5
nov	22	2458444.75	18	29	56.18	-22	43	0.59	10.8327	14.4
nov	23	2458445.75	18	30	22.80	-22	42	47.31	10.8425	14.4
nov	24	2458446.75	18	30	49.62	-22	42	33.55	10.8522	14.3
nov	25	2458447.75	18	31	16.64	-22	42	19.33	10.8617	14.2
nov	26	2458448.75	18	31	43.84	-22	42	4.64	10.8709	14.2
nov	27	2458449.75	18	32	11.22	-22	41	49.50	10.8799	14.1
nov	28	2458450.75	18	32	38.78	-22	41	33.89	10.8887	14.1
nov	29	2458451.75	18	33	6.51	-22	41	17.80	10.8972	14.0
nov	30	2458452.75	18	33	34.40	-22	41	1.23	10.9056	14.0
dic	1	2458453.75	18	34	2.45	-22	40	44.15	10.9137	13.9
dic	2	2458454.75	18	34	30.67	-22	40	26.56	10.9216	13.8
dic	3	2458455.75	18	34	59.03	-22	40	8.46	10.9292	13.8
dic	4	2458456.75	18	35	27.55	-22	39	49.85	10.9367	13.7
dic	5	2458457.75	18	35	56.21	-22	39	30.74	10.9438	13.7
dic	6	2458458.75	18	36	25.02	-22	39	11.13	10.9508	13.6
dic	7	2458459.75	18	36	53.96	-22	38	51.03	10.9575	13.6
dic	8	2458460.75	18	37	23.03	-22	38	30.45	10.9639	13.5
dic	9	2458461.75	18	37	52.23	-22	38	9.39	10.9702	13.4
dic	10	2458462.75	18	38	21.54	-22	37	47.86	10.9761	13.4
dic	11	2458463.75	18	38	50.97	-22	37	25.84	10.9818	13.3
dic	12	2458464.75	18	39	20.49	-22	37	3.34	10.9873	13.3
dic	13	2458465.75	18	39	50.12	-22	36	40.36	10.9925	13.2
dic	14	2458466.75	18	40	19.84	-22	36	16.89	10.9975	13.1
dic	15	2458467.75	18	40	49.65	-22	35	52.93	11.0022	13.1
dic	16	2458468.75	18	41	19.54	-22	35	28.47	11.0067	13.0
dic	17	2458469.75	18	41	49.52	-22	35	3.51	11.0109	13.0
dic	18	2458470.75	18	42	19.57	-22	34	38.06	11.0149	12.9
dic	19	2458471.75	18	42	49.69	-22	34	12.11	11.0186	12.9
dic	20	2458472.75	18	43	19.88	-22	33	45.67	11.0220	12.8
dic	21	2458473.75	18	43	50.13	-22	33	18.75	11.0252	12.7
dic	22	2458474.75	18	44	20.45	-22	32	51.38	11.0282	12.7
dic	23	2458475.75	18	44	50.82	-22	32	23.56	11.0309	12.6
dic	24	2458476.75	18	45	21.23	-22	31	55.30	11.0333	12.6
dic	25	2458477.75	18	45	51.69	-22	31	26.60	11.0355	12.5
dic	26	2458478.75	18	46	22.17	-22	30	57.47	11.0374	12.5
dic	27	2458479.75	18	46	52.69	-22	30	27.90	11.0390	12.4
dic	28	2458480.75	18	47	23.24	-22	29	57.87	11.0404	12.3
dic	29	2458481.75	18	47	53.80	-22	29	27.38	11.0416	12.3
dic	30	2458482.75	18	48	24.39	-22	28	56.43	11.0424	12.2
dic	31	2458483.75	18	48	54.99	-22	28	25.01	11.0430	12.2

Urano, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
ene	1	2458119.75	1	31	52.83	+8	59	19.48	19.6452	18.8
ene	2	2458120.75	1	31	52.61	+8	59	20.51	19.6619	18.7
ene	3	2458121.75	1	31	52.59	+8	59	22.69	19.6787	18.7
ene	4	2458122.75	1	31	52.76	+8	59	26.00	19.6956	18.6
ene	5	2458123.75	1	31	53.12	+8	59	30.44	19.7125	18.5
ene	6	2458124.75	1	31	53.68	+8	59	36.00	19.7294	18.5
ene	7	2458125.75	1	31	54.43	+8	59	42.69	19.7464	18.4
ene	8	2458126.75	1	31	55.37	+8	59	50.51	19.7635	18.3
ene	9	2458127.75	1	31	56.52	+8	59	59.47	19.7806	18.3
ene	10	2458128.75	1	31	57.86	+9	0	9.58	19.7977	18.2
ene	11	2458129.75	1	31	59.40	+9	0	20.85	19.8149	18.2
ene	12	2458130.75	1	32	1.14	+9	0	33.27	19.8320	18.1
ene	13	2458131.75	1	32	3.08	+9	0	46.85	19.8492	18.0
ene	14	2458132.75	1	32	5.21	+9	1	1.58	19.8664	18.0
ene	15	2458133.75	1	32	7.55	+9	1	17.46	19.8836	17.9
ene	16	2458134.75	1	32	10.07	+9	1	34.48	19.9008	17.8
ene	17	2458135.75	1	32	12.80	+9	1	52.63	19.9180	17.8
ene	18	2458136.75	1	32	15.72	+9	2	11.91	19.9352	17.7
ene	19	2458137.75	1	32	18.82	+9	2	32.30	19.9523	17.6
ene	20	2458138.75	1	32	22.13	+9	2	53.80	19.9694	17.6
ene	21	2458139.75	1	32	25.62	+9	3	16.39	19.9866	17.5
ene	22	2458140.75	1	32	29.30	+9	3	40.08	20.0036	17.4
ene	23	2458141.75	1	32	33.17	+9	4	4.86	20.0207	17.4
ene	24	2458142.75	1	32	37.23	+9	4	30.72	20.0376	17.3
ene	25	2458143.75	1	32	41.48	+9	4	57.68	20.0546	17.2
ene	26	2458144.75	1	32	45.92	+9	5	25.72	20.0714	17.2
ene	27	2458145.75	1	32	50.55	+9	5	54.84	20.0883	17.1
ene	28	2458146.75	1	32	55.37	+9	6	25.04	20.1050	17.1
ene	29	2458147.75	1	33	0.37	+9	6	56.31	20.1217	17.0
ene	30	2458148.75	1	33	5.55	+9	7	28.63	20.1383	16.9
ene	31	2458149.75	1	33	10.91	+9	8	1.97	20.1548	16.9
feb	1	2458150.75	1	33	16.45	+9	8	36.32	20.1713	16.8
feb	2	2458151.75	1	33	22.16	+9	9	11.65	20.1877	16.7
feb	3	2458152.75	1	33	28.04	+9	9	47.96	20.2039	16.7
feb	4	2458153.75	1	33	34.09	+9	10	25.25	20.2201	16.6
feb	5	2458154.75	1	33	40.32	+9	11	3.51	20.2362	16.5
feb	6	2458155.75	1	33	46.73	+9	11	42.74	20.2521	16.5
feb	7	2458156.75	1	33	53.30	+9	12	22.95	20.2680	16.4
feb	8	2458157.75	1	34	0.05	+9	13	4.13	20.2838	16.3
feb	9	2458158.75	1	34	6.96	+9	13	46.26	20.2994	16.3
feb	10	2458159.75	1	34	14.05	+9	14	29.34	20.3149	16.2
feb	11	2458160.75	1	34	21.30	+9	15	13.36	20.3303	16.2
feb	12	2458161.75	1	34	28.71	+9	15	58.30	20.3455	16.1
feb	13	2458162.75	1	34	36.29	+9	16	44.15	20.3606	16.0
feb	14	2458163.75	1	34	44.02	+9	17	30.88	20.3756	16.0
feb	15	2458164.75	1	34	51.91	+9	18	18.49	20.3904	15.9

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
feb	16	2458165.75	1	34	59.95	+9	19	6.95	20.4051	15.8
feb	17	2458166.75	1	35	8.14	+9	19	56.26	20.4196	15.8
feb	18	2458167.75	1	35	16.49	+9	20	46.39	20.4339	15.7
feb	19	2458168.75	1	35	24.98	+9	21	37.34	20.4481	15.6
feb	20	2458169.75	1	35	33.62	+9	22	29.10	20.4622	15.6
feb	21	2458170.75	1	35	42.40	+9	23	21.66	20.4760	15.5
feb	22	2458171.75	1	35	51.34	+9	24	15.02	20.4897	15.5
feb	23	2458172.75	1	36	0.41	+9	25	9.16	20.5032	15.4
feb	24	2458173.75	1	36	9.63	+9	26	4.08	20.5165	15.3
feb	25	2458174.75	1	36	18.98	+9	26	59.76	20.5296	15.3
feb	26	2458175.75	1	36	28.47	+9	27	56.18	20.5426	15.2
feb	27	2458176.75	1	36	38.08	+9	28	53.31	20.5553	15.1
feb	28	2458177.75	1	36	47.82	+9	29	51.13	20.5679	15.1
mar	1	2458178.75	1	36	57.69	+9	30	49.61	20.5803	15.0
mar	2	2458179.75	1	37	7.67	+9	31	48.74	20.5924	15.0
mar	3	2458180.75	1	37	17.78	+9	32	48.51	20.6044	14.9
mar	4	2458181.75	1	37	28.00	+9	33	48.90	20.6162	14.8
mar	5	2458182.75	1	37	38.35	+9	34	49.91	20.6277	14.8
mar	6	2458183.75	1	37	48.81	+9	35	51.55	20.6391	14.7
mar	7	2458184.75	1	37	59.39	+9	36	53.80	20.6502	14.6
mar	8	2458185.75	1	38	10.08	+9	37	56.64	20.6611	14.6
mar	9	2458186.75	1	38	20.88	+9	39	0.07	20.6718	14.5
mar	10	2458187.75	1	38	31.79	+9	40	4.08	20.6822	14.5
mar	11	2458188.75	1	38	42.80	+9	41	8.63	20.6925	14.4
mar	12	2458189.75	1	38	53.92	+9	42	13.73	20.7025	14.3
mar	13	2458190.75	1	39	5.14	+9	43	19.33	20.7123	14.3
mar	14	2458191.75	1	39	16.45	+9	44	25.43	20.7218	14.2
mar	15	2458192.75	1	39	27.85	+9	45	32.01	20.7311	14.1
mar	16	2458193.75	1	39	39.35	+9	46	39.05	20.7402	14.1
mar	17	2458194.75	1	39	50.93	+9	47	46.52	20.7490	14.0
mar	18	2458195.75	1	40	2.60	+9	48	54.43	20.7576	14.0
mar	19	2458196.75	1	40	14.35	+9	50	2.75	20.7660	13.9
mar	20	2458197.75	1	40	26.19	+9	51	11.47	20.7741	13.8
mar	21	2458198.75	1	40	38.10	+9	52	20.60	20.7819	13.8
mar	22	2458199.75	1	40	50.10	+9	53	30.11	20.7895	13.7
mar	23	2458200.75	1	41	2.17	+9	54	39.99	20.7968	13.6
mar	24	2458201.75	1	41	14.32	+9	55	50.24	20.8039	13.6
mar	25	2458202.75	1	41	26.53	+9	57	0.82	20.8107	13.5
mar	26	2458203.75	1	41	38.81	+9	58	11.72	20.8173	13.5
mar	27	2458204.75	1	41	51.15	+9	59	22.90	20.8236	13.4
mar	28	2458205.75	1	42	3.54	+10	0	34.34	20.8296	13.3
mar	29	2458206.75	1	42	15.99	+10	1	46.02	20.8354	13.3
mar	30	2458207.75	1	42	28.49	+10	2	57.93	20.8410	13.2
mar	31	2458208.75	1	42	41.04	+10	4	10.05	20.8462	13.1
abr	1	2458209.75	1	42	53.65	+10	5	22.38	20.8512	13.1
abr	2	2458210.75	1	43	6.30	+10	6	34.91	20.8560	13.0

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
abr	3	2458211.75	1	43	19.00	+10	7	47.64	20.8604	13.0
abr	4	2458212.75	1	43	31.74	+10	9	0.56	20.8646	12.9
abr	5	2458213.75	1	43	44.53	+10	10	13.64	20.8686	12.8
abr	6	2458214.75	1	43	57.36	+10	11	26.89	20.8722	12.8
abr	7	2458215.75	1	44	10.22	+10	12	40.28	20.8756	12.7
abr	8	2458216.75	1	44	23.12	+10	13	53.79	20.8788	12.6
abr	9	2458217.75	1	44	36.04	+10	15	7.40	20.8816	12.6
abr	10	2458218.75	1	44	49.00	+10	16	21.09	20.8842	12.5
abr	11	2458219.75	1	45	1.97	+10	17	34.85	20.8865	12.5
abr	12	2458220.75	1	45	14.97	+10	18	48.66	20.8886	12.4
abr	13	2458221.75	1	45	27.98	+10	20	2.49	20.8903	12.3
abr	14	2458222.75	1	45	41.01	+10	21	16.34	20.8918	12.3
abr	15	2458223.75	1	45	54.06	+10	22	30.18	20.8930	12.2
abr	16	2458224.75	1	46	7.12	+10	23	44.02	20.8940	12.1
abr	17	2458225.75	1	46	20.20	+10	24	57.80	20.8947	12.1
abr	18	2458226.75	1	46	33.29	+10	26	11.15	20.8950	12.0
abr	19	2458227.75	1	46	46.32	+10	27	24.88	20.8952	12.0
abr	20	2458228.75	1	46	59.40	+10	28	38.91	20.8950	11.9
abr	21	2458229.75	1	47	12.49	+10	29	52.63	20.8946	11.8
abr	22	2458230.75	1	47	25.57	+10	31	6.21	20.8939	11.8
abr	23	2458231.75	1	47	38.64	+10	32	19.66	20.8929	11.7
abr	24	2458232.75	1	47	51.70	+10	33	32.96	20.8916	11.6
abr	25	2458233.75	1	48	4.73	+10	34	46.09	20.8901	11.6
abr	26	2458234.75	1	48	17.75	+10	35	59.05	20.8883	11.5
abr	27	2458235.75	1	48	30.75	+10	37	11.81	20.8863	11.5
abr	28	2458236.75	1	48	43.73	+10	38	24.37	20.8840	11.4
abr	29	2458237.75	1	48	56.69	+10	39	36.73	20.8814	11.3
abr	30	2458238.75	1	49	9.63	+10	40	48.89	20.8785	11.3
may	1	2458239.75	1	49	22.54	+10	42	0.84	20.8754	11.2
may	2	2458240.75	1	49	35.42	+10	43	12.56	20.8720	11.2
may	3	2458241.75	1	49	48.27	+10	44	24.04	20.8683	11.1
may	4	2458242.75	1	50	1.09	+10	45	35.28	20.8644	11.0
may	5	2458243.75	1	50	13.87	+10	46	46.25	20.8603	11.0
may	6	2458244.75	1	50	26.61	+10	47	56.93	20.8558	10.9
may	7	2458245.75	1	50	39.31	+10	49	7.31	20.8511	10.8
may	8	2458246.75	1	50	51.96	+10	50	17.37	20.8462	10.8
may	9	2458247.75	1	51	4.57	+10	51	27.09	20.8409	10.7
may	10	2458248.75	1	51	17.12	+10	52	36.46	20.8355	10.7
may	11	2458249.75	1	51	29.62	+10	53	45.46	20.8297	10.6
may	12	2458250.75	1	51	42.06	+10	54	54.08	20.8238	10.5
may	13	2458251.75	1	51	54.45	+10	56	2.32	20.8175	10.5
may	14	2458252.75	1	52	6.78	+10	57	10.16	20.8110	10.4
may	15	2458253.75	1	52	19.05	+10	58	17.60	20.8043	10.3
may	16	2458254.75	1	52	31.26	+10	59	24.64	20.7973	10.3
may	17	2458255.75	1	52	43.40	+11	0	31.26	20.7901	10.2
may	18	2458256.75	1	52	55.48	+11	1	37.46	20.7826	10.2

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ -	"	dis UA	hp h
may	19	2458257.75	1	53	7.48	+11	2	43.20	20.7749	10.1
may	20	2458258.75	1	53	19.40	+11	3	48.46	20.7669	10.0
may	21	2458259.75	1	53	31.24	+11	4	53.22	20.7587	10.0
may	22	2458260.75	1	53	43.00	+11	5	57.46	20.7503	9.9
may	23	2458261.75	1	53	54.68	+11	7	1.17	20.7416	9.8
may	24	2458262.75	1	54	6.26	+11	8	4.33	20.7327	9.8
may	25	2458263.75	1	54	17.76	+11	9	6.94	20.7236	9.7
may	26	2458264.75	1	54	29.18	+11	10	9.00	20.7143	9.7
may	27	2458265.75	1	54	40.50	+11	11	10.51	20.7047	9.6
may	28	2458266.75	1	54	51.73	+11	12	11.46	20.6949	9.5
may	29	2458267.75	1	55	2.87	+11	13	11.85	20.6850	9.5
may	30	2458268.75	1	55	13.92	+11	14	11.66	20.6747	9.4
may	31	2458269.75	1	55	24.86	+11	15	10.88	20.6643	9.3
jun	1	2458270.75	1	55	35.71	+11	16	9.51	20.6537	9.3
jun	2	2458271.75	1	55	46.45	+11	17	7.52	20.6428	9.2
jun	3	2458272.75	1	55	57.09	+11	18	4.90	20.6318	9.2
jun	4	2458273.75	1	56	7.61	+11	19	1.64	20.6206	9.1
jun	5	2458274.75	1	56	18.03	+11	19	57.72	20.6091	9.0
jun	6	2458275.75	1	56	28.33	+11	20	53.13	20.5975	9.0
jun	7	2458276.75	1	56	38.51	+11	21	47.86	20.5856	8.9
jun	8	2458277.75	1	56	48.58	+11	22	41.89	20.5736	8.8
jun	9	2458278.75	1	56	58.53	+11	23	35.22	20.5614	8.8
jun	10	2458279.75	1	57	8.35	+11	24	27.84	20.5490	8.7
jun	11	2458280.75	1	57	18.06	+11	25	19.75	20.5364	8.7
jun	12	2458281.75	1	57	27.65	+11	26	10.96	20.5236	8.6
jun	13	2458282.75	1	57	37.11	+11	27	1.45	20.5107	8.5
jun	14	2458283.75	1	57	46.44	+11	27	51.22	20.4975	8.5
jun	15	2458284.75	1	57	55.65	+11	28	40.25	20.4843	8.4
jun	16	2458285.75	1	58	4.71	+11	29	28.51	20.4708	8.3
jun	17	2458286.75	1	58	13.64	+11	30	16.00	20.4572	8.3
jun	18	2458287.75	1	58	22.43	+11	31	2.67	20.4434	8.2
jun	19	2458288.75	1	58	31.07	+11	31	48.53	20.4295	8.1
jun	20	2458289.75	1	58	39.57	+11	32	33.56	20.4154	8.1
jun	21	2458290.75	1	58	47.92	+11	33	17.76	20.4012	8.0
jun	22	2458291.75	1	58	56.13	+11	34	1.14	20.3868	8.0
jun	23	2458292.75	1	59	4.20	+11	34	43.69	20.3723	7.9
jun	24	2458293.75	1	59	12.12	+11	35	25.42	20.3577	7.8
jun	25	2458294.75	1	59	19.89	+11	36	6.31	20.3429	7.8
jun	26	2458295.75	1	59	27.52	+11	36	46.38	20.3280	7.7
jun	27	2458296.75	1	59	34.99	+11	37	25.60	20.3130	7.6
jun	28	2458297.75	1	59	42.31	+11	38	3.98	20.2979	7.6
jun	29	2458298.75	1	59	49.48	+11	38	41.49	20.2826	7.5
jun	30	2458299.75	1	59	56.48	+11	39	18.14	20.2672	7.4
jul	1	2458300.75	2	0	3.33	+11	39	53.90	20.2518	7.4
jul	2	2458301.75	2	0	10.01	+11	40	28.76	20.2362	7.3
jul	3	2458302.75	2	0	16.53	+11	41	2.72	20.2205	7.3

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
jul	4	2458303.75	2	0	22.89	+11	41	35.76	20.2047	7.2
jul	5	2458304.75	2	0	29.08	+11	42	7.89	20.1888	7.1
jul	6	2458305.75	2	0	35.11	+11	42	39.09	20.1728	7.1
jul	7	2458306.75	2	0	40.96	+11	43	9.37	20.1568	7.0
jul	8	2458307.75	2	0	46.65	+11	43	38.72	20.1406	6.9
jul	9	2458308.75	2	0	52.18	+11	44	7.15	20.1244	6.9
jul	10	2458309.75	2	0	57.53	+11	44	34.66	20.1081	6.8
jul	11	2458310.75	2	1	2.72	+11	45	1.24	20.0918	6.7
jul	12	2458311.75	2	1	7.73	+11	45	26.88	20.0753	6.7
jul	13	2458312.75	2	1	12.56	+11	45	51.59	20.0589	6.6
jul	14	2458313.75	2	1	17.21	+11	46	15.32	20.0423	6.6
jul	15	2458314.75	2	1	21.69	+11	46	38.07	20.0257	6.5
jul	16	2458315.75	2	1	25.97	+11	46	59.82	20.0091	6.4
jul	17	2458316.75	2	1	30.08	+11	47	20.56	19.9924	6.4
jul	18	2458317.75	2	1	34.00	+11	47	40.30	19.9757	6.3
jul	19	2458318.75	2	1	37.74	+11	47	59.05	19.9589	6.2
jul	20	2458319.75	2	1	41.30	+11	48	16.81	19.9421	6.2
jul	21	2458320.75	2	1	44.68	+11	48	33.58	19.9253	6.1
jul	22	2458321.75	2	1	47.88	+11	48	49.37	19.9085	6.0
jul	23	2458322.75	2	1	50.89	+11	49	4.18	19.8917	6.0
jul	24	2458323.75	2	1	53.73	+11	49	18.01	19.8749	5.9
jul	25	2458324.75	2	1	56.38	+11	49	30.85	19.8580	5.8
jul	26	2458325.75	2	1	58.84	+11	49	42.70	19.8412	5.8
jul	27	2458326.75	2	2	1.12	+11	49	53.56	19.8243	5.7
jul	28	2458327.75	2	2	3.20	+11	50	3.41	19.8075	5.6
jul	29	2458328.75	2	2	5.10	+11	50	12.25	19.7907	5.6
jul	30	2458329.75	2	2	6.81	+11	50	20.08	19.7739	5.5
jul	31	2458330.75	2	2	8.33	+11	50	26.89	19.7571	5.4
ago	1	2458331.75	2	2	9.67	+11	50	32.69	19.7403	5.4
ago	2	2458332.75	2	2	10.81	+11	50	37.46	19.7236	5.3
ago	3	2458333.75	2	2	11.76	+11	50	41.22	19.7069	5.3
ago	4	2458334.75	2	2	12.53	+11	50	43.98	19.6903	5.2
ago	5	2458335.75	2	2	13.11	+11	50	45.73	19.6737	5.1
ago	6	2458336.75	2	2	13.50	+11	50	46.48	19.6571	5.1
ago	7	2458337.75	2	2	13.71	+11	50	46.25	19.6406	5.0
ago	8	2458338.75	2	2	13.73	+11	50	45.03	19.6242	4.9
ago	9	2458339.75	2	2	13.56	+11	50	42.81	19.6078	4.9
ago	10	2458340.75	2	2	13.20	+11	50	39.59	19.5915	4.8
ago	11	2458341.75	2	2	12.65	+11	50	35.35	19.5752	4.7
ago	12	2458342.75	2	2	11.90	+11	50	30.09	19.5591	4.7
ago	13	2458343.75	2	2	10.96	+11	50	23.80	19.5430	4.6
ago	14	2458344.75	2	2	9.83	+11	50	16.48	19.5270	4.5
ago	15	2458345.75	2	2	8.51	+11	50	8.16	19.5111	4.5
ago	16	2458346.75	2	2	7.01	+11	49	58.83	19.4953	4.4
ago	17	2458347.75	2	2	5.32	+11	49	48.52	19.4796	4.3
ago	18	2458348.75	2	2	3.45	+11	49	37.24	19.4640	4.3

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
ago	19	2458349.75	2	2	1.40	+11	49	24.99	19.4486	4.2
ago	20	2458350.75	2	1	59.17	+11	49	11.79	19.4332	4.1
ago	21	2458351.75	2	1	56.76	+11	48	57.63	19.4180	4.1
ago	22	2458352.75	2	1	54.16	+11	48	42.53	19.4029	4.0
ago	23	2458353.75	2	1	51.39	+11	48	26.47	19.3879	3.9
ago	24	2458354.75	2	1	48.44	+11	48	9.47	19.3731	3.9
ago	25	2458355.75	2	1	45.31	+11	47	51.53	19.3584	3.8
ago	26	2458356.75	2	1	42.00	+11	47	32.64	19.3438	3.7
ago	27	2458357.75	2	1	38.51	+11	47	12.81	19.3294	3.7
ago	28	2458358.75	2	1	34.85	+11	46	52.05	19.3152	3.6
ago	29	2458359.75	2	1	31.01	+11	46	30.36	19.3010	3.5
ago	30	2458360.75	2	1	27.00	+11	46	7.77	19.2871	3.5
ago	31	2458361.75	2	1	22.83	+11	45	44.27	19.2733	3.4
sep	1	2458362.75	2	1	18.49	+11	45	19.89	19.2597	3.3
sep	2	2458363.75	2	1	13.98	+11	44	54.63	19.2463	3.3
sep	3	2458364.75	2	1	9.32	+11	44	28.52	19.2330	3.2
sep	4	2458365.75	2	1	4.49	+11	44	1.57	19.2199	3.1
sep	5	2458366.75	2	0	59.50	+11	43	33.77	19.2070	3.1
sep	6	2458367.75	2	0	54.35	+11	43	5.14	19.1943	3.0
sep	7	2458368.75	2	0	49.03	+11	42	35.66	19.1818	2.9
sep	8	2458369.75	2	0	43.56	+11	42	5.34	19.1695	2.9
sep	9	2458370.75	2	0	37.93	+11	41	34.18	19.1574	2.8
sep	10	2458371.75	2	0	32.15	+11	41	2.19	19.1455	2.7
sep	11	2458372.75	2	0	26.21	+11	40	29.39	19.1338	2.7
sep	12	2458373.75	2	0	20.13	+11	39	55.80	19.1223	2.6
sep	13	2458374.75	2	0	13.90	+11	39	21.44	19.1111	2.5
sep	14	2458375.75	2	0	7.54	+11	38	46.34	19.1001	2.5
sep	15	2458376.75	2	0	1.04	+11	38	10.52	19.0893	2.4
sep	16	2458377.75	1	59	54.41	+11	37	33.99	19.0787	2.3
sep	17	2458378.75	1	59	47.64	+11	36	56.76	19.0684	2.3
sep	18	2458379.75	1	59	40.75	+11	36	18.86	19.0583	2.2
sep	19	2458380.75	1	59	33.72	+11	35	40.28	19.0484	2.1
sep	20	2458381.75	1	59	26.57	+11	35	1.04	19.0388	2.1
sep	21	2458382.75	1	59	19.30	+11	34	21.14	19.0294	2.0
sep	22	2458383.75	1	59	11.91	+11	33	40.61	19.0203	1.9
sep	23	2458384.75	1	59	4.39	+11	32	59.46	19.0114	1.8
sep	24	2458385.75	1	58	56.77	+11	32	17.69	19.0028	1.8
sep	25	2458386.75	1	58	49.03	+11	31	35.32	18.9945	1.7
sep	26	2458387.75	1	58	41.18	+11	30	52.38	18.9864	1.6
sep	27	2458388.75	1	58	33.23	+11	30	8.89	18.9786	1.6
sep	28	2458389.75	1	58	25.19	+11	29	24.86	18.9710	1.5
sep	29	2458390.75	1	58	17.04	+11	28	40.33	18.9637	1.4
sep	30	2458391.75	1	58	8.81	+11	27	55.32	18.9567	1.4
oct	1	2458392.75	1	58	0.49	+11	27	9.84	18.9499	1.3
oct	2	2458393.75	1	57	52.08	+11	26	23.90	18.9435	1.2
oct	3	2458394.75	1	57	43.58	+11	25	37.53	18.9373	1.2

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
oct	4	2458395.75	1	57	35.00	+11	24	50.73	18.9314	1.1
oct	5	2458396.75	1	57	26.34	+11	24	3.51	18.9257	1.0
oct	6	2458397.75	1	57	17.60	+11	23	15.87	18.9204	1.0
oct	7	2458398.75	1	57	8.79	+11	22	27.84	18.9153	0.9
oct	8	2458399.75	1	56	59.91	+11	21	39.43	18.9106	0.8
oct	9	2458400.75	1	56	50.96	+11	20	50.67	18.9061	0.8
oct	10	2458401.75	1	56	41.96	+11	20	1.60	18.9020	0.7
oct	11	2458402.75	1	56	32.91	+11	19	12.25	18.8981	0.6
oct	12	2458403.75	1	56	23.80	+11	18	22.65	18.8945	0.6
oct	13	2458404.75	1	56	14.66	+11	17	32.81	18.8912	0.5
oct	14	2458405.75	1	56	5.47	+11	16	42.77	18.8883	0.4
oct	15	2458406.75	1	55	56.25	+11	15	52.54	18.8856	0.4
oct	16	2458407.75	1	55	46.99	+11	15	2.13	18.8832	0.3
oct	17	2458408.75	1	55	37.69	+11	14	11.58	18.8812	0.2
oct	18	2458409.75	1	55	28.38	+11	13	20.88	18.8794	0.1
oct	19	2458410.75	1	55	19.03	+11	12	30.07	18.8780	0.1
oct	20	2458411.75	1	55	9.67	+11	11	39.15	18.8768	0.0
oct	21	2458412.75	1	55	0.29	+11	10	48.15	18.8760	23.9
oct	22	2458413.75	1	54	50.89	+11	9	57.10	18.8755	23.9
oct	23	2458414.75	1	54	41.50	+11	9	6.00	18.8752	23.8
oct	24	2458415.75	1	54	32.09	+11	8	14.90	18.8753	23.7
oct	25	2458416.75	1	54	22.70	+11	7	23.82	18.8757	23.7
oct	26	2458417.75	1	54	13.30	+11	6	32.79	18.8764	23.6
oct	27	2458418.75	1	54	3.93	+11	5	41.84	18.8774	23.5
oct	28	2458419.75	1	53	54.56	+11	4	50.98	18.8787	23.5
oct	29	2458420.75	1	53	45.22	+11	4	0.25	18.8803	23.4
oct	30	2458421.75	1	53	35.89	+11	3	9.65	18.8822	23.3
oct	31	2458422.75	1	53	26.59	+11	2	19.20	18.8844	23.3
nov	1	2458423.75	1	53	17.31	+11	1	28.91	18.8870	23.2
nov	2	2458424.75	1	53	8.06	+11	0	38.79	18.8898	23.1
nov	3	2458425.75	1	52	58.85	+10	59	48.86	18.8929	23.1
nov	4	2458426.75	1	52	49.67	+10	58	59.14	18.8964	23.0
nov	5	2458427.75	1	52	40.54	+10	58	9.66	18.9001	22.9
nov	6	2458428.75	1	52	31.46	+10	57	20.46	18.9042	22.8
nov	7	2458429.75	1	52	22.43	+10	56	31.57	18.9086	22.8
nov	8	2458430.75	1	52	13.46	+10	55	43.02	18.9132	22.7
nov	9	2458431.75	1	52	4.56	+10	54	54.83	18.9182	22.6
nov	10	2458432.75	1	51	55.73	+10	54	7.04	18.9234	22.6
nov	11	2458433.75	1	51	46.96	+10	53	19.65	18.9290	22.5
nov	12	2458434.75	1	51	38.27	+10	52	32.69	18.9348	22.4
nov	13	2458435.75	1	51	29.66	+10	51	46.18	18.9410	22.4
nov	14	2458436.75	1	51	21.13	+10	51	0.12	18.9474	22.3
nov	15	2458437.75	1	51	12.68	+10	50	14.55	18.9541	22.2
nov	16	2458438.75	1	51	4.32	+10	49	29.46	18.9611	22.2
nov	17	2458439.75	1	50	56.04	+10	48	44.90	18.9684	22.1
nov	18	2458440.75	1	50	47.87	+10	48	0.86	18.9759	22.0

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
nov	19	2458441.75	1	50	39.79	+10	47	17.37	18.9838	22.0
nov	20	2458442.75	1	50	31.81	+10	46	34.47	18.9919	21.9
nov	21	2458443.75	1	50	23.94	+10	45	52.16	19.0003	21.8
nov	22	2458444.75	1	50	16.18	+10	45	10.48	19.0089	21.8
nov	23	2458445.75	1	50	8.54	+10	44	29.46	19.0178	21.7
nov	24	2458446.75	1	50	1.02	+10	43	49.11	19.0270	21.6
nov	25	2458447.75	1	49	53.62	+10	43	9.46	19.0364	21.6
nov	26	2458448.75	1	49	46.34	+10	42	30.52	19.0461	21.5
nov	27	2458449.75	1	49	39.18	+10	41	52.28	19.0561	21.4
nov	28	2458450.75	1	49	32.15	+10	41	14.76	19.0663	21.4
nov	29	2458451.75	1	49	25.25	+10	40	37.97	19.0767	21.3
nov	30	2458452.75	1	49	18.48	+10	40	1.91	19.0874	21.2
dic	1	2458453.75	1	49	11.84	+10	39	26.61	19.0984	21.2
dic	2	2458454.75	1	49	5.34	+10	38	52.08	19.1096	21.1
dic	3	2458455.75	1	48	58.98	+10	38	18.36	19.1210	21.0
dic	4	2458456.75	1	48	52.77	+10	37	45.46	19.1326	20.9
dic	5	2458457.75	1	48	46.72	+10	37	13.41	19.1445	20.9
dic	6	2458458.75	1	48	40.81	+10	36	42.24	19.1566	20.8
dic	7	2458459.75	1	48	35.07	+10	36	11.96	19.1689	20.7
dic	8	2458460.75	1	48	29.48	+10	35	42.58	19.1814	20.7
dic	9	2458461.75	1	48	24.06	+10	35	14.12	19.1942	20.6
dic	10	2458462.75	1	48	18.79	+10	34	46.59	19.2071	20.5
dic	11	2458463.75	1	48	13.69	+10	34	19.98	19.2203	20.5
dic	12	2458464.75	1	48	8.76	+10	33	54.32	19.2336	20.4
dic	13	2458465.75	1	48	3.99	+10	33	29.60	19.2472	20.3
dic	14	2458466.75	1	47	59.39	+10	33	5.84	19.2609	20.3
dic	15	2458467.75	1	47	54.96	+10	32	43.05	19.2748	20.2
dic	16	2458468.75	1	47	50.71	+10	32	21.24	19.2889	20.1
dic	17	2458469.75	1	47	46.63	+10	32	0.42	19.3032	20.1
dic	18	2458470.75	1	47	42.74	+10	31	40.61	19.3176	20.0
dic	19	2458471.75	1	47	39.02	+10	31	21.81	19.3322	19.9
dic	20	2458472.75	1	47	35.49	+10	31	4.06	19.3469	19.9
dic	21	2458473.75	1	47	32.14	+10	30	47.36	19.3618	19.8
dic	22	2458474.75	1	47	28.98	+10	30	31.72	19.3769	19.7
dic	23	2458475.75	1	47	26.01	+10	30	17.15	19.3921	19.7
dic	24	2458476.75	1	47	23.22	+10	30	3.65	19.4074	19.6
dic	25	2458477.75	1	47	20.62	+10	29	51.20	19.4229	19.5
dic	26	2458478.75	1	47	18.21	+10	29	39.80	19.4385	19.5
dic	27	2458479.75	1	47	15.97	+10	29	29.45	19.4542	19.4
dic	28	2458480.75	1	47	13.93	+10	29	20.15	19.4701	19.3
dic	29	2458481.75	1	47	12.08	+10	29	11.92	19.4861	19.3
dic	30	2458482.75	1	47	10.42	+10	29	4.77	19.5022	19.2
dic	31	2458483.75	1	47	8.96	+10	28	58.71	19.5183	19.1

Neptuno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
ene	1	2458119.75	22	54	39.99	-7	56	14.46	30.4069	16.2
ene	2	2458120.75	22	54	44.91	-7	55	43.12	30.4220	16.1
ene	3	2458121.75	22	54	49.93	-7	55	11.14	30.4370	16.1
ene	4	2458122.75	22	54	55.06	-7	54	38.55	30.4518	16.0
ene	5	2458123.75	22	55	0.29	-7	54	5.36	30.4665	15.9
ene	6	2458124.75	22	55	5.62	-7	53	31.57	30.4810	15.9
ene	7	2458125.75	22	55	11.05	-7	52	57.17	30.4953	15.8
ene	8	2458126.75	22	55	16.58	-7	52	22.17	30.5095	15.7
ene	9	2458127.75	22	55	22.21	-7	51	46.57	30.5235	15.7
ene	10	2458128.75	22	55	27.93	-7	51	10.37	30.5373	15.6
ene	11	2458129.75	22	55	33.76	-7	50	33.57	30.5510	15.5
ene	12	2458130.75	22	55	39.69	-7	49	56.19	30.5645	15.5
ene	13	2458131.75	22	55	45.71	-7	49	18.23	30.5777	15.4
ene	14	2458132.75	22	55	51.83	-7	48	39.72	30.5908	15.4
ene	15	2458133.75	22	55	58.04	-7	48	0.65	30.6037	15.3
ene	16	2458134.75	22	56	4.33	-7	47	21.06	30.6164	15.2
ene	17	2458135.75	22	56	10.72	-7	46	40.95	30.6289	15.2
ene	18	2458136.75	22	56	17.19	-7	46	0.33	30.6411	15.1
ene	19	2458137.75	22	56	23.75	-7	45	19.23	30.6532	15.0
ene	20	2458138.75	22	56	30.38	-7	44	37.64	30.6650	15.0
ene	21	2458139.75	22	56	37.10	-7	43	55.58	30.6767	14.9
ene	22	2458140.75	22	56	43.89	-7	43	13.05	30.6881	14.8
ene	23	2458141.75	22	56	50.76	-7	42	30.06	30.6992	14.8
ene	24	2458142.75	22	56	57.71	-7	41	46.61	30.7102	14.7
ene	25	2458143.75	22	57	4.74	-7	41	2.71	30.7209	14.7
ene	26	2458144.75	22	57	11.83	-7	40	18.36	30.7314	14.6
ene	27	2458145.75	22	57	19.00	-7	39	33.58	30.7416	14.5
ene	28	2458146.75	22	57	26.25	-7	38	48.37	30.7516	14.5
ene	29	2458147.75	22	57	33.56	-7	38	2.76	30.7614	14.4
ene	30	2458148.75	22	57	40.94	-7	37	16.77	30.7709	14.3
ene	31	2458149.75	22	57	48.38	-7	36	30.43	30.7802	14.3
feb	1	2458150.75	22	57	55.88	-7	35	43.75	30.7892	14.2
feb	2	2458151.75	22	58	3.43	-7	34	56.74	30.7980	14.1
feb	3	2458152.75	22	58	11.04	-7	34	9.40	30.8065	14.1
feb	4	2458153.75	22	58	18.71	-7	33	21.74	30.8147	14.0
feb	5	2458154.75	22	58	26.43	-7	32	33.75	30.8228	14.0
feb	6	2458155.75	22	58	34.20	-7	31	45.44	30.8305	13.9
feb	7	2458156.75	22	58	42.03	-7	30	56.82	30.8380	13.8
feb	8	2458157.75	22	58	49.91	-7	30	7.90	30.8452	13.8
feb	9	2458158.75	22	58	57.84	-7	29	18.69	30.8522	13.7
feb	10	2458159.75	22	59	5.82	-7	28	29.21	30.8588	13.6
feb	11	2458160.75	22	59	13.84	-7	27	39.47	30.8653	13.6
feb	12	2458161.75	22	59	21.91	-7	26	49.50	30.8714	13.5
feb	13	2458162.75	22	59	30.02	-7	25	59.30	30.8773	13.4
feb	14	2458163.75	22	59	38.16	-7	25	8.89	30.8828	13.4
feb	15	2458164.75	22	59	46.34	-7	24	18.29	30.8882	13.3

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ -	"	dis UA	hp h
feb	16	2458165.75	22	59	54.55	-7	23	27.51	30.8932	13.3
feb	17	2458166.75	23	0	2.79	-7	22	36.57	30.8979	13.2
feb	18	2458167.75	23	0	11.06	-7	21	45.46	30.9024	13.1
feb	19	2458168.75	23	0	19.36	-7	20	54.20	30.9066	13.1
feb	20	2458169.75	23	0	27.68	-7	20	2.80	30.9105	13.0
feb	21	2458170.75	23	0	36.03	-7	19	11.25	30.9141	12.9
feb	22	2458171.75	23	0	44.40	-7	18	19.57	30.9175	12.9
feb	23	2458172.75	23	0	52.79	-7	17	27.77	30.9205	12.8
feb	24	2458173.75	23	1	1.21	-7	16	35.85	30.9233	12.7
feb	25	2458174.75	23	1	9.65	-7	15	43.85	30.9257	12.7
feb	26	2458175.75	23	1	18.10	-7	14	51.79	30.9279	12.6
feb	27	2458176.75	23	1	26.56	-7	13	59.68	30.9298	12.6
feb	28	2458177.75	23	1	35.03	-7	13	7.54	30.9314	12.5
mar	1	2458178.75	23	1	43.50	-7	12	15.40	30.9328	12.4
mar	2	2458179.75	23	1	51.98	-7	11	23.27	30.9338	12.4
mar	3	2458180.75	23	2	0.47	-7	10	31.19	30.9346	12.3
mar	4	2458181.75	23	2	8.95	-7	9	39.34	30.9351	12.2
mar	5	2458182.75	23	2	17.41	-7	8	47.25	30.9352	12.2
mar	6	2458183.75	23	2	25.89	-7	7	54.92	30.9351	12.1
mar	7	2458184.75	23	2	34.38	-7	7	2.73	30.9348	12.0
mar	8	2458185.75	23	2	42.86	-7	6	10.63	30.9341	12.0
mar	9	2458186.75	23	2	51.34	-7	5	18.59	30.9331	11.9
mar	10	2458187.75	23	2	59.81	-7	4	26.62	30.9319	11.9
mar	11	2458188.75	23	3	8.28	-7	3	34.74	30.9304	11.8
mar	12	2458189.75	23	3	16.73	-7	2	42.97	30.9285	11.7
mar	13	2458190.75	23	3	25.16	-7	1	51.31	30.9264	11.7
mar	14	2458191.75	23	3	33.58	-7	0	59.78	30.9241	11.6
mar	15	2458192.75	23	3	41.98	-7	0	8.40	30.9214	11.5
mar	16	2458193.75	23	3	50.36	-6	59	17.17	30.9184	11.5
mar	17	2458194.75	23	3	58.72	-6	58	26.11	30.9152	11.4
mar	18	2458195.75	23	4	7.05	-6	57	35.23	30.9117	11.4
mar	19	2458196.75	23	4	15.35	-6	56	44.52	30.9079	11.3
mar	20	2458197.75	23	4	23.63	-6	55	53.99	30.9038	11.2
mar	21	2458198.75	23	4	31.87	-6	55	3.65	30.8995	11.2
mar	22	2458199.75	23	4	40.10	-6	54	13.51	30.8948	11.1
mar	23	2458200.75	23	4	48.29	-6	53	23.58	30.8900	11.0
mar	24	2458201.75	23	4	56.44	-6	52	33.88	30.8848	11.0
mar	25	2458202.75	23	5	4.56	-6	51	44.43	30.8793	10.9
mar	26	2458203.75	23	5	12.65	-6	50	55.25	30.8736	10.8
mar	27	2458204.75	23	5	20.68	-6	50	6.36	30.8677	10.8
mar	28	2458205.75	23	5	28.68	-6	49	17.77	30.8614	10.7
mar	29	2458206.75	23	5	36.63	-6	48	29.50	30.8549	10.7
mar	30	2458207.75	23	5	44.53	-6	47	41.55	30.8482	10.6
mar	31	2458208.75	23	5	52.38	-6	46	53.92	30.8412	10.5
abr	1	2458209.75	23	6	0.18	-6	46	6.60	30.8339	10.5
abr	2	2458210.75	23	6	7.93	-6	45	19.61	30.8264	10.4

Neptuno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
abr	3	2458211.75	23	6	15.64	-6	44	32.95	30.8186	10.3
abr	4	2458212.75	23	6	23.29	-6	43	46.62	30.8106	10.3
abr	5	2458213.75	23	6	30.89	-6	43	0.65	30.8024	10.2
abr	6	2458214.75	23	6	38.43	-6	42	15.04	30.7938	10.1
abr	7	2458215.75	23	6	45.92	-6	41	29.82	30.7851	10.1
abr	8	2458216.75	23	6	53.35	-6	40	45.00	30.7761	10.0
abr	9	2458217.75	23	7	0.72	-6	40	0.59	30.7669	10.0
abr	10	2458218.75	23	7	8.02	-6	39	16.61	30.7574	9.9
abr	11	2458219.75	23	7	15.26	-6	38	33.06	30.7477	9.8
abr	12	2458220.75	23	7	22.42	-6	37	49.96	30.7378	9.8
abr	13	2458221.75	23	7	29.52	-6	37	7.32	30.7276	9.7
abr	14	2458222.75	23	7	36.54	-6	36	25.15	30.7172	9.6
abr	15	2458223.75	23	7	43.50	-6	35	43.43	30.7066	9.6
abr	16	2458224.75	23	7	50.38	-6	35	2.19	30.6958	9.5
abr	17	2458225.75	23	7	57.19	-6	34	21.42	30.6848	9.4
abr	18	2458226.75	23	8	3.92	-6	33	41.12	30.6735	9.4
abr	19	2458227.75	23	8	10.58	-6	33	1.31	30.6621	9.3
abr	20	2458228.75	23	8	17.17	-6	32	22.00	30.6504	9.3
abr	21	2458229.75	23	8	23.67	-6	31	43.21	30.6385	9.2
abr	22	2458230.75	23	8	30.09	-6	31	4.96	30.6265	9.1
abr	23	2458231.75	23	8	36.43	-6	30	27.26	30.6142	9.1
abr	24	2458232.75	23	8	42.68	-6	29	50.14	30.6018	9.0
abr	25	2458233.75	23	8	48.84	-6	29	13.59	30.5892	8.9
abr	26	2458234.75	23	8	54.91	-6	28	37.62	30.5763	8.9
abr	27	2458235.75	23	9	0.89	-6	28	2.22	30.5634	8.8
abr	28	2458236.75	23	9	6.79	-6	27	27.41	30.5502	8.7
abr	29	2458237.75	23	9	12.59	-6	26	53.16	30.5368	8.7
abr	30	2458238.75	23	9	18.30	-6	26	19.50	30.5233	8.6
may	1	2458239.75	23	9	23.92	-6	25	46.42	30.5097	8.5
may	2	2458240.75	23	9	29.45	-6	25	13.93	30.4958	8.5
may	3	2458241.75	23	9	34.89	-6	24	42.04	30.4818	8.4
may	4	2458242.75	23	9	40.24	-6	24	10.77	30.4677	8.4
may	5	2458243.75	23	9	45.48	-6	23	40.12	30.4534	8.3
may	6	2458244.75	23	9	50.63	-6	23	10.12	30.4390	8.2
may	7	2458245.75	23	9	55.68	-6	22	40.76	30.4244	8.2
may	8	2458246.75	23	10	0.62	-6	22	12.07	30.4096	8.1
may	9	2458247.75	23	10	5.47	-6	21	44.04	30.3948	8.0
may	10	2458248.75	23	10	10.20	-6	21	16.68	30.3798	8.0
may	11	2458249.75	23	10	14.84	-6	20	50.00	30.3647	7.9
may	12	2458250.75	23	10	19.36	-6	20	23.99	30.3494	7.8
may	13	2458251.75	23	10	23.78	-6	19	58.66	30.3341	7.8
may	14	2458252.75	23	10	28.10	-6	19	34.00	30.3186	7.7
may	15	2458253.75	23	10	32.30	-6	19	10.01	30.3030	7.6
may	16	2458254.75	23	10	36.41	-6	18	46.70	30.2873	7.6
may	17	2458255.75	23	10	40.40	-6	18	24.07	30.2715	7.5
may	18	2458256.75	23	10	44.29	-6	18	2.14	30.2556	7.5

Neptuno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
may	19	2458257.75	23	10	48.07	-6	17	40.93	30.2396	7.4
may	20	2458258.75	23	10	51.73	-6	17	20.45	30.2236	7.3
may	21	2458259.75	23	10	55.28	-6	17	0.71	30.2074	7.3
may	22	2458260.75	23	10	58.71	-6	16	41.72	30.1912	7.2
may	23	2458261.75	23	11	2.02	-6	16	23.47	30.1749	7.1
may	24	2458262.75	23	11	5.22	-6	16	5.97	30.1585	7.1
may	25	2458263.75	23	11	8.30	-6	15	49.19	30.1421	7.0
may	26	2458264.75	23	11	11.27	-6	15	33.15	30.1256	6.9
may	27	2458265.75	23	11	14.12	-6	15	17.82	30.1091	6.9
may	28	2458266.75	23	11	16.85	-6	15	3.23	30.0925	6.8
may	29	2458267.75	23	11	19.48	-6	14	49.36	30.0758	6.7
may	30	2458268.75	23	11	21.99	-6	14	36.23	30.0591	6.7
may	31	2458269.75	23	11	24.38	-6	14	23.83	30.0424	6.6
jun	1	2458270.75	23	11	26.65	-6	14	12.19	30.0257	6.5
jun	2	2458271.75	23	11	28.81	-6	14	1.30	30.0089	6.5
jun	3	2458272.75	23	11	30.85	-6	13	51.18	29.9921	6.4
jun	4	2458273.75	23	11	32.76	-6	13	41.83	29.9753	6.4
jun	5	2458274.75	23	11	34.56	-6	13	33.24	29.9584	6.3
jun	6	2458275.75	23	11	36.23	-6	13	25.43	29.9416	6.2
jun	7	2458276.75	23	11	37.78	-6	13	18.38	29.9247	6.2
jun	8	2458277.75	23	11	39.21	-6	13	12.10	29.9079	6.1
jun	9	2458278.75	23	11	40.51	-6	13	6.59	29.8910	6.0
jun	10	2458279.75	23	11	41.70	-6	13	1.83	29.8742	6.0
jun	11	2458280.75	23	11	42.77	-6	12	57.82	29.8573	5.9
jun	12	2458281.75	23	11	43.72	-6	12	54.55	29.8405	5.8
jun	13	2458282.75	23	11	44.55	-6	12	52.03	29.8237	5.8
jun	14	2458283.75	23	11	45.26	-6	12	50.26	29.8070	5.7
jun	15	2458284.75	23	11	45.85	-6	12	49.25	29.7902	5.6
jun	16	2458285.75	23	11	46.31	-6	12	49.02	29.7735	5.6
jun	17	2458286.75	23	11	46.66	-6	12	49.58	29.7569	5.5
jun	18	2458287.75	23	11	46.88	-6	12	50.92	29.7403	5.4
jun	19	2458288.75	23	11	46.97	-6	12	53.04	29.7238	5.4
jun	20	2458289.75	23	11	46.94	-6	12	55.93	29.7073	5.3
jun	21	2458290.75	23	11	46.79	-6	12	59.57	29.6908	5.2
jun	22	2458291.75	23	11	46.52	-6	13	3.96	29.6745	5.2
jun	23	2458292.75	23	11	46.13	-6	13	9.09	29.6582	5.1
jun	24	2458293.75	23	11	45.62	-6	13	14.95	29.6420	5.0
jun	25	2458294.75	23	11	45.00	-6	13	21.53	29.6259	5.0
jun	26	2458295.75	23	11	44.26	-6	13	28.84	29.6098	4.9
jun	27	2458296.75	23	11	43.41	-6	13	36.87	29.5939	4.8
jun	28	2458297.75	23	11	42.44	-6	13	45.64	29.5780	4.8
jun	29	2458298.75	23	11	41.35	-6	13	55.13	29.5622	4.7
jun	30	2458299.75	23	11	40.14	-6	14	5.35	29.5466	4.6
jul	1	2458300.75	23	11	38.82	-6	14	16.31	29.5310	4.6
jul	2	2458301.75	23	11	37.38	-6	14	27.99	29.5156	4.5
jul	3	2458302.75	23	11	35.82	-6	14	40.40	29.5003	4.4

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Efermídes a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
jul	4	2458303.75	23	11	34.15	-6	14	53.52	29.4850	4.4
jul	5	2458304.75	23	11	32.36	-6	15	7.35	29.4700	4.3
jul	6	2458305.75	23	11	30.46	-6	15	21.88	29.4550	4.2
jul	7	2458306.75	23	11	28.45	-6	15	37.10	29.4402	4.2
jul	8	2458307.75	23	11	26.32	-6	15	52.99	29.4255	4.1
jul	9	2458308.75	23	11	24.09	-6	16	9.54	29.4109	4.0
jul	10	2458309.75	23	11	21.75	-6	16	26.74	29.3965	4.0
jul	11	2458310.75	23	11	19.30	-6	16	44.60	29.3823	3.9
jul	12	2458311.75	23	11	16.75	-6	17	3.12	29.3682	3.8
jul	13	2458312.75	23	11	14.09	-6	17	22.29	29.3542	3.8
jul	14	2458313.75	23	11	11.32	-6	17	42.13	29.3405	3.7
jul	15	2458314.75	23	11	8.44	-6	18	2.64	29.3268	3.6
jul	16	2458315.75	23	11	5.46	-6	18	23.81	29.3134	3.6
jul	17	2458316.75	23	11	2.37	-6	18	45.62	29.3002	3.5
jul	18	2458317.75	23	10	59.17	-6	19	8.05	29.2871	3.4
jul	19	2458318.75	23	10	55.88	-6	19	31.09	29.2742	3.4
jul	20	2458319.75	23	10	52.49	-6	19	54.71	29.2615	3.3
jul	21	2458320.75	23	10	49.00	-6	20	18.90	29.2490	3.2
jul	22	2458321.75	23	10	45.42	-6	20	43.66	29.2367	3.2
jul	23	2458322.75	23	10	41.75	-6	21	8.98	29.2246	3.1
jul	24	2458323.75	23	10	37.98	-6	21	34.84	29.2126	3.0
jul	25	2458324.75	23	10	34.12	-6	22	1.26	29.2009	3.0
jul	26	2458325.75	23	10	30.18	-6	22	28.22	29.1894	2.9
jul	27	2458326.75	23	10	26.14	-6	22	55.71	29.1781	2.8
jul	28	2458327.75	23	10	22.02	-6	23	23.74	29.1671	2.8
jul	29	2458328.75	23	10	17.81	-6	23	52.30	29.1562	2.7
jul	30	2458329.75	23	10	13.51	-6	24	21.37	29.1456	2.6
jul	31	2458330.75	23	10	9.12	-6	24	50.94	29.1352	2.6
ago	1	2458331.75	23	10	4.66	-6	25	21.00	29.1250	2.5
ago	2	2458332.75	23	10	0.11	-6	25	51.53	29.1151	2.4
ago	3	2458333.75	23	9	55.48	-6	26	22.52	29.1053	2.4
ago	4	2458334.75	23	9	50.78	-6	26	53.95	29.0959	2.3
ago	5	2458335.75	23	9	46.00	-6	27	25.80	29.0866	2.2
ago	6	2458336.75	23	9	41.15	-6	27	58.06	29.0776	2.2
ago	7	2458337.75	23	9	36.24	-6	28	30.72	29.0689	2.1
ago	8	2458338.75	23	9	31.25	-6	29	3.77	29.0604	2.0
ago	9	2458339.75	23	9	26.20	-6	29	37.21	29.0522	2.0
ago	10	2458340.75	23	9	21.08	-6	30	11.04	29.0442	1.9
ago	11	2458341.75	23	9	15.90	-6	30	45.26	29.0365	1.8
ago	12	2458342.75	23	9	10.64	-6	31	19.86	29.0290	1.8
ago	13	2458343.75	23	9	5.33	-6	31	54.83	29.0218	1.7
ago	14	2458344.75	23	8	59.95	-6	32	30.13	29.0149	1.6
ago	15	2458345.75	23	8	54.52	-6	33	5.74	29.0082	1.6
ago	16	2458346.75	23	8	49.03	-6	33	41.64	29.0018	1.5
ago	17	2458347.75	23	8	43.49	-6	34	17.82	28.9957	1.4
ago	18	2458348.75	23	8	37.91	-6	34	54.24	28.9899	1.4

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Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
ago	19	2458349.75	23	8	32.28	-6	35	30.91	28.9843	1.3
ago	20	2458350.75	23	8	26.61	-6	36	7.82	28.9790	1.2
ago	21	2458351.75	23	8	20.89	-6	36	44.95	28.9740	1.2
ago	22	2458352.75	23	8	15.14	-6	37	22.29	28.9693	1.1
ago	23	2458353.75	23	8	9.34	-6	37	59.84	28.9648	1.0
ago	24	2458354.75	23	8	3.51	-6	38	37.59	28.9607	1.0
ago	25	2458355.75	23	7	57.64	-6	39	15.53	28.9568	0.9
ago	26	2458356.75	23	7	51.74	-6	39	53.63	28.9532	0.8
ago	27	2458357.75	23	7	45.80	-6	40	31.90	28.9499	0.8
ago	28	2458358.75	23	7	39.84	-6	41	10.31	28.9469	0.7
ago	29	2458359.75	23	7	33.85	-6	41	48.83	28.9442	0.6
ago	30	2458360.75	23	7	27.83	-6	42	27.46	28.9418	0.6
ago	31	2458361.75	23	7	21.79	-6	43	6.17	28.9396	0.5
sep	1	2458362.75	23	7	15.74	-6	43	44.95	28.9378	0.4
sep	2	2458363.75	23	7	9.67	-6	44	23.76	28.9362	0.4
sep	3	2458364.75	23	7	3.59	-6	45	2.61	28.9350	0.3
sep	4	2458365.75	23	6	57.50	-6	45	41.48	28.9340	0.2
sep	5	2458366.75	23	6	51.40	-6	46	20.36	28.9333	0.2
sep	6	2458367.75	23	6	45.29	-6	46	59.25	28.9330	0.1
sep	7	2458368.75	23	6	39.17	-6	47	38.15	28.9329	0.0
sep	8	2458369.75	23	6	33.05	-6	48	17.04	28.9331	24.0
sep	9	2458370.75	23	6	26.92	-6	48	55.92	28.9337	23.9
sep	10	2458371.75	23	6	20.79	-6	49	34.75	28.9345	23.8
sep	11	2458372.75	23	6	14.67	-6	50	13.52	28.9356	23.8
sep	12	2458373.75	23	6	8.55	-6	50	52.19	28.9371	23.7
sep	13	2458374.75	23	6	2.44	-6	51	30.74	28.9388	23.6
sep	14	2458375.75	23	5	56.35	-6	52	9.15	28.9408	23.6
sep	15	2458376.75	23	5	50.27	-6	52	47.41	28.9431	23.5
sep	16	2458377.75	23	5	44.22	-6	53	25.51	28.9458	23.4
sep	17	2458378.75	23	5	38.18	-6	54	3.44	28.9487	23.4
sep	18	2458379.75	23	5	32.17	-6	54	41.19	28.9519	23.3
sep	19	2458380.75	23	5	26.18	-6	55	18.75	28.9554	23.2
sep	20	2458381.75	23	5	20.21	-6	55	56.11	28.9592	23.2
sep	21	2458382.75	23	5	14.27	-6	56	33.26	28.9633	23.1
sep	22	2458383.75	23	5	8.36	-6	57	10.19	28.9676	23.0
sep	23	2458384.75	23	5	2.48	-6	57	46.88	28.9723	22.9
sep	24	2458385.75	23	4	56.64	-6	58	23.31	28.9773	22.9
sep	25	2458386.75	23	4	50.83	-6	58	59.47	28.9825	22.8
sep	26	2458387.75	23	4	45.06	-6	59	35.34	28.9880	22.7
sep	27	2458388.75	23	4	39.33	-7	0	10.90	28.9938	22.7
sep	28	2458389.75	23	4	33.65	-7	0	46.12	28.9999	22.6
sep	29	2458390.75	23	4	28.02	-7	1	21.00	29.0063	22.5
sep	30	2458391.75	23	4	22.44	-7	1	55.51	29.0129	22.5
oct	1	2458392.75	23	4	16.91	-7	2	29.65	29.0199	22.4
oct	2	2458393.75	23	4	11.43	-7	3	3.42	29.0271	22.3
oct	3	2458394.75	23	4	6.01	-7	3	36.81	29.0346	22.3

Neptuno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
oct	4	2458395.75	23	4	0.65	-7	4	9.81	29.0423	22.2
oct	5	2458396.75	23	3	55.34	-7	4	42.43	29.0503	22.1
oct	6	2458397.75	23	3	50.09	-7	5	14.64	29.0586	22.1
oct	7	2458398.75	23	3	44.90	-7	5	46.44	29.0672	22.0
oct	8	2458399.75	23	3	39.78	-7	6	17.79	29.0760	21.9
oct	9	2458400.75	23	3	34.72	-7	6	48.67	29.0851	21.9
oct	10	2458401.75	23	3	29.73	-7	7	19.07	29.0944	21.8
oct	11	2458402.75	23	3	24.82	-7	7	48.96	29.1040	21.7
oct	12	2458403.75	23	3	19.99	-7	8	18.33	29.1138	21.7
oct	13	2458404.75	23	3	15.24	-7	8	47.17	29.1239	21.6
oct	14	2458405.75	23	3	10.56	-7	9	15.48	29.1343	21.5
oct	15	2458406.75	23	3	5.97	-7	9	43.25	29.1448	21.5
oct	16	2458407.75	23	3	1.46	-7	10	10.47	29.1556	21.4
oct	17	2458408.75	23	2	57.04	-7	10	37.15	29.1667	21.3
oct	18	2458409.75	23	2	52.70	-7	11	3.27	29.1780	21.3
oct	19	2458410.75	23	2	48.44	-7	11	28.82	29.1895	21.2
oct	20	2458411.75	23	2	44.28	-7	11	53.80	29.2012	21.1
oct	21	2458412.75	23	2	40.20	-7	12	18.18	29.2132	21.1
oct	22	2458413.75	23	2	36.21	-7	12	41.97	29.2253	21.0
oct	23	2458414.75	23	2	32.32	-7	13	5.14	29.2377	20.9
oct	24	2458415.75	23	2	28.52	-7	13	27.68	29.2503	20.9
oct	25	2458416.75	23	2	24.82	-7	13	49.57	29.2631	20.8
oct	26	2458417.75	23	2	21.23	-7	14	10.79	29.2761	20.7
oct	27	2458418.75	23	2	17.73	-7	14	31.35	29.2893	20.7
oct	28	2458419.75	23	2	14.34	-7	14	51.24	29.3027	20.6
oct	29	2458420.75	23	2	11.06	-7	15	10.45	29.3163	20.5
oct	30	2458421.75	23	2	7.88	-7	15	28.98	29.3301	20.5
oct	31	2458422.75	23	2	4.81	-7	15	46.85	29.3440	20.4
nov	1	2458423.75	23	2	1.84	-7	16	4.05	29.3581	20.3
nov	2	2458424.75	23	1	58.97	-7	16	20.57	29.3725	20.3
nov	3	2458425.75	23	1	56.22	-7	16	36.40	29.3869	20.2
nov	4	2458426.75	23	1	53.57	-7	16	51.52	29.4016	20.1
nov	5	2458427.75	23	1	51.03	-7	17	5.93	29.4164	20.1
nov	6	2458428.75	23	1	48.61	-7	17	19.60	29.4314	20.0
nov	7	2458429.75	23	1	46.31	-7	17	32.51	29.4465	19.9
nov	8	2458430.75	23	1	44.12	-7	17	44.67	29.4617	19.9
nov	9	2458431.75	23	1	42.06	-7	17	56.06	29.4772	19.8
nov	10	2458432.75	23	1	40.12	-7	18	6.68	29.4927	19.7
nov	11	2458433.75	23	1	38.30	-7	18	16.54	29.5084	19.7
nov	12	2458434.75	23	1	36.60	-7	18	25.64	29.5242	19.6
nov	13	2458435.75	23	1	35.02	-7	18	33.98	29.5401	19.5
nov	14	2458436.75	23	1	33.56	-7	18	41.56	29.5562	19.5
nov	15	2458437.75	23	1	32.22	-7	18	48.38	29.5723	19.4
nov	16	2458438.75	23	1	31.00	-7	18	54.43	29.5886	19.3
nov	17	2458439.75	23	1	29.91	-7	18	59.71	29.6049	19.3
nov	18	2458440.75	23	1	28.94	-7	19	4.21	29.6214	19.2

Neptuno, 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ "	"	dis UA	hp h
nov	19	2458441.75	23	1	28.09	-7	19	7.93	29.6379	19.1
nov	20	2458442.75	23	1	27.37	-7	19	10.86	29.6546	19.1
nov	21	2458443.75	23	1	26.77	-7	19	12.98	29.6713	19.0
nov	22	2458444.75	23	1	26.31	-7	19	14.29	29.6881	18.9
nov	23	2458445.75	23	1	25.97	-7	19	14.79	29.7050	18.9
nov	24	2458446.75	23	1	25.76	-7	19	14.48	29.7219	18.8
nov	25	2458447.75	23	1	25.68	-7	19	13.35	29.7389	18.7
nov	26	2458448.75	23	1	25.74	-7	19	11.43	29.7559	18.7
nov	27	2458449.75	23	1	25.92	-7	19	8.72	29.7730	18.6
nov	28	2458450.75	23	1	26.22	-7	19	5.23	29.7902	18.6
nov	29	2458451.75	23	1	26.65	-7	19	0.97	29.8074	18.5
nov	30	2458452.75	23	1	27.21	-7	18	55.92	29.8246	18.4
dic	1	2458453.75	23	1	27.89	-7	18	50.09	29.8419	18.4
dic	2	2458454.75	23	1	28.70	-7	18	43.45	29.8592	18.3
dic	3	2458455.75	23	1	29.63	-7	18	36.01	29.8765	18.2
dic	4	2458456.75	23	1	30.70	-7	18	27.74	29.8938	18.2
dic	5	2458457.75	23	1	31.91	-7	18	18.66	29.9111	18.1
dic	6	2458458.75	23	1	33.24	-7	18	8.77	29.9285	18.0
dic	7	2458459.75	23	1	34.70	-7	17	58.06	29.9458	18.0
dic	8	2458460.75	23	1	36.30	-7	17	46.54	29.9631	17.9
dic	9	2458461.75	23	1	38.03	-7	17	34.23	29.9805	17.8
dic	10	2458462.75	23	1	39.88	-7	17	21.13	29.9978	17.8
dic	11	2458463.75	23	1	41.86	-7	17	7.25	30.0150	17.7
dic	12	2458464.75	23	1	43.97	-7	16	52.59	30.0323	17.6
dic	13	2458465.75	23	1	46.20	-7	16	37.17	30.0495	17.6
dic	14	2458466.75	23	1	48.56	-7	16	20.98	30.0667	17.5
dic	15	2458467.75	23	1	51.04	-7	16	4.02	30.0838	17.4
dic	16	2458468.75	23	1	53.64	-7	15	46.29	30.1009	17.4
dic	17	2458469.75	23	1	56.37	-7	15	27.79	30.1179	17.3
dic	18	2458470.75	23	1	59.23	-7	15	8.52	30.1348	17.2
dic	19	2458471.75	23	2	2.20	-7	14	48.48	30.1517	17.2
dic	20	2458472.75	23	2	5.31	-7	14	27.67	30.1686	17.1
dic	21	2458473.75	23	2	8.54	-7	14	6.09	30.1853	17.1
dic	22	2458474.75	23	2	11.89	-7	13	43.76	30.2020	17.0
dic	23	2458475.75	23	2	15.36	-7	13	20.68	30.2186	16.9
dic	24	2458476.75	23	2	18.96	-7	12	56.87	30.2351	16.9
dic	25	2458477.75	23	2	22.67	-7	12	32.36	30.2515	16.8
dic	26	2458478.75	23	2	26.50	-7	12	7.15	30.2678	16.7
dic	27	2458479.75	23	2	30.44	-7	11	41.25	30.2840	16.7
dic	28	2458480.75	23	2	34.49	-7	11	14.66	30.3001	16.6
dic	29	2458481.75	23	2	38.65	-7	10	47.37	30.3161	16.5
dic	30	2458482.75	23	2	42.93	-7	10	19.38	30.3319	16.5
dic	31	2458483.75	23	2	47.33	-7	9	50.68	30.3477	16.4

Plutón (planeta enano), 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
ene	1	2458119.75	19	21	6.21	-21	40	13.60	34.4491	12.6
ene	2	2458120.75	19	21	14.94	-21	40	2.35	34.4520	12.6
ene	3	2458121.75	19	21	23.68	-21	39	51.06	34.4547	12.5
ene	4	2458122.75	19	21	32.42	-21	39	39.72	34.4570	12.4
ene	5	2458123.75	19	21	41.18	-21	39	28.33	34.4590	12.4
ene	6	2458124.75	19	21	49.94	-21	39	16.87	34.4608	12.3
ene	7	2458125.75	19	21	58.70	-21	39	5.33	34.4622	12.2
ene	8	2458126.75	19	22	7.48	-21	38	53.65	34.4634	12.2
ene	9	2458127.75	19	22	16.23	-21	38	41.24	34.4643	12.1
ene	10	2458128.75	19	22	24.96	-21	38	30.33	34.4648	12.1
ene	11	2458129.75	19	22	33.74	-21	38	18.71	34.4651	12.0
ene	12	2458130.75	19	22	42.52	-21	38	6.93	34.4651	11.9
ene	13	2458131.75	19	22	51.28	-21	37	55.12	34.4648	11.9
ene	14	2458132.75	19	23	0.04	-21	37	43.27	34.4642	11.8
ene	15	2458133.75	19	23	8.79	-21	37	31.41	34.4633	11.7
ene	16	2458134.75	19	23	17.53	-21	37	19.55	34.4621	11.7
ene	17	2458135.75	19	23	26.25	-21	37	7.69	34.4606	11.6
ene	18	2458136.75	19	23	34.95	-21	36	55.83	34.4589	11.6
ene	19	2458137.75	19	23	43.64	-21	36	43.98	34.4568	11.5
ene	20	2458138.75	19	23	52.29	-21	36	32.14	34.4544	11.4
ene	21	2458139.75	19	24	0.93	-21	36	20.30	34.4518	11.4
ene	22	2458140.75	19	24	9.53	-21	36	8.46	34.4488	11.3
ene	23	2458141.75	19	24	18.11	-21	35	56.63	34.4456	11.2
ene	24	2458142.75	19	24	26.65	-21	35	44.80	34.4421	11.2
ene	25	2458143.75	19	24	35.17	-21	35	32.97	34.4383	11.1
ene	26	2458144.75	19	24	43.66	-21	35	21.16	34.4342	11.0
ene	27	2458145.75	19	24	52.11	-21	35	9.37	34.4299	11.0
ene	28	2458146.75	19	25	0.53	-21	34	57.62	34.4252	10.9
ene	29	2458147.75	19	25	8.91	-21	34	45.93	34.4203	10.9
ene	30	2458148.75	19	25	17.25	-21	34	34.30	34.4151	10.8
ene	31	2458149.75	19	25	25.55	-21	34	22.75	34.4097	10.7
feb	1	2458150.75	19	25	33.80	-21	34	11.27	34.4040	10.7
feb	2	2458151.75	19	25	42.00	-21	33	59.86	34.3980	10.6
feb	3	2458152.75	19	25	50.14	-21	33	48.51	34.3917	10.5
feb	4	2458153.75	19	25	58.24	-21	33	37.21	34.3851	10.5
feb	5	2458154.75	19	26	6.28	-21	33	25.97	34.3783	10.4
feb	6	2458155.75	19	26	14.27	-21	33	14.79	34.3713	10.3
feb	7	2458156.75	19	26	22.20	-21	33	3.68	34.3640	10.3
feb	8	2458157.75	19	26	30.08	-21	32	52.65	34.3564	10.2
feb	9	2458158.75	19	26	37.90	-21	32	41.70	34.3485	10.2
feb	10	2458159.75	19	26	45.66	-21	32	30.86	34.3405	10.1
feb	11	2458160.75	19	26	53.36	-21	32	20.12	34.3321	10.0
feb	12	2458161.75	19	27	1.00	-21	32	9.50	34.3235	10.0
feb	13	2458162.75	19	27	8.56	-21	31	59.00	34.3147	9.9
feb	14	2458163.75	19	27	16.06	-21	31	48.64	34.3056	9.8
feb	15	2458164.75	19	27	23.49	-21	31	38.40	34.2963	9.8

Plutón (planeta enano), 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
feb	16	2458165.75	19	27	30.83	-21	31	28.29	34.2867	9.7
feb	17	2458166.75	19	27	38.11	-21	31	18.31	34.2769	9.6
feb	18	2458167.75	19	27	45.30	-21	31	8.46	34.2669	9.6
feb	19	2458168.75	19	27	52.41	-21	30	58.73	34.2566	9.5
feb	20	2458169.75	19	27	59.45	-21	30	49.13	34.2462	9.5
feb	21	2458170.75	19	28	6.40	-21	30	39.66	34.2355	9.4
feb	22	2458171.75	19	28	13.28	-21	30	30.32	34.2245	9.3
feb	23	2458172.75	19	28	20.07	-21	30	21.12	34.2134	9.3
feb	24	2458173.75	19	28	26.78	-21	30	12.09	34.2021	9.2
feb	25	2458174.75	19	28	33.41	-21	30	3.22	34.1905	9.1
feb	26	2458175.75	19	28	39.94	-21	29	54.53	34.1788	9.1
feb	27	2458176.75	19	28	46.39	-21	29	46.04	34.1668	9.0
feb	28	2458177.75	19	28	52.74	-21	29	37.74	34.1547	8.9
mar	1	2458178.75	19	28	59.00	-21	29	29.63	34.1424	8.9
mar	2	2458179.75	19	29	5.16	-21	29	21.70	34.1299	8.8
mar	3	2458180.75	19	29	11.22	-21	29	13.95	34.1172	8.8
mar	4	2458181.75	19	29	17.18	-21	29	6.37	34.1043	8.7
mar	5	2458182.75	19	29	23.05	-21	28	58.96	34.0912	8.6
mar	6	2458183.75	19	29	28.82	-21	28	51.74	34.0780	8.6
mar	7	2458184.75	19	29	34.49	-21	28	44.70	34.0646	8.5
mar	8	2458185.75	19	29	40.06	-21	28	37.86	34.0511	8.4
mar	9	2458186.75	19	29	45.53	-21	28	31.22	34.0374	8.4
mar	10	2458187.75	19	29	50.90	-21	28	24.81	34.0235	8.3
mar	11	2458188.75	19	29	56.16	-21	28	18.62	34.0095	8.2
mar	12	2458189.75	19	30	1.32	-21	28	12.66	33.9953	8.2
mar	13	2458190.75	19	30	6.36	-21	28	6.93	33.9810	8.1
mar	14	2458191.75	19	30	11.30	-21	28	1.44	33.9665	8.0
mar	15	2458192.75	19	30	16.12	-21	27	56.19	33.9519	8.0
mar	16	2458193.75	19	30	20.83	-21	27	51.17	33.9372	7.9
mar	17	2458194.75	19	30	25.43	-21	27	46.39	33.9223	7.9
mar	18	2458195.75	19	30	29.91	-21	27	41.82	33.9073	7.8
mar	19	2458196.75	19	30	34.27	-21	27	37.49	33.8923	7.7
mar	20	2458197.75	19	30	38.52	-21	27	33.37	33.8771	7.7
mar	21	2458198.75	19	30	42.66	-21	27	29.49	33.8617	7.6
mar	22	2458199.75	19	30	46.68	-21	27	25.83	33.8463	7.5
mar	23	2458200.75	19	30	50.58	-21	27	22.43	33.8308	7.5
mar	24	2458201.75	19	30	54.37	-21	27	19.29	33.8152	7.4
mar	25	2458202.75	19	30	58.05	-21	27	16.41	33.7996	7.3
mar	26	2458203.75	19	31	1.60	-21	27	13.81	33.7838	7.3
mar	27	2458204.75	19	31	5.03	-21	27	11.49	33.7680	7.2
mar	28	2458205.75	19	31	8.33	-21	27	9.45	33.7520	7.1
mar	29	2458206.75	19	31	11.51	-21	27	7.67	33.7361	7.1
mar	30	2458207.75	19	31	14.57	-21	27	6.16	33.7200	7.0
mar	31	2458208.75	19	31	17.50	-21	27	4.89	33.7039	7.0
abr	1	2458209.75	19	31	20.31	-21	27	3.88	33.6878	6.9
abr	2	2458210.75	19	31	23.00	-21	27	3.11	33.6716	6.8

Plutón (planeta enano), 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
abr	3	2458211.75	19	31	25.56	-21	27	2.61	33.6553	6.8
abr	4	2458212.75	19	31	28.01	-21	27	2.36	33.6390	6.7
abr	5	2458213.75	19	31	30.33	-21	27	2.39	33.6227	6.6
abr	6	2458214.75	19	31	32.53	-21	27	2.70	33.6064	6.6
abr	7	2458215.75	19	31	34.60	-21	27	3.30	33.5900	6.5
abr	8	2458216.75	19	31	36.55	-21	27	4.19	33.5736	6.4
abr	9	2458217.75	19	31	38.37	-21	27	5.37	33.5572	6.4
abr	10	2458218.75	19	31	40.06	-21	27	6.85	33.5407	6.3
abr	11	2458219.75	19	31	41.63	-21	27	8.61	33.5243	6.2
abr	12	2458220.75	19	31	43.06	-21	27	10.66	33.5079	6.2
abr	13	2458221.75	19	31	44.37	-21	27	13.00	33.4914	6.1
abr	14	2458222.75	19	31	45.54	-21	27	15.61	33.4750	6.0
abr	15	2458223.75	19	31	46.59	-21	27	18.49	33.4586	6.0
abr	16	2458224.75	19	31	47.51	-21	27	21.64	33.4422	5.9
abr	17	2458225.75	19	31	48.31	-21	27	25.05	33.4259	5.8
abr	18	2458226.75	19	31	48.98	-21	27	28.73	33.4095	5.8
abr	19	2458227.75	19	31	49.52	-21	27	32.68	33.3933	5.7
abr	20	2458228.75	19	31	49.95	-21	27	36.93	33.3770	5.6
abr	21	2458229.75	19	31	50.25	-21	27	41.47	33.3608	5.6
abr	22	2458230.75	19	31	50.42	-21	27	46.32	33.3446	5.5
abr	23	2458231.75	19	31	50.46	-21	27	51.47	33.3285	5.4
abr	24	2458232.75	19	31	50.38	-21	27	56.92	33.3125	5.4
abr	25	2458233.75	19	31	50.17	-21	28	2.66	33.2965	5.3
abr	26	2458234.75	19	31	49.82	-21	28	8.67	33.2806	5.3
abr	27	2458235.75	19	31	49.36	-21	28	14.96	33.2648	5.2
abr	28	2458236.75	19	31	48.77	-21	28	21.50	33.2491	5.1
abr	29	2458237.75	19	31	48.06	-21	28	28.31	33.2334	5.1
abr	30	2458238.75	19	31	47.22	-21	28	35.37	33.2178	5.0
may	1	2458239.75	19	31	46.27	-21	28	42.70	33.2023	4.9
may	2	2458240.75	19	31	45.20	-21	28	50.30	33.1870	4.9
may	3	2458241.75	19	31	44.01	-21	28	58.17	33.1717	4.8
may	4	2458242.75	19	31	42.71	-21	29	6.33	33.1565	4.7
may	5	2458243.75	19	31	41.28	-21	29	14.76	33.1414	4.7
may	6	2458244.75	19	31	39.73	-21	29	23.48	33.1265	4.6
may	7	2458245.75	19	31	38.07	-21	29	32.48	33.1116	4.5
may	8	2458246.75	19	31	36.28	-21	29	41.75	33.0969	4.5
may	9	2458247.75	19	31	34.38	-21	29	51.29	33.0823	4.4
may	10	2458248.75	19	31	32.36	-21	30	1.10	33.0679	4.3
may	11	2458249.75	19	31	30.22	-21	30	11.16	33.0536	4.3
may	12	2458250.75	19	31	27.96	-21	30	21.46	33.0394	4.2
may	13	2458251.75	19	31	25.59	-21	30	32.00	33.0254	4.1
may	14	2458252.75	19	31	23.11	-21	30	42.77	33.0115	4.1
may	15	2458253.75	19	31	20.52	-21	30	53.78	32.9978	4.0
may	16	2458254.75	19	31	17.83	-21	31	5.01	32.9842	3.9
may	17	2458255.75	19	31	15.03	-21	31	16.49	32.9708	3.9
may	18	2458256.75	19	31	12.12	-21	31	28.23	32.9576	3.8

Plutón (planeta enano), 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
may	19	2458257.75	19	31	9.11	-21	31	40.22	32.9445	3.7
may	20	2458258.75	19	31	6.00	-21	31	52.47	32.9317	3.7
may	21	2458259.75	19	31	2.77	-21	32	4.97	32.9190	3.6
may	22	2458260.75	19	30	59.44	-21	32	17.70	32.9065	3.5
may	23	2458261.75	19	30	56.01	-21	32	30.66	32.8942	3.5
may	24	2458262.75	19	30	52.47	-21	32	43.83	32.8820	3.4
may	25	2458263.75	19	30	48.84	-21	32	57.20	32.8701	3.3
may	26	2458264.75	19	30	45.11	-21	33	10.77	32.8584	3.3
may	27	2458265.75	19	30	41.28	-21	33	24.53	32.8468	3.2
may	28	2458266.75	19	30	37.37	-21	33	38.48	32.8355	3.1
may	29	2458267.75	19	30	33.37	-21	33	52.64	32.8244	3.1
may	30	2458268.75	19	30	29.28	-21	34	6.99	32.8135	3.0
may	31	2458269.75	19	30	25.10	-21	34	21.54	32.8028	2.9
jun	1	2458270.75	19	30	20.83	-21	34	36.30	32.7923	2.9
jun	2	2458271.75	19	30	16.48	-21	34	51.26	32.7821	2.8
jun	3	2458272.75	19	30	12.05	-21	35	6.41	32.7721	2.7
jun	4	2458273.75	19	30	7.53	-21	35	21.76	32.7623	2.7
jun	5	2458274.75	19	30	2.92	-21	35	37.29	32.7527	2.6
jun	6	2458275.75	19	29	58.24	-21	35	53.00	32.7434	2.5
jun	7	2458276.75	19	29	53.47	-21	36	8.87	32.7343	2.5
jun	8	2458277.75	19	29	48.63	-21	36	24.89	32.7254	2.4
jun	9	2458278.75	19	29	43.71	-21	36	41.06	32.7168	2.3
jun	10	2458279.75	19	29	38.72	-21	36	57.37	32.7084	2.3
jun	11	2458280.75	19	29	33.66	-21	37	13.80	32.7003	2.2
jun	12	2458281.75	19	29	28.54	-21	37	30.37	32.6924	2.1
jun	13	2458282.75	19	29	23.35	-21	37	47.07	32.6848	2.1
jun	14	2458283.75	19	29	18.10	-21	38	3.91	32.6775	2.0
jun	15	2458284.75	19	29	12.80	-21	38	20.91	32.6704	1.9
jun	16	2458285.75	19	29	7.43	-21	38	38.05	32.6635	1.9
jun	17	2458286.75	19	29	2.00	-21	38	55.34	32.6570	1.8
jun	18	2458287.75	19	28	56.50	-21	39	12.76	32.6507	1.7
jun	19	2458288.75	19	28	50.96	-21	39	30.29	32.6446	1.7
jun	20	2458289.75	19	28	45.35	-21	39	47.93	32.6389	1.6
jun	21	2458290.75	19	28	39.70	-21	40	5.64	32.6334	1.5
jun	22	2458291.75	19	28	34.00	-21	40	23.44	32.6282	1.5
jun	23	2458292.75	19	28	28.25	-21	40	41.31	32.6232	1.4
jun	24	2458293.75	19	28	22.47	-21	40	59.25	32.6186	1.3
jun	25	2458294.75	19	28	16.64	-21	41	17.27	32.6142	1.2
jun	26	2458295.75	19	28	10.78	-21	41	35.37	32.6100	1.2
jun	27	2458296.75	19	28	4.89	-21	41	53.54	32.6062	1.1
jun	28	2458297.75	19	27	58.96	-21	42	11.79	32.6027	1.0
jun	29	2458298.75	19	27	53.00	-21	42	30.12	32.5994	1.0
jun	30	2458299.75	19	27	47.01	-21	42	48.51	32.5964	0.9
jul	1	2458300.75	19	27	40.98	-21	43	6.98	32.5937	0.8
jul	2	2458301.75	19	27	34.93	-21	43	25.50	32.5913	0.8
jul	3	2458302.75	19	27	28.86	-21	43	44.06	32.5892	0.7

Plutón (planeta enano), 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
jul	4	2458303.75	19	27	22.75	-21	44	2.67	32.5873	0.6
jul	5	2458304.75	19	27	16.63	-21	44	21.30	32.5858	0.6
jul	6	2458305.75	19	27	10.49	-21	44	39.94	32.5845	0.5
jul	7	2458306.75	19	27	4.33	-21	44	58.60	32.5835	0.4
jul	8	2458307.75	19	26	58.16	-21	45	17.25	32.5828	0.4
jul	9	2458308.75	19	26	51.99	-21	45	35.90	32.5824	0.3
jul	10	2458309.75	19	26	45.80	-21	45	54.54	32.5823	0.2
jul	11	2458310.75	19	26	39.62	-21	46	13.19	32.5825	0.2
jul	12	2458311.75	19	26	33.44	-21	46	31.85	32.5830	0.1
jul	13	2458312.75	19	26	27.25	-21	46	50.53	32.5838	0.0
jul	14	2458313.75	19	26	21.07	-21	47	9.22	32.5849	24.0
jul	15	2458314.75	19	26	14.88	-21	47	27.91	32.5862	23.9
jul	16	2458315.75	19	26	8.70	-21	47	46.59	32.5879	23.8
jul	17	2458316.75	19	26	2.52	-21	48	5.23	32.5899	23.8
jul	18	2458317.75	19	25	56.35	-21	48	23.83	32.5921	23.7
jul	19	2458318.75	19	25	50.19	-21	48	42.37	32.5946	23.6
jul	20	2458319.75	19	25	44.06	-21	49	0.85	32.5975	23.6
jul	21	2458320.75	19	25	37.94	-21	49	19.26	32.6006	23.5
jul	22	2458321.75	19	25	31.84	-21	49	37.62	32.6040	23.4
jul	23	2458322.75	19	25	25.77	-21	49	55.92	32.6077	23.4
jul	24	2458323.75	19	25	19.73	-21	50	14.16	32.6117	23.3
jul	25	2458324.75	19	25	13.71	-21	50	32.35	32.6159	23.2
jul	26	2458325.75	19	25	7.72	-21	50	50.48	32.6205	23.2
jul	27	2458326.75	19	25	1.77	-21	51	8.55	32.6253	23.1
jul	28	2458327.75	19	24	55.84	-21	51	26.56	32.6304	23.0
jul	29	2458328.75	19	24	49.95	-21	51	44.49	32.6358	23.0
jul	30	2458329.75	19	24	44.10	-21	52	2.34	32.6415	22.9
jul	31	2458330.75	19	24	38.28	-21	52	20.10	32.6474	22.8
ago	1	2458331.75	19	24	32.50	-21	52	37.76	32.6536	22.8
ago	2	2458332.75	19	24	26.76	-21	52	55.30	32.6601	22.7
ago	3	2458333.75	19	24	21.07	-21	53	12.73	32.6669	22.6
ago	4	2458334.75	19	24	15.43	-21	53	30.03	32.6740	22.6
ago	5	2458335.75	19	24	9.84	-21	53	47.21	32.6813	22.5
ago	6	2458336.75	19	24	4.31	-21	54	4.25	32.6889	22.4
ago	7	2458337.75	19	23	58.83	-21	54	21.17	32.6967	22.4
ago	8	2458338.75	19	23	53.41	-21	54	37.98	32.7048	22.3
ago	9	2458339.75	19	23	48.06	-21	54	54.67	32.7132	22.2
ago	10	2458340.75	19	23	42.76	-21	55	11.25	32.7219	22.2
ago	11	2458341.75	19	23	37.53	-21	55	27.72	32.7308	22.1
ago	12	2458342.75	19	23	32.36	-21	55	44.07	32.7399	22.0
ago	13	2458343.75	19	23	27.25	-21	56	0.27	32.7494	21.9
ago	14	2458344.75	19	23	22.20	-21	56	16.31	32.7590	21.9
ago	15	2458345.75	19	23	17.23	-21	56	32.18	32.7690	21.8
ago	16	2458346.75	19	23	12.33	-21	56	47.87	32.7791	21.7
ago	17	2458347.75	19	23	7.51	-21	57	3.38	32.7895	21.7
ago	18	2458348.75	19	23	2.77	-21	57	18.72	32.8002	21.6

Plutón (planeta enano), 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
ago	19	2458349.75	19	22	58.11	-21	57	33.89	32.8110	21.5
ago	20	2458350.75	19	22	53.54	-21	57	48.89	32.8222	21.5
ago	21	2458351.75	19	22	49.04	-21	58	3.74	32.8335	21.4
ago	22	2458352.75	19	22	44.64	-21	58	18.42	32.8451	21.3
ago	23	2458353.75	19	22	40.31	-21	58	32.93	32.8568	21.3
ago	24	2458354.75	19	22	36.08	-21	58	47.28	32.8689	21.2
ago	25	2458355.75	19	22	31.93	-21	59	1.45	32.8811	21.1
ago	26	2458356.75	19	22	27.87	-21	59	15.44	32.8935	21.1
ago	27	2458357.75	19	22	23.89	-21	59	29.25	32.9062	21.0
ago	28	2458358.75	19	22	20.01	-21	59	42.85	32.9190	20.9
ago	29	2458359.75	19	22	16.22	-21	59	56.26	32.9321	20.9
ago	30	2458360.75	19	22	12.53	-22	0	9.44	32.9453	20.8
ago	31	2458361.75	19	22	8.94	-22	0	22.41	32.9588	20.7
sep	1	2458362.75	19	22	5.45	-22	0	35.16	32.9724	20.7
sep	2	2458363.75	19	22	2.06	-22	0	47.70	32.9863	20.6
sep	3	2458364.75	19	21	58.78	-22	1	0.02	33.0003	20.5
sep	4	2458365.75	19	21	55.60	-22	1	12.13	33.0145	20.5
sep	5	2458366.75	19	21	52.53	-22	1	24.05	33.0289	20.4
sep	6	2458367.75	19	21	49.57	-22	1	35.77	33.0435	20.3
sep	7	2458368.75	19	21	46.71	-22	1	47.29	33.0582	20.3
sep	8	2458369.75	19	21	43.96	-22	1	58.62	33.0731	20.2
sep	9	2458370.75	19	21	41.32	-22	2	9.72	33.0882	20.1
sep	10	2458371.75	19	21	38.78	-22	2	20.60	33.1034	20.1
sep	11	2458372.75	19	21	36.36	-22	2	31.23	33.1187	20.0
sep	12	2458373.75	19	21	34.05	-22	2	41.61	33.1343	19.9
sep	13	2458374.75	19	21	31.85	-22	2	51.74	33.1499	19.9
sep	14	2458375.75	19	21	29.78	-22	3	1.62	33.1657	19.8
sep	15	2458376.75	19	21	27.82	-22	3	11.27	33.1817	19.7
sep	16	2458377.75	19	21	25.99	-22	3	20.68	33.1977	19.7
sep	17	2458378.75	19	21	24.28	-22	3	29.86	33.2139	19.6
sep	18	2458379.75	19	21	22.68	-22	3	38.81	33.2303	19.5
sep	19	2458380.75	19	21	21.21	-22	3	47.54	33.2467	19.5
sep	20	2458381.75	19	21	19.86	-22	3	56.05	33.2632	19.4
sep	21	2458382.75	19	21	18.62	-22	4	4.32	33.2799	19.4
sep	22	2458383.75	19	21	17.51	-22	4	12.36	33.2966	19.3
sep	23	2458384.75	19	21	16.51	-22	4	20.15	33.3135	19.2
sep	24	2458385.75	19	21	15.64	-22	4	27.70	33.3304	19.2
sep	25	2458386.75	19	21	14.89	-22	4	34.99	33.3474	19.1
sep	26	2458387.75	19	21	14.26	-22	4	42.02	33.3645	19.0
sep	27	2458388.75	19	21	13.76	-22	4	48.79	33.3817	19.0
sep	28	2458389.75	19	21	13.39	-22	4	55.29	33.3990	18.9
sep	29	2458390.75	19	21	13.14	-22	5	1.52	33.4163	18.8
sep	30	2458391.75	19	21	13.02	-22	5	7.50	33.4337	18.8
oct	1	2458392.75	19	21	13.04	-22	5	13.23	33.4512	18.7
oct	2	2458393.75	19	21	13.18	-22	5	18.72	33.4687	18.6
oct	3	2458394.75	19	21	13.45	-22	5	23.98	33.4863	18.6

Plutón (planeta enano), 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
oct	4	2458395.75	19	21	13.84	-22	5	29.00	33.5039	18.5
oct	5	2458396.75	19	21	14.36	-22	5	33.79	33.5215	18.4
oct	6	2458397.75	19	21	15.01	-22	5	38.33	33.5392	18.4
oct	7	2458398.75	19	21	15.78	-22	5	42.62	33.5570	18.3
oct	8	2458399.75	19	21	16.68	-22	5	46.63	33.5747	18.2
oct	9	2458400.75	19	21	17.71	-22	5	50.38	33.5925	18.2
oct	10	2458401.75	19	21	18.86	-22	5	53.84	33.6103	18.1
oct	11	2458402.75	19	21	20.15	-22	5	57.02	33.6281	18.0
oct	12	2458403.75	19	21	21.57	-22	5	59.95	33.6459	18.0
oct	13	2458404.75	19	21	23.12	-22	6	2.61	33.6637	17.9
oct	14	2458405.75	19	21	24.80	-22	6	5.02	33.6814	17.8
oct	15	2458406.75	19	21	26.62	-22	6	7.19	33.6992	17.8
oct	16	2458407.75	19	21	28.56	-22	6	9.12	33.7170	17.7
oct	17	2458408.75	19	21	30.62	-22	6	10.81	33.7347	17.6
oct	18	2458409.75	19	21	32.81	-22	6	12.25	33.7524	17.6
oct	19	2458410.75	19	21	35.13	-22	6	13.45	33.7701	17.5
oct	20	2458411.75	19	21	37.57	-22	6	14.40	33.7878	17.5
oct	21	2458412.75	19	21	40.13	-22	6	15.10	33.8054	17.4
oct	22	2458413.75	19	21	42.82	-22	6	15.54	33.8229	17.3
oct	23	2458414.75	19	21	45.63	-22	6	15.71	33.8404	17.3
oct	24	2458415.75	19	21	48.56	-22	6	15.61	33.8579	17.2
oct	25	2458416.75	19	21	51.62	-22	6	15.25	33.8753	17.1
oct	26	2458417.75	19	21	54.81	-22	6	14.61	33.8926	17.1
oct	27	2458418.75	19	21	58.12	-22	6	13.72	33.9098	17.0
oct	28	2458419.75	19	22	1.55	-22	6	12.59	33.9270	16.9
oct	29	2458420.75	19	22	5.11	-22	6	11.21	33.9441	16.9
oct	30	2458421.75	19	22	8.79	-22	6	9.61	33.9611	16.8
oct	31	2458422.75	19	22	12.59	-22	6	7.78	33.9781	16.7
nov	1	2458423.75	19	22	16.51	-22	6	5.73	33.9949	16.7
nov	2	2458424.75	19	22	20.54	-22	6	3.44	34.0116	16.6
nov	3	2458425.75	19	22	24.69	-22	6	0.92	34.0283	16.5
nov	4	2458426.75	19	22	28.95	-22	5	58.14	34.0448	16.5
nov	5	2458427.75	19	22	33.33	-22	5	55.10	34.0612	16.4
nov	6	2458428.75	19	22	37.82	-22	5	51.81	34.0775	16.4
nov	7	2458429.75	19	22	42.43	-22	5	48.25	34.0937	16.3
nov	8	2458430.75	19	22	47.15	-22	5	44.45	34.1097	16.2
nov	9	2458431.75	19	22	51.99	-22	5	40.41	34.1257	16.2
nov	10	2458432.75	19	22	56.95	-22	5	36.14	34.1414	16.1
nov	11	2458433.75	19	23	2.01	-22	5	31.65	34.1571	16.0
nov	12	2458434.75	19	23	7.19	-22	5	26.94	34.1726	16.0
nov	13	2458435.75	19	23	12.47	-22	5	22.02	34.1879	15.9
nov	14	2458436.75	19	23	17.86	-22	5	16.89	34.2031	15.8
nov	15	2458437.75	19	23	23.34	-22	5	11.54	34.2181	15.8
nov	16	2458438.75	19	23	28.93	-22	5	5.98	34.2330	15.7
nov	17	2458439.75	19	23	34.62	-22	5	0.21	34.2476	15.6
nov	18	2458440.75	19	23	40.41	-22	4	54.21	34.2622	15.6

Plutón (planeta enano), 2018

Efemérides a las 0^h del meridiano 90° W.G.

mes	día	dj	h	α m	s	°	δ '	"	dis UA	hp h
nov	19	2458441.75	19	23	46.30	-22	4	47.98	34.2765	15.5
nov	20	2458442.75	19	23	52.28	-22	4	41.53	34.2907	15.5
nov	21	2458443.75	19	23	58.36	-22	4	34.85	34.3046	15.4
nov	22	2458444.75	19	24	4.54	-22	4	27.94	34.3184	15.3
nov	23	2458445.75	19	24	10.81	-22	4	20.82	34.3320	15.3
nov	24	2458446.75	19	24	17.18	-22	4	13.48	34.3455	15.2
nov	25	2458447.75	19	24	23.64	-22	4	5.96	34.3587	15.1
nov	26	2458448.75	19	24	30.20	-22	3	58.25	34.3717	15.1
nov	27	2458449.75	19	24	36.84	-22	3	50.37	34.3845	15.0
nov	28	2458450.75	19	24	43.57	-22	3	42.32	34.3971	14.9
nov	29	2458451.75	19	24	50.37	-22	3	34.09	34.4095	14.9
nov	30	2458452.75	19	24	57.26	-22	3	25.67	34.4216	14.8
dic	1	2458453.75	19	25	4.23	-22	3	17.07	34.4336	14.7
dic	2	2458454.75	19	25	11.27	-22	3	8.26	34.4453	14.7
dic	3	2458455.75	19	25	18.39	-22	2	59.26	34.4568	14.6
dic	4	2458456.75	19	25	25.60	-22	2	50.05	34.4681	14.6
dic	5	2458457.75	19	25	32.88	-22	2	40.66	34.4791	14.5
dic	6	2458458.75	19	25	40.23	-22	2	31.09	34.4899	14.4
dic	7	2458459.75	19	25	47.67	-22	2	21.35	34.5005	14.4
dic	8	2458460.75	19	25	55.17	-22	2	11.45	34.5108	14.3
dic	9	2458461.75	19	26	2.74	-22	2	1.40	34.5209	14.2
dic	10	2458462.75	19	26	10.38	-22	1	51.21	34.5307	14.2
dic	11	2458463.75	19	26	18.08	-22	1	40.88	34.5403	14.1
dic	12	2458464.75	19	26	25.84	-22	1	30.41	34.5496	14.0
dic	13	2458465.75	19	26	33.66	-22	1	19.80	34.5587	14.0
dic	14	2458466.75	19	26	41.54	-22	1	9.05	34.5675	13.9
dic	15	2458467.75	19	26	49.47	-22	0	58.16	34.5760	13.9
dic	16	2458468.75	19	26	57.45	-22	0	47.12	34.5843	13.8
dic	17	2458469.75	19	27	5.48	-22	0	35.93	34.5923	13.7
dic	18	2458470.75	19	27	13.56	-22	0	24.60	34.6001	13.7
dic	19	2458471.75	19	27	21.70	-22	0	13.13	34.6075	13.6
dic	20	2458472.75	19	27	29.88	-22	0	1.51	34.6148	13.5
dic	21	2458473.75	19	27	38.12	-21	59	49.77	34.6217	13.5
dic	22	2458474.75	19	27	46.39	-21	59	37.92	34.6283	13.4
dic	23	2458475.75	19	27	54.72	-21	59	25.96	34.6347	13.3
dic	24	2458476.75	19	28	3.08	-21	59	13.93	34.6408	13.3
dic	25	2458477.75	19	28	11.47	-21	59	1.81	34.6467	13.2
dic	26	2458478.75	19	28	19.90	-21	58	49.62	34.6522	13.2
dic	27	2458479.75	19	28	28.36	-21	58	37.34	34.6575	13.1
dic	28	2458480.75	19	28	36.85	-21	58	24.96	34.6625	13.0
dic	29	2458481.75	19	28	45.36	-21	58	12.48	34.6672	13.0
dic	30	2458482.75	19	28	53.90	-21	57	59.90	34.6716	12.9
dic	31	2458483.75	19	29	2.47	-21	57	47.21	34.6757	12.8

Satélite de los planetas, 2018

Planeta	Satélite	Periodo orbital (días)	Semi eje mayor (10 ³ km)	Excentricidad de la órbita	Inclinación de la órbita	Masa (kg)	Radio (km)	Albedo
Tie	1 Luna	27.321661	384.400	0.05490	18.2-28.58	p1.23000371E-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 Ganímedes	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 Caldona	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	r24135.610	0.31770	165.792	e	2.60	0.04
Júp	24 Iocasta	606.30000	r20642.860	0.26860	149.906	e	2.60	0.04
Júp	25 Erinoma	661.10000	r21867.750	0.34650	160.909	e	1.60	0.04
Júp	26 Isumoa	704.90000	r22804.700	0.28090	165.039	e	1.90	0.04
Júp	27 Praxiodica	624.60000	r21098.100	0.14580	146.353	e	3.40	0.04
Júp	28 Autonoo	778.00000	r24413.090	0.45860	153.056	e	2.00	0.04
Júp	29 Tiona	610.00000	r20769.900	0.28830	148.286	e	2.00	0.04
Júp	30 Hermipe	624.60000	r21047.990	0.24790	149.785	e	2.00	0.04
Júp	31 Gitna	679.30000	r22274.410	0.31120	164.343	e	1.50	0.04
Júp	32 Euridome	752.40000	r23830.940	0.32550	150.430	e	1.50	0.04
Júp	33 Euanda	620.90000	r20983.140	0.14270	146.030	e	1.50	0.04
Júp	36 Esponda	690.30000	r22548.240	0.51890	155.220	e	1.00	0.04
Júp	37 Kala	679.40000	r22300.640	0.32500	164.794	e	1.00	0.04
Júp	39 Egémona	715.00000	r23006.330	0.24940	152.330	e	1.50	0.04
Júp	41 Oda	747.00000	r23743.830	0.40510	159.408	e	2.00	0.04
Júp	43 Arca	748.70000	r23765.120	0.22370	163.254	e	1.50	0.04
Júp	45 Élica	601.40000	r20540.270	0.13750	154.587	e	2.00	0.04
Júp	46 Carpo	455.07000	r17056.040	0.29490	55.147	e	1.50	0.04
Júp	47 Euquelade	735.27000	r 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
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	r12893.240	0.17560	173.730	e	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

Satélite de los planetas, 2018

Planeta	Satélite	Periodo orbital (días)	Semi eje mayor (10 ³ km)	Excentricidad de la órbita	Inclinación de la órbita	Masa (kg)	Radio (km)	Albedo
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	r23128.000	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	Sicorax	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

Parámetros orbitales y físicos, 2018

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 ³	días	"
Luna	1737.4	7.3458×10^{22}	3.34	+ 27.32166	2010.7
Mercurio	2439.7	3.3010×10^{23}	5.43	+ 58.6462	12.3
Venus	6051.8	4.8673×10^{24}	5.24	- 243.0185	63.0
Tierra	6378.1	5.9721×10^{24}	5.513	+ 0.99726963	
Marte	3396.2	6.4169×10^{23}	3.93	+ 1.02595676	25.1
Júpiter	71492.0	1.8981×10^{27}	1.33	+ 0.41354	49.9
Saturno	60268.0	5.6831×10^{26}	0.69	+ 0.44401	20.7
Urano	25559.0	8.6890×10^{25}	1.27	- 0.71833	4.1
Neptuno	24764.0	1.0241×10^{26}	1.64	+ 0.67125	2.4
Plutón	1195.0	1.3041×10^{22}	1.82	- 6.3872	0.11

* Movimiento de rotación retrógrado

Sistema de constantes y parámetros, 2018

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
Eclipsar (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, 2018

Unión Astronómica Internacional (IAU 1976)

Parámetros del Sol, la Tierra y la Luna

Sol	
Radio	6.96×10^8 m
Semidiámetro a la distancia media	$15' 59.63'' = 959.63''$
Masa	1.9891×10^{33} g
Densidad media	1.41 g cm ⁻³
Gravedad superficial	29,398 cm s ⁻²
Inclinación del ecuador solar (respecto de la eclíptica)	7° 15'
Longitud del Nodo Ascendente (T en siglos desde J2000.0)	75° 46' + 84' T
Período 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	1.94×10^4 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	$23^\circ 26' 21.448''$
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 ²

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	$-0.0188626'' - 0.0476128'' T$

Sistema de constantes y parámetros, 2018

Unión Astronómica Internacional (IAU 1976)

Figura y campo de gravedad	
Radio ecuatorial (a)	6378140 m
Radio polar (b)	6356755 m
Masa	$5.9742 \cdot 10^{24}$ g
Densidad media	5.52 g/cm ³
Factor dinámico (J ₂)	$0.00108263 \cdot 10^{-11}$ años ⁻¹
Gravedad normal (g)	$g = 9.80621 - 0.02593 \cos(2f) + 0.00003 \cos(4f)$ m/s ²
Constante de gravitación geocéntrica	$3.986005 \cdot 10^{14}$ m ³ s ⁻²

Luna

Radio medio	1738 km
Semidiámetro a la distancia media	15' 32.6"
Masa	$7.3483 \cdot 10^{22}$ kg
Densidad media	3.34 g/cm ²
Gravedad superficial	1.62 m/s ² = 0.17g

Orbita de la Luna en torno a la Tierra

Movimiento sideral medio	$2.661699489 \cdot 10^{-6}$ rad/s
Distancia media de la Tierra a la Luna	$3.844 \cdot 10^5$ km = 60.27 radios terrestres = 0.002570 UA
Paralaje horizontal ecuatorial (a la distancia media)	57' 02.608" = 3422.608"
Distancia media del centro de la Tierra al baricentro Tierra-Luna	$4.671 \cdot 10^3$ km
Excentricidad media	0.05490
Inclinación media (respecto de la Eclíptica)	5.145396°
Inclinación media (respecto del ecuador de la Luna)	6° 41'
Límites de la declinación geocéntrica	+29° - 29°
Período de revolución del nodo	6798d
Período de revolución del perigeo	3232d
Período Saros	223 lunaciones = 19 pasos del Sol por el Nodo 6585 1/3 días
Rapidez orbital media	1023 m/s = 0.000591 UA/día
Aceleración centrípeta media	0.00272 m/s ² = 0.0003 g

Nomenclatura de las estrellas brillantes, 2018

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

Nomenclatura de las estrellas brillantes, 2018

Nombres de estrellas			
Propios	Clasificación Bayer	NY	
Altair	δ	Dra.	7310
AlTarf	β	Cnc.	3249
Alterf	λ	Leo.	3773
Aludra	η	CMa.	2827
Alula Australia	ξ	UMa.	4374
Alula Borealis	ν	UMa.	4377
Alwaid	β	Dra.	6536
Al Wazor	δ	CMa.	2693
Alya	θ	Ser.	7141
Alzirr	ξ	Gem.	2484
Ancha	θ	Aqr.	8499
Angetenar	τ	Eri.	850
Ankaa	α	Phe.	99
Anser	α	Vul.	7405
Antares	α	SCO.	6134
Arcturus	α	Boo.	5340
Arich	γ	Vir.	4825
Arietis	α	Ari.	617
Arkab Posterior	β	Sgr.	7343
Arkab Prior	β	Sgr.	7337
Arneb	α	Lep.	1865
Arnai	γ	Cep.	8974
Ascella	ζ	Sgr.	7194
Asellus Australis	δ	Cnc.	3461
Asellus Borealis	γ	Cnc.	3449
Asellus Primus	θ	Boo.	5404
Asellus Secundus	ι	Boo.	5350
Asellus Tertius	κ	Boo.	5329
Asmidiske	ι	Car.	3699
Asmidiske	ξ	Pup.	3045
Asuia	ψ	Dra.	6636
Atik	ο	Per.	1131
Atlas	27	Tau.	1178
Atria	α	Tri.	544
Auva	δ	Vir.	4910
Avior	ε	Car.	3307
Azelfafage	π	Cyg.	8301
Azha	η	Eri.	874
Baham	θ	Peg.	8450
Baten Kaitos	ζ	Cet.	539
Becrux	β	Cru.	4853
Beid	ο	Eri.	1298
Bellatrix	γ	Ori.	1790
Benetnash	η	UMa.	5191
Betelgeuse	α	Ori.	2061
Botein	δ	Ari.	951
Brachiu	γ	SCO.	1809
Bunda	ξ	Agr.	8264
Caja	ω	Her.	6117

Nombres de estrellas			
Propios	Clasificación Bayer	NY	
Calx	μ	Gem.	2298
Canopus	α	Car.	2326
Capella	α	Aur.	1708
Castor	α	Gem.	2890
Castula	υ	Cas.	253
Castula	υ	Cas.	265
Cebalrai	β	Oph.	6603
Ceginus	γ	Boo.	5435
Celaeno	16	Tau.	1140
Chara	β	CVn.	4785
Chertan	θ	Leo.	4359
Cor Caroli	α	CVn.	4915
Cor Tauri	α	Tau.	1457
Cursa	β	Eri.	1666
Dabih Major	β	Cap.	7776
Demon Star	β	per.	936
Deneb	α	Cyg.	7924
Deneb	ε	Aql.	7176
Deneb	ε	Del.	7852
Deneb	η	Cet.	334
Deneb	ζ	Aql.	7235
Deneb Algedi	δ	Cap.	8322
Denebkaitos	ι	Cet.	74
Denebola	β	Leo.	4534
Dhur	δ	Leo.	4357
Diadem	α	Com.	4968
Diphda	β	Cet.	188
Dschubba	δ	SCO.	5953
Dubhe	α	UMa.	4301
Ed Asich	ι	Dra.	5744
El Acola	ξ	UMa.	4374
Elacrab	β	SCO.	5984
El Kaprah	κ	UMa.	3594
El Karidab	δ	Sgr.	6859
El Khereb	τ	Peg.	8880
Elkhiffa Australis	α	Lib.	5530
Elkhiffa Borealis	β	Lib.	5685
El Koprah	χ	UMa.	4518
El Nath	β	Tau.	1791
El Phekrab	μ	UMa.	4069
Enif	ε	Peg.	8308
Erakis	μ	Cep.	8316
Etamin	γ	Dra.	6705
Fomalhaut	α	Psa.	8728
Fornacis	α	For.	963
Fumal Samakah	β	Psc.	8773
Furud	ζ	CMa.	2282
Gacrux	γ	Cru.	4763
Gemma	α	CrB.	5793

Nomenclatura de las estrellas brillantes, 2018

Nombres de estrellas			Nombres de estrellas		
Propios	Clasificación Bayer	NY	Propios	Clasificación Bayer	NY
Genam	ξ Dra.	6688	Megrez	δ UMa.	4660
Gianfar	λ Dra.	4434	Mekbuda	ζ Gem.	2650
Giedi Prima	α Cap.	7747	Menchib	ξ Per.	1228
Giedi Secunda	α Cap.	7754	Menkalinan	β Aur.	2088
Gienah	γ Crv.	4662	Menkar	α Cet.	911
Gienah	ε Cyg.	7949	Menkar	λ Cet.	896
Gildun	δ UMi.	6789	Menkent	θ Cen.	5288
Gomeisa	β CMi.	2845	Merak	β UMa.	4295
Gorgonea Quarta	ω Per.	947	Meres	β Boo.	5602
Gorgonea Tertia	ρ Per.	921	Meridiana	β CrA.	7259
Hadar	β Cen.	5267	Merope	23 Tau.	1156
Haedus	ζ Aur.	1612	Mesartim	γ Ari.	545
Hamal	α Ari.	617	Minelauva	β Vir.	4540
Hassaleh	ι Aur.	1577	Minkar	ε Crv.	4630
Hatysa	ι Ori.	1895	Mintaka	δ Ori.	1852
Head of Hydrus	α Hyi.	691	Mira	o Cet.	681
Heka	λ Ori.	1879	Mirach	β And.	337
Hércules	β Gem.	2990	Miram	η Per.	834
Heze	ζ Vir.	5107	Mirphak	α Per.	2294
Hoedus II	v Aur.	1641	Mirza	β CMa.	2286
Homam	ζ Peg.	8634	Misam	κ Per.	941
Hyadum I	γ Tau.	1346	Mizar	ζ UMa.	5055
Hyadum II	δ Tau.	1373	Mufrid	η Boo.	5235
Isis	γ CMa.	2657	Muscida	o UMa.	3323
Izar	ε Boo.	5506	Muscida	π UMa.	3403
Jabbah	v Sco.	6027	Naos	ζ Pup.	3165
Jed	δ Oph.	6056	Nashira	γ Cap.	8278
Jugum	γ Lyr.	7178	Nicolaus	α Del.	7906
Kaffaljidhma	γ Cet.	804	Nihal	β Lep.	1829
Kaus Australis	ε Sgr.	6879	Nodus I.	ζ Dra.	6396
Kaus Borealis	λ Sgr.	6913	Nunki	σ Sgr.	7121
Keid	o Eri.	1325	Nusakan	β CrB.	5747
Kitalphar	α Equ.	8131	Oculus Boreus	ε Tau.	1409
Kocab	β UMi.	5563	Peacock	α Pav.	7790
Kornephoros	β Her.	6148	Phact	α Col.	1956
Kraz	β Crv.	4786	Phad	γ UMa.	4554
Ksora	δ Cas.	403	Pherkad	γ UMi.	5735
Kuma	v Dra.	6555	Pherkad Minor	λ UMi.	5714
Lesath	v Sco.	6508	Pleione	28 Tau.	1180
Maasym	λ Her.	6526	Polaris	α UMi.	424
Maia	20 Tau.	1149	Pullux	β Gem.	2990
Maiaplacidus	β Car.	3685	Praecipua	46 LMi.	4247
Marfak	θ Cas.	343	Praepes	η Gem.	2216
Marfak	κ Her.	6008	Praesaepe	ε Cnc.	3429
Marfak	μ Cas.	321	Prima Giedi	α Cap.	7747
Marfic	λ Oph.	6149	Procyon	α CMi.	2943
Markab	α Peg.	8781	Propus	ι Gem.	2821
Matar	η Peg.	8650	Rana	δ Eri.	1136
Mebstuta	ε Gem.	2473	Rasalgethi	α Her.	6406

Nomenclatura de las estrellas brillantes, 2018

Nombres de estrellas		
Propios	Clasificación Bayer	NY
Rasalhague	α	Oph. 6556
Ras Elased Austral	ε	Leo. 3873
Regulus	α	Leo. 3982
Rigel	β	Ori. 1713
Rigil Kent	α	Cen. 5459
Rijilal Awwa	μ	Vir. 5487
Rotanev	β	Del. 7882
Ruchbah	ε	Cas. 542
Saad el Sund	β	Aqr. 8232
Sabik	η	Oph. 6378
Sadalachbia	γ	Aqr. 8518
Sadalbari	μ	Peg. 8684
Sadalmelik	α	Aqr. 8414
Sadir	α	Cyg. 7796
Saidak	80	UMa. 5062
Saiph	κ	Ori. 2004
Saiph	η	Ori. 1788
Sargas	θ	Sco. 6553
Sarin	δ	Her. 6410
Sartan	α	Cnc. 3572
Sceptrum	53	Eri. 1481
Scheat	β	Peg. 8775
Scheat	δ	Aqr. 8709
Segin	ε	Cas. 542
Shaula	λ	Sco. 6527
Schedir	α	Cas. 168
Sheliak	β	Lyr. 7106
Sirius	α	CMa. 2491
Situla	κ	Aqr. 8610

Nombres de estrellas		
Propios	Clasificación Bayer	NY
Spica	α	Vir. 5056
Subra	ο	Leo. 3852
Superba	λ	CVn. 4846
Syrma	ι	Vir. 5338
Tabit	π	Ori. 1543
Tabit	υ	Ori. 1855
Talitha	ι	UMa. 3569
Tarazed	γ	Aql. 7525
Tayeta	19	Tau. 1845
Tegmen	ζ	Cnc. 3208
Terebellum	β	Sgr. 7604
Theemim	υ	Eri. 1464
Thuban	α	Dra. 5291
Torcularis Septentr.	ο	Psc. 510
Tyl	ε	Dra. 7582
Unukalhai	α	Ser. 5854
Vega	α	Lyr. 7001
Vindematrix	ε	Vir. 4932
Wasat	δ	Gem. 2777
Wazn	β	Col. 2040
Yed Posterior	ε	Oph. 5985
Zaniah	η	Vir. 4689
Zaurak	γ	Eri. 1231
Zibal	ζ	Eri. 984
Zuben Elakrab	γ	Lib. 5787
Zuben Elakribi	δ	Lib. 5586
Zuben Hakrabi	ζ	Lib. 5848
Zuben Hakrabi	υ	Lib. 5794

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
118268	9072	28	Psc	0	0	15.8	06	57	56.6	4.03	0.419	0.49	F4IV
118322	9076	ϵ	Tuc	0	0	51.9	-65	28	27.4	4.49	-0.075	-0.04	B9IV
122	9084	θ	Oct	0	2	31.3	-76	57	49.2	4.78	1.254	1.26	K2III
154	9089	30	Psc	0	2	54.5	-05	54	40.8	4.37	1.631	2.35	M3III
301	9098	2	Cet	0	4	41.2	-17	13	59.1	4.55	-0.047	-0.03	B9IVn
355	9103	3	Cet	0	5	26.9	-10	24	23.9	4.99	1.619	1.64	K3Ibvar
443	3	33	Psc	0	6	16.9	-05	36	15.2	4.61	1.029	1.04	K1III
677	15	α	And	0	9	20.9	29	11	32.9	2.07	-0.038	-0.10	B9p
746	21	β	Cas	0	10	10.6	59	15	06.2	2.28	0.380	0.40	F2III-IV
765	25	ϵ	Phe	0	10	20.6	-45	38	43.8	3.88	1.013	1.00	K0III
910	33	6	Cet	0	12	12.3	-15	21	59.6	4.89	0.487	0.59	F5V
1067	39	γ	Peg	0	14	11.4	15	17	10.8	2.83	-0.190	-0.22	B2IV
1168	45	χ	Peg	0	15	33.8	20	18	34.1	4.79	1.572	1.93	M2III
1170	48	AE	Cet	0	15	34.7	-18	49	49.8	4.44	1.640	1.96	M1III
1366	63	θ	And	0	18	03.8	38	47	03.2	4.61	0.059	0.07	A2V
1473	68	σ	And	0	19	17.9	36	53	15.5	4.51	0.054	0.06	A2V
1562	74	ι	Cet	0	20	22.2	-08	43	17.5	3.56	1.214	1.13	K2III
1599	77	ζ	Tuc	0	21	01.4	-64	45	58.2	4.23	0.576	0.65	F9V
2021	98	β	Hya	0	26	42.1	-77	9	00.9	2.82	0.618	0.68	G2IV
2072	100	κ	Phe	0	27	06.5	-43	34	38.6	3.93	0.175	0.20	A7V
2081	99	α	Phe	0	27	11.7	-42	12	20.0	2.40	1.083	1.11	K0III
2210	105	η	Scl	0	28	50.6	-32	54	18.9	4.86	1.634	2.32	M2/M3III
2472	125	λ^1	Phe	0	32	18.2	-48	42	05.2	4.76	0.018	0.01	A0V
2484	126	β^1	Tuc	0	32	23.1	-62	51	23.5	4.36	-0.064	-0.02	B9V
2487	127	β^2	Tuc	0	32	23.9	-62	51	49.8	4.53	0.147	0.14	A2V
2505	123	λ	Cas	0	32	48.2	54	37	27.0	4.74	-0.098	-0.08	B8Vn
2599	130	κ	Cas	0	34	03.9	63	2	01.1	4.17	0.130	0.17	B1Ia
2912	154	π	And	0	37	52.4	33	49	15.3	4.34	-0.123	-0.08	B5V
2920	153	ζ	Cas	0	38	00.7	53	59	54.5	3.69	-0.196	-0.23	B2IV
3031	163	ϵ	And	0	39	32.3	29	24	42.9	4.34	0.871	0.92	G5III
3092	165	δ	And	0	40	19.3	30	57	43.2	3.27	1.268	1.23	K3III
3179	168	α	Cas	0	41	34.1	56	38	18.6	2.24	1.170	1.13	K0II-IIIvar
3245	180	μ	Phe	0	42	11.7	-45	59	01.4	4.59	0.953	0.95	G8III
3300	179	ξ	Cas	0	43	06.3	50	36	49.3	4.80	-0.105	-0.10	B25V
3405	191	η	Phe	0	44	10.8	-57	21	42.8	4.36	0.024	0.02	A0IV
3414	184	π	Cas	0	44	30.0	47	7	31.6	4.95	0.170	0.19	A5V
3419	188	β	Cet	0	44	31.0	-17	53	07.3	2.04	1.019	1.00	K0III
3455	194	φ^1	Cet	0	45	07.4	-10	30	32.8	4.77	0.998	0.98	K0IIIvar
3504	193	σ	Cas	0	45	45.9	48	23	07.1	4.48	-0.069	0.00	B5III
3693	215	ζ	And	0	48	19.4	24	22	03.0	4.08	1.100	1.06	K1II
3786	224	δ	Psc	0	49	38.6	07	41	07.5	4.44	1.500	1.58	K5III
3801	223	ν	Cas	0	49	53.5	51	4	07.4	4.90	-0.091	-0.07	B9III
3821	219	η	Cas	0	50	14.2	57	54	46.2	3.46	0.587	0.66	G0V
3881	226	ν	And	0	50	50.5	41	10	45.5	4.53	-0.136	-0.14	B5V
4147	248	20	Cet	0	53	57.3	-01	2	39.0	4.78	1.550	1.66	M0III
4151	244	***	***	0	54	11.3	61	13	30.1	4.80	0.540	0.61	F8V
4292	253	ν^1	Cas	0	56	06.8	59	4	20.8	4.83	1.216	1.19	K2III
4422	265	ν^2	Cas	0	57	46.8	59	16	50.2	4.62	0.957	1.01	G8III-IV
4436	269	37	And	0	57	47.2	38	35	57.5	3.86	0.130	0.14	A5V
4427	264	γ	Cas	0	57	50.4	60	48	59.4	2.15	-0.046	-0.02	B0IV:evvar
4463	271	η	And	0	58	11.9	23	31	01.7	4.40	0.940	0.94	G8III-IV
4577	280	α	Scl	0	59	29.7	-29	15	28.2	4.30	-0.154	-0.12	B7IIIp
4906	294	ϵ	Psc	1	3	54.3	07	59	21.6	4.27	0.952	0.98	K0III
5165	322	β	Phe	1	6	54.3	-46	37	10.5	3.32	0.885	0.90	G8IIIvar
5348	338	ζ	Phe	1	9	09.5	-55	8	50.0	3.94	-0.120	-0.08	B6V

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
5364	334	η	Cet	1	9	31.2	-10	5	04.7	3.46	1.161	1.11	K2III
5434	335	φ	And	1	10	35.1	47	20	23.7	4.26	0.012	-0.02	B7III
5447	337	β	And	1	10	46.4	35	43	05.3	2.07	1.576	1.74	M0IIIvar
5372	285	***	***	1	11	38.7	86	21	18.8	4.24	1.213	1.16	K2II-III
5542	343	θ	Cas	1	12	14.5	55	14	52.0	4.34	0.170	0.19	A7Vvar
5571	351	χ	Psc	1	12	27.1	21	7	57.1	4.66	1.024	0.99	K0III
5586	352	τ	Psc	1	12	41.1	30	11	14.5	4.51	1.092	1.05	K0III-IV
5742	360	φ	Psc	1	14	45.5	24	40	52.4	4.67	1.047	1.02	K0III
5862	370	ν	Phe	1	16	01.0	-45	25	59.9	4.97	0.571	0.62	F8V
5896	377	κ	Tuc	1	16	23.7	-68	46	40.5	4.25	0.480	0.55	F6IV
6193	383	υ	Psc	1	20	29.3	27	21	38.7	4.74	0.032	0.10	A3V
6242	382	φ	Cas	1	21	15.6	58	19	41.7	4.95	0.683	0.93	F0Ia
6411	390	ξ	And	1	23	26.3	45	37	30.5	4.87	1.077	1.04	K0III-IV
6537	402	θ	Cet	1	24	56.9	-08	5	17.8	3.60	1.065	1.05	K0III
6670	412	46	Cet	1	26	31.8	-14	30	11.1	4.90	1.231	1.29	K2III
6686	403	δ	Cas	1	27	02.5	60	19	50.7	2.66	0.160	0.19	A5Vv
6692	399	ψ	Cas	1	27	15.9	68	13	33.1	4.72	1.047	1.01	K0III
6813	417	ω	And	1	28	46.3	45	30	05.6	4.83	0.421	0.49	F5IV
6867	429	γ	Phe	1	29	10.0	-43	13	26.3	3.41	1.542	1.73	K5II-III
7007	434	μ	Psc	1	31	09.4	06	14	18.9	4.84	1.372	1.42	K4III
7083	440	δ	Phe	1	32	01.2	-48	58	37.4	3.93	0.972	1.00	K0III-IV
7097	437	η	Psc	1	32	28.6	15	26	26.1	3.62	0.974	0.94	G8III
7294	442	χ	Cas	1	35	09.3	59	19	34.5	4.68	0.991	1.01	K0III
7513	458	υ	And	1	37	53.4	41	29	50.3	4.10	0.536	0.58	F8V
7588	472	α	Eri	1	38	24.0	-57	8	35.8	0.45	-0.158	-0.17	B3Vp
7607	464	υ	Per	1	39	08.3	48	43	16.4	3.59	1.275	1.23	K3III
7818	477	τ	And	1	41	40.8	40	40	12.1	4.96	-0.068	-0.06	B8III
7884	489	ν	Psc	1	42	23.8	05	34	50.1	4.45	1.347	1.37	K3III
7918	483	***	***	1	42	55.2	42	42	19.1	4.96	0.618	0.67	G2V
7999	500	***	***	1	43	39.7	-03	35	51.6	4.98	1.378	1.26	K3II-III
8068	496	φ	Per	1	44	49.8	50	46	52.2	4.01	-0.098	-0.08	B2Vpe
8102	509	τ	Cet	1	44	55.6	-15	50	26.1	3.49	0.727	0.82	G8V
8198	510	\omicron	Psc	1	46	22.4	09	15	00.4	4.26	0.942	0.93	K0III
8497	531	χ	Cet	1	50	29.6	-10	35	44.1	4.66	0.333	0.38	F3III
8645	539	ζ	Cet	1	52	22.5	-10	14	39.5	3.74	1.136	1.07	K2III
8796	544	α	Tri	1	54	08.5	29	40	05.5	3.42	0.488	0.55	F6IV
8837	555	ψ	Phe	1	54	23.1	-46	12	45.6	4.39	1.597	2.49	M4III
8833	549	ξ	Psc	1	54	30.9	03	16	41.3	4.61	0.928	0.93	K0III
8832	545	γ^1	Ari	1	54	32.9	19	23	01.8	3.88	-0.047	-0.03	A1p
8928	570	η^2	Hya	1	55	24.4	-67	33	24.1	4.68	0.931	0.95	G5III
8903	553	β	Ari	1	55	39.9	20	53	51.8	2.64	0.165	0.18	A5V
8886	542	ϵ	Cas	1	55	44.8	63	45	37.0	3.35	-0.150	-0.12	B2pvar
9007	566	χ	Eri	1	56	40.6	-51	31	02.7	3.69	0.844	0.90	G5IV
9009	548	ω	Cas	1	57	27.9	68	46	30.3	4.97	-0.084	-0.06	B8III
9061	565	56	Cet	1	57	32.2	-22	26	13.6	4.92	1.434	1.45	K3III
9095	574	***	***	1	57	54.0	-47	17	43.8	4.82	0.864	0.89	G8III
9153	569	λ	Ari	1	58	57.8	23	41	07.8	4.79	0.290	0.33	F0V
9236	591	α	Hya	1	59	21.1	-61	28	49.2	2.86	0.290	0.34	F0V
9347	585	υ	Cet	2	0	52.6	-20	59	20.0	3.99	1.554	1.79	K5/M0III
9487	595	α	Psc	2	3	00.4	02	51	08.5	3.82	0.024	0.05	A2
9480	575	48	Cas	2	3	30.6	70	59	43.9	4.49	0.164	0.20	A3IV
9505	590	g	Per	2	3	32.8	54	34	33.7	4.99	-0.071	-0.02	B8III
9640	603	50	Cas	2	5	02.6	42	25	03.4	2.10	1.370	1.37	B8V
9598	580	57	And	2	5	03.2	72	30	34.6	3.95	-0.002	0.03	A2V
9677	612	ν	For	2	5	19.2	-29	12	31.4	4.68	-0.156	-0.12	B95p

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Estrella		α						δ			V	U-B	B-V	Esp
NH	NY	nom	h	m	s	°	'	"						
9884	617	α	Ari	2	8	13.2	23	32	56.6	2.01	1.151	1.13	K2III	
9977	620	58	And	2	9	36.7	37	56	45.3	4.78	0.120	0.16	A5IV-V	
10053623		14	Ari	2	10	28.8	26	1	35.7	4.98	0.339	0.40	F2III	
10064	622	4	Tri	2	10	39.0	35	4	26.1	3.00	0.140	0.17	A5III	
10280	642	TZ	Tri	2	13	27.0	30	23	20.0	4.94	0.770	0.81	F5V	
10324	649	65	Cet	2	13	59.0	08	55	57.5	4.36	0.878	0.90	G8II:	
10340	643	60	And	2	14	23.4	44	19	03.0	4.84	1.476	1.49	K4III	
10602	674	φ	Eri	2	17	10.2	-51	25	37.6	3.56	-0.120	-0.11	B8IV-V	
10644	660	8	Tri	2	18	11.4	34	18	28.4	4.84	0.607	0.76	G0V	
10670	664	γ	Tri	2	18	25.2	33	55	54.5	4.03	0.019	-0.02	A1Vnn	
11001	705	δ	Hya	2	22	05.0	-68	34	32.0	4.08	0.034	0.04	A3V	
11345	708	65	And	2	26	50.7	-12	12	28.3	4.88	-0.027	-0.01	A0V	
11313	699	ρ	Cet	2	26	52.1	50	21	40.6	4.73	1.532	1.58	K4III	
11407	721	κ	Eri	2	27	39.8	-47	37	17.2	4.24	-0.136	-0.11	B5IV	
11484	718	73	Cet	2	29	08.7	08	32	31.3	4.30	-0.053	-0.06	B9III	
11569	707	ι	Cas	2	30	36.9	67	29	03.9	4.46	0.153	0.17	A5p	
11783	740	σ	Cet	2	32	57.9	-15	9	52.0	4.74	0.454	0.55	F5V	
11918	749	ω	For	2	34	39.3	-28	9	06.6	4.96	-0.050	-0.04	B9V	
12093	754	78	Cet	2	36	50.8	05	40	23.0	4.87	0.880	0.89	G8III	
12394	806	ϵ	Hya	2	39	52.8	-68	11	16.8	4.12	-0.061	-0.07	B9III	
12387	779	δ	Cet	2	40	26.0	00	24	26.6	4.08	-0.212	-0.22	B2IV	
12390	781	ϵ	Cet	2	40	27.6	-11	47	40.2	4.83	0.447	0.53	F5V	
12413	789	s	Eri	2	40	30.3	-42	48	46.5	4.74	0.061	0.09	A2V	
12486	794	ι	Eri	2	41	23.8	-39	46	37.0	4.11	1.006	1.05	K0III	
12623	788	12	Per	2	43	25.4	40	16	15.8	4.91	0.582	0.62	F9V	
12706	804	86	Cet	2	44	15.7	03	18	46.2	3.47	0.093	0.10	A3V	
12719	801	35	Ari	2	44	32.5	27	47	05.3	4.65	-0.122	-0.12	B3V	
12770	811	π	Cet	2	45	00.2	-13	46	52.3	4.24	-0.122	-0.11	B7IV	
12777	799	13	Per	2	45	28.4	49	18	19.6	4.10	0.514	0.59	F7V	
12876	837	ζ	Hya	2	45	50.1	-67	32	21.0	4.83	0.058	0.08	A2IV/V	
12828	813	μ	Cet	2	45	56.7	10	11	28.6	4.27	0.311	0.37	F1III-IV	
12843	818	τ^1	Eri	2	45	58.0	-18	29	42.4	4.47	0.481	0.54	F5/F6V	
13061	824	39	Ari	2	49	00.9	29	19	22.2	4.52	1.112	1.04	K1III	
13147	841	β	For	2	49	51.9	-32	19	44.4	4.45	0.981	1.00	G8III	
13244	872	v	Hya	2	50	22.6	-74	59	28.7	4.76	1.337	1.27	K3III	
13209	838	41	Ari	2	51	04.6	27	20	08.4	3.61	-0.100	-0.08	B8Vn	
13254	840	16	Per	2	51	45.5	38	23	37.1	4.22	0.343	0.41	F2III	
13288	850	τ^2	Eri	2	51	52.7	-20	55	43.1	4.76	0.906	0.91	K0III	
13268	834	η	Per	2	52	03.6	55	58	15.3	3.77	1.690	1.64	K3Ib	
13328	843	α	UMi	2	52	39.6	35	8	04.9	4.56	1.554	1.67	K5III	
11767	424	17	Per	2	54	59.9	89	20	31.3	1.97	0.636	0.70	F7:Ib-IIv	
13531	854	18	Per	2	55	34.8	52	50	12.7	3.93	0.758	0.80	G4III	
13701	874	3	Eri	2	57	19.9	-08	49	31.8	3.89	1.088	1.08	K1III-IV	
13847	897	θ^2	Eri	2	58	57.8	-40	13	52.6	2.88	0.128	0.17	A4III+	
13884	909	β	Hor	2	59	09.0	-63	59	53.2	4.98	0.126	0.14	A5III	
13879	879	π	Per	2	59	57.1	39	44	07.9	4.68	0.065	0.11	A2Vn	
13905	882	24	Per	3	0	12.8	35	15	21.9	4.94	1.235	1.19	K2III	
13914	887	48	Ari	3	0	16.4	21	24	47.8	4.63	0.048	0.05	A2Vs	
13954	896	91	Cet	3	0	42.5	08	58	48.1	4.71	-0.109	-0.09	B6III	
14146	919	τ^3	Eri	3	3	12.5	-23	33	10.2	4.08	0.163	0.18	A4V	
14135	911	α	Cet	3	3	14.9	04	9	40.5	2.54	1.630	1.97	M2III	
14328	915	γ	Per	3	6	08.9	53	34	38.9	2.91	0.716	0.77	G8III+	
14354	921	25	Per	3	6	22.1	38	54	38.4	3.32	1.528	2.76	M3IIIvar	
14382	918	k	Per	3	6	56.6	56	46	36.8	4.77	1.018	0.99	K0II-III	
14576	936	β	Per	3	9	22.8	41	1	32.2	2.09	-0.003	0.02	B8V	

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Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
14632	937	ι	Per	3	10	24.8	49	40	56.8	4.05	0.595	0.65	G0V
14668	941	27	Per	3	10	45.1	44	55	34.8	3.79	0.980	0.94	K0III
14817	947	ω	Per	3	12	29.4	39	40	50.0	4.61	1.115	1.09	K1III
14838	951	57	Ari	3	12	41.4	19	47	43.7	4.35	1.033	0.96	K2IIIvar
14879	963	α	For	3	12	51.8	-28	54	56.5	3.80	0.543	0.63	F8V
14862	932	***	***	3	13	59.4	74	27	42.4	4.85	0.035	0.05	A2Vnn
15110	972	58	Ari	3	15	58.1	21	6	42.4	4.87	-0.007	0.02	A1V
15197	984	ζ	Eri	3	16	44.0	-08	45	07.3	4.80	0.232	0.28	A5m
15382	994	15	Eri	3	19	11.2	-22	26	40.0	4.86	0.904	0.91	K0III
15416	991	***	***	3	19	53.6	34	17	20.5	4.85	1.491	1.41	K2II
15457	996	κ^1	Cet	3	20	20.0	03	26	12.9	4.84	0.681	0.73	G5Vvar
15474	1003	τ^4	Eri	3	20	20.4	-21	41	29.3	3.70	1.614	2.42	M3/M4III
15510	1008	e	Eri	3	20	40.0	-42	59	59.7	4.26	0.711	0.79	G8V
15549	999	***	***	3	21	27.8	29	6	51.3	4.47	1.555	1.61	K2II-III
15520	985	BK	Cam	3	21	38.2	65	43	05.3	4.74	-0.108	-0.12	B25Vne
15648	1002	32	Per	3	22	41.3	43	23	42.4	4.96	0.051	0.06	A3V
15863	1017	33	Per	3	25	39.2	49	55	31.8	1.79	0.481	0.63	F5Ib
15900	1030	o	Tau	3	25	48.7	09	5	34.1	3.61	0.887	0.90	G8III
16083	1038	2	Tau	3	28	10.4	09	47	45.6	3.73	-0.082	-0.07	B9Vn
16147	1034	***	***	3	29	22.5	49	7	33.1	4.99	-0.091	-0.07	B5V
16245	1083	κ	Ret	3	29	42.3	-62	52	21.9	4.71	0.410	0.49	F5IV-V
16228	1035	CS	Cam	3	30	34.9	60	0	11.0	4.21	0.419	0.58	B9Ia
16244	1044	34	Per	3	30	42.0	49	34	17.3	4.67	-0.096	-0.07	B3V
16281	1040	CE	Cam	3	31	24.2	58	56	28.3	4.55	0.489	0.79	A0Ia
16341	1070	v	Eri	3	31	32.2	-05	0	46.1	4.74	-0.092	-0.07	B9Vs
16335	1052	σ	Per	3	31	53.2	48	3	27.2	4.36	1.367	1.42	K3III
16369	1066	5	Tau	3	31	53.8	12	59	55.9	4.14	1.112	1.01	K0II-III
16537	1084	18	Eri	3	33	48.2	-09	23	48.1	3.72	0.881	0.94	K2V
16611	1088	τ^5	Eri	3	34	36.3	-21	34	18.7	4.26	-0.106	-0.09	B9V
16870	1106	ψ	Per	3	37	45.6	-40	12	52.6	4.57	1.023	1.07	K0III
16826	1087	y	Eri	3	37	48.8	48	15	09.3	4.32	-0.058	0.07	B5Ve
16852	1101	10	Tau	3	37	49.1	00	27	33.1	4.29	0.575	0.66	F9V
17304	1134	δ	For	3	42	59.1	-31	52	48.7	4.99	-0.159	-0.15	B5III
17351	1143	o	Per	3	43	31.2	-37	15	21.6	4.59	1.191	1.12	K2IIICN
17313	1123	h	Eri	3	43	33.3	34	1	22.7	4.97	-0.048	-0.03	B05V
17378	1136	δ	Eri	3	44	08.2	-09	42	06.6	3.52	0.915	0.94	K0IV
17358	1122	δ	Per	3	44	15.0	47	50	42.2	3.01	-0.125	-0.07	B5III
17440	1175	β	Ret	3	44	26.2	-64	44	56.5	3.84	1.133	1.11	K0IV
17448	1131	o	Per	3	45	29.0	32	20	43.6	3.84	0.022	0.12	B1III
17499	1142	17	Tau	3	45	58.7	24	10	12.5	3.72	-0.105	-0.09	B6III
17531	1145	19	Tau	3	46	18.8	24	31	26.3	4.30	-0.110	-0.08	B6V
17529	1135	v	Per	3	46	27.4	42	38	07.6	3.77	0.425	0.52	F5IIvar
17573	1149	20	Tau	3	46	55.9	24	25	27.1	3.87	-0.063	-0.02	B8III
17678	1208	π	Eri	3	46	58.3	-74	10	55.0	3.26	1.590	1.94	M2III
17593	1162	γ	Hya	3	47	01.1	-12	2	40.8	4.43	1.604	1.89	M1III
17608	1156	23	Tau	3	47	25.7	24	0	16.7	4.14	-0.051	0.02	B6IV
17651	1173	***	***	3	47	38.7	-23	11	46.0	4.22	0.434	0.51	F3/F5V
17587	1129	27	Eri	3	47	40.4	63	24	05.5	4.78	0.747	0.79	A3V
17702	1165	η	Tau	3	48	35.3	24	9	39.5	2.85	-0.086	-0.01	B7III
17797	1189	***	***	3	49	16.9	-37	33	52.1	4.30	-0.038	-0.02	A+
17874	1195	g	Eri	3	50	08.8	-36	8	42.5	4.17	0.927	0.92	G8III
17847	1178	27	Tau	3	50	16.0	24	6	31.0	3.62	-0.070	-0.03	B8III
17884	1155	BE	Cam	3	51	14.0	65	34	51.9	4.39	1.870	2.58	M1III
17959	1148	γ	Cam	3	52	20.5	71	23	12.7	4.59	0.064	0.13	A2IVn
18216	1213	τ^8	Eri	3	54	30.0	-24	33	30.6	4.64	-0.136	-0.13	B5V

Posiciones medias de estrellas brillantes, 2018

Estrella		α						δ			V	U-B	B-V	Esp
NH	NY	nom	h	m	s	°	'	"						
18255	1211	32	Eri	3	55	13.3	-02	54	04.4	4.46	0.672	0.73	G8III	
18246	1203	ζ	Per	3	55	18.0	31	56	13.6	2.84	0.271	0.18	B1Ib	
18488	1205	***	***	3	58	43.8	61	9	39.9	4.99	1.435	1.53	K3I-II	
18543	1231	γ	Eri	3	58	53.6	-13	27	25.2	2.97	1.588	1.78	M1IIIb	
18597	1247	***	***	3	59	02.5	-61	20	54.0	4.56	1.590	1.85	M2III	
18505	1204	45	Per	3	59	04.3	63	7	28.1	4.95	-0.074	-0.01	B95V	
18532	1220	δ	Ret	3	59	06.0	40	3	43.8	2.90	-0.199	-0.19	B05V	
18614	1228	ξ	Per	4	0	10.2	35	50	33.7	3.98	0.016	0.16	O75Iab:	
18673	1240	36	Eri	4	0	42.8	-23	57	53.2	4.62	-0.121	-0.07	Ap	
18744	1264	γ	Ret	4	1	10.1	-62	6	28.9	4.48	1.500	2.42	M4III	
18772	1266	ι	Ret	4	1	36.4	-61	1	38.7	4.97	1.386	1.41	K4III	
18724	1239	35	Tau	4	1	42.4	12	32	28.7	3.41	-0.099	-0.08	B3V	
18907	1251	38	Tau	4	4	08.5	06	2	21.7	3.91	0.032	0.03	A1V	
19038	1256	37	Tau	4	5	47.5	22	7	51.8	4.36	1.064	1.02	K0III	
19018	1242	***	***	4	6	00.4	59	12	17.8	5.00	0.495	0.69	F0II	
19167	1261	λ	Per	4	7	58.2	50	23	58.9	4.25	-0.011	0.08	A0IVn	
19343	1273	48	Per	4	10	00.7	47	45	36.5	3.96	-0.025	0.08	B3Ve	
19515	1302	δ	Hor	4	11	28.0	-41	56	46.1	4.93	0.334	0.41	A9V	
19587	1298	σ^1	Eri	4	12	46.2	-06	47	25.9	4.04	0.327	0.38	F2II-III	
19747	1326	α	Hor	4	14	36.9	-42	14	58.6	3.85	1.085	1.09	K1III	
19780	1336	α	Ret	4	14	40.0	-62	25	40.3	3.33	0.915	0.91	G7III	
19740	1311	47	Tau	4	14	56.9	09	18	34.0	4.84	0.799	0.86	G5III	
19777	1318	39	Eri	4	15	16.6	-10	12	41.5	4.87	1.156	1.12	K3III	
19849	1325	f	Per	4	16	07.4	-07	37	31.5	4.43	0.820	0.89	K1V	
19811	1306	40	Eri	4	16	09.2	40	31	44.0	4.67	1.007	1.07	G5II	
19812	1303	51	Per	4	16	15.8	48	27	16.4	4.12	0.935	0.93	G0Ib	
19893	1338	μ	Tau	4	16	30.8	-51	26	26.4	4.26	0.312	0.37	F4III	
19860	1320	γ	Dor	4	16	32.4	08	56	14.5	4.27	-0.054	-0.02	B3IV	
19921	1355	ε	Ret	4	16	48.4	-59	15	29.3	4.44	1.078	1.05	K2IV	
19990	1329	ω^2	Tau	4	18	20.9	20	37	21.6	4.93	0.259	0.30	A3m	
20042	1347	ν^4	Eri	4	18	35.7	-33	45	15.0	3.55	-0.108	-0.09	B9V	
20070	1324	b	Per	4	19	38.5	50	20	21.0	4.60	0.043	0.16	A2V	
20205	1346	γ	Tau	4	20	50.9	15	40	15.3	3.65	0.981	0.95	G8III	
20250	1348	φ	Tau	4	21	29.7	27	23	36.6	4.97	1.150	1.35	K1III	
20252	1343	54	Per	4	21	37.0	34	36	35.3	4.93	0.950	0.94	G8III	
20354	1350	V469	Per	4	22	53.8	46	32	28.7	4.80	-0.022	0.03	B4IV	
20455	1373	δ^1	Tau	4	24	00.3	17	35	04.1	3.77	0.983	0.93	G8III	
20535	1393	d	Eri	4	24	44.0	-33	58	29.4	3.97	1.468	1.53	K4III	
20542	1380	64	Tau	4	25	09.9	17	29	08.1	4.80	0.154	0.18	A7V	
20635	1387	κ^1	Tau	4	26	28.5	22	20	05.0	4.21	0.136	0.16	A7IV-V	
20648	1389	68	Tau	4	26	33.7	17	58	07.6	4.30	0.049	0.08	A2IV	
20713	1394	71	Tau	4	27	24.1	15	39	31.6	4.48	0.262	0.33	F0V	
20711	1392	ν	Tau	4	27	25.0	22	51	14.6	4.28	0.263	0.32	A8Vn	
20732	1396	π	Tau	4	27	39.2	14	45	15.2	4.69	0.979	0.96	G8III	
20877	1407	75	Tau	4	29	30.0	16	23	58.5	4.96	1.137	1.12	K2IIIvar	
20885	1411	θ^1	Tau	4	29	38.0	16	0	06.8	3.84	0.952	1.02	G7III	
20889	1409	ε	Tau	4	29	42.0	19	13	12.0	3.53	1.014	1.04	K0III	
20894	1412	78	Tau	4	29	43.2	15	54	37.7	3.40	0.179	0.21	A7III	
21029	1427	***	***	4	31	37.3	16	13	58.2	4.78	0.170	0.19	A6IV	
21139	1437	45	Eri	4	32	49.5	00	0	20.3	4.91	1.320	1.25	K3II-III	
21248	1453	ν^1	Eri	4	34	14.1	-29	43	48.4	4.49	0.972	1.00	K0III	
21281	1465	α	Dor	4	34	23.9	-55	0	26.1	3.30	-0.079	-0.08	A0V:	
21273	1444	ρ	Tau	4	34	54.0	14	52	54.7	4.65	0.255	0.28	A8V	
21393	1464	52	Eri	4	36	16.2	-30	31	31.7	3.81	0.957	0.93	G8III	
21402	1458	88	Tau	4	36	40.3	10	11	50.5	4.25	0.184	0.21	A5m	

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
21421	1457	87	Tau	4	36	59.0	16	32	42.1	0.87	1.538	1.67	K5III
21444	1463	v	Eri	4	37	14.7	-03	18	57.3	3.93	-0.210	-0.20	B2III
21476	1454	58	Per	4	37	58.6	41	18	03.8	4.25	1.171	1.13	G8II
21594	1481	53	Eri	4	39	01.7	-14	16	08.9	3.86	1.082	1.09	K1III
21589	1473	c	Tau	4	39	11.6	12	32	47.5	4.27	0.122	0.15	A6V
21644	1483	***	***	4	39	45.4	-12	5	15.8	4.99	0.074	0.13	A0V
21683	1479	σ^2	Tau	4	40	20.1	15	57	11.4	4.67	0.147	0.19	A5Vn
21770	1502	α	Cae	4	41	09.5	-41	49	45.4	4.44	0.342	0.40	F2V
21763	1496	54	Eri	4	41	15.1	-19	38	13.7	4.32	1.599	2.27	M3/M4III
21881	1497	94	Tau	4	43	21.5	22	59	27.1	4.27	-0.112	-0.10	B3V
22109	1520	μ	Eri	4	46	25.7	-03	13	19.3	4.01	-0.148	-0.13	B5IV
22449	1543	π^3	Ori	4	50	50.8	06	59	31.7	3.19	0.484	0.53	F6V
22453	1533	1	Aur	4	51	09.6	37	31	09.2	4.89	1.447	1.51	K4II
22509	1544	2	Ori	4	51	37.3	08	55	49.8	4.35	0.010	0.04	A1Vn
22549	1552	3	Ori	4	52	11.6	05	38	07.2	3.68	-0.157	-0.16	B2III
22667	1556	σ^1	Ori	4	53	34.9	14	16	48.0	4.71	1.773	2.63	M3Sv
22701	1560	61	Eri	4	53	48.3	-05	25	22.9	4.36	0.257	0.33	A9IV
22678	1551	2	Aur	4	53	52.5	36	43	57.8	4.79	1.414	1.46	K3III
22797	1567	π^5	Ori	4	55	13.0	02	28	10.6	3.71	-0.179	-0.18	B2III
22783	1542	9	Cam	4	55	54.1	66	22	17.5	4.26	-0.008	0.09	O95Ia
22845	1570	π^1	Ori	4	55	54.9	10	10	43.7	4.64	0.085	0.11	A0V
22957	1580	σ^2	Ori	4	57	24.8	13	32	32.0	4.06	1.158	1.16	K2III
23015	1577	ι	Aur	4	58	12.1	33	11	37.3	2.69	1.490	1.46	K3IIvar
23040	1568	7	Cam	4	58	46.5	53	46	46.7	4.43	-0.017	0.06	A1V
23123	1601	10	Ori	4	59	30.5	01	44	27.8	4.47	1.369	1.32	K2IIvar
23179	1592	4	Aur	5	0	30.9	37	54	59.2	4.93	0.037	0.06	A1V
23231	1611	64	Eri	5	0	47.4	-12	30	40.9	4.78	0.267	0.33	F0V
23362	1621	***	***	5	2	13.8	-20	1	34.1	4.91	-0.047	-0.04	B9V
23364	1617	ψ	Eri	5	2	20.2	-07	8	53.2	4.80	-0.164	-0.18	B3V
23416	1605	ε	Aur	5	3	18.0	43	50	55.7	3.03	0.537	0.61	F0Ia
23453	1612	8	Aur	5	3	46.5	41	6	03.7	3.69	1.154	1.12	K4II
23497	1620	ι	Tau	5	4	12.2	21	36	53.3	4.62	0.155	0.19	A7V
23522	1603	10	Cam	5	5	04.3	60	28	01.1	4.03	0.921	0.89	G0Ib
23595	1652	γ^1	Cae	5	5	04.4	-35	27	31.0	4.55	1.177	1.19	K2III
23607	1638	V1032	Ori	5	5	37.7	15	25	42.1	4.65	-0.064	0.02	A0p
23693	1674	ζ	Dor	5	5	49.8	-57	26	52.5	4.71	0.526	0.60	F7V
23685	1654	ε	Lep	5	6	14.7	-22	20	50.3	3.19	1.460	1.50	K4III
23767	1641	10	Aur	5	7	48.9	41	15	27.5	3.18	-0.148	-0.17	B3V
23783	1637	9	Aur	5	8	07.8	51	37	12.9	4.98	0.343	0.40	F0V
23835	1656	104	Tau	5	8	32.7	18	40	05.9	4.91	0.657	0.74	G4V
23875	1666	β	Eri	5	8	45.6	-05	3	49.7	2.78	0.161	0.16	A3IIIvar
23972	1679	λ	Eri	5	10	02.0	-08	43	53.9	4.25	-0.187	-0.16	B2IVn
24010	1676	15	Ori	5	10	45.6	15	37	09.6	4.81	0.313	0.40	F2IV
24244	1696	ι	Lep	5	13	09.7	-11	50	53.9	4.45	-0.099	-0.08	B8V
24372	1744	μ	Lep	5	13	44.9	-67	9	51.9	4.81	1.274	1.22	K2III
24305	1702	θ	Dor	5	13	45.8	-16	11	05.1	3.29	-0.110	-0.09	B9IV:
24327	1705	κ	Lep	5	14	05.2	-12	55	14.2	4.36	-0.094	-0.07	B7V
24331	1698	ρ	Ori	5	14	15.6	02	52	54.9	4.46	1.166	1.12	K3III
24340	1689	μ	Aur	5	14	41.8	38	30	16.6	4.82	0.189	0.23	A4m
24436	1713	β	Ori	5	15	25.7	-08	10	53.6	0.18	-0.030	0.03	B8Ia
24608	1708	13	Aur	5	18	03.5	46	0	53.3	0.08	0.795	0.83	M1:
24659	1743	σ	Col	5	18	09.2	-34	52	41.2	4.81	0.987	1.00	K0/K1III/IV
24674	1735	20	Ori	5	18	30.3	-06	49	32.6	3.59	-0.115	-0.10	B5III
24727	1726	16	Aur	5	19	23.5	33	23	21.1	4.54	1.252	1.32	K3III
24822	1739	n	Tau	5	20	23.4	22	6	50.5	4.96	0.937	0.92	G8III

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
24845	1756	λ	Aur	5	20	25.7	-13	9	32.2	4.29	-0.235	-0.26	B05IV
24813	1729	λ	Lep	5	20	26.7	40	6	48.8	4.69	0.630	0.70	G0V
24927	1762	***	***	5	21	14.3	-21	13	20.3	4.70	-0.048	-0.03	A0V
25044	1765	22	Ori	5	22	42.5	00	21	56.0	4.72	-0.168	-0.17	B2IV-V
25142	1770	23	Ori	5	23	48.4	03	33	39.1	4.99	-0.096	-0.14	B1V
25247	1784	29	Ori	5	24	50.3	-07	47	32.5	4.13	0.943	0.97	G8III
25281	1788	η	Ori	5	25	24.5	-02	22	53.3	3.35	-0.240	-0.16	B1V
25278	1780	V1119	Tau	5	25	30.3	17	23	57.0	5.00	0.544	0.62	F8V
25302	1789	V1086	Ori	5	25	42.5	01	51	43.2	4.89	-0.200	-0.19	B1V:pe
25336	1790	24	Ori	5	26	07.5	06	21	54.1	1.64	-0.224	-0.22	B2III
25428	1791	β	Tau	5	27	27.8	28	37	16.9	1.65	-0.130	-0.09	B7III
25473	1811	ψ	Ori	5	27	48.4	03	6	37.1	4.59	-0.199	-0.21	B2IV
25539	1810	o	Tau	5	28	44.8	21	57	04.2	4.88	-0.140	-0.13	B25IV
25606	1829	β	Lep	5	29	02.3	-20	44	45.0	2.81	0.807	0.86	G5II
25737	1834	31	Ori	5	30	40.4	-01	4	44.5	4.71	1.592	1.70	K5III
25813	1839	32	Ori	5	31	46.5	05	57	39.0	4.20	-0.143	-0.14	B5V
25859	1862	ϵ	Col	5	31	52.2	-35	27	28.6	3.86	1.130	1.09	K1II/III
25923	1855	v	Ori	5	32	49.6	-07	17	21.1	4.62	-0.261	-0.28	B0V
25930	1852	δ	Ori	5	32	57.2	00	17	12.3	2.25	-0.175	-0.21	O95II
25945	1845	119	Tau	5	33	17.9	18	36	23.1	4.32	2.060	2.54	M2Ib
25985	1865	11	Lep	5	33	32.8	-17	48	36.9	2.58	0.211	0.32	F0Ib
26069	1922	β	Dor	5	33	47.3	-62	28	40.7	3.76	0.640	0.69	F6Ia
25984	1843	x	Aur	5	33	56.0	32	12	14.2	4.71	0.281	0.51	B5Iab
26176	1876	37	Ori	5	35	50.2	09	30	02.3	4.39	-0.157	-0.13	B0IV
26199	1887	***	***	5	35	57.0	-05	59	27.7	4.78	-0.248	-0.27	B05V
26207	1879	λ	Ori	5	36	09.5	09	56	42.2	3.39	-0.160	-0.13	O
26220	1893	41	Ori	5	36	10.4	-05	22	35.1	4.98	0.000	0.00	O7
26235	1897	θ^2	Ori	5	36	17.5	-05	24	18.8	4.98	-0.097	0.03	O95Vpe
26237	1892	c	Ori	5	36	18.0	-04	49	39.2	4.58	-0.183	-0.19	B2III
26241	1899	44	Ori	5	36	20.3	-05	53	56.7	2.75	-0.210	-0.22	O9III
26311	1903	ϵ	Ori	5	37	09.2	-01	11	29.3	1.69	-0.184	-0.16	B0Ia
26366	1907	40	Ori	5	37	55.4	09	17	57.2	4.09	0.951	1.02	G8III-IV
26451	1910	ζ	Tau	5	38	45.1	21	9	08.0	2.97	-0.148	-0.15	B4IIIp
26549	1931	σ	Ori	5	39	40.5	-02	35	26.7	3.77	-0.190	-0.25	O95V
26563	1937	d	Ori	5	39	46.8	-07	12	13.7	4.77	0.139	0.16	A4V
26594	1934	47	Ori	5	40	09.8	04	7	50.1	4.50	-0.098	-0.02	B3IIIe
26634	1956	α	Col	5	40	19.2	-34	3	54.9	2.65	-0.120	-0.07	B7IV
26727	1948	ζ	Ori	5	41	41.6	-01	56	02.9	1.74	-0.199	-0.18	O95Ib
26736	1952	***	***	5	41	47.1	-01	7	13.5	4.95	-0.197	-0.21	B2IV-V
26777	1946	126	Tau	5	42	21.9	16	32	32.0	4.84	-0.125	-0.10	B3IV
26885	1963	51	Ori	5	43	26.1	01	28	55.9	4.90	1.144	1.17	K1III
27100	2015	δ	Dor	5	44	48.5	-65	43	43.2	4.34	0.217	0.27	A7V
27072	1983	γ	Lep	5	45	14.1	-22	26	36.6	3.59	0.481	0.57	F7V
27321	2020	β	π c	5	47	43.4	-51	3	37.7	3.85	0.171	0.18	A3V
27288	1998	ζ	Lep	5	47	47.7	-14	48	58.6	3.55	0.104	0.11	A2Vann
27366	2004	κ	Ori	5	48	38.1	-09	39	51.5	2.07	-0.168	-0.14	B05Iavar
27468	2002	132	Tau	5	50	09.1	24	34	19.8	4.88	1.021	1.04	G8IIIvar
27530	2042	γ	π c	5	50	09.9	-56	9	45.2	4.50	1.075	1.06	K1III
27483	1995	29	Aur	5	50	27.4	39	11	07.8	4.51	0.949	0.95	G8III
27511	2010	134	Tau	5	50	35.3	12	39	20.5	4.89	-0.068	-0.05	B9IV
27628	2040	β	Col	5	51	36.8	-35	45	44.2	3.12	1.146	1.10	K15III
27654	2035	δ	Lep	5	52	07.1	-20	52	43.5	3.76	0.984	1.05	G8III/IV
27639	2011	31	Aur	5	52	18.2	37	18	32.7	4.72	1.621	1.90	M1III
27673	2012	32	Aur	5	52	46.4	39	9	07.3	3.97	1.132	1.07	K0III
27750	2037	56	Ori	5	53	24.1	01	51	29.7	4.76	1.382	1.31	K2IIvar

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
27810	2056	λ	Col	5	53	47.2	-33	47	53.7	4.88	-0.154	-0.14	B5V
27890	2102	***	***	5	54	14.6	-63	5	02.5	4.65	1.022	1.03	K1III/IV
27830	2034	136	Tau	5	54	29.5	27	36	53.8	4.56	-0.008	0.00	A0V
27913	2047	x^1	Ori	5	55	28.8	20	16	40.6	4.39	0.594	0.66	G0V
28010	2087	ξ	Ori	5	56	08.2	-37	7	08.1	4.97	1.102	1.03	K1IIICN
27989	2061	η	Col	5	56	10.4	07	24	32.6	0.45	1.500	2.32	M2Ib
27949	2029	α	Aur	5	56	23.9	55	42	32.4	4.96	0.052	0.09	A2V
28103	2085	γ	Lep	5	57	14.9	-14	9	56.0	3.71	0.337	0.39	F1V
28199	2106	139	Col	5	58	11.6	-35	16	56.1	4.36	-0.165	-0.16	B25IV
28237	2084	η	Tau	5	59	08.6	25	57	16.4	4.81	-0.088	-0.04	B1Ib
28328	2120	δ	Col	5	59	42.8	-42	48	53.8	3.96	1.146	1.06	K0III
28360	2088	37	Aur	6	0	53.2	44	56	50.4	1.90	0.077	0.05	A2V
28413	2113	35	Aur	6	0	58.9	-03	4	29.5	4.53	1.202	1.26	K2IIIvar
28380	2095	***	***	6	0	59.0	37	12	43.4	2.65	-0.083	-0.06	A0p
28358	2077	β	Aur	6	1	03.1	54	17	01.8	3.72	1.010	0.99	K0III
28404	2091	3	Aur	6	1	18.5	45	56	11.1	4.30	1.701	2.51	M3IIvar
28574	2128	μ	Mon	6	2	42.7	-10	35	56.2	4.92	-0.128	-0.08	B5III
28614	2124	x^2	Ori	6	3	24.1	09	38	44.8	4.12	0.170	0.19	Am
28716	2135	1	Ori	6	5	01.1	20	8	11.1	4.64	0.236	0.41	B2Iavar
28734	2134	SS	Gem	6	5	14.7	23	15	38.2	4.16	0.835	0.88	G7III
28816	2148	θ	Lep	6	5	48.7	-16	29	12.8	4.92	0.196	0.21	Ap
28910	2155	θ	Lep	6	6	59.6	-14	56	17.3	4.67	0.046	0.04	A0V
29034	2177	ν	Col	6	8	09.7	-37	15	23.2	5.00	-0.095	-0.08	B8:IV
29038	2159	δ	Ori	6	8	37.7	14	45	53.0	4.42	-0.164	-0.17	B3IV
29276	2212	ξ	π c	6	10	39.6	-54	58	23.9	4.72	-0.229	-0.24	B05IV
29426	2199	f^1	Ori	6	12	59.5	14	12	11.0	4.45	-0.180	-0.16	B3IV
29434	2198	ν^1	Ori	6	13	07.3	16	7	28.8	4.95	-0.149	-0.12	B5Vn
29651	2227	γ	Mon	6	15	45.5	-06	16	54.3	3.99	1.319	1.27	K3III
29655	2216	η	Gem	6	15	59.7	22	29	59.3	3.31	1.600	2.70	M3III
29696	2219	κ	Aur	6	16	33.4	29	29	22.4	4.32	1.021	1.04	G8IIIvar
29735	2244	***	***	6	16	35.8	-13	43	32.6	5.00	-0.078	-0.05	B9V
29807	2256	κ	Col	6	17	12.7	-35	8	51.5	4.37	0.978	0.94	G8II
29997	2209	***	***	6	20	52.9	69	18	37.2	4.76	0.025	0.05	A0Vn
30093	2275	***	***	6	20	55.2	-02	57	13.2	4.91	1.613	1.90	M1III
30122	2282	δ	CMA	6	21	01.4	-30	4	21.4	3.02	-0.160	-0.20	B25V
30060	2238	ζ	Lyn	6	21	15.2	59	0	06.9	4.44	0.032	0.05	A2Vs
30277	2296	β	Col	6	22	47.4	-33	26	48.3	3.85	0.858	0.88	G7II
30324	2294	μ	CMA	6	23	30.9	-17	57	58.6	1.98	-0.240	-0.24	B1II/III
30343	2286	μ	Gem	6	24	04.8	22	30	08.9	2.87	1.621	2.30	M3IIIvar
30438	2326	***	***	6	24	21.8	-52	42	22.9	-0.62	0.164	0.23	F0Ib
30419	2298	α	Mon	6	24	44.9	04	34	55.3	4.39	0.215	0.25	A5IV
30520	2289	ψ^1	Aur	6	26	19.3	49	16	35.0	4.92	1.905	1.94	K5Iabvar
30788	2361	λ	CMA	6	28	51.4	-32	35	33.8	4.47	-0.169	-0.16	B4V
30867	2356	β	Mon	6	29	42.9	-07	2	46.3	3.76	-0.113	-0.11	B3Ve
30883	2343	ν	Gem	6	30	03.7	20	11	55.8	4.13	-0.115	-0.10	B6III
31125	2387	4	CMA	6	32	37.6	-23	25	58.2	4.34	-0.245	-0.24	B1III
31216	2385	13	Mon	6	33	54.2	07	19	04.7	4.47	0.023	0.09	A0Ib
31407	2435	***	***	6	35	23.1	-52	59	28.7	4.35	-0.021	0.06	B9III
31416	2414	ξ^2	CMA	6	35	49.9	-22	58	50.1	4.54	-0.035	-0.01	A0III
31592	2429	ν^2	CMA	6	37	29.5	-19	16	22.2	3.95	1.037	1.02	K1III+
31685	2451	ν	Pup	6	38	19.7	-43	12	46.7	3.17	-0.103	-0.07	B8III
31700	2443	ν^3	CMA	6	38	42.3	-18	15	16.7	4.42	1.137	1.12	K0II/III
31681	2421	γ	Gem	6	38	46.7	16	22	54.5	1.93	0.001	0.04	A0IV
31827	2450	***	***	6	40	07.5	-14	9	48.8	4.82	1.459	1.45	K2III
31832	2427	ψ^2	Aur	6	40	39.0	42	28	14.6	4.80	1.236	1.17	K3III

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
31978	2456	S	Mon	6	41	59.8	09	52	37.9	4.66	-0.233	-0.22	O7
32249	2478	30	Gem	6	45	01.9	13	12	28.3	4.49	1.167	1.11	K1III
32246	2473	ϵ	Gem	6	45	04.2	25	6	40.3	3.06	1.377	1.22	A3mA6-A9
32349	2491	9	CMa	6	45	57.8	-16	44	34.1	-1.44	0.009	-0.02	A0m
32362	2484	ξ	Gem	6	46	19.6	12	52	26.9	3.35	0.443	0.48	F5IV
32438	2470	12	Lyn	6	47	51.9	59	25	14.3	4.86	0.084	0.10	A3V
32533	2503	17	Mon	6	48	20.1	08	0	57.1	4.77	1.396	1.36	K4III
32607	2550	α	Pic	6	48	22.8	-61	57	42.0	3.24	0.225	0.28	A7IV
32578	2506	18	Mon	6	48	49.5	02	23	25.9	4.48	1.099	1.06	K0III
32761	2554	***	***	6	50	15.4	-53	38	40.8	4.41	0.899	0.92	G6II
32768	2553	τ	Pup	6	50	23.7	-50	38	14.2	2.94	1.207	1.14	K0III
32759	2538	κ	CMa	6	50	31.9	-32	31	51.0	3.50	-0.116	-0.10	B15IVne
32855	2549	***	***	6	51	32.7	-34	23	24.5	4.99	1.379	1.28	K2/K3III
32844	2516	ψ^7	Aur	6	52	04.3	41	45	27.4	4.99	1.256	1.23	K3III
33018	2540	θ	Gem	6	54	00.4	33	56	14.0	3.60	0.102	0.14	A3III
33092	2571	EY	CMa	6	54	20.9	-20	14	53.7	4.82	-0.212	-0.21	B1Ib
33152	2580	σ^1	CMa	6	54	54.0	-24	12	30.4	3.89	1.740	1.58	K3Iab
33160	2574	θ	CMa	6	55	03.0	-12	3	46.8	4.08	1.418	1.49	K4III
33202	2564	e	Gem	6	55	41.2	13	9	10.3	4.73	0.321	0.36	F0Vp
33302	2590	π	CMa	6	56	25.6	-20	9	40.4	4.66	0.374	0.46	F2IV/V
33357	2608	***	***	6	56	45.6	-48	44	46.5	4.94	1.668	2.05	M1III
33345	2593	μ	CMa	6	56	57.5	-14	4	06.7	5.00	1.182	1.30	B95V
33347	2596	ι	CMa	6	56	57.7	-17	4	45.8	4.36	-0.063	0.01	B3Ib/II
33449	2560	15	Lyn	6	58	52.4	58	23	46.7	4.35	0.850	0.85	G5III-IV
33485	2585	ψ	Aur	6	58	57.9	45	4	05.4	4.90	0.027	0.05	A2Vn
33579	2618	ϵ	CMa	6	59	21.2	-28	59	53.8	1.50	-0.211	-0.20	B2II
33856	2646	σ	CMa	7	2	27.4	-27	57	44.5	3.49	1.729	1.82	K4III
33694	2527	***	***	7	2	44.2	76	57	00.3	4.55	1.365	1.35	K4III
33977	2653	σ^2	CMa	7	3	47.8	-23	51	41.0	3.02	-0.077	-0.03	B3Ia
33971	2648	19	Mon	7	3	49.9	-04	16	02.4	4.99	-0.195	-0.19	B1V
34059	2672	H	Pup	7	4	22.5	-49	36	41.9	4.92	0.140	0.15	A4IV
34045	2657	γ	CMa	7	4	35.7	-15	39	42.5	4.11	-0.112	-0.09	B8II
34088	2650	43	Gem	7	5	12.3	20	32	29.8	4.01	0.899	0.90	G3Ibv
34481	2736	γ^2	Vol	7	8	35.1	-70	31	43.5	3.78	1.006	0.94	G8IIIvar
34444	2693	δ	CMa	7	9	08.6	-26	25	25.0	1.83	0.671	0.67	F8Ia
34495	2702	A	Pup	7	9	28.4	-39	41	10.4	4.83	-0.179	-0.17	B3IV/V
34622	2701	20	Mon	7	11	08.8	-04	16	02.0	4.91	1.020	1.03	K0III
34693	2697	46	Gem	7	12	18.9	30	12	47.5	4.41	1.261	1.25	K2III
34769	2714	22	Mon	7	12	48.5	00	31	28.9	4.15	-0.005	0.02	A2V
34752	2696	63	Aur	7	12	55.5	39	17	19.0	4.91	1.451	1.48	K4II-III
34834	2740	QW	Pup	7	13	05.3	-46	47	27.3	4.49	0.324	0.40	F0IV
34899	2746	OU	Pup	7	13	46.6	-45	12	56.4	4.87	-0.003	0.02	Ap
34922	2748	L ²	Pup	7	14	06.2	-44	40	14.3	4.42	1.331	3.46	M5e
34981	2745	27	CMa	7	15	00.5	-26	23	07.5	4.42	-0.170	-0.12	B3III
35020	2762	***	***	7	15	08.8	-48	18	17.9	4.75	-0.091	-0.07	B8/B9V
35037	2749	ω	CMa	7	15	33.7	-26	48	20.9	4.01	-0.150	-0.08	B2IV/Ve
35228	2803	δ	Vol	7	16	49.0	-67	59	27.5	3.97	0.760	0.78	F6II
35205	2766	***	***	7	17	19.5	-27	54	53.7	4.66	1.589	2.11	M2III
35210	2764	145	CMa	7	17	23.6	-23	20	58.3	4.83	1.601	1.77	K4III
35264	2773	π	Pup	7	17	47.8	-37	7	53.7	2.71	1.616	1.65	K3Ib
35363	2787	NV	Pup	7	18	57.9	-36	46	06.9	4.65	-0.099	0.11	B2V+
35350	2763	λ	Gem	7	19	09.3	16	30	20.0	3.58	0.106	0.12	A3V
35412	2781	29	CMa	7	19	26.6	-24	35	36.6	4.88	-0.160	-0.06	O7f
35415	2782	30	CMa	7	19	28.5	-24	59	21.1	4.37	-0.132	-0.10	O9Ib
35384	2751	***	***	7	19	56.0	49	25	47.6	5.00	0.087	0.16	A4IIIIn

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
35550	2777	δ	Gem	7	21	13.6	21	56	48.4	3.50	0.374	0.44	F0IV
35727	2812	***	***	7	23	02.4	-19	3	10.7	4.94	-0.039	0.01	B5II/III
35904	2827	η	CMa	7	24	49.6	-29	20	24.6	2.45	-0.083	0.01	B5Ia
36041	2828	2	CMi	7	26	39.5	09	14	17.7	4.99	0.991	0.96	G8III
36046	2821	60	Gem	7	26	52.4	27	45	35.2	3.78	1.024	1.01	G9III+
36145	2818	21	Lyn	7	28	06.3	49	10	22.6	4.61	-0.001	0.02	A1V
36188	2845	3	CMi	7	28	09.2	08	15	02.5	2.89	-0.097	-0.07	B8Vvar
36284	2854	γ	CMi	7	29	10.2	08	53	12.2	4.33	1.425	1.48	K3III
36377	2878	σ	Pup	7	29	49.1	-43	20	22.8	3.25	1.509	1.54	K5III
36366	2852	62	Gem	7	30	18.0	31	44	46.6	4.16	0.320	0.40	F0V
36431	2874	***	***	7	30	38.6	-23	3	49.6	4.85	0.243	0.35	A6Ib/II
36425	2864	6	CMi	7	30	49.5	11	58	00.9	4.55	1.276	1.21	K2III
36514	2881	***	***	7	31	25.8	-31	0	07.7	4.65	0.904	0.89	G2Ib
36773	2902	VZ	Cam	7	34	39.0	-14	33	54.1	4.82	1.362	1.37	A4Ia
36795	2906	KQ	Pup	7	34	50.7	-22	20	13.4	4.44	0.521	0.60	F6V
36547	2742	***	***	7	34	51.3	82	22	14.2	4.92	1.633	2.66	M4IIIa
36850	2890	α	Gem	7	35	46.5	31	50	45.4	1.58	0.034	0.05	A2V _m
36942	2934	***	***	7	36	07.2	-52	34	32.6	4.93	1.373	1.39	K3III
36917	2922	***	***	7	36	07.5	-28	24	40.3	4.65	-0.111	-0.12	B8V
36962	2905	u	Gem	7	37	03.6	26	51	11.1	4.06	1.540	1.66	K5III
37096	2937	f	Pup	7	38	03.2	-35	0	39.7	4.53	-0.081	-0.08	B8IV/V
37173	2944	PU	Pup	7	39	04.3	-25	24	28.2	4.69	-0.100	-0.07	B8IV
37229	2948	***	***	7	39	35.4	-26	50	48.9	3.80	-0.159	-0.15	B5IV
37297	2961	n ¹	Pup	7	40	06.5	-38	21	04.9	4.84	-0.189	-0.17	B3V
37279	2943	a	CMi	7	40	16.1	05	10	34.2	0.40	0.432	0.49	F5IV-V
37265	2930	71	Gem	7	40	22.2	34	32	25.1	4.89	0.413	0.47	F3III
37379	2959	***	***	7	41	14.0	-15	18	28.5	4.98	1.543	1.49	K3III
37504	3024	ζ	Vol	7	41	34.9	-72	39	00.8	3.93	1.033	1.02	K0III
37447	2970	26	Mon	7	42	07.9	-09	35	43.6	3.94	1.022	1.01	K0III
37648	2993	1	Pup	7	44	17.2	-28	27	21.0	4.63	1.632	1.76	K5III
37629	2973	75	Gem	7	44	27.9	28	50	14.0	4.23	1.118	1.12	K1III
37677	2996	24	Lyn	7	44	33.0	-29	0	00.1	3.94	0.160	0.34	A2Iab
37609	2946	3	Pup	7	44	33.7	58	39	54.1	4.93	0.104	0.17	A3IV _n
37740	2985	κ	Gem	7	45	33.7	24	21	07.8	3.57	0.932	0.90	G8III
37819	3017	c	Pup	7	45	54.9	-38	0	51.6	3.62	1.706	1.82	K4III
37826	2990	β	Gem	7	46	26.7	27	58	48.2	1.16	0.991	0.97	K0III _{ivar}
37908	3003	g	Gem	7	47	11.6	18	27	48.8	4.89	1.425	1.54	K5III
38070	3034	o	Pup	7	48	51.3	-25	59	02.7	4.40	-0.070	0.13	B1IV:nne
38089	3046	Q	Pup	7	48	53.2	-47	7	30.4	4.69	1.039	1.03	K0III
38164	3055	P	Pup	7	49	48.1	-46	25	13.9	4.10	-0.160	-0.17	B0III
38170	3045	ξ	Pup	7	50	04.3	-24	54	26.0	3.34	1.218	1.08	G6Ia
38414	3080	a	Pup	7	52	51.2	-40	37	27.5	3.71	1.012	1.04	G5III
38455	3084	b	Pup	7	53	17.9	-38	54	41.5	4.49	-0.188	-0.18	B2V
38500	3089	***	***	7	53	34.9	-49	39	42.6	4.63	-0.228	-0.24	B15V _p
38518	3090	J	Pup	7	53	50.8	-48	9	06.7	4.22	-0.130	-0.11	B05Ib
38538	3067	φ	Gem	7	54	37.6	26	42	59.3	4.97	0.098	0.14	A3V
38827	3117	x	Car	7	57	14.9	-53	1	57.3	3.46	-0.177	-0.17	B3IV _p
38835	3102	11	Pup	7	57	39.3	-22	55	49.7	4.20	0.718	0.75	F7/F8II
38901	3113	***	***	7	58	24.4	-30	23	06.9	4.76	0.151	0.24	A7III
38957	3129	V	Pup	7	58	46.4	-49	17	44.8	4.47	-0.180	-0.14	B1V _p
39138	3159	***	***	8	0	33.8	-63	37	08.5	4.81	-0.173	-0.16	B3V
39079	3122	27	Mon	8	0	39.6	-03	43	52.2	4.93	1.205	1.22	K2III
39095	3131	***	***	8	0	41.8	-18	27	03.6	4.61	0.087	0.11	A1V
39211	3141	28	Mon	8	2	09.8	-01	26	42.5	4.69	1.475	1.54	K4III
39311	3145	***	***	8	3	13.6	02	16	57.2	4.39	1.252	1.27	K2III

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
39429	3165	ζ	Pup	8	4	14.1	-40	3	21.8	2.21	-0.269	-0.22	O5IAf
39424	3149	x	Gem	8	4	39.1	27	44	27.9	4.94	1.130	1.09	K2III
39794	3223	ϵ	Vol	8	7	59.0	-68	40	17.2	4.35	-0.113	-0.10	B6IV
39757	3185	ρ	Pup	8	8	19.9	-24	21	31.1	2.83	0.458	0.42	F2mF5IIp
39903	3220	***	***	8	9	18.9	-61	21	32.4	4.74	0.437	0.53	F5V
39863	3188	ζ	Mon	8	9	31.4	-03	2	19.6	4.36	0.970	0.92	G2Ib
39847	3173	27	Lyn	8	9	50.4	51	27	06.0	4.78	0.048	0.10	A2V
39906	3192	16	Pup	8	9	51.2	-19	18	00.6	4.40	-0.160	-0.14	B5V
39953	3207	γ^2	Vel	8	10	06.2	-47	23	30.5	1.75	-0.145	-0.14	WC8
40091	3225	NS	Pup	8	12	01.2	-39	40	28.2	4.44	1.590	1.62	K4III
40096	3226	***	***	8	12	03.4	-43	2	35.7	4.73	0.164	0.30	A7Ib
40084	3211	19	Pup	8	12	08.4	-12	58	58.5	4.72	0.939	0.93	K0III
40167	3208	ζ	Cnc	8	13	16.2	17	35	26.2	4.67	0.531	0.60	G0V
40259	3229	20	Pup	8	14	11.0	-15	50	41.9	4.99	1.066	1.02	G5Ib/II
40274	3237	MX	Pup	8	14	11.4	-35	57	22.5	4.78	-0.110	-0.01	B2ne
40326	3243	h^2	Pup	8	14	42.4	-40	24	18.8	4.42	1.170	1.15	K1II/III
40526	3249	β	Cnc	8	17	31.0	09	7	38.4	3.53	1.481	1.47	K4III
40702	3318	α	Cha	8	18	01.3	-76	58	39.3	4.05	0.413	0.49	F5III
40706	3270	q	Pup	8	19	14.9	-36	43	02.7	4.44	0.222	0.25	A4m
40888	3340	θ	Cha	8	20	03.4	-77	32	36.4	4.34	1.161	1.10	K0III-IV
40945	3282	w	Pup	8	22	06.8	-33	6	50.6	4.83	1.419	1.35	K2/K3III
41037	3307	ϵ	Car	8	22	53.5	-59	34	09.9	1.86	1.196	1.16	K3III+B2V
41039	3294	B	Vel	8	23	05.9	-48	33	01.6	4.79	-0.146	-0.12	B1V
41075	3275	31	Lyn	8	24	05.7	43	7	38.2	4.25	1.550	1.61	K5III
41312	3347	β	Vol	8	25	56.0	-66	11	55.9	3.77	1.132	1.10	K2IIIvar
41307	3314	C	Hya	8	26	35.1	-03	58	04.2	3.91	-0.012	-0.02	A0V
41704	3323	o	UMa	8	31	47.2	60	39	16.4	3.35	0.856	0.87	G4II-III
42134	3414	e^2	Car	8	35	45.9	-58	4	25.4	4.84	0.981	0.98	K0III
42312	3426	e	Vel	8	38	17.7	-43	3	16.3	4.11	0.109	0.20	A6II
42313	3410	4	Hya	8	38	38.0	05	38	17.5	4.14	0.003	0.02	A1Vnn
42402	3418	σ	Hya	8	39	43.4	03	16	31.5	4.45	1.216	1.12	K2III
42483	3433	ζ	Pyx	8	40	28.6	-29	37	40.0	4.86	0.900	0.99	G5III
42536	3447	β	Pyx	8	40	49.4	-52	59	17.1	3.60	-0.168	-0.16	B3IV
42515	3438	o	Vel	8	40	49.6	-35	22	29.3	3.97	0.936	0.91	G5II/III
42509	3431	a	Hya	8	40	54.1	-12	32	30.2	4.98	1.415	1.40	K3III
42568	3457	V343	Car	8	41	01.5	-59	49	38.8	4.31	-0.117	-0.08	B15III
42570	3445	b	Vel	8	41	14.4	-46	42	54.8	3.77	0.670	0.92	F3Ia
42527	3403	π^2	UMa	8	41	48.7	64	15	41.5	4.59	1.179	1.18	K2III
42624	3452	n	Vel	8	41	49.6	-47	23	01.7	4.74	0.137	0.25	A5II
42662	3441	9	Hya	8	42	34.8	-16	0	38.9	4.87	1.063	1.04	K0IIICN
42726	3467	HY	Vel	8	42	57.2	-53	10	51.5	4.83	-0.173	-0.18	B3IV
42799	3454	η	Hya	8	44	11.4	03	19	52.3	4.30	-0.192	-0.20	B3V
42828	3468	43	Cnc	8	44	20.2	-33	15	13.9	3.68	-0.180	-0.17	B15III
42806	3449	α	Pyx	8	44	21.2	21	24	02.9	4.66	0.010	0.03	A1V
42835	3459	F	Hya	8	44	34.9	-07	18	04.8	4.63	0.840	0.85	G2Ib
42884	3477	d	Vel	8	45	03.6	-42	43	01.1	4.05	0.874	0.89	G5III
42913	3485	δ	Vel	8	45	12.9	-54	46	38.1	1.93	0.043	0.05	A1V
42911	3461	δ	Cnc	8	45	44.0	18	5	06.6	3.94	1.083	1.01	K0III
43023	3487	a	Vel	8	46	39.3	-46	6	35.5	3.87	0.015	0.09	A1III
43105	3498	V344	Car	8	47	11.2	-56	50	17.8	4.50	-0.169	-0.16	B3Vne
43067	3484	D	Hya	8	47	15.0	-13	36	58.5	4.32	0.900	0.91	G8III
43109	3482	ϵ	Hya	8	47	45.2	06	20	59.8	3.38	0.685	0.78	G0III-IV
43103	3475	48	Cnc	8	47	48.8	28	41	27.7	4.03	1.007	0.96	G8Iab:
43234	3492	ρ	Hya	8	49	24.7	05	46	06.4	4.35	-0.044	-0.03	A0Vn
43347	3520	g	Vel	8	50	26.1	-45	22	38.7	4.94	0.043	0.06	A2III

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp	
NH	NY	nom	h	m	s	°	'	"				
43409	3518	y Pyx	8	51	19.1	-27	46	45.3	4.02	1.272	1.24	K3III
43783	3571	c Car	8	55	27.9	-60	42	56.4	3.84	-0.104	-0.08	B8III
43825	3556	δ Pyx	8	56	19.2	-27	45	14.1	4.87	0.142	0.16	A3IV
43813	3547	ζ Hya	8	56	22.2	05	52	26.9	3.11	0.978	0.96	G8III-IV
43878	3574	H Vel	8	56	52.8	-52	47	42.4	4.68	-0.115	-0.11	B5V
43937	3582	V376 Car	8	57	25.5	-59	18	04.4	4.93	-0.182	-0.21	B2IV-V
44066	3572	α Cnc	8	59	29.8	11	47	06.2	4.26	0.141	0.14	A5m
44127	3569	ι UMa	9	0	27.9	47	58	04.6	3.12	0.223	0.25	A7IV
44191	3591	w Vel	9	0	46.9	-41	19	34.6	4.45	0.646	0.75	Fp
44248	3579	10 UMa	9	1	49.9	41	42	30.8	3.96	0.463	0.53	F5V
44382	3615	α Vol	9	2	44.1	-66	28	12.7	4.00	0.145	0.15	Am
44390	3576	8 UMa	9	4	11.3	67	33	21.0	4.74	1.542	2.15	M3III
44511	3614	c Vel	9	4	47.6	-47	10	19.2	3.75	1.174	1.11	K2III
44471	3594	κ UMa	9	4	52.8	47	4	55.5	3.57	0.007	0.03	A1Vn
44599	3643	*** **	9	5	11.0	-72	40	37.8	4.47	0.607	0.67	F6II-III
44626	3642	V345 Car	9	5	46.9	-70	36	47.0	4.66	-0.149	-0.13	B2IVe
44659	3613	18 Hya	9	6	56.7	05	1	02.7	4.99	1.189	1.17	K2II-III
44700	3612	*** **	9	7	42.0	38	22	37.6	4.56	1.037	0.97	G8Ib-II
44816	3634	λ Vel	9	8	40.6	-43	30	28.5	2.23	1.665	1.69	K4Ib-II
44824	3628	κ Pyx	9	8	51.6	-25	56	02.3	4.62	1.594	1.66	K4/K5III
44901	3619	15 UMa	9	10	09.9	51	31	43.3	4.46	0.288	0.30	Am
45080	3659	V357 Car	9	11	27.3	-59	2	35.2	3.43	-0.190	-0.17	B2IV
45101	3663	i Car	9	11	41.8	-62	23	35.7	3.96	-0.180	-0.18	B3IV
45085	3654	GX Vel	9	11	44.7	-44	56	39.2	4.99	0.222	0.36	B5Ia
45038	3616	13 UMa	9	11	59.8	67	3	26.1	4.80	0.489	0.57	F7IV-V
45075	3624	τ UMa	9	12	25.4	63	26	12.8	4.67	0.381	0.45	Am
45238	3685	β Car	9	13	23.7	-69	47	36.8	1.67	0.070	0.02	A2IV
45336	3665	22 Hya	9	15	19.5	02	14	07.1	3.89	-0.060	-0.07	B95V
45439	3682	l Vel	9	16	20.5	-38	38	51.7	4.92	1.084	1.06	K1III
45448	3684	k Vel	9	16	29.6	-37	29	27.4	4.63	0.473	0.52	F3/F5V
45496	3696	g Car	9	16	43.4	-57	37	09.8	4.34	1.602	1.83	M1III
45493	3662	DD UMa	9	17	30.5	53	56	39.1	4.80	0.199	0.26	A5V
45556	3699	ι Car	9	17	35.1	-59	21	11.8	2.21	0.189	0.28	A8Ib
45688	3690	38 Lyn	9	19	59.4	36	43	23.7	3.82	0.066	0.12	A1V
45751	3706	26 Hya	9	20	39.8	-12	3	13.4	4.77	0.927	0.91	G8III
45811	3709	27 Hya	9	21	23.2	-09	38	05.9	4.80	0.913	0.92	F5V+
45856	3728	k Car	9	21	23.4	-62	29	01.9	4.79	0.926	0.96	G6III
45860	3705	40 Lyn	9	22	10.6	34	18	47.9	3.14	1.550	1.65	M0IIIvar
45902	3718	θ Pyx	9	22	18.8	-26	2	41.7	4.71	1.633	1.91	M0III
45941	3734	κ Vel	9	22	41.2	-55	5	24.6	2.47	-0.141	-0.17	B2IV
46026	3733	λ Pyx	9	24	00.3	-28	54	49.2	4.71	0.892	0.91	G8III
46146	3731	κ Leo	9	25	43.7	26	6	06.2	4.47	1.222	1.20	K2III
46371	3749	G Hya	9	28	09.2	-22	25	32.3	4.72	1.154	1.11	K1III
46390	3748	α Hya	9	28	29.8	-08	44	22.5	1.99	1.440	1.39	K3III
46515	3765	ϵ Ant	9	30	00.6	-36	1	58.4	4.51	1.408	1.37	K3III
46509	3759	τ^1 Hya	9	30	05.2	-02	51	02.1	4.59	0.411	0.52	F6V
46651	3786	ψ Vel	9	31	25.9	-40	32	54.6	3.60	0.371	0.43	F2IV
46701	3803	N Vel	9	31	47.1	-57	6	59.2	3.16	1.538	1.59	K5III
46750	3773	4 Leo	9	32	46.4	22	53	07.7	4.32	1.541	1.63	K5IIIvar
46776	3787	23 UMa	9	32	55.5	-01	16	01.4	4.54	0.109	0.16	A3V
46771	3782	32 Hya	9	32	56.5	11	13	01.3	4.99	1.046	0.89	K0IIIvar
46733	3757	ξ Leo	9	32	58.1	62	58	46.9	3.65	0.360	0.41	F0IV
46853	3775	25 UMa	9	34	05.0	51	35	30.8	3.17	0.475	0.56	F6IV
46974	3825	h Car	9	34	58.9	-59	18	45.7	4.08	-0.013	0.01	B5II
46952	3800	10 LMi	9	35	21.0	36	18	52.0	4.54	0.914	0.91	G8III

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Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
47006	3799	d	UMa	9	36	04.8	51	58	05.2	4.47	0.027	0.08	A2V
46977	3771	26	UMa	9	36	05.1	69	44	51.5	4.54	0.781	0.83	G4III-IV
47029	3809	***	***	9	36	12.7	39	32	18.2	4.81	0.992	1.00	K0III
47175	3836	M	Vel	9	37	29.3	-49	26	18.3	4.34	0.173	0.18	A5V
47205	3827	10	Leo	9	38	11.2	06	45	07.6	5.00	1.051	1.03	K1IIIvar
47310	3834	2	Sex	9	39	25.1	04	33	53.8	4.68	1.310	1.35	K3III
47193	3751	***	***	9	39	35.4	81	14	32.6	4.28	1.488	1.46	K3III
47391	3856	m	Car	9	39	51.8	-61	24	44.0	4.51	-0.070	-0.06	B9V
47431	3845	ι	Hya	9	40	48.0	-01	13	39.3	3.90	1.313	1.29	K3IIIvar
47522	3858	14	Leo	9	42	07.7	-23	40	34.6	4.76	-0.117	-0.10	B5V
47508	3852	I	Hya	9	42	08.2	09	48	26.4	3.52	0.516	0.59	A5V+
47592	3862	***	***	9	43	04.6	-23	59	57.2	4.93	0.534	0.58	G0V
47758	3871	θ	Ant	9	45	01.6	-27	51	17.3	4.78	0.516	0.61	A7V+
47854	3884	1	Car	9	45	45.3	-62	35	37.0	3.69	1.010	1.03	G5Iab/Ib
47908	3873	ε	Leo	9	46	53.9	23	41	17.7	2.97	0.808	0.81	G0II
48002	3890	υ	Car	9	47	33.8	-65	9	29.4	2.92	0.273	0.42	A9
48319	3888	υ	UMa	9	52	17.4	58	57	02.5	3.78	0.291	0.39	F0IV
48356	3903	υ ¹	Hya	9	52	22.1	-14	56	02.5	4.11	0.918	0.92	G6/G8III
48374	3912	m	Vel	9	52	23.7	-46	38	05.7	4.58	1.172	1.10	G5Ib
48402	3894	φ	UMa	9	53	21.2	53	58	37.0	4.55	0.038	0.09	A3IV
48455	3905	μ	Leo	9	53	48.7	25	55	08.5	3.88	1.222	1.13	K0III
48559	3919	***	***	9	55	02.7	-26	1	12.0	4.87	1.199	1.19	K2III
48615	3923	***	***	9	55	44.6	-19	5	51.6	4.94	1.559	1.75	K5III
48774	3940	φ	Vel	9	57	30.8	-54	39	22.7	3.52	-0.067	-0.04	B5Ib
49029	3950	π	Leo	10	1	11.4	07	57	17.2	4.68	1.589	1.96	M2III
49402	3970	υ ²	Hya	10	6	01.5	-13	9	17.7	4.60	-0.087	-0.07	B8V
49583	3975	η	Leo	10	8	20.3	16	40	18.4	3.48	-0.031	0.06	A0Ib
49593	3974	21	LMi	10	8	30.9	35	9	13.6	4.49	0.190	0.19	A7V
49641	3981	31	Leo	10	8	53.0	00	27	45.6	4.48	-0.032	-0.01	A0III
49637	3980	α	Sex	10	8	53.1	09	54	22.2	4.39	1.448	1.51	K4III
49669	3982	α	Leo	10	9	21.3	11	52	34.1	1.36	-0.087	-0.10	B7V
49712	3990	Q	Vel	10	9	38.5	-51	54	08.8	4.85	-0.120	-0.10	B3IV
49841	3994	41	Hya	10	11	29.4	-12	26	46.2	3.61	1.007	0.96	K0III
50099	4037	ω	Car	10	14	10.5	-70	7	48.0	3.29	-0.074	-0.03	B8III
50191	4023	q	Vel	10	15	30.9	-42	12	50.6	3.85	0.051	0.03	A2V
50371	4050	ζ	Leo	10	17	42.2	-61	25	30.3	3.39	1.541	1.45	K3II
50335	4031	V337	Car	10	17	43.0	23	19	28.1	3.43	0.307	0.39	F0III
50372	4033	33	UMa	10	18	12.3	42	49	16.6	3.45	0.029	0.05	A2IV
50555	4063	GZ	Vel	10	20	18.6	-55	7	21.4	4.59	1.600	1.50	K3II
50564	4054	40	Leo	10	20	44.4	19	22	35.1	4.78	0.452	0.53	F6IV
50583	4057	41	Leo	10	20	59.4	19	44	50.2	2.01	1.128	1.17	K0III
50676	4074	J	Vel	10	21	36.3	-56	8	12.4	4.50	-0.102	-0.08	B3III
50799	4080	r	Vel	10	23	07.3	-41	44	36.5	4.82	1.095	1.06	K1IIIvar
50801	4069	μ	UMa	10	23	25.5	41	24	21.0	3.06	1.603	1.77	M0III
50847	4089	***	***	10	23	31.2	-66	59	43.3	4.97	-0.128	-0.12	B8V
50954	4102	***	***	10	24	45.5	-74	7	33.4	3.99	0.369	0.43	F2IV
50933	4072	ET	UMa	10	25	26.6	65	28	19.6	4.94	-0.052	-0.02	A0sp
51056	4090	30	LMi	10	26	58.1	33	42	04.7	4.72	0.260	0.31	F0V
51069	4094	μ	Hya	10	26	59.2	-16	55	52.4	3.83	1.456	1.47	K4III
51172	4104	α	Ant	10	28	00.0	-31	9	44.8	4.28	1.429	1.47	K4III
51192	4110	V399	Car	10	28	06.0	-57	44	00.7	4.65	0.474	0.69	A6Ia
51232	4114	s	Car	10	28	33.7	-58	50	03.2	3.81	0.317	0.41	F2II
51233	4100	31	LMi	10	28	56.8	36	36	42.4	4.20	0.908	0.89	G8III-IV
51438	4138	***	***	10	30	48.1	-72	5	17.5	4.72	0.042	0.06	A2III
51495	4142	***	***	10	31	27.9	-73	19	00.5	4.94	1.677	1.71	K4/K5III

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
51459	4112	36	UMa	10	31	47.9	55	53	06.1	4.82	0.541	0.58	F8V
51523	4134	***	***	10	32	05.1	-53	48	35.3	4.89	0.500	0.58	F6V
51576	4140	p	Car	10	32	41.1	-61	46	50.9	3.30	-0.089	0.02	B4Vne
51624	4133	ρ	Leo	10	33	47.0	09	12	39.2	3.84	-0.148	-0.13	B1Ib
51658	4132	***	***	10	34	18.3	40	19	47.4	4.72	0.222	0.23	A7IV
51839	4174	γ	Cha	10	35	40.4	-78	42	13.6	4.11	1.580	1.71	M0III
51849	4159	r	Car	10	36	18.2	-57	39	13.5	4.45	1.604	1.62	K3/K4II
51808	4126	***	***	10	36	36.8	75	37	00.3	4.86	0.957	0.94	K0III
51986	4167	p	Vel	10	38	05.0	-48	19	19.3	3.84	0.300	0.35	A3m+
51979	4162	***	***	10	38	05.9	-27	30	32.1	4.87	1.626	1.89	M1III
52009	4163	U	Hya	10	38	28.1	-13	28	52.3	4.89	2.800	2.27	C
52102	4177	***	***	10	39	27.5	-59	16	46.6	4.69	1.562	1.63	K4/K5III:
52085	4171	ϕ^3	Hya	10	39	29.1	-16	58	23.0	4.91	0.922	0.85	G8III
52098	4166	37	LMi	10	39	45.4	31	52	46.7	4.68	0.823	0.82	G0II
52154	4180	x	Vel	10	40	02.8	-55	41	59.9	4.29	1.025	0.96	G2II
52370	4196	V518	Car	10	42	53.8	-64	33	48.7	4.76	-0.139	-0.13	B3V
52419	4199	θ	Car	10	43	37.2	-64	29	29.9	2.74	-0.220	-0.24	B0Vp
52468	4200	w	Car	10	44	14.8	-60	39	50.2	4.58	1.700	1.79	K3Ib
52502	4205	***	***	10	44	47.3	-64	3	30.4	4.80	-0.134	-0.12	B5Vn
52633	4234	δ^2	Cha	10	45	56.2	-80	38	16.0	4.45	-0.188	-0.19	B25IV
52736	4222	***	***	10	47	31.9	-64	28	52.5	4.87	-0.149	-0.18	B3IV
52727	4216	μ	Vel	10	47	34.1	-49	31	06.1	2.69	0.901	0.91	G5III
52943	4232	v	Hya	10	50	32.3	-16	17	27.0	3.11	1.232	1.22	K0/K1III
53253	4257	u	Car	10	54	15.1	-58	57	06.1	3.78	0.945	0.96	K0III-IV
53229	4247	46	LMi	10	54	20.5	34	6	52.8	3.79	1.040	1.07	K0III-IV
53295	4248	45	UMa	10	55	02.2	43	5	27.7	4.66	-0.039	0.01	A1Vs
53417	4259	54	Leo	10	56	36.7	24	39	02.3	4.30	0.016	0.07	A1
53502	4273	ι	Ant	10	57	35.0	-37	14	15.1	4.60	1.006	0.99	K0III
53740	4287	7	Crt	110	40.6	-18	23	51.4	4.08	1.079	1.06	K1III	
53773	4293	i	Vel	11	1	00.4	-42	19	31.3	4.37	0.116	0.13	A3IV
53807	4291	58	Leo	11	1	30.9	03	31	04.2	4.84	1.144	1.13	K1III
53824	4294	59	Leo	11	1	42.3	06	0	06.2	4.98	0.166	0.18	A5III
53907	4299	61	Leo	11	2	46.3	-02	35	04.2	4.73	1.593	1.77	K5III
53910	4295	β	UMa	11	2	56.8	56	16	58.3	2.34	0.033	0.02	A1V
53954	4300	60	Leo	11	3	18.9	20	4	48.9	4.42	0.053	0.03	A1m
54061	4301	50	UMa	11	4	51.2	61	39	03.3	1.81	1.061	1.03	F7V
54182	4310	63	Leo	11	5	58.2	07	14	08.5	4.62	0.332	0.39	F2III-IVvar
54204	4314	x^1	Hya	11	6	13.5	-27	23	37.5	4.92	0.369	0.43	F3IV/V
54301	4325	z	Car	11	7	18.3	-62	31	27.4	4.62	0.988	0.97	G8III
54463	4337	x	Car	11	9	23.2	-59	4	31.6	3.93	1.225	1.19	G0Ia0
54539	4335	ψ	UMa	11	10	41.8	44	23	52.1	3.00	1.144	1.09	K1III
54682	4343	β	Crt	11	12	34.2	-22	55	37.5	4.46	0.025	0.04	A1V
54751	4352	V533	Car	11	13	24.0	-60	25	06.3	4.59	0.541	0.70	A6Ia
54872	4357	68	Leo	11	15	05.4	20	25	19.5	2.56	0.128	0.12	A4V
54879	4359	70	Leo	11	15	12.5	15	19	41.5	3.33	-0.003	0.01	A2V
54951	4362	FN	Leo	11	16	11.1	22	59	39.8	4.56	1.657	2.27	M3III
55084	4368	ϕ	Leo	11	17	36.1	-03	45	10.7	4.45	0.210	0.25	A7IVn
55219	4377	v	UMa	11	19	28.4	32	59	35.2	3.49	1.400	1.37	K3III
55266	4380	55	UMa	11	20	08.1	38	5	01.8	4.76	0.113	0.11	A2V
55282	4382	δ	Crt	11	20	16.0	-14	52	43.9	3.56	1.112	1.12	K0III
55425	4390	π	Cen	11	21	51.4	-54	35	33.2	3.90	-0.157	-0.16	B5Vn
55434	4386	σ	Leo	11	22	05.4	05	55	39.8	4.05	-0.058	-0.06	B95Vs
55560	4392	56	UMa	11	23	50.1	43	22	51.5	4.99	0.998	0.94	G8II
55588	4396	***	***	11	24	06.7	-36	15	59.2	5.00	1.464	1.47	K4III
55642	4399	78	Leo	11	24	53.2	10	25	38.5	4.00	0.423	0.47	F2IV

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
55687	4402	14	Crt	11	25	32.7	-10	57	39.5	4.81	1.556	1.67	K5III
55705	4405	γ	Crt	11	25	48.5	-17	47	08.8	4.06	0.216	0.24	A9V
55945	4418	τ	Leo	11	28	53.3	02	45	15.2	4.95	1.000	0.95	G8II-III
56127	4432	87	Leo	11	31	15.6	-03	6	20.6	4.77	1.529	1.62	K4III
56211	4434	λ	Dra	11	32	28.9	69	13	43.6	3.82	1.613	1.79	M0IIIvar
56280	4443	17	Crt	11	33	11.6	-29	21	45.1	4.93	0.540	0.61	F8V
56343	4450	ξ	Hya	11	33	54.9	-31	57	36.4	3.54	0.947	0.92	G8III
56480	4460	A	Cen	11	35	38.7	-54	21	58.9	4.62	-0.077	-0.06	B9V
56561	4467	λ	Cen	11	36	38.6	-63	7	20.3	3.11	-0.044	-0.01	B9II:
56633	4468	21	Crt	11	37	37.3	-09	54	16.9	4.70	-0.073	-0.06	B95Vn
56647	4471	91	Leo	11	37	53.8	00	55	33.6	4.30	0.983	0.98	G9III
56922	4494	o	Hya	11	41	08.2	-34	50	50.2	4.70	-0.070	-0.05	B9V
56986	4499	***	***	11	41	46.7	-62	11	33.8	4.93	1.111	1.11	G3Ib
57175	4511	V810	Cen	11	44	24.7	-62	35	31.6	5.00	0.784	0.87	F9Ia
57283	4514	27	Crt	11	45	42.2	-18	27	12.8	4.71	0.958	0.94	G8III
57328	4515	2	Vir	11	46	14.2	08	9	18.8	4.84	0.174	0.19	A4V
57363	4520	λ	Mus	11	46	29.5	-66	49	52.9	3.63	0.160	0.17	A7III
57380	4517	v	Vir	11	46	48.6	06	25	32.3	4.04	1.501	1.79	M0III
57399	4518	x	UMa	11	47	01.2	47	40	36.3	3.69	1.181	1.15	K0III
57443	4523	***	***	11	47	24.2	-40	36	03.8	4.89	0.664	0.73	G3/G5V
57439	4522	***	***	11	47	25.1	-61	16	52.6	4.11	0.895	0.88	G0II
57565	4527	93	Leo	11	48	56.3	20	6	57.8	4.50	0.547	0.69	A
57581	4530	μ	Mus	11	49	08.7	-66	55	04.2	4.75	1.522	1.62	K4III
57632	4534	94	Leo	11	50	00.1	14	28	07.0	2.14	0.090	0.10	A3Vvar
57669	4537	j	Cen	11	50	35.7	-63	53	28.8	4.30	-0.149	-0.09	B3V
57696	4538	***	***	11	50	50.6	-70	19	43.3	4.98	1.360	1.31	G5Ib
57757	4540	5	Vir	11	51	39.6	01	39	37.5	3.59	0.518	0.61	F8V
57803	4546	B	Cen	11	52	04.5	-45	16	35.1	4.47	1.283	1.24	K4III
57851	4549	***	***	11	52	46.2	-65	18	31.9	4.89	-0.123	-0.11	B4V
57936	4552	β	Hya	11	53	50.8	-34	0	39.7	4.29	-0.100	-0.07	Ap
58001	4554	γ	UMa	11	54	47.8	53	35	30.8	2.41	0.044	0.06	A0V
58484	4583	ϵ	Cha	12	0	34.2	-78	19	29.5	4.88	-0.054	-0.02	B9Vn
58590	4589	8	Vir	12	1	49.3	06	30	40.3	4.65	0.122	0.14	A5V
58758	4599	θ^1	Cru	12	3	58.7	-63	24	57.1	4.32	0.280	0.36	Am
58867	4603	θ^2	Cru	12	5	17.1	-63	16	07.2	4.72	-0.081	-0.06	B2IV
58948	4608	9	Vir	12	6	09.0	08	37	49.2	4.12	0.967	0.96	G8III
59072	4616	η	Cru	12	7	51.6	-64	43	00.6	4.14	0.353	0.41	F2III
59173	4618	V863	Cen	12	9	03.2	-50	45	51.2	4.46	-0.163	-0.16	B2IIIne
59196	4621	δ	Cen	12	9	19.5	-50	49	31.3	2.58	-0.128	-0.12	B2IVne
59199	4623	α	Crv	12	9	22.3	-24	49	55.1	4.02	0.334	0.40	F0IV/V
59316	4630	2	Crv	12	11	04.7	-22	43	21.3	3.02	1.326	1.23	K2III
59449	4638	ρ	Cen	12	12	37.6	-52	28	17.0	3.97	-0.156	-0.17	B3V
59747	4656	δ	Cru	12	16	08.3	-58	51	06.2	2.79	-0.193	-0.25	B2IV
59774	4660	69	UMa	12	16	20.0	56	55	47.8	3.32	0.077	0.03	A3Vvar
59803	4662	γ	Crv	12	16	45.6	-17	38	40.3	2.58	-0.107	-0.10	B8III
59847	4667	7	Com	12	17	16.6	23	50	33.7	4.93	0.957	0.94	K0III
59856	4668	***	***	12	17	25.7	32	57	29.7	4.99	1.140	1.12	K1III
59929	4671	ϵ	Mus	12	18	35.2	-68	3	48.7	4.06	1.603	2.82	M5III
60009	4679	ζ	Cru	12	19	27.2	-64	6	20.7	4.06	-0.168	-0.18	B25V
60000	4674	β	Cha	12	19	28.3	-79	24	53.3	4.24	-0.123	-0.11	B5Vn
60129	4689	η	Vir	12	20	51.2	00	46	10.2	3.89	0.026	0.03	A2IV
60172	4695	c	Vir	12	21	17.4	03	12	34.9	4.97	1.172	1.19	K1III
60202	4697	11	Com	12	21	39.0	17	41	26.9	4.72	1.010	1.02	G8III
60260	4700	ϵ	Cru	12	22	22.2	-60	30	11.4	3.59	1.389	1.39	K3/K4III
60351	4707	12	Com	12	23	26.0	25	44	37.2	4.78	0.515	0.61	F8:p

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp	
NH	NY	nom	h	m	s	°	'	"				
60485	4716	5 CVn	12	24	55.1	51	27	35.7	4.76	0.877	0.89	G7III
60697	4733	14 Com	12	27	19.4	27	9	57.3	4.92	0.277	0.28	F0p
60710	4732	G Cen	12	27	32.2	-51	33	10.6	4.82	-0.141	-0.16	B3Vn
60718	4730	α^1 Cru	12	27	38.4	-63	12	05.1	0.77	-0.243	-0.26	B05IV
60742	4737	γ Com	12	27	51.4	28	9	56.8	4.35	1.128	1.04	K2IIICN+
60746	4738	16 Com	12	27	54.7	26	43	24.3	4.98	0.088	0.05	A4V
60823	4743	σ Cen	12	29	02.9	-50	19	58.3	3.91	-0.192	-0.20	B3V
60965	4757	7 Crv	12	30	49.4	-16	37	05.6	2.94	-0.012	-0.04	B95V
61084	4763	γ Cru	12	32	12.2	-57	12	59.7	1.59	1.600	2.37	M4III
61174	4775	η Crv	12	33	01.6	-16	17	53.7	4.30	0.388	0.44	F2V
61199	4773	γ Mus	12	33	35.7	-72	14	05.7	3.84	-0.157	-0.14	B5V
61281	4787	κ Dra	12	34	15.8	69	41	11.2	3.85	-0.116	-0.02	B6IIIp
61317	4785	8 CVn	12	34	37.0	41	15	25.8	4.24	0.588	0.67	G0V
61359	4786	β Crv	12	35	21.7	-23	29	55.8	2.65	0.893	0.88	G5II
61384	4795	6 Dra	12	35	30.4	69	55	12.0	4.95	1.312	1.27	K2III
61394	4789	23 Com	12	35	46.3	22	31	39.6	4.80	0.012	0.03	A0IV
61585	4798	α Mus	12	38	18.4	-69	14	13.9	2.69	-0.176	-0.23	B2IV-V
61622	4802	τ Cen	12	38	43.3	-48	38	34.4	3.85	0.049	0.06	A2V
61740	4813	26 Vir	12	40	12.1	-08	5	49.6	4.66	1.240	1.15	K2III
61789	4817	l Cen	12	40	53.0	-40	5	19.7	4.63	-0.082	-0.06	B8II/III
61932	4819	γ Cen	12	42	32.7	-49	3	40.1	2.20	-0.023	-0.01	A1IV
61941	4825	γ Vir	12	42	35.9	-01	33	01.1	2.74	0.368	0.43	F0V+
61960	4828	ρ Vir	12	42	49.2	10	8	02.2	4.88	0.076	0.08	A0V
61966	4823	CH Cru	12	43	01.2	-59	47	13.4	4.91	-0.044	-0.02	B6IV
62012	4831	w Cen	12	43	37.4	-48	54	51.9	4.66	1.075	1.03	K0III
62268	4842	ι Cru	12	46	44.2	-61	4	57.2	4.69	1.049	1.03	K1III
62322	4844	β Mus	12	47	26.1	-68	12	32.4	3.04	-0.178	-0.19	B2V
62327	4848	*** ***	12	47	27.1	-56	35	23.0	4.62	-0.150	-0.16	B3V
62434	4853	β Cru	12	48	48.9	-59	47	22.3	1.25	-0.238	-0.27	B05III
62683	4874	p Cen	12	51	41.7	-34	5	59.2	4.90	-0.031	-0.01	B9V
62763	4883	31 Com	12	52	35.9	27	26	25.3	4.93	0.681	0.70	G0III
62867	4888	e Cen	12	54	10.2	-49	2	37.0	4.33	1.344	1.33	K3/K4III
62886	4894	35 Com	12	54	12.3	21	8	40.6	4.89	0.904	0.91	G8III
62896	4889	n Cen	12	54	28.1	-40	16	44.8	4.25	0.224	0.27	A4IV
62956	4905	ϵ UMa	12	54	50.3	55	51	34.9	1.76	-0.022	-0.04	A0p
62985	4902	ψ Vir	12	55	19.0	-09	38	20.9	4.77	1.590	2.18	M3IIIvar
63003	4898	μ^1 Cru	12	55	41.6	-57	16	40.8	4.03	-0.180	-0.26	B2IV-V
63007	4897	λ Cru	12	55	45.9	-59	14	48.4	4.62	-0.153	-0.15	B4Vn
63090	4910	δ Vir	12	56	32.1	03	17	50.2	3.39	1.571	2.24	M3III
63125	4915	α^2 CVn	12	56	53.4	38	13	07.7	2.89	-0.115	-0.13	A0spe
63355	4920	36 Com	12	59	50.3	17	18	36.3	4.76	1.568	1.79	M0III
63462	4924	37 Com	13	1	09.5	30	41	08.2	4.88	1.165	1.13	K1IIIp
63503	4931	78 UMa	13	1	31.0	56	16	01.3	4.93	0.368	0.45	F2V
63608	4932	ϵ Vir	13	3	05.8	10	51	36.4	2.85	0.934	0.83	G8IIIvar
63613	4923	δ Mus	13	3	34.3	-71	38	53.1	3.61	1.190	1.17	K2III
63724	4933	ξ^1 Cen	13	4	38.1	-49	37	34.7	4.83	0.029	0.05	A0V
63945	4940	f Cen	13	7	21.6	-48	33	43.2	4.71	-0.148	-0.14	B5V
64004	4942	ξ^2 Cen	13	7	60.0	-50	0	17.5	4.27	-0.182	-0.18	B15V
64022	4954	41 Com	13	8	03.9	27	31	33.1	4.80	1.482	1.55	K5III
64166	4958	45 Hya	13	10	03.3	-23	12	59.6	4.94	1.048	1.02	K0III
64241	4968	42 Com	13	10	53.2	17	25	55.1	4.32	0.455	0.53	F5V
64238	4963	51 Vir	13	10	54.6	-05	38	14.4	4.38	-0.008	0.01	A1V
64394	4983	β Com	13	12	44.1	27	47	05.6	4.23	0.572	0.67	G0V
64408	4979	*** ***	13	13	05.4	-37	54	02.3	4.85	0.693	0.73	G3V
64425	4975	V831 Cen	13	13	27.8	-60	1	06.5	4.58	-0.073	-0.07	B8V

Posiciones medias de estrellas brillantes, 2018

Estrella		α						δ			V	U-B	B-V	Esp
NH	NY	nom	h	m	s	°	'	"						
64540	4997	***	***	13	14	33.1	40	3	19.2	4.94	1.061	1.03	K0III	
64583	4989	***	***	13	15	24.7	-59	12	05.7	4.90	0.489	0.56	F7IV	
64661	4993	η	Mus	13	16	31.5	-67	59	31.3	4.79	-0.078	-0.09	B8V	
64844	5017	20	CVn	13	18	22.2	40	28	32.3	4.72	0.306	0.31	F3III	
64820	5002	***	***	13	18	29.1	-66	52	50.0	4.86	1.480	1.50	K2Ib/II	
64852	5015	σ	Vir	13	18	32.4	05	22	22.3	4.78	1.638	1.97	M2III	
64924	5019	61	Vir	13	19	22.6	-18	24	49.2	4.74	0.709	0.75	G5V	
64962	5020	γ	Hya	13	19	55.9	-23	16	06.9	2.99	0.920	0.90	G8III	
65109	5028	ι	Cen	13	21	38.6	-36	48	33.6	2.75	0.068	0.02	A2V	
65271	5035	J	Cen	13	23	50.6	-61	5	05.0	4.52	-0.141	-0.13	B3V	
65378	5054	79	UMa	13	24	40.0	54	49	45.0	2.23	0.057	0.07	A2V	
65387	5041	m	Cen	13	25	16.2	-64	37	54.5	4.52	0.822	0.87	G5III-IV	
65477	5062	80	UMa	13	25	57.8	54	53	31.2	3.99	0.169	0.19	A5V	
65474	5056	α	Vir	13	26	10.2	-11	15	26.4	0.98	-0.235	-0.25	B1V	
65639	5068	69	Vir	13	28	26.5	-16	4	08.2	4.76	1.096	1.02	K1IIICN	
65721	5072	70	Vir	13	29	20.1	13	40	49.7	4.97	0.714	0.77	G5V	
65936	5089	d	Cen	13	32	07.4	-39	30	08.0	3.90	1.186	1.10	G8II/III	
66006	5095	l	Vir	13	32	55.7	-06	21	02.7	4.68	1.606	2.06	M3III	
66200	5105	78	Vir	13	35	04.2	03	33	52.3	4.92	0.029	0.03	A1p	
66234	5112	24	CVn	13	35	12.5	48	55	18.6	4.68	0.132	0.10	A5V	
66257	5110	BH	CVn	13	35	37.3	37	5	17.3	4.91	0.404	0.55	F2IV	
66249	5107	ζ	Vir	13	35	38.2	00	41	23.2	3.38	0.114	0.12	A3V	
66458	5127	25	CVn	13	38	16.9	36	12	04.7	4.82	0.239	0.31	A7III	
66657	5132	ϵ	Cen	13	41	04.3	-53	33	34.9	2.29	-0.171	-0.23	B1III	
66738	5154	83	UMa	13	41	26.2	54	35	18.5	4.63	1.630	1.97	M2IIIvar	
66821	5141	Q	Cen	13	42	56.6	-54	39	08.7	4.99	-0.055	-0.03	B8Vn+	
67153	5168	l	Cen	13	46	44.6	-33	8	11.7	4.23	0.390	0.44	F3V	
67234	5172	M	Cen	13	47	50.3	-51	31	29.3	4.64	0.955	0.93	G8/K0III	
67275	5185	τ	Boo	13	48	08.5	17	21	55.4	4.50	0.508	0.51	F7V	
67301	5191	η	UMa	13	48	16.1	49	13	17.1	1.85	-0.099	-0.08	B3V	
67459	5200	v	Boo	13	50	22.2	15	42	24.4	4.05	1.520	1.60	K5IIIvar	
67457	5192	2	Cen	13	50	31.4	-34	32	32.7	4.19	1.520	3.00	M5III	
67480	5201	e	Boo	13	50	35.3	21	10	22.4	4.92	1.432	1.38	K4III	
67464	5190	v	Cen	13	50	37.3	-41	46	44.9	3.41	-0.225	-0.24	B2IV	
67472	5193	μ	Cen	13	50	44.3	-42	33	54.5	3.47	-0.170	-0.21	B2IV-Ve	
67494	5196	89	Vir	13	50	52.8	-18	13	32.2	4.96	1.059	1.09	K0III	
67627	5226	i	Dra	13	51	58.4	64	37	56.2	4.58	1.572	2.35	M3III	
67665	5219	AW	CVn	13	52	36.4	34	21	11.5	4.76	1.611	1.63	K5III	
67669	5210	V983	Cen	13	52	54.0	-33	5	06.3	4.32	-0.146	-0.12	B5	
67786	5221	h	Cen	13	54	16.7	-32	1	05.6	4.75	-0.111	-0.10	B4IV	
67927	5235	η	Boo	13	55	33.9	18	18	20.2	2.68	0.580	0.65	G0IV	
68002	5231	ζ	Cen	13	56	42.2	-47	22	43.1	2.55	-0.176	-0.18	B25IV	
68191	5241	***	***	13	59	00.4	-63	46	35.1	4.71	1.075	1.05	K4III	
68245	5248	φ	Cen	13	59	24.2	-42	11	25.1	3.83	-0.224	-0.23	B2IV	
68282	5249	φ^1	Cen	13	59	49.8	-44	53	34.9	3.87	-0.208	-0.22	B2IV-V	
68520	5264	τ	Vir	14	2	35.4	01	27	20.6	4.23	0.121	0.14	A3V	
68523	5260	φ^2	Cen	14	2	53.2	-45	41	31.9	4.34	0.598	0.65	F6II	
68756	5291	α	Dra	14	4	53.5	64	17	16.2	3.67	-0.049	-0.08	A0III	
68702	5267	β	Cen	14	5	08.7	-60	27	40.8	0.61	-0.231	-0.25	B1III	
68862	5285	x	Cen	14	7	11.0	-41	16	02.6	4.36	-0.198	-0.21	B2V	
68895	5287	π	Hya	14	7	25.8	-26	46	14.4	3.25	1.091	1.10	K2III	
68933	5288	5	Cen	14	7	46.6	-36	27	36.6	2.06	1.011	1.01	K0IIIb	
69112	5321	4	UMi	14	8	48.2	77	27	38.0	4.80	1.368	1.34	K3III	
69191	5297	***	***	14	11	09.4	-53	31	34.1	4.74	0.938	0.92	G8III	
69226	5304	12	Boo	14	11	14.5	25	0	17.0	4.82	0.541	0.57	F9IVw	

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
69269	5301	ET	Vir	14	11	51.3	-16	23	19.0	4.93	1.684	1.94	M1III
69389	5313	CU	Vir	14	13	12.1	02	19	23.2	4.99	-0.118	-0.11	B9p
69427	5315	κ	Vir	14	13	53.1	-10	21	32.3	4.18	1.323	1.35	K3III
69483	5329	κ^2	Boo	14	14	08.7	51	42	14.4	4.53	0.233	0.23	A8IV
69673	5340	16	Boo	14	16	30.3	19	5	11.9	-0.05	1.239	1.22	K2IIIp
69713	5350	21	Boo	14	16	49.2	51	16	56.8	4.75	0.236	0.19	A9V
69701	5338	99	Vir	14	16	59.2	-06	5	16.7	4.07	0.511	0.59	F7V
69732	5351	19	Boo	14	17	05.2	46	0	14.2	4.18	0.087	0.04	A0sh
69879	5361	A	Boo	14	18	46.7	35	25	29.3	4.80	1.057	1.00	K1III
69974	5359	100	Vir	14	20	06.8	-13	27	19.4	4.52	0.128	0.11	A1V
69996	5354	ι	Lup	14	20	35.8	-46	8	32.9	3.55	-0.184	-0.18	B25IV
70027	5370	20	Boo	14	20	37.8	16	13	22.7	4.84	1.228	1.16	K3III
69896	5303	η	Aps	14	20	40.3	-81	5	33.3	4.89	0.243	0.24	A2m
70069	5358	ν	Cen	14	21	37.9	-56	28	14.3	4.30	0.082	0.21	B6Ib
70090	5367	ψ	Cen	14	21	41.3	-37	58	09.9	4.05	-0.030	-0.02	A0IV
70104	5364	***	***	14	21	53.9	-45	16	17.2	4.78	0.310	0.36	F0IV
70264	5371	***	***	14	23	57.4	-58	32	33.1	4.76	0.795	0.83	G8/K1
70306	5381	51	Hya	14	24	10.0	-27	50	16.9	4.78	1.300	1.31	K3III
70300	5378	V761	Cen	14	24	11.0	-39	35	43.2	4.41	-0.185	-0.20	B2V
70327	5385	***	***	14	24	17.3	08	21	47.6	4.86	0.010	0.07	A0V
70497	5404	θ	Boo	14	25	49.6	51	45	56.7	4.04	0.497	0.59	F7V
70574	5395	τ^1	Lup	14	27	20.0	-45	18	14.7	4.56	-0.147	-0.14	B2IV
70576	5396	τ^2	Lup	14	27	22.7	-45	27	42.7	4.33	0.434	0.58	A7:+
70692	5430	5	UMi	14	27	30.5	75	36	49.5	4.25	1.431	1.42	K4III
70755	5409	105	Vir	14	29	09.4	-02	18	36.1	4.81	0.693	0.73	G2III
70753	5407	52	Hya	14	29	15.7	-29	34	25.7	4.97	-0.074	-0.05	B7/B8V
70638	5339	δ	Oct	14	30	06.3	-83	45	00.2	4.31	1.300	1.30	K2III
71053	5429	ρ	Boo	14	32	37.6	30	17	27.5	3.57	1.298	1.22	K3III
71075	5435	γ	Boo	14	32	49.3	38	13	40.9	3.04	0.191	0.17	A7IIIvar
71121	5425	σ	Lup	14	33	52.5	-50	32	16.9	4.44	-0.177	-0.18	B2III
71284	5447	σ	Boo	14	35	29.1	29	39	55.9	4.47	0.364	0.41	F3Vvvar
71352	5440	η	Cen	14	36	41.4	-42	14	16.8	2.33	-0.157	-0.17	B1Vn
71536	5453	ρ	Lup	14	39	08.5	-49	30	19.0	4.05	-0.152	-0.16	B5V
71681	5460	α^2	Cen	14	40	51.3	-60	54	39.7	1.35	0.900	0.88	K1V
71683	5459	α^1	Cen	14	40	52.5	-60	54	37.0	-0.01	0.710	0.69	G2V
71762	5475	29	Boo	14	41	35.8	16	20	23.4	4.49	-0.002	0.02	B9p
71795	5477	ζ	Boo	14	42	02.0	13	38	59.3	3.78	0.044	0.06	A3IVn
71832	5480	31	Boo	14	42	33.3	08	5	00.6	4.86	0.992	0.96	G8IIIvar
71865	5471	***	***	14	43	06.9	-37	52	18.5	4.01	-0.157	-0.18	B25V
71860	5469	α	Lup	14	43	10.1	-47	27	59.3	2.30	-0.154	-0.21	B15III
71908	5463	α	Cir	14	44	01.4	-65	3	15.4	3.18	0.256	0.26	F1Vp
71957	5487	μ	Vir	14	44	02.2	-05	44	15.8	3.87	0.385	0.47	F2III
71995	5490	W	Boo	14	44	14.1	26	26	60.0	4.80	1.672	2.13	M3III
72010	5485	c^1	Cen	14	44	47.7	-35	15	08.0	4.06	1.356	1.35	K3III
72105	5505	36	Boo	14	45	47.7	26	59	49.3	2.35	0.966	0.95	A0
72125	5502	o	Boo	14	46	06.3	16	53	12.5	4.60	0.972	0.94	K0III
72104	5489	c^2	Cen	14	46	07.6	-35	16	08.7	4.92	0.013	0.02	A0V
72220	5511	109	Vir	14	47	11.1	01	48	57.1	3.73	-0.005	0.01	A0V
72370	5470	α	Aps	14	50	14.7	-79	7	15.7	3.83	1.433	1.42	K5III
72607	5563	β	UMi	14	50	40.2	74	4	47.5	2.07	1.465	1.46	K4IIIvar
72571	5526	58	Hya	14	51	22.8	-28	2	10.9	4.42	1.366	1.43	K3III
72622	5531	9	Lib	14	51	54.3	-16	7	03.5	2.75	0.147	0.16	A3IV
72631	5535	11	Lib	14	51	58.7	-02	22	30.9	4.93	0.988	0.97	G8
72659	5544	ξ	Boo	14	52	14.6	19	1	29.0	4.54	0.720	0.82	G8V

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
72683	5528	o	Lup	14	52	51.2	-43	39	02.6	4.32	-0.154	-0.14	B5IV
73199	5589	RR	UMi	14	57	53.0	65	51	32.8	4.63	1.590	2.85	M5III
73165	5570	16	Lib	14	58	09.1	-04	25	14.9	4.47	0.318	0.38	F0V
73273	5571	β	Lup	14	59	45.1	-43	12	26.1	2.68	-0.184	-0.23	B2III
73334	5576	κ	Cen	15	0	22.3	-42	10	37.9	3.13	-0.208	-0.21	B2IV
73473	5586	δ	Lib	15	1	57.8	-08	35	28.7	4.91	0.000	0.07	B95V
73555	5602	β	Boo	15	2	38.6	40	19	06.0	3.49	0.956	0.89	G8III
73568	5600	ω	Boo	15	2	55.2	24	56	09.2	4.80	1.506	1.54	K4III
73620	5601	110	Vir	15	3	50.2	02	1	10.7	4.39	1.026	1.04	K0III
73695	5618	44	Boo	15	4	23.9	47	34	57.6	4.83	0.647	0.71	G2V
73714	5603	γ	Sco	15	5	09.4	-25	21	12.7	3.25	1.674	2.23	M3/M4III
73745	5616	ψ	Boo	15	5	14.3	26	52	34.9	4.52	1.240	1.23	K2III
73807	5605	π	Lup	15	6	23.2	-47	7	20.3	3.91	-0.144	-0.15	B5
73996	5634	45	Boo	15	8	06.8	24	47	52.9	4.93	0.429	0.51	F5V
74117	5626	λ	Lup	15	10	05.8	-45	20	59.0	4.07	-0.162	-0.18	B3V
74376	5646	κ^1	Lup	15	13	13.8	-48	48	24.4	3.88	-0.029	-0.02	B9V
74392	5652	ι^1	Lib	15	13	16.8	-19	51	37.9	4.54	-0.071	-0.06	Asp
74395	5649	ζ	Lup	15	13	37.4	-52	10	05.5	3.41	0.918	0.91	G8III
74449	5651	e	Lup	15	14	04.6	-44	34	08.2	4.83	-0.177	-0.19	B3IV
74604	5660	1	Lup	15	15	45.6	-31	35	13.0	4.91	0.374	0.48	F3III
74666	5681	49	Boo	15	16	14.9	33	14	48.0	3.46	0.961	0.96	G8III
74785	5685	β	Lib	15	18	00.3	-09	27	00.2	2.61	-0.071	-0.08	B8V
74857	5686	β	Cir	15	18	57.6	-30	12	55.6	4.35	1.100	1.03	K1II/III
74824	5670	2	Lup	15	18	58.6	-58	52	07.3	4.07	0.088	0.08	A3V
74837	5666	ε	Cir	15	19	13.8	-63	40	37.7	4.85	1.260	1.20	K25III
74911	5683	μ	Lup	15	19	49.7	-47	56	30.9	4.27	-0.086	-0.07	B8V
74946	5671	γ	TrA	15	20	39.8	-68	44	45.5	2.87	0.014	0.04	A1V
75097	5735	γ	UMi	15	20	42.8	71	46	05.4	3.00	0.058	0.12	A3II-III
75141	5695	δ	Lup	15	22	35.6	-40	42	47.3	3.22	-0.227	-0.23	B15IV
75177	5705	φ^1	Lup	15	22	59.1	-36	19	37.9	3.57	1.534	1.59	K5III
75206	5698	ν^1	Lup	15	23	26.1	-47	59	37.3	4.99	0.515	0.59	F8V
75264	5708	ε	Lup	15	23	56.7	-44	45	17.2	3.37	-0.191	-0.20	B2IV-V
75312	5727	η	CrB	15	23	58.2	30	13	19.0	4.99	0.577	0.65	G2V
75304	5712	φ^2	Lup	15	24	20.6	-36	55	24.6	4.54	-0.155	-0.16	B4V
75323	5704	γ	Cir	15	24	51.9	-59	23	08.7	4.48	0.169	0.18	B5III
75411	5733	ε	Lib	15	25	11.4	37	18	47.2	4.31	0.309	0.35	F0V
75379	5723	μ^1	Boo	15	25	12.2	-10	23	15.4	4.92	0.453	0.52	F5IV
75458	5744	ι	Dra	15	25	20.6	58	54	06.3	3.29	1.166	1.07	K2III
75501	5724	k	Lup	15	26	32.5	-38	47	52.1	4.60	0.000	0.02	A0V
75695	5747	3	CrB	15	28	35.5	29	2	34.2	3.66	0.319	0.37	F0p
76008	5826	15	UMi	15	30	54.1	77	17	13.6	5.00	1.545	1.61	K5III
76041	5774	53	Boo	15	32	26.8	40	50	14.4	4.98	0.086	0.15	A5V
76127	5778	θ	CrB	15	33	40.6	31	17	51.3	4.14	-0.127	-0.12	B6Vnn
76219	5777	37	Lib	15	35	11.5	-10	7	36.3	4.61	1.000	1.02	K1IV
76267	5793	α	CrB	15	35	28.3	26	39	12.1	2.22	0.032	0.05	A0V
76276	5788	δ	Ser	15	35	41.2	10	28	41.1	3.80	0.268	0.30	F0IV
76297	5776	γ	Lup	15	36	22.8	-41	13	39.0	2.80	-0.216	-0.22	B2IV
76333	5787	38	Lib	15	36	33.8	-14	51	00.0	3.91	1.007	1.02	K0III
76371	5781	d	Lup	15	37	10.1	-45	1	07.8	4.55	-0.175	-0.20	B3IVp
76470	5794	v	Lib	15	38	09.1	-28	11	42.2	3.60	1.361	1.36	K3III
76440	5771	ε	TrA	15	38	26.1	-66	22	38.2	4.11	1.161	1.12	K0III
76552	5797	ω	Lup	15	39	18.4	-42	37	35.8	4.34	1.412	1.42	K45III
76600	5812	τ	Lib	15	39	47.8	-29	50	14.1	3.66	-0.177	-0.18	B25V
76669	5833	ζ^1	CrB	15	40	04.5	36	34	35.8	4.64	-0.103	-0.09	B7V+

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
76705	5820	3	Lup	15	40	56.8	-34	28	15.3	4.66	0.964	0.97	G8/K0III
76742	5824	42	Lib	15	41	22.7	-23	52	36.8	4.97	1.302	1.25	K3III
76852	5842	ι	Ser	15	42	22.6	19	36	42.6	4.51	0.062	0.07	A1V
76829	5825	g	Lup	15	42	28.1	-44	43	15.5	4.64	0.413	0.47	F5IV-V
76880	5838	43	Lib	15	43	00.9	-19	44	15.1	4.75	1.574	1.74	K5III
77055	5903	16	UMi	15	43	26.1	77	44	12.5	4.29	0.038	0.05	A3Vn
76952	5849	γ	CrB	15	43	31.2	26	14	16.8	3.81	0.020	0.04	A1Vs
76945	5839	4	Lup	15	43	52.0	-34	46	06.3	4.75	-0.151	-0.15	B5V
77070	5854	α	Ser	15	45	10.8	06	22	06.8	2.63	1.167	1.09	K2III
77233	5867	β	Ser	15	47	02.5	15	21	54.0	3.65	0.073	0.09	A3V
77257	5868	λ	Ser	15	47	20.6	07	17	46.4	4.42	0.604	0.66	G0Vvar
77450	5879	35	Ser	15	49	34.4	18	5	07.6	4.09	1.616	1.73	M1III
77512	5889	10	CrB	15	50	22.2	26	0	45.8	4.59	0.794	0.82	G5III-IV
77516	5881	μ	Ser	15	50	35.2	-03	29	08.3	3.54	-0.036	-0.03	A0V
77622	5892	ϵ	Ser	15	51	44.4	04	25	23.6	3.71	0.147	0.13	A2m
77655	5901	11	CrB	15	51	55.8	35	36	03.1	4.79	0.996	0.97	K0III-IV
77661	5899	1	Sco	15	52	04.7	20	55	24.0	4.74	1.534	1.60	K5III
77635	5885	38	Ser	15	52	05.7	-25	48	22.2	4.63	-0.072	-0.04	B15Vn
77634	5883	x	Lup	15	52	08.3	-33	40	55.3	3.97	-0.045	-0.05	B95III-IV
77760	5914	x	Her	15	53	19.0	42	24	02.2	4.60	0.563	0.63	F9V
77840	5904	2	Sco	15	54	43.6	-25	22	51.6	4.59	-0.073	-0.06	B25Vn
77853	5908	46	Lib	15	54	52.9	-16	46	56.1	4.13	1.003	1.02	K0III
77952	5897	β	TrA	15	56	47.3	-63	29	09.1	2.83	0.315	0.36	F2III
78072	5933	41	Ser	15	57	18.5	15	36	08.1	3.85	0.478	0.54	F6V
78104	5928	5	Sco	15	58	01.8	-29	16	00.0	3.87	-0.199	-0.18	B2IV/V
78180	5960	CL	Dra	15	58	13.9	54	41	53.0	4.96	0.269	0.29	F0IV
78159	5947	ϵ	CrB	15	58	21.2	26	49	31.1	4.14	1.231	1.17	K3III
78207	5941	48	Lib	15	59	13.7	-14	19	53.2	4.95	-0.080	-0.06	B8Ia/Iab
78265	5944	π	Sco	15	59	58.5	-26	9	57.4	2.89	-0.180	-0.18	B1V
78323	5943	***	***	16	0	46.2	-41	47	45.4	4.99	0.988	0.97	G8III
78384	5948	η	Lup	16	1	21.2	-38	26	53.0	3.42	-0.206	-0.23	B25IV
78401	5953	7	Sco	16	1	25.8	-22	40	23.0	2.29	-0.117	-0.09	B02IV
78493	5971	ι	CrB	16	2	11.1	29	48	00.9	4.98	-0.050	-0.03	A0p
78527	5986	13	Dra	16	2	14.3	58	30	58.7	4.01	0.528	0.55	F8IV-V
78554	5972	π	Ser	16	3	05.5	22	45	14.9	4.82	0.066	0.09	A3V
78592	5982	υ	Her	16	3	22.5	45	59	10.0	4.72	-0.094	-0.06	B9III
78650	5969	***	***	16	4	27.9	-25	54	55.4	4.96	1.234	1.25	K3III
78639	5962	η	Nor	16	4	34.9	-49	16	46.6	4.65	0.902	0.91	G8III
78655	5967	***	***	16	4	38.3	-38	39	09.4	4.90	-0.146	-0.15	B6III/IV
78662	5961	ι^1	Nor	16	5	03.0	-57	49	31.0	4.63	0.252	0.30	A7IV
78820	5984	8	Sco	16	6	30.9	-19	51	17.0	2.56	-0.065	-0.04	B05V
78821	5985	8	Sco	16	6	31.2	-19	51	03.7	4.90	-0.024	0.00	B2V
78914	5980	δ	Nor	16	7	48.3	-45	13	18.0	4.73	0.230	0.20	Am
78918	5987	θ	Lup	16	7	48.7	-36	51	04.0	4.22	-0.184	-0.19	B25Vn
78933	5993	9	Sco	16	7	53.5	-20	43	04.5	3.93	-0.046	0.01	B1V
78990	5997	ω^2	Sco	16	8	29.6	-20	55	02.5	4.31	0.831	0.85	G6/G8III
79043	6008	7	Her	16	8	54.7	16	59	55.7	5.00	0.931	0.93	G8III
79101	6023	φ	Her	16	9	21.2	44	53	13.8	4.23	-0.045	-0.02	B9MNp
79119	6018	16	CrB	16	9	38.9	36	26	41.7	4.73	1.015	1.00	K0III-IV
79375	6031	ψ	Sco	16	13	00.8	-10	6	39.4	4.93	0.087	0.09	A3IV
79374	6027	ν	Sco	16	13	04.4	-19	30	26.5	4.00	0.076	0.14	B2IV
79404	6028	13	Sco	16	13	26.8	-27	58	22.4	4.58	-0.172	-0.15	B2V
79509	6024	κ	Nor	16	14	56.8	-54	40	35.2	4.95	1.017	0.99	G4III
79593	6056	δ	Oph	16	15	19.0	-03	44	26.4	2.73	1.584	1.82	M1III
79822	6116	η	UMi	16	16	59.1	75	42	43.3	4.95	0.393	0.46	F5V

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
79664	6030	δ	TrA	16	17	08.1	-63	43	50.8	3.86	1.105	1.03	G5II
79790	6058	γ^1	Nor	16	18	24.5	-50	6	45.3	4.97	0.788	0.88	F9Ia
79882	6075	ε	Oph	16	19	18.1	-04	44	10.7	3.23	0.966	0.96	G8III
79881	6070	d	Sco	16	19	26.9	-28	39	30.7	4.80	0.008	-0.01	A0V:
79992	6092	22	Her	16	20	17.9	46	16	12.2	3.91	-0.151	-0.19	B5IV
80000	6072	γ^2	Nor	16	21	13.9	-50	11	56.7	4.01	1.080	1.03	G8III
80079	6081	o	Sco	16	21	45.1	-24	12	44.7	4.55	0.758	0.80	A4II/III
80112	6084	σ	Sco	16	22	19.0	-25	38	08.5	2.90	0.299	0.31	B1III
80170	6095	20	Her	16	22	44.2	19	6	38.9	3.74	0.299	0.34	A9III
80181	6103	19	CrB	16	22	49.1	30	51	00.2	4.86	0.970	0.93	K0III
80179	6093	50	Ser	16	23	00.6	00	59	12.5	4.82	0.338	0.39	F0V
80047	6020	δ^1	Aps	16	23	10.3	-78	44	19.4	4.68	1.680	2.67	M5III
80331	6132	η	Dra	16	24	14.7	61	28	21.6	2.73	0.910	0.84	G8III
80343	6104	ψ	Oph	16	25	11.3	-20	4	45.1	4.48	0.996	0.99	K0III
80463	6117	24	Her	16	26	16.2	13	59	30.6	4.57	0.002	0.02	B9p
80473	6112	5	Oph	16	26	41.8	-23	29	17.9	4.57	0.227	0.25	B2V
80650	6161	15	Dra	16	27	57.3	68	43	41.0	4.94	-0.051	0.02	A0III
80569	6118	x	Oph	16	28	05.9	-18	29	48.4	4.22	0.217	0.24	B2Vne
80582	6115	ε	Nor	16	28	32.8	-47	35	42.7	4.46	-0.070	-0.04	B4V
80628	6129	3	Oph	16	28	48.3	-08	24	42.9	4.62	0.185	0.20	A3m
80704	6146	30	Her	16	29	15.1	41	50	30.5	4.83	1.289	3.61	M6III:var
80686	6098	ζ	TrA	16	30	28.8	-70	7	24.4	4.90	0.555	0.64	F9V
80763	6134	α	Sco	16	30	32.7	-26	28	17.5	1.06	1.865	2.90	M1Ib
80816	6148	27	Her	16	31	01.0	21	27	01.4	2.78	0.947	0.94	G8III
80815	6141	i	Sco	16	31	20.1	-25	9	16.0	4.79	-0.116	-0.12	B3V
80883	6149	10	Oph	16	31	50.9	01	56	41.0	3.82	0.022	0.03	A2V
80894	6147	φ	Oph	16	32	12.0	-16	39	05.9	4.29	0.924	0.89	G8/K0III
80911	6143	***	***	16	32	35.7	-34	44	34.9	4.24	-0.168	-0.17	B2III-IV
80975	6153	ω	Oph	16	33	14.1	-21	30	16.2	4.45	0.130	0.12	Ap
81008	6159	h	Her	16	33	28.3	11	26	58.2	4.84	1.495	1.58	K4III
81126	6168	35	Her	16	34	42.0	42	23	59.2	4.20	-0.013	0.02	B9Vvar
81122	6155	μ	Nor	16	35	24.2	-44	4	57.9	4.86	0.045	0.18	B0Ia
81065	6102	γ	Aps	16	36	20.7	-78	56	05.7	3.86	0.923	0.92	K0IV
81266	6165	τ	Sco	16	37	02.2	-28	15	10.2	2.82	-0.206	-0.24	B0V
81304	6166	***	***	16	37	35.7	-35	17	30.3	4.18	1.535	1.72	K5III
81377	6175	ζ	Oph	16	38	10.8	-10	36	11.4	2.54	0.038	0.10	O95V
81497	6200	42	Her	16	39	15.0	48	53	34.2	4.86	1.562	2.03	M25III
81660	6223	g	Dra	16	41	03.1	64	33	15.0	4.84	1.212	1.19	K1p
81693	6212	40	Her	16	41	59.0	31	34	12.0	2.81	0.650	0.70	F9IV
81724	6196	***	***	16	42	38.7	-17	46	35.4	4.91	1.095	1.13	G8II/III
81833	6220	44	Her	16	43	31.9	38	53	16.6	3.48	0.916	0.89	G8III-IV
82080	6322	ε	UMi	16	44	08.3	82	0	15.2	4.21	0.897	0.91	G5IIIvar
82020	6237	β	Aps	16	45	39.0	56	44	57.6	4.84	0.375	0.44	F2V
81852	6163	***	***	16	45	45.7	-77	33	09.5	4.23	1.060	1.04	K0III
82321	6254	52	Her	16	49	46.8	45	57	06.8	4.82	0.087	0.10	A2p
82273	6217	α	TrA	16	50	38.3	-69	3	32.4	1.91	1.447	1.45	K2IIb-IIIa
82369	6243	20	Oph	16	50	51.5	-10	48	51.3	4.64	0.478	0.55	F7IV
82396	6241	ε	Sco	16	51	21.9	-34	19	30.7	2.29	1.144	1.10	K2IIIb
82363	6229	η	Ara	16	51	23.5	-59	4	20.0	3.77	1.562	1.67	K5III
82514	6247	μ^1	Sco	16	53	07.6	-38	4	38.6	3.00	-0.200	-0.20	B15IV
82545	6252	μ^2	Sco	16	53	35.5	-38	2	50.5	3.56	-0.210	-0.21	B2IV
82673	6281	ι	Oph	16	54	53.0	10	8	10.1	4.39	-0.088	-0.13	B8V
82671	6262	ζ^1	Sco	16	55	18.2	-42	23	27.6	4.70	0.444	0.71	B1Iae
82729	6271	ζ^2	Sco	16	55	53.3	-42	23	28.4	3.62	1.393	1.37	K4III
82860	6315	h	Dra	16	56	08.0	65	6	24.2	4.88	0.481	0.56	F6Vvar

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
83000	6299	27	Oph	16	58	32.7	09	20	51.0	3.19	1.160	1.10	K2IIIvar
83081	6285	ζ	Ara	17	0	09.4	-56	1	02.1	3.12	1.552	1.60	K5III
83207	6324	ϵ	Her	17	0	59.9	30	54	00.6	3.92	-0.018	-0.04	A0V
83153	6295	ϵ^1	Ara	17	1	03.8	-53	11	12.6	4.06	1.452	1.42	K4III
83262	6318	30	Oph	17	2	02.2	-04	14	56.5	4.82	1.483	1.49	K4III
83430	6337	***	***	17	3	58.8	14	3	59.4	4.97	1.600	2.08	M3III
83608	6369	21	Dra	17	5	43.2	54	26	46.3	4.91	0.471	0.54	F5
83574	6334	k	Sco	17	6	02.5	-34	8	50.0	4.83	0.257	0.38	B2Iab
83613	6355	60	Her	17	6	14.2	12	42	59.9	4.89	0.125	0.11	A4IV
83895	6396	22	Dra	17	8	50.6	65	41	31.1	3.17	-0.120	-0.14	B6III
84012	6378	η	Oph	17	11	26.4	-15	44	46.6	2.43	0.059	0.06	A25Va
84143	6380	η	Sco	17	13	28.9	-43	15	42.2	3.32	0.441	0.47	F3p
84345	6406	64	Her	17	15	29.5	14	22	13.6	2.78	1.164	1.13	M5IIvar
84380	6418	67	Her	17	15	41.5	36	47	21.3	3.16	1.437	1.31	K3IIvar
84379	6410	65	Her	17	15	47.5	24	49	06.5	3.12	0.080	0.06	A3IV
84405	6401	36	Oph	17	16	29.4	-26	37	42.5	4.33	0.855	0.92	K2:III:
84514	6415	41	Oph	17	17	33.7	00	27	53.3	4.72	1.119	1.09	K2III
84573	6431	u	Her	17	18	00.6	33	4	52.2	4.80	-0.166	-0.17	B15Vp
84606	6436	e	Her	17	18	18.6	37	16	23.0	4.64	0.043	0.07	A2V
84880	6446	53	Ser	17	21	52.2	-12	51	50.9	4.32	0.037	0.07	A0/A1V
84893	6445	40	Oph	17	22	07.0	-21	7	52.3	4.39	0.394	0.47	F2/F3V
84970	6453	θ	Oph	17	23	08.8	-25	0	59.1	3.27	-0.186	-0.21	B2IV
84969	6417	ζ	Aps	17	23	55.9	-67	47	14.2	4.76	1.194	1.18	K1III
85112	6484	ρ	Her	17	24	19.3	37	7	47.6	4.15	-0.011	0.01	B95III
85822	6789	23	UMi	17	26	20.3	86	34	22.7	4.35	0.021	0.04	A1Vn
85258	6461	β	Ara	17	26	50.5	-55	32	42.7	2.84	1.479	1.50	K3Ib-II
85267	6462	γ	Ara	17	26	57.3	-56	23	34.6	3.31	-0.150	-0.12	B1Ib
85355	6498	σ	Oph	17	27	26.0	04	7	32.2	4.34	1.480	1.44	K3IIvar
85340	6486	b	Oph	17	27	30.1	-24	11	26.6	4.16	0.283	0.30	A3IV:m
85365	6493	***	***	17	27	36.8	-05	6	05.5	4.53	0.385	0.46	F3V
85423	6492	d	Oph	17	28	32.2	-29	52	55.6	4.28	0.402	0.45	F3III
85670	6536	β	Dra	17	30	51.1	52	17	17.9	2.79	0.954	0.93	G2II
85693	6526	76	Her	17	31	29.2	26	5	52.0	4.41	1.434	1.39	K3IIvar
85696	6508	34	Sco	17	32	01.4	-37	18	31.6	2.70	-0.179	-0.23	B2IV
85819	6554	c	Oph	17	32	32.5	55	10	19.7	4.89	0.251	0.28	Am
85755	6519	24	Dra	17	32	32.7	-23	58	31.2	4.78	0.016	0.08	A0V
85829	6555	ν^2	Dra	17	32	38.0	55	9	39.4	4.86	0.279	0.30	Am
85727	6500	δ	Ara	17	32	46.3	-60	41	49.0	3.60	-0.104	-0.10	B8V
85792	6510	α	Ara	17	33	16.4	-49	53	19.7	2.84	-0.136	-0.15	B2Vne
85927	6527	λ	Sco	17	34	52.0	-37	6	55.9	1.62	-0.231	-0.24	B15IV+
86032	6556	55	Oph	17	35	47.6	12	32	52.2	2.08	0.155	0.17	A5III
86201	6596	ω	Dra	17	36	50.7	68	44	57.4	4.77	0.430	0.49	F5V
86092	6537	σ	Ara	17	37	02.3	-46	30	59.4	4.56	-0.020	0.01	A0V
86170	6546	***	***	17	37	49.3	-38	38	47.4	4.26	1.075	1.09	G8/K0III/IV
86263	6561	θ	Sco	17	38	38.8	-15	24	31.3	3.54	0.262	0.29	F0IIIp
86228	6553	ξ	Ser	17	38	39.0	-43	0	27.7	1.86	0.406	0.48	F1II
86284	6567	μ	Oph	17	38	51.1	-08	7	42.9	4.58	0.132	0.22	B8II-IIIINp
86414	6588	ι	Her	17	39	59.3	45	59	50.1	3.82	-0.179	-0.21	B3V
86614	6636	ψ^1	Dra	17	41	36.9	72	8	21.3	4.57	0.434	0.50	F5IV-V
86486	6569	λ	Ara	17	41	49.7	-49	25	30.0	4.76	0.415	0.49	F3IV
86565	6581	o	Ser	17	42	27.3	-12	53	01.3	4.24	0.086	0.10	A2Va
86670	6580	κ	Sco	17	43	46.1	-39	2	15.7	2.39	-0.171	-0.22	B15III
86742	6603	60	Oph	17	44	23.2	04	33	39.3	2.76	1.168	1.10	K2III
86736	6595	58	Oph	17	44	32.3	-21	41	26.2	4.86	0.469	0.54	F6/F7V
86974	6623	μ	Her	17	47	11.0	27	42	39.1	3.42	0.750	0.71	G5IV

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
86929	6582	η	Pav	17	47	33.1	-64	43	48.6	3.61	1.161	1.09	K1III
87072	6616	X	Sgr	17	48	43.5	-27	50	10.2	4.53	0.600	0.76	F7II
87108	6629	62	Oph	17	48	49.2	02	42	06.0	3.75	0.043	0.05	A0V
87073	6615	ι	Sco	17	48	52.8	-40	7	56.3	2.99	0.509	0.64	F3Ia
87220	6628	***	***	17	50	22.6	-31	42	28.2	4.79	-0.028	0.01	B8Ib/II
87261	6630	***	***	17	51	07.1	-37	2	50.7	3.19	1.192	1.15	K0/K1III
87294	6631	ι	Sco	17	51	28.8	-40	5	40.4	4.78	0.259	0.41	A6Ib
87585	6688	32	Dra	17	53	51.0	56	52	12.8	3.73	1.177	1.11	K2III
87808	6695	θ	Her	17	56	53.3	37	14	56.5	3.86	1.350	1.17	K1IIvar
87833	6705	33	Dra	17	57	02.2	51	29	14.5	2.24	1.521	1.54	K5III
87846	6675	***	***	17	58	08.4	-44	20	36.5	4.85	1.176	1.15	K2III
87933	6703	ξ	Her	17	58	29.0	29	14	49.0	3.70	0.935	0.89	K0III
87936	6682	***	***	17	59	06.7	-41	43	01.4	4.88	1.617	1.88	M0III
87998	6707	94	Her	17	59	12.6	30	11	19.6	4.41	0.380	0.51	F2II
88048	6698	64	Oph	18	0	02.7	-09	46	28.0	3.32	0.987	0.95	K0III
88060	6693	***	***	18	0	16.6	-30	15	11.6	5.00	1.654	2.00	K5/M0III
88128	6713	93	Her	18	0	52.8	16	45	03.9	4.67	1.254	1.12	K0II-III
88116	6700	4	Sgr	18	0	55.3	-23	48	58.4	4.74	-0.030	-0.01	B9V
88149	6712	66	Oph	18	1	10.8	04	22	07.9	4.79	-0.100	-0.08	B2Ve
88175	6710	ζ	Ser	18	1	27.7	-03	41	24.2	4.62	0.390	0.45	F3V
88192	6714	67	Oph	18	1	34.3	02	55	55.3	3.93	0.029	0.10	B5Ib
88267	6729	95	Her	18	2	17.5	21	35	48.6	4.26	0.406	0.47	G5
88290	6723	68	Oph	18	2	41.5	01	18	21.6	4.42	0.046	0.06	A2Vn
88404	6733	τ	Oph	18	4	05.4	-08	10	44.2	4.77	0.410	0.45	F5V+
88567	6742	γ^1	Sgr	18	6	12.1	-29	34	39.3	4.66	0.774	0.81	G0Ib/II
88601	6752	V2391	Oph	18	6	23.2	02	29	51.9	4.03	0.860	0.96	K0V
88657	6765	98	Her	18	6	48.7	22	13	18.3	4.96	1.656	2.18	M3IIIa+
88635	6746	10	Sgr	18	6	59.8	-30	25	19.8	2.98	0.981	0.99	K0III
88788	6791	θ	Ara	18	8	02.2	43	27	54.3	5.00	0.913	0.91	G8III
88714	6743	***	***	18	8	04.3	-50	5	17.6	3.65	-0.101	-0.06	B2Ib
88726	6749	***	***	18	8	10.2	-43	25	20.6	4.92	0.255	0.29	A5V
88765	6770	71	Oph	18	8	11.5	08	44	15.0	4.64	0.951	0.92	G8III-IV
88771	6771	72	Oph	18	8	13.6	09	34	03.9	3.71	0.159	0.18	A4IVs
88794	6779	\circ	Her	18	8	15.9	28	45	57.9	3.84	-0.018	-0.02	B9V
88839	6766	***	***	18	9	15.3	-28	27	12.1	4.55	0.938	1.00	K0IIICNpvar
88886	6787	102	Her	18	9	33.0	20	49	07.1	4.37	-0.164	-0.19	B2IV
88866	6745	π	Pav	18	10	21.6	-63	39	55.4	4.33	0.228	0.23	Am
89172	6815	ϵ	Tel	18	12	35.9	31	24	39.5	4.96	1.643	2.16	M3III
89112	6783	104	Her	18	12	36.1	-45	56	57.3	4.52	1.009	0.95	G5III
89153	6801	***	***	18	12	51.1	-23	41	45.1	4.96	1.055	1.02	K0III
89348	6850	36	Dra	18	14	00.2	64	24	13.5	4.99	0.440	0.51	F5V
89341	6812	μ	Sgr	18	14	52.2	-21	3	08.7	3.84	0.195	0.21	B2III:
89642	6832	η	Sgr	18	18	52.7	-36	45	15.7	3.10	1.582	2.24	M2III
89678	6842	***	***	18	19	12.6	-27	2	03.5	4.66	1.629	1.62	K3III
89908	6920	1	Lyr	18	20	29.4	71	20	50.1	4.22	-0.093	-0.11	A0p
89826	6872	43	Dra	18	20	30.6	36	4	25.8	4.33	1.162	1.10	K2IIIvar
89937	6927	x	Dra	18	20	43.3	72	44	25.4	3.55	0.489	0.62	F7Vvar
89861	6868	106	Her	18	21	04.9	21	58	13.0	4.92	1.594	1.82	M1III
89918	6866	74	Oph	18	21	47.5	03	23	12.4	4.85	0.911	0.90	G8III
89931	6859	19	Sgr	18	22	10.7	-29	49	06.8	2.72	1.380	1.35	K3III
89962	6869	58	Ser	18	22	16.0	-02	53	33.7	3.23	0.941	0.96	K0III-IV
90156	6923	b	Dra	18	24	10.8	58	48	42.6	4.98	0.082	0.05	A3V
90139	6895	109	Her	18	24	29.2	21	46	45.5	3.85	1.168	1.13	K2III
90135	6884	ζ	Sct	18	24	40.4	-08	55	23.8	4.66	0.932	0.94	K0III
90098	6855	ξ	Pav	18	24	55.7	-61	28	59.1	4.35	1.462	1.50	M1III

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
90185	6879	20	Sgr	18	25	23.9	-34	22	26.9	1.79	-0.031	0.01	B95III
90344	6945	42	Dra	18	26	02.3	65	34	30.0	4.82	1.179	1.16	K2III
90289	6896	21	Sgr	18	26	27.1	-20	31	48.8	4.81	1.310	1.27	A1/A2V
90422	6897	α	Tel	18	28	20.6	-45	57	22.8	3.49	-0.179	-0.18	B3IV
90496	6913	22	Sgr	18	29	06.7	-25	24	35.6	2.82	1.025	1.04	K1IIIb
90595	6930	ζ	Tel	18	30	15.1	-14	33	09.0	4.67	0.076	0.10	A1IV/V
90568	6905	γ	Sct	18	30	15.3	-49	3	30.8	4.10	0.995	1.02	G8/K0III
90905	6978	d	Dra	18	32	53.7	57	3	36.8	4.77	0.611	0.67	F7Ib
90797	6916	v	Pav	18	33	05.9	-62	15	50.8	4.63	-0.116	-0.11	B8III
90830	6934	δ^1	Tel	18	33	07.6	-45	54	01.6	4.92	-0.101	-0.08	B6IV
90982	6951	θ	CrA	18	34	49.4	-42	17	50.4	4.62	0.994	0.95	G5III
91117	6973	α	Sct	18	36	12.8	-08	13	47.0	3.85	1.317	1.28	K2III
91262	7001	3	Lyr	18	37	33.9	38	48	06.7	0.03	-0.001	-0.01	A0Vvar
91726	7020	δ	Sct	18	43	17.2	-09	2	00.3	4.70	0.358	0.40	F2IIIp
91845	7032	ϵ	Sct	18	44	31.7	-08	15	19.8	4.88	1.112	1.07	G8II
91919	7051	4	Lyr	18	44	57.1	39	41	25.3	4.67	0.170	0.19	F1V
91926	7053	ϵ^2	Lyr	18	44	59.6	39	37	58.6	4.59	0.180	0.20	A8Vn
91792	6982	ζ	Pav	18	45	11.2	-71	24	33.3	4.01	1.134	1.14	K2III
91971	7056	ζ^1	Lyr	18	45	24.6	37	37	31.4	4.34	0.192	0.18	Am
91918	7029	***	***	18	45	33.6	-35	37	19.4	4.86	-0.168	-0.19	B2V
92043	7061	110	Her	18	46	27.5	20	33	54.4	4.19	0.483	0.55	F6V
92041	7039	27	Sgr	18	46	48.7	-26	58	12.5	3.17	-0.107	-0.10	B85III
92088	7064	***	***	18	46	49.2	26	40	58.7	4.83	1.199	1.16	K3III
92024	7012	***	***	18	47	15.5	-64	51	04.9	4.78	0.199	0.21	A7V
92161	7069	111	Her	18	47	50.3	18	12	11.9	4.34	0.148	0.16	A5III
92175	7063	β	Sct	18	48	09.3	-04	43	36.1	4.22	1.087	1.09	G5II
92420	7106	β	Lyr	18	50	45.8	33	23	06.4	3.52	0.003	0.02	A8:V
92512	7125	o	Dra	18	51	28.4	59	24	40.9	4.63	1.185	1.20	K0II-III
92689	7137	***	***	18	53	41.0	50	43	54.8	4.92	0.903	0.88	G8III
92609	7074	λ	Pav	18	53	55.5	-62	9	50.5	4.22	-0.150	-0.14	B2II-III
92782	7180	u	Dra	18	54	09.9	71	19	17.7	4.82	1.151	1.10	K0III
92791	7139	12	Lyr	18	55	09.1	36	55	22.9	4.22	1.575	2.60	M4IIvar
92761	7116	v^1	Sgr	18	55	17.1	-22	43	13.8	4.86	1.412	1.35	K1II
92818	7133	113	Her	18	55	31.8	22	40	10.6	4.57	0.782	0.86	G4III+
92862	7157	R	Lyr	18	55	53.9	43	58	16.5	4.08	1.397	3.14	M5IIIvar
92845	7120	v^2	Sgr	18	56	14.2	-22	38	48.2	5.00	1.348	1.25	K1Ib/II
92855	7121	34	Sgr	18	56	24.7	-26	16	19.8	2.05	-0.134	-0.13	B25V
92946	7141	θ^1	Ser	18	57	08.3	04	13	44.2	4.62	0.161	0.20	A5V
92951	7142	θ^2	Ser	18	57	09.8	04	13	39.1	4.98	0.204	0.22	A5Vn
93026	7149	η	Sct	18	58	03.1	-05	49	15.4	4.83	1.057	1.03	K1III
93085	7150	κ	Pav	18	58	50.0	-21	4	50.9	3.52	1.151	1.09	G8/K0II/III
93015	7107	37	Sgr	18	58	50.9	-67	12	27.6	4.40	0.530	0.59	F5Ib-II:
93194	7178	14	Lyr	18	59	38.2	32	42	57.3	3.25	-0.049	-0.03	B9III
93148	7134	λ	Tel	18	59	56.3	-52	54	44.5	4.85	-0.051	-0.03	A0V
93174	7152	ϵ	CrA	18	59	58.1	-37	4	53.6	4.83	0.396	0.44	F3IV/V
93244	7176	13	Aql	19	0	27.7	15	5	40.5	4.02	1.082	1.00	K2III
93279	7192	λ	Lyr	19	0	42.7	32	10	20.5	4.94	1.465	1.32	K3III
93408	7215	16	Lyr	19	1	57.8	46	57	42.3	5.00	0.186	0.23	A7V
93429	7193	i	Aql	19	2	40.1	-05	42	42.2	4.02	1.079	1.08	K1IIIvar
93506	7194	38	Sgr	19	3	47.2	-29	51	07.4	2.60	0.062	0.06	A3IV
93542	7188	ζ	CrA	19	4	25.3	-42	4	01.4	4.74	-0.027	-0.02	A0Vn
93683	7217	39	Sgr	19	5	47.4	-21	42	46.4	3.76	1.012	0.98	K0III
93747	7235	17	Aql	19	6	15.6	13	53	31.8	2.99	0.014	-0.01	A0Vn
93805	7236	16	Aql	19	7	13.8	-04	51	12.5	3.43	-0.096	-0.09	B9Vn
93825	7226	γ	CrA	19	7	40.0	-37	2	06.7	4.23	0.523	0.59	F7IV-V

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Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
93864	7234	40	Sgr	19	8	05.6	-27	38	30.6	3.32	1.169	1.15	K1/K2III
94005	7242	δ	CrA	19	9	38.1	-40	27	58.7	4.57	1.070	1.06	K1III
94114	7254	α	CrA	19	10	43.7	-37	52	26.3	4.11	0.042	0.03	A0/A1V
94141	7264	π	Sgr	19	10	51.8	-20	59	33.7	2.88	0.377	0.44	F2II/III
94160	7259	β	CrA	19	11	17.9	-39	18	35.1	4.10	1.163	1.11	K0II/IICN
94376	7310	57	Dra	19	12	33.3	67	41	38.7	3.07	0.990	0.94	G9III
94490	7309	54	Dra	19	14	14.9	57	44	14.9	5.00	1.156	1.12	K2III
94481	7298	η	Lyr	19	14	23.3	39	10	43.2	4.43	-0.150	-0.19	B25IV
94648	7352	τ	Dra	19	15	11.1	73	23	21.4	4.45	1.257	1.15	K3III
94643	7292	42	Sgr	19	16	40.4	-25	13	23.8	4.86	0.569	0.67	K0/K1III+
94713	7314	1	Vul	19	17	00.6	38	10	03.2	4.35	1.258	1.13	K0II
94703	7306	21	Lyr	19	17	00.8	21	25	27.1	4.76	-0.058	-0.05	B4IV
94779	7328	κ	Cyg	19	17	31.8	53	24	11.5	3.80	0.950	0.85	K0III
94820	7304	43	Sgr	19	18	42.9	-18	55	06.7	4.88	1.013	0.99	K0III
95081	7371	58	Dra	19	20	45.6	65	45	01.0	4.60	0.033	0.01	A2III _s
95066	7333	26	Aql	19	21	32.1	-05	22	47.5	4.98	0.937	0.93	G8III-IV
95168	7340	ρ^1	Sgr	19	22	44.6	-17	48	39.4	3.92	0.228	0.25	F0III/IV
95176	7342	46	Sgr	19	22	47.1	-15	55	08.0	4.52	0.079	0.34	F2p
95241	7337	β^1	Sgr	19	23	57.8	-44	25	20.9	3.96	-0.085	-0.07	B9V
95294	7343	β^2	Sgr	19	24	33.1	-44	45	47.5	4.27	0.350	0.42	F2III
95372	7372	2	Cyg	19	24	51.4	29	39	30.6	4.99	-0.120	-0.11	B3IV
95347	7348	α	Sgr	19	25	09.9	-40	34	46.0	3.96	-0.105	-0.10	B8V
95501	7377	30	Aql	19	26	25.8	03	9	10.5	3.36	0.319	0.38	F0IV
95585	7387	ν	Aql	19	27	27.8	00	22	36.2	4.64	0.576	0.75	F2Ib
95771	7405	α	Vul	19	29	28.5	24	42	12.2	4.44	1.502	1.68	M0
95853	7420	ι^2	Cyg	19	30	10.3	51	46	11.4	3.76	0.148	0.18	A5Vn
95947	7417	6	Cyg	19	31	28.0	27	59	58.2	3.05	1.088	1.05	K3II+
96100	7462	61	Dra	19	32	19.3	69	41	33.0	4.67	0.786	0.85	K0V
96052	7426	8	Cyg	19	32	27.6	34	29	35.6	4.74	-0.150	-0.12	B3IV
96229	7429	μ	Aql	19	34	59.6	07	25	09.9	4.45	1.176	1.14	K3III
96275	7437	9	Vul	19	35	23.6	19	48	53.6	5.00	-0.093	-0.08	B8III _{ln}
96341	7424	ι	Tel	19	36	35.0	-48	3	27.2	4.88	1.096	1.06	G9III
96441	7469	13	Cyg	19	36	56.3	50	15	52.7	4.49	0.395	0.44	F4V
96468	7447	41	Aql	19	37	40.7	-01	14	39.6	4.36	-0.079	-0.06	B5III
96465	7440	52	Sgr	19	37	49.8	-24	50	28.8	4.59	-0.075	-0.06	B8/B9V
96483	7446	κ	Aql	19	37	53.1	-06	59	06.1	4.93	-0.046	0.03	B05III
96683	7478	12	Cyg	19	40	06.5	30	11	48.9	4.68	0.971	0.89	G8III-IV
96757	7479	α	Sge	19	40	55.4	18	3	27.1	4.39	0.777	0.77	G0II
96837	7488	β	Sge	19	41	52.8	17	31	11.9	4.39	1.041	0.96	G8II
97118	7517	15	Cyg	19	44	56.6	37	23	59.7	4.89	0.948	0.94	G8III
97165	7528	δ	Cyg	19	45	33.2	45	10	36.2	2.86	-0.002	-0.02	B95III
97295	7534	50	Aql	19	47	07.8	33	46	17.5	5.00	0.476	0.55	F5
97278	7525	17	Cyg	19	47	08.3	10	39	34.1	2.72	1.507	1.44	K3II
97290	7515	f	Sgr	19	47	26.4	-19	42	55.0	4.87	1.061	1.03	K0III
97433	7582	63	Dra	19	48	06.1	70	18	53.8	3.84	0.888	0.88	G8III
97365	7536	7	Sge	19	48	12.7	18	34	51.6	3.68	1.313	1.27	M2II
97649	7557	53	Aql	19	51	41.1	08	55	06.1	0.76	0.221	0.27	A7IV-V
97679	7565	V395	Vul	19	51	51.9	22	39	29.1	4.90	-0.153	-0.12	B25V
97804	7570	η	Aql	19	53	24.9	01	3	15.6	3.87	0.630	0.73	F6Ibv
97886	7592	13	Vul	19	54	14.9	24	7	44.0	4.57	-0.047	-0.02	B95III
97938	7595	ξ	Aql	19	55	08.7	08	30	37.6	4.71	1.023	1.03	K0III
98055	7619	24	Cyg	19	56	06.4	52	29	19.2	4.91	0.124	0.12	A4Vn
98036	7602	60	Aql	19	56	13.3	06	27	14.7	3.71	0.855	0.89	G8IVvar
98073	7633	***	***	19	56	16.5	58	53	45.0	4.98	1.584	1.56	K5II-III

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
98068	7613	22	Cyg	19	56	31.4	38	32	12.1	4.95	-0.086	-0.07	B5IV
98032	7581	ι	Sgr	19	56	32.0	-41	49	05.3	4.12	1.063	1.09	K0III
98066	7597	ω	Sgr	19	56	58.2	-26	14	56.5	4.70	0.748	0.79	G3/G5III
98110	7615	η	Cyg	19	57	00.0	35	8	00.5	3.89	1.019	0.98	K0IIivar
98162	7604	59	Sgr	19	58	04.8	-27	7	10.1	4.54	1.462	1.39	K3III
98337	7635	12	Sge	19	59	34.8	19	32	36.3	3.51	1.571	1.65	K5III
98353	7618	60	Sgr	20	0	04.7	-26	8	39.6	4.84	0.882	0.91	G8II/III
98412	7623	θ^1	Sgr	20	0	56.2	-35	13	29.3	4.37	-0.150	-0.15	B25IV
98543	7653	15	Vul	20	1	51.8	27	48	20.4	4.66	0.184	0.19	A4III
98495	7590	ϵ	Pav	20	2	42.0	-72	51	32.6	3.97	-0.032	-0.04	A0V
98702	7685	ρ	Dra	20	2	53.7	67	55	35.1	4.51	1.313	1.23	K3III
98608	7625	ν	Pav	20	3	17.6	-59	19	24.8	4.95	1.356	3.25	M6III
98688	7650	V3872	Sgr	20	3	47.5	-27	39	25.3	4.43	1.640	2.50	M4III
98761	7652	***	***	20	4	46.9	-37	53	17.0	4.77	1.417	1.40	K4III
98842	7659	***	***	20	5	29.8	-32	0	10.7	4.99	1.208	1.17	K1III/IV
99255	7750	1	Cep	20	8	14.0	77	45	58.8	4.38	-0.046	-0.06	B9III
99120	7673	ξ	Tel	20	8	47.7	-52	49	34.2	4.93	1.591	1.83	M1II
99303	7708	b^2	Cyg	20	10	06.9	36	53	41.7	4.93	-0.139	-0.13	B25V
99240	7665	δ	Pav	20	10	31.4	-66	7	57.9	3.55	0.751	0.76	G5IV-Vvar
99473	7710	θ	Aql	20	12	15.5	00	45	55.5	3.24	-0.066	-0.06	B95III
99655	7740	33	Cyg	20	13	49.6	56	37	29.4	4.28	0.114	0.14	A3IV-Vn
99639	7730	30	Cyg	20	13	53.0	46	52	20.5	4.80	0.100	0.19	A5III _n
99675	7735	31	Cyg	20	14	12.9	46	47	53.3	3.80	1.270	1.15	K2II+
99742	7724	67	Aql	20	15	08.0	15	15	18.0	4.94	0.072	0.09	A2V
99770	7736	V1644	Cyg	20	15	13.6	36	51	49.8	4.93	0.151	0.21	A2V
99848	7751	QR	Vul	20	16	02.6	47	46	18.1	3.96	1.451	1.45	K3Ib-II
99824	7739	V1488	Cyg	20	16	02.9	25	38	57.8	4.79	-0.181	-0.22	B3V
99874	7744	23	Vul	20	16	32.1	27	52	18.9	4.50	1.258	1.30	K3III
100044	7763	P	Cyg	20	18	28.1	38	5	28.6	4.77	0.377	0.44	B2pe
100027	7747	5	Cap	20	18	40.3	-12	26	59.4	4.30	0.928	1.05	G3Ib
100064	7754	6	Cap	20	19	04.7	-12	29	10.7	3.58	0.883	0.92	G6/G8III
100310	7773	ν	Cap	20	21	41.3	-12	41	58.8	4.77	-0.047	-0.06	B9IV
100345	7776	9	Cap	20	22	02.9	-14	43	18.0	3.05	0.790	0.90	A5:n
100453	7796	37	Cyg	20	22	53.6	40	19	00.0	2.23	0.673	0.65	F8Ib
100587	7806	39	Cyg	20	24	36.0	32	15	02.7	4.43	1.331	1.31	K3III
100751	7790	α	Pav	20	27	06.0	-56	40	27.0	1.94	-0.118	-0.10	B2IV
101093	7850	11	Cap	20	29	53.3	63	3	23.9	4.21	0.199	0.20	A7III
101027	7822	2	Cep	20	29	54.8	-17	45	04.5	4.77	0.386	0.44	F3V
101076	7834	41	Cyg	20	30	09.1	30	25	52.2	4.01	0.404	0.46	F5II
101101	7831	69	Aql	20	30	36.9	-02	49	22.5	4.91	1.160	1.12	K2III
101138	7844	V2014	Cyg	20	30	37.9	49	0	51.9	4.94	-0.087	-0.06	B25IV
101421	7852	2	δ	20	34	05.8	11	22	01.5	4.03	-0.123	-0.10	B6III
101474	7866	V2125	Cyg	20	34	37.4	35	18	54.1	4.61	1.593	1.78	K2Ib
101589	7871	ζ	δ	20	36	10.4	14	44	20.4	4.64	0.120	0.14	A3V
101612	7848	φ^1	Pav	20	37	05.9	-60	31	04.1	4.75	0.291	0.34	F1III
101692	7873	70	Aql	20	37	41.4	-02	29	05.3	4.91	1.606	1.66	K5II
101769	7882	β	δ	20	38	25.0	14	39	37.2	3.64	0.425	0.50	F5IV
101772	7869	α	Ind	20	38	51.6	-47	13	32.1	3.11	0.998	0.98	K0III
101773	7859	ρ	Pav	20	39	07.4	-61	27	52.8	4.86	0.447	0.52	Fm
101847	7884	1	Aql	20	39	17.5	-01	2	21.9	4.31	0.949	0.91	G8III
101867	7891	29	Vul	20	39	20.9	21	16	01.1	4.81	-0.030	-0.01	A0V
101958	7906	α	δ	20	40	29.8	15	58	42.0	3.77	-0.057	-0.01	B9V
102098	7924	50	Cyg	20	42	03.8	45	20	49.7	1.25	0.092	0.16	A2Ia
102281	7928	δ	δ	20	44	19.3	15	8	30.8	4.43	0.302	0.34	A7III _p
102333	7920	η	Ind	20	45	23.2	-51	51	12.4	4.51	0.278	0.30	A6:var

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
102422	7957	η	Cep	20	45	39.8	61	54	40.0	3.41	0.912	0.94	KOIV
102388	7939	30	Vul	20	45	40.6	25	20	15.6	4.92	1.183	1.11	K2III
102431	7955	***	***	20	45	48.6	57	38	47.7	4.52	0.535	0.58	F8IV-V
102453	7942	52	Cyg	20	46	25.6	30	47	17.1	4.22	1.051	1.01	K0III
102395	7913	β	Pav	20	46	36.2	-66	8	06.0	3.42	0.163	0.20	A5IV
102488	7949	53	Cyg	20	46	57.6	34	2	25.5	2.48	1.021	1.00	K0III
102485	7936	xsi	Cap	20	47	11.2	-25	12	11.8	4.13	0.426	0.49	F5V
102532	7948	12	δ	20	47	31.0	16	11	30.7	4.27	1.042	1.03	K1IV
102571	7956	T	Cyg	20	47	55.1	34	26	34.5	4.93	1.294	1.25	K3IIIvar
102589	7963	54	Cyg	20	48	07.8	36	33	34.2	4.53	-0.083	-0.12	B6IV
102618	7950	2	Aqr	20	48	40.5	-09	25	37.2	3.78	0.000	-0.01	A1V
102624	7951	3	Aqr	20	48	42.7	-04	57	32.2	4.43	1.639	2.21	M3IIIvar
102724	7977	V1661	Cyg	20	49	34.1	46	11	00.4	4.81	0.571	0.59	B3Ia
102790	7952	ζ	Ind	20	50	44.9	-46	9	25.5	4.90	1.494	1.57	K5III
102831	7965	α	Mic	20	51	07.1	-33	42	36.3	4.89	1.004	0.97	G8III
103004	7995	18	Cap	20	52	55.2	27	10	01.4	4.56	0.835	0.87	G8III
102978	7980	31	Vul	20	52	55.3	-26	50	55.7	4.12	1.633	1.76	K4III
103045	7990	6	Aqr	20	53	39.0	-08	54	46.4	4.73	0.325	0.36	A3m
103089	8001	57	Cyg	20	53	54.1	44	27	28.8	4.80	-0.134	-0.16	B5V
103227	7986	β	Ind	20	56	14.5	-58	22	58.5	3.67	1.250	1.11	K0III
103413	8028	ν	Cyg	20	57	51.8	41	14	20.5	3.94	0.027	0.01	A1Vn
103632	8047	f ¹	Cyg	21	0	27.4	47	35	37.8	4.74	-0.084	-0.06	B1ne
103738	8039	γ	Mic	21	2	25.3	-32	11	03.7	4.67	0.890	0.90	G8III
104019	8060	η	Cap	21	5	27.3	-19	46	50.7	4.82	0.169	0.18	A5V
104060	8079	ξ	Cyg	21	5	36.3	44	0	08.4	3.72	1.609	1.63	K5Ibv
104139	8075	23	Cap	21	6	59.1	-17	9	30.0	4.08	-0.010	0.00	A1V
104194	8089	f ²	Cyg	21	7	14.4	47	43	24.2	4.56	1.569	1.54	K4II
104234	8080	24	Cap	21	8	12.4	-24	55	51.1	4.49	1.604	1.81	K5/MOIII
104459	8093	ν	Aqr	21	10	36.0	-11	17	45.0	4.50	0.926	0.92	G8III
104521	8097	γ	Equ	21	11	14.5	10	12	25.0	4.70	0.262	0.26	F0p
104732	8115	ζ	Cyg	21	13	43.5	30	18	12.5	3.21	0.990	0.97	G8II
104858	8123	δ	Equ	21	15	22.9	10	4	58.1	4.47	0.529	0.57	F5V+
104887	8130	65	Cyg	21	15	31.9	38	7	29.7	3.74	0.393	0.46	F1IV
104987	8131	α	Equ	21	16	44.9	05	19	30.5	3.92	0.549	0.62	G0III+
105102	8143	67	Cyg	21	18	08.6	39	28	22.4	4.22	0.098	0.25	B9Iab
105138	8146	ν	Cyg	21	18	40.8	34	58	31.2	4.41	-0.103	-0.09	B2Vne
105199	8162	ϵ	Mic	21	19	01.2	62	39	51.7	2.45	0.257	0.26	A7IV-V
105140	8135	α	Cep	21	19	03.3	-32	5	39.1	4.71	0.070	0.09	A0V
105319	8140	θ	Ind	21	21	10.4	-53	22	14.7	4.39	0.191	0.21	A5V
105382	8151	θ^1	Mic	21	21	56.2	-40	43	48.4	4.80	0.029	0.07	A2p
105502	8173	1	Peg	21	22	56.6	19	53	04.0	4.08	1.108	1.05	K1III
105515	8167	ι	Cap	21	23	16.4	-16	45	17.4	4.28	0.888	0.89	G8III
105881	8204	34	Cap	21	27	43.2	-22	19	49.1	3.77	1.002	0.88	G4Ibp
105858	8181	γ	Pav	21	27	57.0	-65	16	52.0	4.21	0.494	0.61	F6V
106032	8238	8	Cep	21	28	53.5	70	38	31.6	3.23	-0.201	-0.25	B2IIIv
106039	8213	b	Cap	21	29	46.5	-21	43	32.6	4.50	0.889	0.89	K0III
106140	8225	2	Peg	21	30	47.2	23	43	14.3	4.52	1.618	1.82	M1III
106278	8232	22	Aqr	21	32	31.9	-05	29	20.2	2.90	0.828	0.82	G0Ib
106481	8252	ρ	Cyg	21	34	40.7	45	40	27.2	3.98	0.885	0.94	G8III
106551	8255	72	Cyg	21	35	32.0	38	37	03.4	4.87	1.085	1.06	K1III
106723	8260	39	Cap	21	38	06.8	-19	22	56.2	4.51	-0.180	-0.17	B3V:p
106801	8279	V337	Cep	21	38	25.0	62	9	56.9	4.76	0.246	0.38	B2Ib
106786	8264	ξ	Aqr	21	38	44.1	-07	46	13.6	4.68	0.175	0.19	A7V
106985	8278	40	Cap	21	41	06.8	-16	34	40.5	3.69	0.320	0.32	A7III:mp
107119	8317	11	Cep	21	42	11.2	71	23	48.4	4.55	1.108	1.07	K0III

Posiciones medias de estrellas brillantes, 2018

Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'	"					
107136	8301	π^1	Cyg	21	42	45.2	51	16	28.5	4.69	-0.119	-0.12	B3IV
107089	8254	v	Oct	21	43	28.1	-77	18	22.7	3.73	1.008	0.98	K0III
107188	8288	43	Cap	21	43	41.3	-18	46	52.4	4.72	0.868	0.91	G8III
107259	8316	μ	Cep	21	44	04.5	58	51	55.2	4.23	2.242	3.57	M2Ia
107310	8309	78	Cyg	21	44	58.3	28	49	36.8	4.49	0.512	0.58	F6V
107315	8308	ε	Peg	21	45	05.7	09	57	38.0	2.38	1.520	1.42	K2Ibvar
107348	8313	9	Peg	21	45	23.3	17	26	08.0	4.34	1.161	1.05	G5Ib
107354	8315	10	Peg	21	45	29.1	25	43	50.7	4.14	0.425	0.48	F5IV
107418	8334	v	Cep	21	45	59.0	61	12	23.7	4.25	0.474	0.73	A2Iavar
107380	8305	9	PsA	21	46	02.6	-32	56	25.9	4.35	-0.053	-0.05	B95V
107533	8335	81	Cyg	21	47	28.7	49	23	44.6	4.23	-0.120	-0.13	B3III
107556	8322	49	Cap	21	48	03.6	-16	2	33.3	2.85	0.180	0.35	A5mF2
108085	8353	γ	Gru	21	55	02.6	-37	16	37.2	3.00	-0.084	-0.10	B8III
108431	8368	δ	Ind	21	59	09.9	-54	54	13.5	4.40	0.297	0.35	F0IV
108874	8402	o	Aqr	22	4	16.2	-02	3	55.5	4.74	-0.100	-0.03	B7IVe
108917	8417	17	Cep	22	4	19.7	64	43	06.6	4.26	0.379	0.44	Am
108870	8387	ε	Ind	22	4	45.8	-56	42	32.7	4.69	1.056	1.15	K5V
109068	8413	v	Peg	22	6	36.7	05	8	58.5	4.86	1.443	1.45	K4III
109074	8414	α	Aqr	22	6	44.0	00	13	45.7	2.95	0.969	0.92	G2Ib
109111	8411	λ	Gru	22	7	13.4	-39	27	12.1	4.47	1.349	1.31	M0III
109139	8418	33	Aqr	22	7	26.0	-13	46	45.4	4.29	-0.075	-0.06	B8V
109176	8430	24	Peg	22	7	52.4	25	26	09.8	3.77	0.435	0.51	F5V
109268	8425	α	Gru	22	9	23.4	-46	52	14.4	1.73	-0.070	-0.05	B7IV
109285	8431	μ	PsA	22	9	27.5	-32	53	51.0	4.50	0.054	0.06	A2V
109289	8433	u	PsA	22	9	30.6	-33	57	10.7	4.99	1.499	1.50	K4III
109400	8468	24	Cep	22	10	09.5	72	25	57.2	4.79	0.919	0.91	G8III
109410	8454	π	Peg	22	10	48.7	33	16	10.4	4.28	0.471	0.52	F5III
109427	8450	26	Peg	22	11	08.0	06	17	22.2	3.52	0.086	0.09	A2V
109422	8447	τ	PsA	22	11	13.5	-32	27	24.7	4.94	0.489	0.54	F6V
109492	8465	ζ	Cep	22	11	29.9	58	17	34.3	3.39	1.558	1.58	K1Ibv
109754	8485	***	***	22	14	40.5	39	48	26.0	4.50	1.385	1.36	K3III
109857	8494	23	Cep	22	15	43.3	57	8	10.6	4.18	0.278	0.33	F0IV
109908	8486	μ^1	Gru	22	16	43.4	-41	15	14.4	4.79	0.790	0.83	G8III+
109937	8498	1	Lac	22	16	46.7	37	50	28.9	4.14	1.447	1.33	K3III
110003	8499	43	Aqr	22	17	48.5	-07	41	26.1	4.17	0.979	0.95	G8III-IV
110130	8502	α	Tuc	22	19	45.2	-60	9	59.9	2.87	1.390	1.37	K3III
110351	8523	2	Lac	22	21	47.6	46	37	48.6	4.55	-0.100	-0.10	B6V
110371	8522	32	Peg	22	22	10.7	28	25	27.2	4.78	-0.010	0.06	B9III
110386	8520	31	Peg	22	22	25.7	12	17	56.1	4.82	-0.132	-0.16	B2IV-V
110395	8518	48	Aqr	22	22	36.7	-01	17	36.8	3.86	-0.057	-0.06	A0V
110538	8538	3	Lac	22	24	17.5	52	19	19.7	4.42	1.015	1.03	G9III
110609	8541	4	Lac	22	25	16.2	49	34	14.2	4.55	0.092	0.18	B9Iab
110672	8539	π	Aqr	22	26	13.3	01	28	18.5	4.80	-0.171	-0.18	B1Ve
110838	8540	δ	Tuc	22	28	37.7	-64	52	17.5	4.51	-0.029	-0.01	B8V
110882	8551	35	Peg	22	28	47.7	04	47	20.1	4.78	1.039	1.07	K0III
110960	8558	ζ^1	Aqr	22	29	47.0	00	4	30.9	3.65	0.406	0.50	F3III-IV
110991	8571	δ	Cep	22	29	51.7	58	30	37.0	4.07	0.778	0.81	G2Ibvar
111022	8572	V412	Lac	22	30	18.3	47	48	07.2	4.34	1.679	1.90	M0II
110997	8556	δ^1	Gru	22	30	22.1	-43	24	01.7	3.97	1.022	0.98	G6/G8III
111043	8560	δ^2	Gru	22	30	51.3	-43	39	14.5	4.12	1.570	2.49	M45IIIa
111104	8579	6	Lac	22	31	17.3	43	13	07.1	4.52	-0.086	-0.09	B2IV
111123	8573	57	Aqr	22	31	37.4	-10	34	57.9	4.82	-0.053	-0.04	A0IVs
111169	8585	7	Lac	22	32	03.4	50	22	40.8	3.76	0.031	0.05	A1V
111188	8576	β	PsA	22	32	33.1	-32	15	02.5	4.29	0.011	0.03	A1V
111310	8582	v	Tuc	22	34	14.1	-61	53	11.3	4.91	1.612	2.50	M4III

Posiciones medias de estrellas brillantes, 2018

Estrella		α						δ			V	U-B	B-V	Esp
NH	NY	nom	h	m	s	°	'	"						
111497	8597	62	Aqr	22	36	18.4	00	1	18.1	4.04	-0.083	-0.07	B9IV-Vn	
111674	8613	9	Lac	22	38	08.2	51	38	27.6	4.64	0.254	0.28	A8IV	
111841	8622	10	Lac	22	40	05.7	39	8	49.0	4.89	-0.207	-0.23	O9V	
111944	8632	11	Lac	22	41	19.7	44	22	23.7	4.50	1.318	1.25	K3III	
111954	8628	ϵ	PsA	22	41	40.5	-26	56	48.1	4.18	-0.105	-0.07	B8V	
112029	8634	ζ	Peg	22	42	23.1	10	55	42.1	3.41	-0.086	-0.06	B85V	
112051	8641	o	Peg	22	42	37.7	29	24	16.7	4.80	-0.013	0.02	A1IV	
112122	8636	β	Gru	22	43	45.8	-46	47	14.5	2.07	1.610	2.60	M5III	
112158	8650	η	Peg	22	43	52.3	30	19	06.2	2.93	0.852	0.87	G2II-III	
112203	8644	ρ	Gru	22	44	34.0	-41	19	02.9	4.84	1.027	1.01	K0III	
112211	8649	g	Aqr	22	44	34.8	-18	43	59.3	4.68	1.358	1.35	K3III	
112374	8655	η	Gru	22	46	45.4	-53	24	08.5	4.84	1.180	1.21	K2IIICNIV	
112519	8702	***	***	22	47	21.6	83	15	06.9	4.77	1.257	1.25	K3III	
112440	8667	47	Peg	22	47	25.4	23	39	48.2	3.97	1.070	0.99	G8II-III	
112447	8665	46	Peg	22	47	37.1	12	16	05.3	4.20	0.502	0.60	F7V	
112405	8630	β	Oct	22	47	50.7	-81	17	01.8	4.13	0.208	0.24	A9IV/V	
112623	8675	ϵ	Gru	22	49	39.8	-51	13	08.8	3.49	0.083	0.10	A3V	
112724	8694	32	Cep	22	50	20.6	66	17	52.7	3.50	1.053	1.06	K0III	
112716	8679	τ	Aqr	22	50	34.2	-13	29	40.6	4.05	1.570	1.72	K5III	
112748	8684	μ	Peg	22	50	53.9	24	41	58.6	3.51	0.933	0.89	M2III	
112917	8699	15	Lac	22	52	52.3	43	24	39.8	4.95	1.559	1.71	M0III	
112948	8695	22	PsA	22	53	33.0	-32	46	37.2	4.46	-0.037	-0.01	A0III	
112961	8698	λ	Aqr	22	53	34.7	-07	28	50.9	3.73	1.626	2.07	M2IIIvar	
113116	8748	***	***	22	54	11.9	84	26	42.3	4.70	1.418	1.38	K4III	
113136	8709	δ	Aqr	22	55	37.8	-15	43	19.5	3.27	0.066	0.08	A3V	
113186	8717	ρ	Peg	22	56	09.6	08	54	54.9	4.91	-0.003	0.00	A1V	
113246	8720	δ	PsA	22	56	58.1	-32	26	25.5	4.20	0.952	0.96	G8III	
113288	8726	V424	Lac	22	57	14.9	49	49	57.4	4.99	1.778	1.87	K5Ibvar	
113368	8728	α	PsA	22	58	40.1	-29	31	25.8	1.17	0.145	0.16	A3V	
113638	8747	ζ	Gru	23	1	57.8	-52	39	16.5	4.11	0.960	1.01	G8III	
113726	8762	1	And	23	2	46.6	42	25	32.6	3.62	-0.099	-0.05	B6pv	
113881	8775	53	Peg	23	4	40.4	28	11	00.4	2.44	1.655	2.31	M2II-IIIvar	
113889	8773	4	Psc	23	4	49.1	03	55	11.8	4.48	-0.115	-0.09	B6Ve	
113919	8780	3	And	23	5	01.1	50	9	10.6	4.64	1.058	1.02	K0III	
113963	8781	54	Peg	23	5	41.0	15	18	18.3	2.49	-0.002	0.00	B95III	
114104	8797	1	Cas	23	7	24.1	59	31	11.9	4.84	-0.060	-0.02	B05IV	
114119	8789	86	Aqr	23	7	40.3	-23	38	34.3	4.48	0.892	0.92	G8III	
114131	8787	θ	Gru	23	7	54.9	-43	25	12.6	4.28	0.423	0.44	F5me	
114144	8795	55	Peg	23	7	56.2	09	30	34.9	4.54	1.559	1.79	M2III	
114155	8796	56	Peg	23	8	00.9	25	34	06.1	4.76	1.285	1.30	K0IIp	
114222	8819	33	Cep	23	8	29.4	75	29	15.6	4.41	0.802	0.84	G2III	
114341	8812	c^2	Aqr	23	10	25.8	-21	4	18.2	3.68	1.202	1.16	K1III	
114375	8817	89	Aqr	23	10	54.0	-22	21	25.5	4.71	0.674	0.75	A3IV:	
114421	8820	ι	Gru	23	11	23.9	-45	8	46.4	3.88	0.998	0.95	K0III	
114570	8830	7	And	23	13	24.2	49	30	27.1	4.53	0.302	0.35	FOV	
114724	8834	90	Aqr	23	15	16.8	-05	56	56.6	4.22	1.545	1.89	M2III	
114855	8841	ψ^1	Aqr	23	16	51.6	-08	59	12.2	4.24	1.107	1.06	K0III	
114939	8850	92	Aqr	23	17	48.4	-07	37	31.4	4.93	1.613	2.56	M3III	
114971	8852	6	Psc	23	18	07.5	03	23	01.0	3.70	0.916	0.97	G7III	
114996	8848	γ	Tuc	23	18	29.8	-58	8	02.7	3.99	0.410	0.50	F1III	
115022	8860	8	And	23	18	36.4	49	6	59.7	4.82	1.668	2.14	M2III	
115033	8858	ψ^2	Aqr	23	18	51.8	-09	4	52.6	4.41	-0.144	-0.14	B5Vn	
115088	8872	34	Cep	23	19	23.6	68	12	46.2	4.75	0.836	0.86	K0III	
115102	8863	γ	Scl	23	19	49.1	-32	25	51.9	4.41	1.109	1.08	K1III	
115115	8865	ψ^3	Aqr	23	19	55.3	-09	30	33.9	4.99	-0.022	0.00	A0V	

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Estrella		α			δ			V	U-B	B-V	Esp		
NH	NY	nom	h	m	s	°	'					"	
115250	8880	τ	Peg	23	21	33.3	23	50	30.4	4.58	0.180	0.23	A5V
115438	8892	b ¹	Aqr	23	23	56.4	-19	59	57.9	3.96	1.082	1.10	K0III
115590	8904	4	Cas	23	25	40.1	62	23	04.3	4.96	1.676	1.94	M1III
115623	8905	v	Peg	23	26	18.3	23	30	22.0	4.42	0.617	0.67	F8IV
115669	8906	b ²	Aqr	23	27	00.9	-20	32	25.7	4.38	1.460	1.52	K4III
115738	8911	8	Psc	23	27	52.9	01	21	25.4	4.95	0.036	0.01	A0p
115830	8916	10	Psc	23	28	54.4	06	28	50.7	4.27	1.062	1.03	K1III
115919	8923	70	Peg	23	30	05.5	12	51	45.9	4.54	0.939	0.93	G8III
115990	8926	AR	Cas	23	30	53.7	58	39	03.8	4.89	-0.122	-0.11	B3IV
116231	8937	β	Scl	23	33	57.5	-37	42	56.8	4.38	-0.095	-0.09	95IVMNpe
116247	8939	101	Aqr	23	34	14.6	-20	48	43.8	4.70	0.020	0.03	A0V
116310	8943	72	Peg	23	34	52.5	31	25	39.0	4.97	1.383	1.36	K4III
116389	8949	ι	Phe	23	36	03.9	-42	30	45.5	4.69	0.078	0.10	A2V
116584	8961	λ	And	23	38	28.5	46	33	30.4	3.81	0.984	0.96	G8III-IV
116602	8959	***	***	23	38	50.4	-45	23	23.7	4.74	0.082	0.08	A2V
116631	8965	17	And	23	39	03.0	43	22	14.1	4.29	-0.083	-0.06	B8V
116727	8974	35	Cep	23	40	07.4	77	44	07.8	3.21	1.031	0.99	K1IV
116758	8968	102	Aqr	23	40	44.5	-14	7	11.6	4.97	0.257	0.29	A7IV
116771	8969	17	Psc	23	40	54.2	05	43	35.8	4.13	0.507	0.59	F7V
116805	8976	19	And	23	41	19.5	44	26	11.2	4.15	-0.071	-0.06	B9IVn
116901	8982	104	Aqr	23	42	43.3	-17	42	49.9	4.82	0.822	0.81	G2Ib/II
116928	8984	λ	Psc	23	42	59.5	01	52	54.9	4.49	0.200	0.22	A7V
116971	8988	105	Aqr	23	43	40.8	-14	26	33.2	4.49	-0.032	-0.04	B9V
117073	8997	78	Peg	23	44	55.5	29	27	50.3	4.93	0.935	0.93	K0III
117221	9003	ψ	And	23	46	57.4	46	31	22.9	4.97	1.086	1.05	G5Ib
117245	9004	TX	Psc	23	47	20.3	03	35	22.1	4.95	2.508	2.57	C5II
117301	9008	τ	Cas	23	47	58.3	58	45	18.4	4.88	1.122	1.08	K1III
117452	9016	δ	Scl	23	49	53.2	-28	1	40.6	4.59	0.001	-0.01	A0V
117863	9045	7	Cas	23	55	19.0	57	36	08.3	4.51	1.190	1.15	F8Iavar
118121	9062	η	Tuc	23	58	32.6	-64	11	44.1	5.00	0.060	0.07	A1V
118131	9064	ψ	Peg	23	58	42.3	25	14	39.1	4.63	1.584	2.21	M3III
118209	9067	27	Psc	23	59	37.2	-03	27	12.2	4.88	0.930	0.92	G9III
118243	9071	σ	Cas	23	59	57.4	55	51	28.3	4.88	-0.071	-0.05	B1V

Notas

NH: número de catálogo Hipparco.

NY: número de catálogo Bright Star Catalog, U. Yale.

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

θ SCL						ζ TUC						β HYI					
5.25			F4V			4.23			F4V			2.7			G2 IV		
α		α _c		δ		α		α _c		δ		α		α _c		δ	
h m		h m		° ′		h m		h m		° ′		h m		h m		° ′	
00 12		00 11		-35 -2		00 20		00 20		-64 45		00 26		00 25		-77 -08	
hp		hp		hp		hp		hp		hp		hp		hp		hp	
mes	d	s	s	″	h	mes	d	s	s	″	h	mes	d	s	s	″	h
ene	1	37.47	42.82	75.06	17.49	ene	1	57.89	03.24	93.61	17.63	ene	1	37.29	42.64	97.02	17.72
ene	7	37.40	42.68	75.01	17.09	ene	7	57.69	02.97	93.13	17.23	ene	7	36.84	42.12	96.40	17.33
ene	13	37.29	42.52	75.01	16.70	ene	13	57.43	02.66	92.64	16.84	ene	13	36.30	41.53	95.77	16.93
ene	19	37.22	42.37	74.67	16.30	ene	19	57.23	02.39	91.74	16.44	ene	19	35.85	41.01	94.70	16.54
ene	25	37.11	42.24	74.45	15.91	ene	25	57.01	02.14	90.90	16.05	ene	25	35.39	40.52	93.69	16.14
ene	31	37.06	42.11	73.75	15.52	ene	31	56.84	01.88	89.54	15.65	ene	31	34.98	40.03	92.16	15.75
feb	6	36.98	42.00	73.22	15.12	feb	6	56.66	01.68	88.32	15.26	feb	6	34.61	39.63	90.76	15.35
feb	12	36.92	41.89	72.41	14.73	feb	12	56.50	01.46	86.78	14.87	feb	12	34.24	39.20	89.05	14.96
feb	18	36.87	41.80	71.54	14.33	feb	18	56.38	01.31	85.16	14.47	feb	18	33.97	38.90	87.24	14.57
feb	24	36.82	41.72	70.61	13.94	feb	24	56.24	01.14	83.46	14.08	feb	24	33.67	38.57	85.37	14.17
mar	2	36.82	41.67	69.36	13.54	mar	2	56.19	01.04	81.44	13.68	mar	2	33.52	38.37	83.19	13.78
mar	8	36.78	41.61	68.29	13.15	mar	8	56.10	00.93	79.61	13.29	mar	8	33.31	38.15	81.20	13.38
mar	14	36.80	41.58	66.89	12.76	mar	14	56.08	00.87	77.45	12.89	mar	14	33.22	38.01	78.89	12.99
mar	20	36.79	41.57	65.65	12.36	mar	20	56.06	00.84	75.47	12.50	mar	20	33.16	37.94	76.77	12.59
mar	26	36.84	41.56	64.05	11.97	mar	26	56.09	00.81	73.17	12.11	mar	26	33.15	37.88	74.35	12.20
abr	1	36.87	41.58	62.61	11.57	abr	1	56.15	00.85	71.06	11.71	abr	1	33.24	37.95	72.13	11.81
abr	7	36.93	41.60	61.03	11.18	abr	7	56.20	00.88	68.86	11.32	abr	7	33.30	37.97	69.83	11.41
abr	13	37.02	41.65	59.39	10.79	abr	13	56.33	00.97	66.63	10.92	abr	13	33.50	38.14	67.53	11.02
abr	19	37.09	41.71	57.83	10.39	abr	19	56.44	01.05	64.55	10.53	abr	19	33.67	38.28	65.39	10.62
abr	25	37.23	41.78	56.00	10.00	abr	25	56.65	01.20	62.25	10.14	abr	25	33.99	38.54	63.04	10.23
may	1	37.34	41.87	54.49	9.60	may	1	56.81	01.34	60.33	9.74	may	1	34.27	38.80	61.10	9.83
may	7	37.49	41.96	52.71	9.21	may	7	57.04	01.51	58.20	9.35	may	7	34.65	39.11	58.97	9.44
may	13	37.63	42.07	51.19	8.81	may	13	57.28	01.72	56.40	8.95	may	13	35.07	39.51	57.17	9.05
may	19	37.82	42.19	49.45	8.42	may	19	57.55	01.92	54.46	8.56	may	19	35.51	39.87	55.26	8.65
may	25	38.00	42.32	47.92	8.03	may	25	57.86	02.18	52.79	8.16	may	25	36.05	40.37	53.64	8.26
may	31	38.18	42.45	46.45	7.63	may	31	58.15	02.41	51.26	7.77	may	31	36.53	40.80	52.18	7.86
jun	6	38.40	42.59	44.96	7.24	jun	6	58.50	02.69	49.77	7.38	jun	6	37.14	41.34	50.77	7.47
jun	12	38.58	42.74	43.75	6.84	jun	12	58.81	02.97	48.64	6.98	jun	12	37.69	41.85	49.73	7.08
jun	18	38.83	42.89	42.29	6.45	jun	18	59.20	03.26	47.32	6.59	jun	18	38.35	42.42	48.53	6.68
jun	24	39.02	43.05	41.32	6.05	jun	24	59.53	03.56	46.57	6.19	jun	24	38.96	42.99	47.90	6.29
jun	30	39.25	43.20	40.21	5.66	jun	30	59.90	03.85	45.73	5.80	jun	30	39.59	43.54	47.20	5.89
jul	6	39.45	43.36	39.43	5.27	jul	6	60.27	04.17	45.28	5.41	jul	6	40.26	44.16	46.90	5.50
jul	12	39.67	43.50	38.63	4.87	jul	12	60.61	04.45	44.89	5.01	jul	12	40.86	44.70	46.67	5.11
jul	18	39.89	43.66	38.00	4.48	jul	18	61.00	04.78	44.71	4.62	jul	18	41.56	45.33	46.65	4.71
jul	24	40.07	43.80	37.62	4.08	jul	24	61.32	05.04	44.84	4.22	jul	24	42.12	45.85	46.96	4.32
jul	30	40.27	43.94	37.26	3.69	jul	30	61.67	05.33	45.02	3.83	jul	30	42.75	46.41	47.32	3.92
ago	5	40.43	44.07	37.29	3.30	ago	5	61.96	05.60	45.64	3.43	ago	5	43.29	46.93	48.12	3.53
ago	11	40.63	44.19	37.11	2.90	ago	11	62.28	05.84	46.08	3.04	ago	11	43.85	47.41	48.75	3.14
ago	17	40.76	44.30	37.43	2.51	ago	17	62.54	06.08	47.06	2.65	ago	17	44.34	47.88	49.92	2.74
ago	23	40.91	44.39	37.67	2.11	ago	23	62.78	06.27	47.97	2.25	ago	23	44.77	48.25	51.02	2.35
ago	29	41.02	44.48	38.22	1.72	ago	29	63.00	06.47	49.20	1.86	ago	29	45.19	48.66	52.43	1.95
sep	4	41.12	44.55	38.85	1.32	sep	4	63.17	06.60	50.53	1.46	sep	4	45.49	48.92	53.95	1.56
sep	10	41.23	44.61	39.48	0.93	sep	10	63.36	06.74	51.86	1.07	sep	10	45.84	49.22	55.46	1.16
sep	16	41.28	44.64	40.42	0.54	sep	16	63.45	06.82	53.51	0.68	sep	16	46.01	49.37	57.27	0.77
sep	22	41.35	44.66	41.26	0.14	sep	22	63.56	06.88	55.03	0.28	sep	22	46.20	49.51	58.95	0.38
sep	28	41.36	44.67	42.46	23.75	sep	28	63.59	06.91	56.88	23.89	sep	28	46.27	49.58	60.96	23.98
oct	4	41.40	44.65	43.38	23.35	oct	4	63.63	06.89	58.44	23.49	oct	4	46.30	49.56	62.66	23.59
oct	10	41.39	44.63	44.64	22.96	oct	10	63.62	06.86	60.30	23.10	oct	10	46.28	49.52	64.64	23.19
oct	16	41.38	44.58	45.74	22.56	oct	16	63.57	06.76	61.97	22.70	oct	16	46.15	49.34	66.42	22.80
oct	22	41.36	44.52	46.96	22.17	oct	22	63.51	06.67	63.69	22.31	oct	22	46.02	49.18	68.23	22.40
oct	28	41.30	44.43	48.20	21.78	oct	28	63.37	06.50	65.38	21.92	oct	28	45.74	48.87	70.01	22.01
nov	3	41.28	44.35	49.22	21.38	nov	3	63.28	06.35	66.80	21.52	nov	3	45.53	48.59	71.48	21.62
nov	9	41.19	44.23	50.46	20.99	nov	9	63.09	06.13	68.37	21.13	nov	9	45.15	48.19	73.10	21.22
nov	15	41.14	44.11	51.39	20.59	nov	15	62.94	05.91	69.56	20.73	nov	15	44.80	47.77	74.30	20.83
nov	21	41.04	43.98	52.52	20.20	nov	21	62.73	05.67	70.87	20.34	nov	21	44.38	47.31	75.61	20.43
nov	27	40.98	43.84	53.25	19.80	nov	27	62.53	05.38	71.70	19.94	nov	27	43.92	46.77	76.43	20.04
dic	3	40.89	43.69	54.12	19.41	dic	3	62.31	05.12	72.60	19.55	dic	3	43.47	46.28	77.28	19.64
dic	9	40.79	43.53	54.76	19.02	dic	9	62.06	04.80	73.19	19.16	dic	9	42.93	45.67	77.82	19.25
dic	15	40.70	43.38	55.30	18.62	dic	15	61.85	04.52	73.58	18.76	dic	15	42.46	45.13	78.14	18.86
dic	21	40.59	43.21	55.83	18.23	dic	21	61.57	04.20	73.90	18.37	dic	21	41.89	44.51	78.36	18.46
dic	27	40.53	43.05	55.92	17.83	dic	27	61.38	03.91	73.70	17.97	dic	27	41.43	43.96	78.04	18.07

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

β CET					ϕ^2 CET					η CET							
2.0		K1 LLE			5.1		F7 IV-V			3.4		K1.5 III					
α		α_c		δ	α		α_c		δ	α		α_c		δ			
h	m	h	m	°	h	m	h	m	°	h	m	h	m	°			
00 44		00 43		-17 -53	00 51		00 50		-10 -32	01 09		01 08		-10 -05			
hp					hp					hp							
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	28.72	34.07	90.88	18.02	ene	1	00.97	06.32	63.14	18.13	ene	1	29.14	34.49	25.87	18.44
ene	7	28.66	33.93	91.10	17.62	ene	7	00.91	06.19	63.42	17.73	ene	7	29.08	34.36	26.17	18.04
ene	13	28.56	33.79	91.48	17.23	ene	13	00.82	06.05	63.88	17.34	ene	13	28.99	34.22	26.67	17.65
ene	19	28.50	33.66	91.54	16.84	ene	19	00.76	05.92	64.05	16.94	ene	19	28.93	34.08	26.87	17.25
ene	25	28.40	33.53	91.76	16.44	ene	25	00.66	05.79	64.41	16.55	ene	25	28.82	33.95	27.25	16.86
ene	31	28.35	33.40	91.56	16.05	ene	31	00.62	05.66	64.36	16.16	ene	31	28.78	33.82	27.25	16.46
feb	6	28.27	33.29	91.53	15.65	feb	6	00.53	05.55	64.52	15.76	feb	6	28.69	33.70	27.42	16.07
feb	12	28.21	33.18	91.29	15.26	feb	12	00.47	05.44	64.47	15.37	feb	12	28.62	33.59	27.41	15.68
feb	18	28.15	33.08	90.97	14.86	feb	18	00.41	05.34	64.37	14.97	feb	18	28.55	33.48	27.33	15.28
feb	24	28.09	33.00	90.64	14.47	feb	24	00.35	05.25	64.28	14.58	feb	24	28.48	33.38	27.27	14.89
mar	2	28.08	32.92	89.98	14.08	mar	2	00.33	05.18	63.85	14.18	mar	2	28.45	33.30	26.86	14.49
mar	8	28.03	32.86	89.52	13.68	mar	8	00.28	05.11	63.64	13.79	mar	8	28.39	33.22	26.69	14.10
mar	14	28.02	32.81	88.71	13.29	mar	14	00.27	05.06	63.10	13.40	mar	14	28.38	33.16	26.17	13.70
mar	20	28.00	32.78	88.06	12.89	mar	20	00.24	05.02	62.71	13.00	mar	20	28.33	33.11	25.80	13.31
mar	26	28.02	32.75	87.06	12.50	mar	26	00.27	04.99	61.98	12.61	mar	26	28.35	33.07	25.11	12.92
abr	1	28.04	32.74	86.14	12.10	abr	1	00.27	04.98	61.33	12.21	abr	1	28.34	33.05	24.47	12.52
abr	7	28.07	32.75	85.10	11.71	abr	7	00.31	04.98	60.55	11.82	abr	7	28.36	33.04	23.73	12.13
abr	13	28.13	32.77	83.93	11.32	abr	13	00.36	05.00	59.63	11.42	abr	13	28.40	33.04	22.82	11.73
abr	19	28.18	32.79	82.85	10.92	abr	19	00.41	05.02	58.79	11.03	abr	19	28.44	33.06	22.01	11.34
abr	25	28.28	32.84	81.41	10.53	abr	25	00.51	05.06	57.58	10.64	abr	25	28.53	33.09	22.81	10.94
may	1	28.37	32.90	80.26	10.13	may	1	00.58	05.11	56.64	10.24	may	1	28.60	33.13	19.88	10.55
may	7	28.50	32.96	78.79	9.74	may	7	00.71	05.18	55.37	9.85	may	7	28.71	33.18	18.64	10.16
may	13	28.61	33.04	77.52	9.34	may	13	00.81	05.25	54.27	9.45	may	13	28.81	33.24	17.54	9.76
may	19	28.76	33.13	76.01	8.95	may	19	00.97	05.33	52.93	9.06	may	19	28.95	33.32	16.21	9.37
may	25	28.91	33.23	74.60	8.56	may	25	01.11	05.43	51.65	8.67	may	25	29.09	33.41	14.92	8.97
may	31	29.07	33.34	73.22	8.16	may	31	01.26	05.53	50.40	8.27	may	31	29.23	33.50	13.67	8.58
jun	6	29.25	33.45	71.75	7.77	jun	6	01.44	05.64	49.01	7.88	jun	6	29.40	33.60	12.27	8.18
jun	12	29.41	33.57	70.51	7.37	jun	12	01.59	05.75	47.84	7.48	jun	12	29.55	33.71	11.09	7.79
jun	18	29.63	33.70	68.95	6.98	jun	18	01.81	05.87	46.32	7.09	jun	18	29.76	33.83	9.56	7.40
jun	24	29.80	33.83	67.82	6.59	jun	24	01.97	06.00	45.21	6.69	jun	24	29.92	33.95	8.42	7.00
jun	30	30.01	33.95	66.50	6.19	jun	30	02.17	06.12	43.88	6.30	jun	30	30.12	34.07	7.07	6.61
jul	6	30.18	34.09	65.43	5.80	jul	6	02.34	06.25	42.77	5.91	jul	6	30.30	34.20	5.93	6.21
jul	12	30.38	34.22	64.34	5.40	jul	12	02.54	06.37	41.63	5.51	jul	12	30.49	34.33	4.76	5.82
jul	18	30.58	34.35	63.30	5.01	jul	18	02.73	06.50	40.50	5.12	jul	18	30.68	34.46	3.59	5.43
jul	24	30.75	34.48	62.52	4.61	jul	24	02.90	06.63	39.62	4.72	jul	24	30.86	34.58	2.68	5.03
jul	30	30.94	34.60	61.69	4.22	jul	30	03.08	06.75	38.65	4.33	jul	30	31.04	34.71	1.67	4.64
ago	5	31.08	34.72	61.23	3.83	ago	5	03.22	06.86	38.04	3.93	ago	5	31.19	34.83	0.10	4.24
ago	11	31.27	34.84	60.52	3.43	ago	11	03.41	06.97	37.17	3.54	ago	11	31.38	34.94	0.10	3.85
ago	17	31.40	34.94	60.28	3.04	ago	17	03.53	07.08	36.73	3.15	ago	17	31.51	35.06	59.62	3.45
ago	23	31.55	35.04	59.96	2.64	ago	23	03.68	07.17	36.21	2.75	ago	23	31.67	35.16	59.06	3.06
ago	29	31.66	35.12	59.90	2.25	ago	29	03.79	07.26	35.93	2.36	ago	29	31.79	35.25	58.73	2.67
sep	4	31.77	35.20	59.96	1.85	sep	4	03.90	07.33	35.76	1.96	sep	4	31.90	35.33	58.53	2.27
sep	10	31.88	35.26	59.97	1.46	sep	10	04.01	07.40	35.52	1.57	sep	10	32.03	35.41	58.25	1.88
sep	16	31.95	35.31	60.33	1.07	sep	16	04.08	07.45	35.64	1.18	sep	16	32.11	35.47	58.35	1.48
sep	22	32.03	35.35	60.59	0.67	sep	22	04.17	07.48	35.64	0.78	sep	22	32.20	35.52	58.32	1.09
sep	28	32.06	35.37	61.22	0.28	sep	28	04.20	07.51	36.02	0.39	sep	28	32.25	35.56	58.67	0.69
oct	4	32.13	35.38	61.61	23.88	oct	4	04.27	07.52	36.17	23.99	oct	4	32.33	35.58	58.80	0.30
oct	10	32.14	35.38	62.33	23.49	oct	10	04.28	07.52	36.64	23.60	oct	10	32.35	35.60	59.25	23.91
oct	16	32.16	35.36	62.98	23.10	oct	16	04.31	07.50	37.05	23.20	oct	16	32.40	35.59	59.66	23.51
oct	22	32.16	35.32	63.75	22.70	oct	22	04.31	07.48	37.58	22.81	oct	22	32.41	35.57	00.17	23.12
oct	28	32.14	35.27	64.61	22.31	oct	28	04.30	07.43	38.23	22.42	oct	28	32.41	35.54	00.83	22.72
nov	3	32.15	35.21	65.27	21.91	nov	3	04.31	07.38	38.68	22.02	nov	3	32.43	35.50	01.28	22.33
nov	9	32.10	35.14	66.24	21.52	nov	9	04.27	07.31	39.46	21.63	nov	9	32.40	35.44	02.07	21.93
nov	15	32.08	35.05	66.93	21.12	nov	15	04.26	07.23	39.98	21.23	nov	15	32.40	35.37	02.61	21.54
nov	21	32.01	34.95	67.89	20.73	nov	21	04.19	07.13	40.79	20.84	nov	21	32.34	35.28	03.43	21.15
nov	27	31.98	34.84	68.52	20.34	nov	27	04.17	07.03	41.30	20.44	nov	27	32.33	35.19	03.97	20.75
dic	3	31.91	34.72	69.32	19.94	dic	3	04.11	06.92	41.99	20.05	dic	3	32.28	35.08	04.67	20.36
dic	9	31.85	34.59	69.99	19.55	dic	9	04.06	06.80	42.59	19.66	dic	9	32.23	34.97	05.31	19.96
dic	15	31.79	34.46	70.59	19.15	dic	15	04.00	06.67	43.14	19.26	dic	15	32.18	34.85	05.87	19.57
dic	21	31.70	34.32	71.27	18.76	dic	21	03.92	06.54	43.80	18.87	dic	21	32.10	34.72	06.58	19.17
dic	27	31.66	34.19	71.55	18.36	dic	27	03.88	06.41	44.08	18.47	dic	27	32.06	34.59	06.88	18.78

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

θ CET						δ CAS						ν PSC								
3.61			KO IIIB			2.6			A5 III-IV			4.4			K3 IIIB					
α		α _c	δ		δ	α		α _c	δ		δ	α		α _c	δ					
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'			
01	24	01	23	-08	-05	hp	01	26	01	26	60	19	hp	01	42	01	41	05	34	hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h			
ene	1	54.94	60.29	38.29	18.69	ene	1	61.00	06.36	51.43	18.73	ene	1	21.92	27.27	34.22	18.98			
ene	7	54.88	60.16	38.60	18.30	ene	7	60.80	06.08	51.78	18.33	ene	7	21.86	27.14	33.97	18.59			
ene	13	54.79	60.02	39.15	17.90	ene	13	60.59	05.82	51.66	17.94	ene	13	21.78	27.01	33.44	18.19			
ene	19	54.73	59.89	39.38	17.51	ene	19	60.39	05.55	51.58	17.54	ene	19	21.71	26.87	33.16	17.80			
ene	25	54.62	59.75	39.80	17.12	ene	25	60.14	05.27	51.06	17.15	ene	25	21.61	26.73	32.64	17.41			
ene	31	54.57	59.62	39.85	16.72	ene	31	59.97	05.02	50.65	16.76	ene	31	21.55	26.60	32.43	17.01			
feb	6	54.48	59.50	40.07	16.33	feb	6	59.73	04.75	49.86	16.36	feb	6	21.45	26.47	32.03	16.62			
feb	12	54.41	59.37	40.13	15.93	feb	12	59.55	04.52	48.97	15.97	feb	12	21.38	26.35	31.71	16.22			
feb	18	54.33	59.26	40.10	15.54	feb	18	59.33	04.27	47.95	15.57	feb	18	21.30	26.23	31.46	15.83			
feb	24	54.25	59.16	40.12	15.14	feb	24	59.16	04.07	46.66	15.18	feb	24	21.21	26.12	31.09	15.43			
mar	2	54.22	59.06	39.78	14.75	mar	2	59.02	03.87	45.55	14.78	mar	2	21.17	26.01	31.08	15.04			
mar	8	54.15	58.98	39.68	14.36	mar	8	58.87	03.70	44.02	14.39	mar	8	21.09	25.92	30.77	14.65			
mar	14	54.12	58.91	39.24	13.96	mar	14	58.77	03.56	42.68	14.00	mar	14	21.06	25.84	30.78	14.25			
mar	20	54.07	58.85	38.94	13.57	mar	20	58.65	03.43	41.04	13.60	mar	20	20.99	25.77	30.63	13.86			
mar	26	54.08	58.80	38.33	13.17	mar	26	58.63	03.36	39.60	13.21	mar	26	20.99	25.72	30.76	13.46			
abr	1	54.06	58.77	37.77	12.78	abr	1	58.57	03.28	38.04	12.81	abr	1	20.97	25.68	30.86	13.07			
abr	7	54.08	58.75	37.12	12.38	abr	7	58.60	03.27	36.50	12.42	abr	7	20.98	25.65	31.00	12.67			
abr	13	54.10	58.74	36.29	11.99	abr	13	58.62	03.25	35.09	12.02	abr	13	21.00	25.63	31.29	12.28			
abr	19	54.13	58.75	35.56	11.60	abr	19	58.68	03.29	33.54	11.63	abr	19	21.01	25.63	31.49	11.89			
abr	25	54.22	58.77	34.43	11.20	abr	25	58.80	03.35	32.40	11.24	abr	25	21.09	25.64	32.17	11.49			
may	1	54.27	58.80	33.57	10.81	may	1	58.90	03.43	31.02	10.84	may	1	21.13	25.66	32.56	11.10			
may	7	54.38	58.84	32.39	10.41	may	7	59.09	03.55	30.02	10.45	may	7	21.23	25.70	33.28	10.70			
may	13	54.46	58.90	31.34	10.02	may	13	59.23	03.67	28.95	10.05	may	13	21.31	25.75	33.90	10.31			
may	19	54.60	58.97	30.08	9.62	may	19	59.49	03.85	28.18	9.66	may	19	21.45	25.81	34.74	9.92			
may	25	54.73	59.05	28.82	9.23	may	25	59.70	04.01	27.54	9.26	may	25	21.57	25.88	35.63	9.52			
may	31	54.87	59.13	27.63	8.84	may	31	59.97	04.23	26.97	8.87	may	31	21.70	25.97	36.47	9.13			
jun	6	55.03	59.23	26.25	8.44	jun	6	60.23	04.43	26.72	8.48	jun	6	21.86	26.06	37.55	8.73			
jun	12	55.18	59.33	25.10	8.05	jun	12	60.51	04.66	26.38	8.08	jun	12	22.00	26.16	38.43	8.34			
jun	18	55.38	59.45	23.58	7.65	jun	18	60.84	04.91	26.61	7.69	jun	18	22.20	26.27	39.72	7.94			
jun	24	55.54	59.56	22.44	7.26	jun	24	61.12	05.15	26.65	7.29	jun	24	22.36	26.38	40.69	7.55			
jun	30	55.73	59.68	21.10	6.86	jun	30	61.47	05.42	27.09	6.90	jun	30	22.55	26.50	41.89	7.16			
jul	6	55.90	59.81	19.93	6.47	jul	6	61.75	05.65	27.55	6.51	jul	6	22.72	26.62	42.99	6.76			
jul	12	56.10	59.93	18.76	6.08	jul	12	62.10	05.94	28.22	6.11	jul	12	22.92	26.75	44.12	6.37			
jul	18	56.29	60.06	17.54	5.68	jul	18	62.40	06.18	29.17	5.72	jul	18	23.10	26.88	45.36	5.97			
jul	24	56.46	60.19	16.61	5.29	jul	24	62.72	06.45	30.07	5.32	jul	24	23.28	27.01	46.36	5.58			
jul	30	56.65	60.31	15.55	4.89	jul	30	63.03	06.69	31.31	4.93	jul	30	23.47	27.13	47.54	5.18			
ago	5	56.80	60.44	14.84	4.50	ago	5	63.29	06.93	32.39	4.53	ago	5	23.62	27.26	48.41	4.79			
ago	11	56.99	60.56	13.88	4.11	ago	11	63.62	07.18	33.96	4.14	ago	11	23.82	27.38	49.57	4.40			
ago	17	57.13	60.67	13.32	3.71	ago	17	63.85	07.39	35.35	3.75	ago	17	23.96	27.50	50.39	4.00			
ago	23	57.29	60.78	12.71	3.32	ago	23	64.13	07.62	37.00	3.35	ago	23	24.13	27.61	51.28	3.61			
ago	29	57.41	60.88	12.30	2.92	ago	29	64.33	07.79	38.63	2.96	ago	29	24.25	27.72	52.04	3.21			
sep	4	57.54	60.97	12.04	2.53	sep	4	64.56	07.99	40.29	2.56	sep	4	24.39	27.82	52.65	2.82			
sep	10	57.67	61.05	11.68	2.13	sep	10	64.76	08.14	42.25	2.17	sep	10	24.52	27.90	53.43	2.43			
sep	16	57.75	61.12	11.71	1.74	sep	16	64.93	08.29	43.98	1.78	sep	16	24.62	27.98	53.82	2.03			
sep	22	57.86	61.18	11.60	1.35	sep	22	65.09	08.41	45.98	1.38	sep	22	24.73	28.05	54.37	1.64			
sep	28	57.91	61.22	11.88	0.95	sep	28	65.19	08.51	47.71	0.99	sep	28	24.79	28.11	54.57	1.24			
oct	4	58.00	61.26	11.95	0.56	oct	4	65.34	08.60	49.76	0.59	oct	4	24.90	28.15	54.97	0.85			
oct	10	58.04	61.28	12.32	0.16	oct	10	65.40	08.64	51.60	0.20	oct	10	24.94	28.18	55.10	0.45			
oct	16	58.09	61.28	12.67	23.77	oct	16	65.49	08.69	53.51	23.80	oct	16	25.01	28.20	55.22	0.06			
oct	22	58.11	61.27	13.12	23.37	oct	22	65.51	08.67	55.37	23.41	oct	22	25.04	28.21	55.28	23.67			
oct	28	58.12	61.25	13.74	22.98	oct	28	65.54	08.67	57.05	23.02	oct	28	25.07	28.20	55.13	23.27			
nov	3	58.15	61.22	14.13	22.59	nov	3	65.55	08.61	58.96	22.62	nov	3	25.11	28.18	55.22	22.88			
nov	9	58.13	61.17	14.89	22.19	nov	9	65.51	08.55	60.47	22.23	nov	9	25.10	28.14	54.91	22.48			
nov	15	58.13	61.10	15.39	21.80	nov	15	65.49	08.45	62.17	21.83	nov	15	25.12	28.09	54.84	22.09			
nov	21	58.09	61.03	16.17	21.40	nov	21	65.38	08.32	63.48	21.44	nov	21	25.09	28.03	54.46	21.69			
nov	27	58.08	60.94	16.71	21.01	nov	27	65.34	08.19	64.93	21.04	nov	27	25.10	27.95	54.29	21.30			
dic	3	58.03	60.84	17.38	20.61	dic	3	65.20	08.00	66.11	20.65	dic	3	25.06	27.87	53.97	20.91			
dic	9	57.99	60.73	18.02	20.22	dic	9	65.10	07.83	67.16	20.26	dic	9	25.03	27.77	53.61	20.51			
dic	15	57.94	60.62	18.57	19.83	dic	15	64.93	07.61	68.12	19.86	dic	15	24.99	27.66	53.31	20.12			
dic	21	57.87	60.49	19.29	19.43	dic	21	64.77	07.39	68.70	19.47	dic	21	24.92	27.55	52.80	19.72			
dic	27	57.84	60.37	19.60	19.04	dic	27	64.61	07.14	69.48	19.07	dic	27	24.89	27.42	52.64	19.33			

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

τ CET						α ARI						μ FOR								
3.4			G8 V			2.0			A2 IIIAB			5.2			A2 VN					
α		α_c	δ			α		α_c	δ			α		α_c	δ					
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'			
01	44	01	43	-15	-50	hp	02	08	02	07	23	32	hp	02	13	02	12	-30	-38	hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h			
ene	1	53.87	59.22	50.07	19.03	ene	1	11.51	16.86	46.74	19.41	ene	1	41.80	47.15	43.16	19.51			
ene	7	53.81	59.08	50.41	18.63	ene	7	11.45	16.73	46.77	19.02	ene	7	41.72	47.00	43.65	19.11			
ene	13	53.71	58.94	50.95	18.24	ene	13	11.35	16.59	46.41	18.63	ene	13	41.61	46.84	44.33	18.72			
ene	19	53.63	58.79	51.15	17.84	ene	19	11.28	16.44	46.25	18.23	ene	19	41.52	46.68	44.60	18.32			
ene	25	53.52	58.65	51.50	17.45	ene	25	11.16	16.29	45.79	17.84	ene	25	41.39	46.52	44.96	17.93			
ene	31	53.46	58.51	51.47	17.05	ene	31	11.10	16.15	45.53	17.44	ene	31	41.31	46.35	44.91	17.53			
feb	6	53.36	58.38	51.55	16.66	feb	6	10.98	16.00	45.05	17.05	feb	6	41.18	46.20	44.90	17.14			
feb	12	53.27	58.24	51.48	16.27	feb	12	10.89	15.86	44.55	16.65	feb	12	41.07	46.04	44.72	16.75			
feb	18	53.19	58.12	51.26	15.87	feb	18	10.79	15.72	44.09	16.26	feb	18	40.97	45.90	44.31	16.35			
feb	24	53.10	58.00	51.09	15.48	feb	24	10.69	15.59	43.41	15.87	feb	24	40.85	45.75	43.94	15.96			
mar	2	53.05	57.90	50.52	15.08	mar	2	10.62	15.47	43.04	15.47	mar	2	40.77	45.62	43.11	15.56			
mar	8	52.96	57.80	50.19	14.69	mar	8	10.52	15.36	42.32	15.08	mar	8	40.66	45.50	42.50	15.17			
mar	14	52.93	57.71	49.50	14.29	mar	14	10.47	15.26	41.86	14.68	mar	14	40.60	45.38	41.51	14.77			
mar	20	52.86	57.64	48.92	13.90	mar	20	10.39	15.17	41.20	14.29	mar	20	40.51	45.29	40.58	14.38			
mar	26	52.85	57.58	48.06	13.51	mar	26	10.37	15.10	40.75	13.89	mar	26	40.46	45.19	39.37	13.99			
abr	1	52.82	57.53	47.19	13.11	abr	1	10.33	15.04	40.27	13.50	abr	1	40.41	45.12	38.11	13.59			
abr	7	52.82	57.49	46.28	12.72	abr	7	10.32	15.00	39.78	13.11	abr	7	40.38	45.06	36.83	13.20			
abr	13	52.84	57.47	45.15	12.32	abr	13	10.33	14.96	39.49	12.71	abr	13	40.38	45.01	35.30	12.80			
abr	19	52.85	57.46	44.16	11.93	abr	19	10.33	14.95	39.05	12.32	abr	19	40.36	44.98	33.92	12.41			
abr	25	52.92	57.47	42.76	11.53	abr	25	10.40	14.95	39.02	11.92	abr	25	40.41	44.96	32.12	12.01			
may	1	52.96	57.49	41.64	11.14	may	1	10.43	14.96	38.72	11.53	may	1	40.43	44.96	30.62	11.62			
may	7	53.05	57.52	40.22	10.75	may	7	10.53	14.99	38.73	11.13	may	7	40.50	44.97	28.83	11.23			
may	13	53.13	57.57	38.91	10.35	may	13	10.60	15.03	38.70	10.74	may	13	40.56	45.00	27.14	10.83			
may	19	53.25	57.62	37.44	9.96	may	19	10.73	15.10	38.87	10.35	may	19	40.67	45.03	25.34	10.44			
may	25	53.37	57.69	35.96	9.56	may	25	10.85	15.17	39.16	9.95	may	25	40.78	45.10	23.51	10.04			
may	31	53.50	57.77	34.59	9.17	may	31	10.99	15.25	39.41	9.56	may	31	40.90	45.16	21.85	9.65			
jun	6	53.66	57.86	33.03	8.77	jun	6	11.15	15.34	39.95	9.16	jun	6	41.05	45.24	20.00	9.25			
jun	12	53.80	57.96	31.73	8.38	jun	12	11.29	15.45	40.32	8.77	jun	12	41.18	45.34	18.45	8.86			
jun	18	54.00	58.06	30.07	7.99	jun	18	11.50	15.56	41.16	8.37	jun	18	41.37	45.44	16.58	8.47			
jun	24	54.15	58.18	28.82	7.59	jun	24	11.66	15.68	41.73	7.98	jun	24	41.53	45.56	15.13	8.07			
jun	30	54.34	58.29	27.41	7.20	jun	30	11.87	15.81	42.57	7.59	jun	30	41.73	45.67	13.57	7.68			
jul	6	54.51	58.42	26.16	6.80	jul	6	12.04	15.94	43.40	7.19	jul	6	41.91	45.81	12.18	7.28			
jul	12	54.71	58.54	24.97	6.41	jul	12	12.25	16.09	44.27	6.80	jul	12	42.10	45.94	10.93	6.89			
jul	18	54.90	58.67	23.72	6.02	jul	18	12.45	16.22	45.37	6.40	jul	18	42.31	46.09	09.62	6.50			
jul	24	55.07	58.80	22.81	5.62	jul	24	12.64	16.37	46.26	6.01	jul	24	42.50	46.23	08.72	6.10			
jul	30	55.27	58.93	21.78	5.23	jul	30	12.84	16.51	47.41	5.62	jul	30	42.71	46.38	07.71	5.71			
ago	5	55.42	59.06	21.13	4.83	ago	5	13.01	16.65	48.32	5.22	ago	5	42.89	46.53	07.13	5.31			
ago	11	55.62	59.18	20.26	4.44	ago	11	13.23	16.79	49.56	4.83	ago	11	43.11	46.67	06.39	4.92			
ago	17	55.76	59.31	19.81	4.04	ago	17	13.38	16.92	50.56	4.43	ago	17	43.28	46.82	06.08	4.52			
ago	23	55.93	59.42	19.34	3.65	ago	23	13.57	17.06	51.66	4.04	ago	23	43.47	46.95	05.82	4.13			
ago	29	56.07	59.53	19.07	3.26	ago	29	13.71	17.18	52.72	3.64	ago	29	43.63	47.09	05.76	3.74			
sep	4	56.19	59.62	19.00	2.86	sep	4	13.87	17.30	53.65	3.25	sep	4	43.78	47.21	05.97	3.34			
sep	10	56.33	59.72	18.82	2.47	sep	10	14.02	17.41	54.84	2.86	sep	10	43.95	47.34	06.08	2.95			
sep	16	56.43	59.79	19.07	2.07	sep	16	14.14	17.51	55.67	2.46	sep	16	44.08	47.44	06.68	2.55			
sep	22	56.54	59.86	19.19	1.68	sep	22	14.28	17.60	56.72	2.07	sep	22	44.22	47.53	07.17	2.16			
sep	28	56.60	59.92	19.70	1.28	sep	28	14.36	17.67	57.45	1.67	sep	28	44.31	47.62	08.07	1.76			
oct	4	56.70	59.96	20.03	0.89	oct	4	14.49	17.74	58.40	1.28	oct	4	44.43	47.68	08.84	1.37			
oct	10	56.75	59.99	20.65	0.50	oct	10	14.55	17.79	59.14	0.88	oct	10	44.50	47.74	09.88	0.98			
oct	16	56.81	60.00	21.29	0.10	oct	16	14.65	17.84	59.87	0.49	oct	16	44.58	47.77	11.01	0.58			
oct	22	56.84	60.00	22.00	23.71	oct	22	14.70	17.86	60.58	0.10	oct	22	44.63	47.80	12.16	0.19			
oct	28	56.85	59.98	22.90	23.31	oct	28	14.75	17.88	61.05	23.70	oct	28	44.66	47.79	13.55	23.79			
nov	3	56.89	59.96	23.54	22.92	nov	3	14.81	17.87	61.79	23.31	nov	3	44.72	47.78	14.67	23.40			
nov	9	56.87	59.91	24.57	22.52	nov	9	14.82	17.86	62.13	22.91	nov	9	44.71	47.75	16.17	23.00			
nov	15	56.88	59.85	25.32	22.13	nov	15	14.86	17.82	62.68	22.52	nov	15	44.73	47.70	17.39	22.61			
nov	21	56.84	59.78	26.33	21.74	nov	21	14.83	17.77	62.93	22.12	nov	21	44.70	47.64	18.84	22.22			
nov	27	56.84	59.69	27.09	21.34	nov	27	14.86	17.72	63.31	21.73	nov	27	44.70	47.55	20.05	21.82			
dic	3	56.79	59.60	27.95	20.95	dic	3	14.83	17.64	63.56	21.34	dic	3	44.66	47.47	21.29	21.43			
dic	9	56.75	59.49	28.78	20.55	dic	9	14.81	17.55	63.70	20.94	dic	9	44.61	47.35	22.53	21.03			
dic	15	56.70	59.37	29.47	20.16	dic	15	14.77	17.45	63.89	20.55	dic	15	44.56	47.24	23.54	20.64			
dic	21	56.62	59.24	30.31	19.77	dic	21	14.71	17.34	63.78	20.15	dic	21	44.48	47.10	24.68	20.24			
dic	27	56.58	59.11	30.71	19.37	dic	27	14.69	17.22	63.99	19.76	dic	27	44.43	46.96	25.34	19.85			

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

γ TRI					ι PER					e ERI							
4.0		A1 VNN			4.05		G0 V			4.16		G5 V					
α		α_c		δ	α		α_c		δ	α		α_c		δ			
h m		h m		°	h m		h m		°	h m		h m		°			
02 18		02 17		33 55	03 10		03 09		49 40	03 20		03 19		-42 -59			
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	23.57	28.92	47.67	19.58	ene	1	23.28	28.63	53.18	20.45	ene	1	39.21	44.56	87.31	20.62
ene	7	23.50	28.77	47.90	19.19	ene	7	23.19	28.47	53.98	20.06	ene	7	39.12	44.40	88.17	20.23
ene	13	23.39	28.62	47.72	18.80	ene	13	23.07	28.30	54.32	19.66	ene	13	39.00	44.23	89.23	19.83
ene	19	23.31	28.47	47.70	18.40	ene	19	22.97	28.12	54.79	19.27	ene	19	38.88	44.04	89.86	19.44
ene	25	23.17	28.30	47.34	18.01	ene	25	22.79	27.92	54.91	18.87	ene	25	38.73	43.86	90.49	19.04
ene	31	23.09	28.14	47.13	17.61	ene	31	22.69	27.74	55.08	18.48	ene	31	38.61	43.66	90.78	18.65
feb	6	22.96	27.98	46.68	17.22	feb	6	22.50	27.52	55.02	18.08	feb	6	38.46	43.48	90.97	18.26
feb	12	22.86	27.82	46.16	16.82	feb	12	22.36	27.33	54.76	17.69	feb	12	38.31	43.28	91.05	17.86
feb	18	22.73	27.66	45.64	16.43	feb	18	22.18	27.11	54.52	17.30	feb	18	38.16	43.09	90.78	17.47
feb	24	22.62	27.52	44.85	16.04	feb	24	22.01	26.92	53.89	16.90	feb	24	37.99	42.90	90.57	17.07
mar	2	22.53	27.38	44.35	15.64	mar	2	21.88	26.72	53.49	16.51	mar	2	37.87	42.71	89.83	16.68
mar	8	22.42	27.25	43.45	15.25	mar	8	21.70	26.54	52.63	16.11	mar	8	37.70	42.54	89.29	16.28
mar	14	22.35	27.14	42.78	14.85	mar	14	21.58	26.37	51.92	15.72	mar	14	37.58	42.37	88.35	15.89
mar	20	22.25	27.03	41.88	14.46	mar	20	21.42	26.20	50.95	15.32	mar	20	37.44	42.22	87.38	15.50
mar	26	22.23	26.95	41.14	14.06	mar	26	21.34	26.07	49.99	14.93	mar	26	37.33	42.06	86.18	15.10
abr	1	22.17	26.88	40.38	13.67	abr	1	21.23	25.93	49.02	14.54	abr	1	37.23	41.94	84.82	14.71
abr	7	22.15	26.83	39.56	13.28	abr	7	21.17	25.84	47.87	14.14	abr	7	37.13	41.81	83.48	14.31
abr	13	22.15	26.78	38.93	12.88	abr	13	21.11	25.74	46.90	13.75	abr	13	37.07	41.71	81.81	13.92
abr	19	22.15	26.76	38.12	12.49	abr	19	21.07	25.68	45.64	13.35	abr	19	37.00	41.62	80.29	13.52
abr	25	22.21	26.76	37.72	12.09	abr	25	21.09	25.64	44.75	12.96	abr	25	36.99	41.54	78.34	13.13
may	1	22.24	26.77	37.05	11.70	may	1	21.09	25.62	43.57	12.56	may	1	36.96	41.49	76.63	12.74
may	7	22.34	26.80	36.70	11.30	may	7	21.16	25.63	42.64	12.17	may	7	36.97	41.44	74.67	12.34
may	13	22.40	26.84	36.30	10.91	may	13	21.20	25.64	41.68	11.78	may	13	36.99	41.43	72.71	11.95
may	19	22.54	26.91	36.08	10.52	may	19	21.33	25.70	40.78	11.38	may	19	37.05	41.41	70.73	11.55
may	25	22.66	26.98	36.01	10.12	may	25	21.43	25.75	40.10	10.99	may	25	37.12	41.44	68.60	11.16
may	31	22.81	27.07	35.90	9.73	may	31	21.58	25.85	39.29	10.59	may	31	37.20	41.46	66.71	10.76
jun	6	22.97	27.17	36.10	9.33	jun	6	21.75	25.95	38.83	10.20	jun	6	37.32	41.51	64.57	10.37
jun	12	23.13	27.29	36.15	8.94	jun	12	21.91	26.06	38.20	9.80	jun	12	37.42	41.58	62.73	9.98
jun	18	23.35	27.41	36.68	8.54	jun	18	22.15	26.21	38.04	9.41	jun	18	37.59	41.66	60.60	9.58
jun	24	23.52	27.54	36.98	8.15	jun	24	22.33	26.36	37.70	9.02	jun	24	37.73	41.76	58.84	9.19
jun	30	23.74	27.69	37.57	7.76	jun	30	22.59	26.54	37.62	8.62	jun	30	37.92	41.87	57.03	8.79
jul	6	23.92	27.83	38.19	7.36	jul	6	22.80	26.70	37.66	8.23	jul	6	38.10	42.00	55.31	8.40
jul	12	24.15	27.99	38.86	6.97	jul	12	23.07	26.90	37.70	7.83	jul	12	38.29	42.13	53.82	8.00
jul	18	24.36	28.14	39.81	6.57	jul	18	23.32	27.10	38.13	7.44	jul	18	38.51	42.29	52.20	7.61
jul	24	24.57	28.30	40.58	6.18	jul	24	23.58	27.31	38.37	7.05	jul	24	38.71	42.44	51.07	7.22
jul	30	24.79	28.46	41.65	5.78	jul	30	23.85	27.51	38.99	6.65	jul	30	38.94	42.61	49.82	6.82
ago	5	24.97	28.61	42.51	5.39	ago	5	24.08	27.72	39.44	6.26	ago	5	39.14	42.78	48.99	6.43
ago	11	25.21	28.77	43.74	5.00	ago	11	24.38	27.95	40.28	5.86	ago	11	39.39	42.95	48.08	6.03
ago	17	25.38	28.92	44.76	4.60	ago	17	24.61	28.15	41.03	5.47	ago	17	39.60	43.14	47.55	5.64
ago	23	25.59	29.08	45.93	4.21	ago	23	24.89	28.37	41.92	5.07	ago	23	39.82	43.31	47.19	5.25
ago	29	25.75	29.21	47.10	3.81	ago	29	25.11	28.57	42.93	4.68	ago	29	40.03	43.50	46.96	4.85
sep	4	25.92	29.35	48.16	3.42	sep	4	25.35	28.78	43.83	4.29	sep	4	40.23	43.66	47.12	4.46
sep	10	26.09	29.47	49.52	3.03	sep	10	25.59	28.98	45.14	3.89	sep	10	40.45	43.83	47.15	4.06
sep	16	26.23	29.59	50.55	2.63	sep	16	25.80	29.17	46.16	3.50	sep	16	40.63	43.99	47.76	3.67
sep	22	26.38	29.70	51.83	2.24	sep	22	26.03	29.35	47.50	3.10	sep	22	40.82	44.14	48.28	3.27
sep	28	26.48	29.79	52.83	1.84	sep	28	26.19	29.50	48.64	2.71	sep	28	40.97	44.29	49.21	2.88
oct	4	26.62	29.88	54.06	1.45	oct	4	26.41	29.67	50.00	2.32	oct	4	41.15	44.40	50.14	2.49
oct	10	26.70	29.94	55.12	1.05	oct	10	26.55	29.80	51.33	1.92	oct	10	41.28	44.52	51.29	2.09
oct	16	26.81	30.00	56.18	0.66	oct	16	26.74	29.93	52.63	1.53	oct	16	41.41	44.60	52.66	1.70
oct	22	26.87	30.03	57.24	0.27	oct	22	26.86	30.02	54.06	1.13	oct	22	41.52	44.68	54.00	1.30
oct	28	26.93	30.06	58.07	23.87	oct	28	26.98	30.11	55.26	0.74	oct	28	41.61	44.74	55.69	0.91
nov	3	27.00	30.07	59.18	23.48	nov	3	27.11	30.18	56.80	0.34	nov	3	41.70	44.77	57.11	0.51
nov	9	27.02	30.06	59.89	23.08	nov	9	27.19	30.23	57.98	23.95	nov	9	41.75	44.79	58.96	0.12
nov	15	27.07	30.04	60.82	22.69	nov	15	27.29	30.26	59.40	23.56	nov	15	41.81	44.78	60.57	23.73
nov	21	27.05	29.99	61.44	22.29	nov	21	27.31	30.25	60.59	23.16	nov	21	41.82	44.76	62.36	23.33
nov	27	27.08	29.94	62.18	21.90	nov	27	27.39	30.25	61.84	22.77	nov	27	41.84	44.70	64.05	22.94
dic	3	27.05	29.86	62.80	21.51	dic	3	27.39	30.19	63.07	22.37	dic	3	41.83	44.64	65.66	22.54
dic	9	27.04	29.78	63.26	21.11	dic	9	27.41	30.14	64.10	21.98	dic	9	41.81	44.54	67.38	22.15
dic	15	27.00	29.67	63.78	20.72	dic	15	27.38	30.05	65.24	21.58	dic	15	41.77	44.44	68.80	21.76
dic	21	26.93	29.55	63.96	20.32	dic	21	27.32	29.95	66.01	21.19	dic	21	41.70	44.32	70.38	21.36
dic	27	26.90	29.43	64.44	19.93	dic	27	27.30	29.83	67.06	20.80	dic	27	41.65	44.18	71.48	20.97

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

δ ERI					γ DOR					β ERI							
3.52		K0 IV			4.26		F1 V			2.79		A3 III					
α		α_c		δ	α		α_c		δ	α		α_c		δ			
h m		h m		° ′	h m		h m		° ′	h m		h m		° ′			
03 44		03 43		-09 -42	04 16		04 15		-51 -26	05 08 05		07 -05 -03		hp			
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	07.03	12.38	25.40	21.01	ene	1	31.15	36.50	49.99	21.55	ene	1	44.75	50.09	62.46	22.42
ene	7	06.99	12.27	25.94	20.62	ene	7	31.06	36.33	51.24	21.16	ene	7	44.49	49.50	66.24	22.03
ene	13	06.92	12.16	26.77	20.22	ene	13	30.92	36.15	52.71	20.76	ene	13	43.87	48.66	67.42	21.63
ene	19	06.87	12.03	27.27	19.83	ene	19	30.79	35.95	53.76	20.37	ene	19	43.29	47.90	65.70	21.24
ene	25	06.77	11.90	27.86	19.44	ene	25	30.62	35.74	54.77	19.98	ene	25	43.16	47.47	61.13	20.85
ene	31	06.71	11.76	28.23	19.04	ene	31	30.46	35.51	55.50	19.58	ene	31	43.58	47.52	54.86	20.45
feb	6	06.60	11.62	28.56	18.65	feb	6	30.27	35.29	56.05	19.19	feb	6	44.38	48.01	48.61	20.06
feb	12	06.51	11.48	28.89	18.25	feb	12	30.08	35.04	56.54	18.79	feb	12	45.40	48.78	44.86	19.66
feb	18	06.40	11.33	28.95	17.86	feb	18	29.88	34.81	56.62	18.40	feb	18	46.37	49.56	45.48	19.27
feb	24	06.28	11.19	29.18	17.46	feb	24	29.67	34.57	56.77	18.00	feb	24	47.13	50.05	49.67	18.88
mar	2	06.20	11.05	28.95	17.07	mar	2	29.48	34.33	56.38	17.61	mar	2	47.51	50.03	55.11	18.48
mar	8	06.08	10.91	28.99	16.68	mar	8	29.26	34.10	56.15	17.22	mar	8	44.75	50.09	62.46	22.42
mar	14	05.99	10.78	28.71	16.28	mar	14	29.07	33.86	55.52	16.82	mar	14	44.49	49.50	66.24	22.03
mar	20	05.87	10.65	28.44	15.89	mar	20	28.87	33.65	54.78	16.43	mar	20	43.87	48.66	67.42	21.63
mar	26	05.81	10.53	28.05	15.49	mar	26	28.69	33.42	53.88	16.03	mar	26	43.29	47.90	65.70	21.24
abr	1	05.72	10.43	27.48	15.10	abr	1	28.52	33.23	52.69	15.64	abr	1	43.16	47.47	61.13	20.85
abr	7	05.66	10.33	27.02	14.70	abr	7	28.36	33.03	51.58	15.24	abr	7	43.58	47.52	54.86	20.45
abr	13	05.60	10.24	26.22	14.31	abr	13	28.22	32.86	50.05	14.85	abr	13	44.38	48.01	48.61	20.06
abr	19	05.55	10.17	25.61	13.92	abr	19	28.08	32.70	48.67	14.46	abr	19	45.40	48.78	44.86	19.66
abr	25	05.55	10.10	24.58	13.52	abr	25	28.00	32.55	46.84	14.06	abr	25	46.37	49.56	45.48	19.27
may	1	05.52	10.05	23.78	13.13	may	1	27.90	32.43	45.20	13.67	may	1	47.13	50.05	49.67	18.88
may	7	05.55	10.01	22.74	12.73	may	7	27.84	32.31	43.31	13.27	may	7	47.51	50.03	55.11	18.48
may	13	05.55	09.99	21.65	12.34	may	13	27.80	32.24	41.33	12.88	may	13	44.75	50.09	62.46	22.42
may	19	05.61	09.98	20.55	11.94	may	19	27.79	32.15	39.39	12.48	may	19	44.49	49.50	66.24	22.03
may	25	05.67	09.99	19.23	11.55	may	25	27.80	32.12	37.19	12.09	may	25	43.87	48.66	67.42	21.63
may	31	05.74	10.00	18.13	11.16	may	31	27.82	32.09	35.26	11.70	may	31	43.29	47.90	65.70	21.24
jun	6	05.83	10.03	16.72	10.76	jun	6	27.89	32.08	33.02	11.30	jun	6	43.16	47.47	61.13	20.85
jun	12	05.92	10.08	15.54	10.37	jun	12	27.95	32.11	31.04	10.91	jun	12	43.58	47.52	54.86	20.45
jun	18	06.07	10.13	14.04	9.97	jun	18	28.07	32.13	28.80	10.51	jun	18	44.38	48.01	48.61	20.06
jun	24	06.17	10.20	12.80	9.58	jun	24	28.18	32.20	26.83	10.12	jun	24	45.40	48.78	44.86	19.66
jun	30	06.33	10.28	11.47	9.18	jun	30	28.32	32.27	24.87	9.72	jun	30	46.37	49.56	45.48	19.27
jul	6	06.46	10.37	10.12	8.79	jul	6	28.48	32.38	22.90	9.33	jul	6	47.13	50.05	49.67	18.88
jul	12	06.63	10.46	08.95	8.40	jul	12	28.65	32.49	21.21	8.94	jul	12	47.51	50.03	55.11	18.48
jul	18	06.80	10.57	07.54	8.00	jul	18	28.85	32.63	19.33	8.54	jul	18	44.75	50.09	62.46	22.42
jul	24	06.96	10.69	06.54	7.61	jul	24	29.05	32.78	17.95	8.15	jul	24	44.49	49.50	66.24	22.03
jul	30	07.14	10.81	05.32	7.21	jul	30	29.27	32.94	16.43	7.75	jul	30	43.87	48.66	67.42	21.63
ago	5	07.29	10.94	04.43	6.82	ago	5	29.48	33.12	15.30	7.36	ago	5	43.29	47.90	65.70	21.24
ago	11	07.50	11.06	03.41	6.43	ago	11	29.73	33.29	14.15	6.96	ago	11	43.16	47.47	61.13	20.85
ago	17	07.66	11.20	02.64	6.03	ago	17	29.96	33.50	13.31	6.57	ago	17	43.58	47.52	54.86	20.45
ago	23	07.85	11.33	01.97	5.64	ago	23	30.21	33.69	12.71	6.18	ago	23	44.38	48.01	48.61	20.06
ago	29	08.01	11.47	01.34	5.24	ago	29	30.45	33.91	12.19	5.78	ago	29	45.40	48.78	44.86	19.66
sep	4	08.17	11.60	01.04	4.85	sep	4	30.68	34.11	12.12	5.39	sep	4	46.37	49.56	45.48	19.27
sep	10	08.35	11.73	00.52	4.45	sep	10	30.93	34.31	11.92	4.99	sep	10	47.13	50.05	49.67	18.88
sep	16	08.49	11.86	00.51	4.06	sep	16	31.15	34.52	12.32	4.60	sep	16	47.51	50.03	55.11	18.48
sep	22	08.66	11.98	00.36	3.67	sep	22	31.39	34.70	12.67	4.21	sep	22	44.75	50.09	62.46	22.42
sep	28	08.78	12.09	00.55	3.27	sep	28	31.59	34.90	13.41	3.81	sep	28	44.49	49.50	66.24	22.03
oct	4	08.94	12.19	00.72	2.88	oct	4	31.80	35.06	14.26	3.42	oct	4	43.87	48.66	67.42	21.63
oct	10	09.05	12.29	01.03	2.48	oct	10	31.99	35.23	15.29	3.02	oct	10	43.29	47.90	65.70	21.24
oct	16	09.18	12.37	01.56	2.09	oct	16	32.17	35.36	16.64	2.63	oct	16	43.16	47.47	61.13	20.85
oct	22	09.28	12.45	02.02	1.69	oct	22	32.33	35.50	17.95	2.23	oct	22	43.58	47.52	54.86	20.45
oct	28	09.37	12.50	02.84	1.30	oct	28	32.47	35.60	19.68	1.84	oct	28	44.38	48.01	48.61	20.06
nov	3	09.48	12.55	03.37	0.91	nov	3	32.61	35.68	21.17	1.45	nov	3	45.40	48.78	44.86	19.66
nov	9	09.54	12.58	04.33	0.51	nov	9	32.70	35.74	23.12	1.05	nov	9	46.37	49.56	45.48	19.27
nov	15	09.63	12.60	05.10	0.12	nov	15	32.80	35.77	24.91	0.66	nov	15	47.13	50.05	49.67	18.88
nov	21	09.66	12.60	06.04	23.72	nov	21	32.85	35.79	26.86	0.26	nov	21	47.51	50.03	55.11	18.48
nov	27	09.73	12.58	06.96	23.33	nov	27	32.91	35.76	28.82	23.87	nov	27	44.75	50.09	62.46	22.42
dic	3	09.75	12.56	07.81	22.93	dic	3	32.93	35.74	30.66	23.47	dic	3	44.49	49.50	66.24	22.03
dic	9	09.77	12.51	08.84	22.54	dic	9	32.93	35.66	32.70	23.08	dic	9	43.87	48.66	67.42	21.63
dic	15	09.78	12.45	09.62	22.15	dic	15	32.91	35.58	34.43	22.69	dic	15	43.29	47.90	65.70	21.24
dic	21	09.76	12.38	10.65	21.75	dic	21	32.85	35.47	36.36	22.29	dic	21	43.16	47.47	61.13	20.85
dic	27	09.77	12.30	11.27	21.36	dic	27	32.80	35.33	37.84	21.90	dic	27	43.58	47.52	54.86	20.45

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

ζ DOR					ζ LEP					δ LEP							
4.7		F7 V			3.55		A3 V			3.8		KO III CN					
α		α _c		δ	α		α _c		δ	α		α _c		δ			
h m		h m		°	h m		h m		°	h m		h m		°			
05 05		05 04		-57 -26	05 47		05 46		-14 -48	05 52		05 51		-20 -52			
hp				hp													
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	51.24	56.59	71.02	22.37	ene	1	47.09	52.44	69.49	23.07	ene	1	06.63	11.98	53.86	23.15
ene	7	51.15	56.43	72.57	21.98	ene	7	47.11	52.39	70.49	22.68	ene	7	06.65	11.93	55.05	22.75
ene	13	51.02	56.25	74.36	21.59	ene	13	47.09	52.32	71.75	22.29	ene	13	06.63	11.86	56.49	22.36
ene	19	50.88	56.04	75.77	21.19	ene	19	47.08	52.24	72.74	21.89	ene	19	06.62	11.78	57.66	21.96
ene	25	50.70	55.83	77.10	20.80	ene	25	47.02	52.15	73.69	21.50	ene	25	06.56	11.69	58.77	21.57
ene	31	50.52	55.57	78.26	20.40	ene	31	47.00	52.04	74.60	21.10	ene	31	06.52	11.57	59.84	21.17
feb	6	50.32	55.34	79.15	20.01	feb	6	46.91	51.93	75.27	20.71	feb	6	06.44	11.46	60.65	20.78
feb	12	50.10	55.06	80.05	19.61	feb	12	46.84	51.81	76.06	20.31	feb	12	06.36	11.33	61.57	20.39
feb	18	49.86	54.80	80.50	19.22	feb	18	46.74	51.67	76.47	19.92	feb	18	06.26	11.19	62.09	19.99
feb	24	49.61	54.52	81.04	18.83	feb	24	46.63	51.53	77.06	19.53	feb	24	06.14	11.04	62.78	19.60
mar	2	49.38	54.23	81.04	18.43	mar	2	46.54	51.39	77.22	19.13	mar	2	06.04	10.89	63.03	19.20
mar	8	49.12	53.95	81.16	18.04	mar	8	46.41	51.24	77.54	18.74	mar	8	05.91	10.74	63.41	18.81
mar	14	48.87	53.66	80.91	17.64	mar	14	46.30	51.09	77.62	18.34	mar	14	05.80	10.58	63.54	18.41
mar	20	48.62	53.40	80.49	17.25	mar	20	46.16	50.94	77.56	17.95	mar	20	05.65	10.43	63.51	18.02
mar	26	48.38	53.11	79.96	16.85	mar	26	46.06	50.79	77.53	17.55	mar	26	05.54	10.27	63.49	17.63
abr	1	48.14	52.85	79.06	16.46	abr	1	45.93	50.64	77.15	17.16	abr	1	05.41	10.12	63.10	17.23
abr	7	47.92	52.59	78.26	16.07	abr	7	45.83	50.50	76.96	16.77	abr	7	05.29	09.97	62.89	16.84
abr	13	47.72	52.35	77.01	15.67	abr	13	45.72	50.36	76.37	16.37	abr	13	05.18	09.82	62.25	16.44
abr	19	47.52	52.13	75.87	15.28	abr	19	45.62	50.23	75.94	15.98	abr	19	05.07	09.69	61.77	16.05
abr	25	47.36	51.91	74.29	14.88	abr	25	45.56	50.11	75.16	15.58	abr	25	05.00	09.55	60.92	15.65
may	1	47.20	51.73	72.82	14.49	may	1	45.47	50.00	74.46	15.19	may	1	04.90	09.44	60.14	15.26
may	7	47.08	51.54	71.14	14.09	may	7	45.42	49.89	73.64	14.79	may	7	04.85	09.32	59.22	14.87
may	13	46.96	51.40	69.28	13.70	may	13	45.36	49.80	72.61	14.40	may	13	04.78	09.22	58.08	14.47
may	19	46.89	51.26	67.49	13.31	may	19	45.35	49.72	71.72	14.01	may	19	04.76	09.13	57.08	14.08
may	25	46.84	51.16	65.35	12.91	may	25	45.33	49.65	70.46	13.61	may	25	04.74	09.06	55.69	13.68
may	31	46.81	51.07	63.49	12.52	may	31	45.33	49.59	69.47	13.22	may	31	04.73	09.00	54.57	13.29
jun	6	46.81	51.01	61.28	12.12	jun	6	45.35	49.55	68.13	12.82	jun	6	04.75	08.95	53.09	12.89
jun	12	46.82	50.98	59.27	11.73	jun	12	45.37	49.52	66.95	12.43	jun	12	04.76	08.91	51.77	12.50
jun	18	46.89	50.95	57.03	11.33	jun	18	45.44	49.51	65.57	12.03	jun	18	04.82	08.89	50.24	12.11
jun	24	46.96	50.98	54.97	10.94	jun	24	45.48	49.51	64.26	11.64	jun	24	04.86	08.89	48.79	11.71
jun	30	47.06	51.01	52.93	10.55	jun	30	45.57	49.52	62.98	11.25	jun	30	04.95	08.89	47.37	11.32
jul	6	47.18	51.09	50.80	10.15	jul	6	45.64	49.55	61.52	10.85	jul	6	05.01	08.92	45.76	10.92
jul	12	47.33	51.17	48.98	9.76	jul	12	45.75	49.59	60.35	10.46	jul	12	05.12	08.96	44.46	10.53
jul	18	47.51	51.28	46.91	9.36	jul	18	45.87	49.64	58.85	10.06	jul	18	05.23	09.01	42.82	10.13
jul	24	47.69	51.42	45.33	8.97	jul	24	45.99	49.71	57.76	9.67	jul	24	05.35	09.07	41.61	9.74
jul	30	47.90	51.56	43.59	8.57	jul	30	46.13	49.79	56.46	9.27	jul	30	05.49	09.15	40.19	9.35
ago	5	48.11	51.75	42.18	8.18	ago	5	46.24	49.88	55.38	8.88	ago	5	05.60	09.24	39.00	8.95
ago	11	48.36	51.92	40.82	7.79	ago	11	46.42	49.98	54.34	8.49	ago	11	05.78	09.34	37.85	8.56
ago	17	48.60	52.14	39.67	7.39	ago	17	46.55	50.10	53.35	8.09	ago	17	05.91	09.45	36.77	8.16
ago	23	48.86	52.34	38.81	7.00	ago	23	46.73	50.21	52.62	7.70	ago	23	06.09	09.57	35.97	7.77
ago	29	49.12	52.58	37.97	6.60	ago	29	46.88	50.34	51.78	7.30	ago	29	06.24	09.70	35.07	7.38
sep	4	49.38	52.81	37.62	6.21	sep	4	47.04	50.47	51.38	6.91	sep	4	06.41	09.84	34.62	6.98
sep	10	49.66	53.04	37.14	5.82	sep	10	47.22	50.61	50.77	6.51	sep	10	06.59	09.97	33.97	6.59
sep	16	49.92	53.29	37.25	5.42	sep	16	47.38	50.75	50.64	6.12	sep	16	06.76	10.12	33.83	6.19
sep	22	50.20	53.52	37.35	5.03	sep	22	47.57	50.89	50.44	5.73	sep	22	06.94	10.26	33.63	5.80
sep	28	50.45	53.76	37.80	4.63	sep	28	47.72	51.03	50.49	5.33	sep	28	07.10	10.41	33.69	5.40
oct	4	50.71	53.97	38.46	4.24	oct	4	47.91	51.17	50.73	4.94	oct	4	07.29	10.55	33.97	5.01
oct	10	50.95	54.19	39.24	3.84	oct	10	48.06	51.31	50.97	4.54	oct	10	07.45	10.69	34.26	4.62
oct	16	51.19	54.38	40.44	3.45	oct	16	48.24	51.43	51.60	4.15	oct	16	07.63	10.83	34.96	4.22
oct	22	51.40	54.57	41.58	3.06	oct	22	48.40	51.56	52.10	3.76	oct	22	07.79	10.95	35.54	3.83
oct	28	51.60	54.73	43.19	2.66	oct	28	48.55	51.68	53.03	3.36	oct	28	07.95	11.08	36.58	3.43
nov	3	51.79	54.86	44.61	2.27	nov	3	48.71	51.78	53.76	2.97	nov	3	08.12	11.18	37.43	3.04
nov	9	51.94	54.98	46.50	1.87	nov	9	48.84	51.88	54.88	2.57	nov	9	08.25	11.29	38.68	2.64
nov	15	52.09	55.05	48.31	1.48	nov	15	48.99	51.96	55.95	2.18	nov	15	08.40	11.37	39.89	2.25
nov	21	52.19	55.13	50.26	1.09	nov	21	49.10	52.04	57.08	1.78	nov	21	08.51	11.45	41.18	1.86
nov	27	52.29	55.14	52.33	0.69	nov	27	49.23	52.09	58.41	1.39	nov	27	08.65	11.50	42.68	1.46
dic	3	52.35	55.16	54.26	0.30	dic	3	49.33	52.13	59.54	1.00	dic	3	08.74	11.55	43.99	1.07
dic	9	52.39	55.12	56.48	23.90	dic	9	49.42	52.16	61.01	0.60	dic	9	08.84	11.58	45.64	0.67
dic	15	52.40	55.07	58.38	23.51	dic	15	49.50	52.17	62.17	0.21	dic	15	08.91	11.59	46.99	0.28
dic	21	52.37	54.99	60.52	23.11	dic	21	49.54	52.17	63.60	23.81	dic	21	08.96	11.58	48.61	23.89
dic	27	52.34	54.87	62.29	22.72	dic	27	49.61	52.14	64.74	23.42	dic	27	09.03	11.56	49.94	23.49

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

η LEP					α MEN					ξ GEM							
3.71		F1 V			5.0		G5 V			3.35		F5 III					
α		α _c		δ	α		α _c		δ	α		α _c		δ			
h m		h m		°	h m		h m		°	h m		h m		°			
05 57		05 56		-14 -09	06 09		06 08		-74 -45	06 46		06 45		12 52	hp		
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	14.30	19.65	66.11	23.23	ene	1	47.93	53.28	40.77	23.44	ene	1	18.59	23.94	21.13	0.05
ene	7	14.33	19.60	67.11	22.84	ene	7	47.77	53.05	42.63	23.05	ene	7	18.67	23.94	20.93	23.65
ene	13	14.31	19.55	68.38	22.44	ene	13	47.57	52.81	44.73	22.65	ene	13	18.69	23.92	20.50	23.26
ene	19	14.31	19.47	69.38	22.05	ene	19	47.30	52.46	46.55	22.26	ene	19	18.73	23.89	20.26	22.87
ene	25	14.26	19.38	70.33	21.65	ene	25	47.00	52.13	48.27	21.86	ene	25	18.71	23.84	20.09	22.47
ene	31	14.23	19.28	71.26	21.26	ene	31	46.63	51.68	49.93	21.47	ene	31	18.73	23.78	19.81	22.08
feb	6	14.15	19.17	71.93	20.87	feb	6	46.24	51.26	51.27	21.07	feb	6	18.68	23.70	19.80	21.68
feb	12	14.08	19.05	72.74	20.47	feb	12	45.80	50.76	52.70	20.68	feb	12	18.64	23.61	19.57	21.29
feb	18	13.99	18.92	73.16	20.08	feb	18	45.32	50.25	53.67	20.29	feb	18	18.58	23.51	19.67	20.89
feb	24	13.88	18.78	73.77	19.68	feb	24	44.83	49.73	54.75	19.89	feb	24	18.49	23.39	19.52	20.50
mar	2	13.79	18.64	73.96	19.29	mar	2	44.29	49.14	55.35	19.50	mar	2	18.43	23.27	19.65	20.11
mar	8	13.66	18.50	74.30	18.89	mar	8	43.77	48.60	56.00	19.10	mar	8	18.31	23.14	19.61	19.71
mar	14	13.56	18.34	74.41	18.50	mar	14	43.20	47.99	56.35	18.71	mar	14	18.23	23.01	19.67	19.32
mar	20	13.42	18.20	74.37	18.11	mar	20	42.66	47.44	56.46	18.31	mar	20	18.09	22.87	19.83	18.92
mar	26	13.32	18.04	74.37	17.71	mar	26	42.09	46.81	56.53	17.92	mar	26	18.00	22.73	19.80	18.53
abr	1	13.19	17.90	74.02	17.32	abr	1	41.54	46.25	56.15	17.52	abr	1	17.88	22.59	20.07	18.13
abr	7	13.08	17.76	73.86	16.92	abr	7	41.00	45.67	55.91	17.13	abr	7	17.78	22.45	20.03	17.74
abr	13	12.98	17.62	73.30	16.53	abr	13	40.47	45.11	55.17	16.74	abr	13	17.67	22.31	20.31	17.35
abr	19	12.87	17.48	72.90	16.13	abr	19	39.97	44.59	54.51	16.34	abr	19	17.56	22.17	20.36	16.95
abr	25	12.81	17.36	72.16	15.74	abr	25	39.48	44.03	53.44	15.95	abr	25	17.50	22.05	20.60	16.56
may	1	12.71	17.24	71.50	15.35	may	1	39.04	43.57	52.38	15.55	may	1	17.39	21.92	20.76	16.16
may	7	12.67	17.13	70.72	14.95	may	7	38.61	43.08	51.14	15.16	may	7	17.34	21.81	20.91	15.77
may	13	12.60	17.04	69.72	14.56	may	13	38.24	42.68	49.62	14.76	may	13	17.27	21.70	21.25	15.37
may	19	12.58	16.95	68.88	14.16	may	19	37.88	42.25	48.20	14.37	may	19	17.24	21.61	21.31	14.98
may	25	12.56	16.88	67.65	13.77	may	25	37.59	41.91	46.35	13.98	may	25	17.21	21.53	21.74	14.59
may	31	12.56	16.82	66.69	13.37	may	31	37.34	41.60	44.74	13.58	may	31	17.19	21.45	21.85	14.19
jun	6	12.58	16.77	65.39	12.98	jun	6	37.13	41.32	42.75	13.19	jun	6	17.20	21.39	22.25	13.80
jun	12	12.58	16.74	64.24	12.59	jun	12	36.98	41.14	40.87	12.79	jun	12	17.19	21.35	22.51	13.40
jun	18	12.65	16.72	62.90	12.19	jun	18	36.85	40.92	38.80	12.40	jun	18	17.25	21.32	22.85	13.01
jun	24	12.69	16.72	61.62	11.80	jun	24	36.81	40.84	36.76	12.00	jun	24	17.27	21.29	23.20	12.62
jun	30	12.78	16.72	60.37	11.40	jun	30	36.80	40.75	34.78	11.61	jun	30	17.34	21.29	23.45	12.22
jul	6	12.84	16.75	58.94	11.01	jul	6	36.86	40.76	32.59	11.22	jul	6	17.39	21.29	23.95	11.83
jul	12	12.95	16.78	57.80	10.61	jul	12	36.95	40.79	30.71	10.82	jul	12	17.48	21.31	24.15	11.43
jul	18	13.06	16.83	56.32	10.22	jul	18	37.10	40.87	28.51	10.43	jul	18	17.58	21.35	24.71	11.04
jul	24	13.17	16.90	55.25	9.83	jul	24	37.30	41.03	26.74	10.03	jul	24	17.67	21.40	24.92	10.64
jul	30	13.31	16.97	53.97	9.43	jul	30	37.54	41.21	24.80	9.64	jul	30	17.80	21.46	25.34	10.25
ago	5	13.42	17.06	52.89	9.04	ago	5	37.84	41.48	23.09	9.24	ago	5	17.89	21.53	25.66	9.86
ago	11	13.59	17.15	51.86	8.64	ago	11	38.16	41.72	21.48	8.85	ago	11	18.06	21.62	25.91	9.46
ago	17	13.72	17.26	50.87	8.25	ago	17	38.54	42.08	19.96	8.46	ago	17	18.18	21.72	26.25	9.07
ago	23	13.89	17.38	50.14	7.85	ago	23	38.94	42.43	18.77	8.06	ago	23	18.34	21.83	26.35	8.67
ago	29	14.04	17.50	49.30	7.46	ago	29	39.38	42.84	17.51	7.67	ago	29	18.48	21.94	26.68	8.28
sep	4	14.20	17.63	48.89	7.07	sep	4	39.84	43.27	16.75	7.27	sep	4	18.63	22.06	26.64	7.88
sep	10	14.38	17.77	48.27	6.67	sep	10	40.32	43.70	15.85	6.88	sep	10	18.81	22.20	26.86	7.49
sep	16	14.54	17.91	48.13	6.28	sep	16	40.83	44.19	15.51	6.49	sep	16	18.97	22.33	26.75	7.10
sep	22	14.73	18.05	47.92	5.88	sep	22	41.33	44.65	15.20	6.09	sep	22	19.16	22.48	26.74	6.70
sep	28	14.88	18.19	47.95	5.49	sep	28	41.86	45.17	15.17	5.70	sep	28	19.30	22.62	26.66	6.31
oct	4	15.07	18.33	48.18	5.10	oct	4	42.35	45.61	15.45	5.30	oct	4	19.51	22.77	26.38	5.91
oct	10	15.22	18.47	48.39	4.70	oct	10	42.87	46.11	15.78	4.91	oct	10	19.67	22.91	26.26	5.52
oct	16	15.40	18.60	49.01	4.31	oct	16	43.36	46.55	16.62	4.51	oct	16	19.87	23.06	25.80	5.12
oct	22	15.56	18.72	49.48	3.91	oct	22	43.83	47.00	17.38	4.12	oct	22	20.04	23.20	25.60	4.73
oct	28	15.71	18.84	50.40	3.52	oct	28	44.28	47.41	18.66	3.73	oct	28	20.21	23.34	25.04	4.34
nov	3	15.89	18.95	51.11	3.12	nov	3	44.69	47.76	19.83	3.33	nov	3	20.41	23.48	24.71	3.94
nov	9	16.02	19.06	52.21	2.73	nov	9	45.08	48.12	21.44	2.94	nov	9	20.56	23.60	24.14	3.55
nov	15	16.17	19.14	53.26	2.34	nov	15	45.41	48.38	23.10	2.54	nov	15	20.75	23.72	23.63	3.15
nov	21	16.28	19.22	54.38	1.94	nov	21	45.71	48.65	24.86	2.15	nov	21	20.89	23.83	23.18	2.76
nov	27	16.42	19.28	55.70	1.55	nov	27	45.94	48.80	26.90	1.76	nov	27	21.07	23.93	22.50	2.37
dic	3	16.52	19.33	56.82	1.15	dic	3	46.14	48.95	28.76	1.36	dic	3	21.20	24.01	22.13	1.97
dic	9	16.62	19.36	58.28	0.76	dic	9	46.27	49.01	31.02	0.97	dic	9	21.35	24.08	21.44	1.58
dic	15	16.70	19.38	59.43	0.36	dic	15	46.34	49.02	33.01	0.57	dic	15	21.47	24.14	21.08	1.18
dic	21	16.75	19.38	60.85	23.97	dic	21	46.37	48.99	35.27	0.18	dic	21	21.56	24.18	20.50	0.79
dic	27	16.83	19.36	61.99	23.58	dic	27	46.31	48.84	37.28	23.78	dic	27	21.68	24.21	20.14	0.39

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

QW PUP						4.43 F6 IV						q Pup								
4.49		F0 IV				4.43		F6 IV				4.45		A7 III						
α		α_c		δ		α		α_c		δ		α		α_c		δ				
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'			
07	13	07	12	-46	-47	hp	07	34	07	33	-22	-20	hp	08	19	08	18	-36	-42	hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h			
ene	1	06.20	11.56	28.74	0.50	ene	1	50.38	55.73	13.96	0.86	ene	1	15.03	20.38	56.58	1.60			
ene	7	06.25	11.53	30.66	0.10	ene	7	50.46	55.74	15.43	0.46	ene	7	15.13	20.41	58.44	1.20			
ene	13	06.27	11.50	32.81	23.71	ene	13	50.51	55.74	17.10	0.07	ene	13	15.21	20.44	60.46	0.81			
ene	19	06.27	11.43	34.78	23.31	ene	19	50.56	55.71	18.61	23.68	ene	19	15.28	20.43	62.42	0.42			
ene	25	06.22	11.35	36.63	22.92	ene	25	50.55	55.68	19.99	23.28	ene	25	15.29	20.42	64.21	0.02			
ene	31	06.19	11.24	38.55	22.52	ene	31	50.57	55.62	21.49	22.89	ene	31	15.33	20.38	66.20	23.63			
feb	6	06.10	11.12	40.11	22.13	feb	6	50.53	55.55	22.62	22.49	feb	6	15.31	20.33	67.80	23.23			
feb	12	06.02	10.98	41.84	21.74	feb	12	50.50	55.47	23.94	22.10	feb	12	15.29	20.26	69.61	22.84			
feb	18	05.89	10.83	43.13	21.34	feb	18	50.44	55.37	24.86	21.70	feb	18	15.24	20.17	71.04	22.44			
feb	24	05.76	10.66	44.53	20.95	feb	24	50.37	55.27	25.92	21.31	feb	24	15.17	20.07	72.57	22.05			
mar	2	05.62	10.47	45.55	20.55	mar	2	50.30	55.15	26.66	20.92	mar	2	15.10	19.95	73.84	21.66			
mar	8	05.45	10.29	46.56	20.16	mar	8	50.19	55.02	27.40	20.52	mar	8	14.99	19.83	75.03	21.26			
mar	14	05.29	10.08	47.38	19.76	mar	14	50.10	54.88	28.01	20.13	mar	14	14.90	19.68	76.13	20.87			
mar	20	05.10	09.88	47.89	19.37	mar	20	49.96	54.74	28.34	19.73	mar	20	14.76	19.54	76.89	20.47			
mar	26	04.93	09.66	48.46	18.98	mar	26	49.86	54.59	28.81	19.34	mar	26	14.65	19.38	77.79	20.08			
abr	1	04.73	09.44	48.54	18.58	abr	1	49.73	54.44	28.82	18.94	abr	1	14.50	19.21	78.21	19.68			
abr	7	04.56	09.23	48.77	18.19	abr	7	49.62	54.29	29.03	18.55	abr	7	14.37	19.04	78.78	19.29			
abr	13	04.37	09.01	48.54	17.79	abr	13	49.49	54.13	28.83	18.16	abr	13	14.23	18.86	78.94	18.90			
abr	19	04.18	08.80	48.34	17.40	abr	19	49.37	53.98	28.70	17.76	abr	19	14.08	18.69	79.10	18.50			
abr	25	04.02	08.57	47.81	17.00	abr	25	49.27	53.82	28.33	17.37	abr	25	13.96	18.51	79.04	18.11			
may	1	03.85	08.38	47.18	16.61	may	1	49.15	53.68	27.86	16.97	may	1	13.81	18.34	78.79	17.71			
may	7	03.71	08.18	46.45	16.22	may	7	49.07	53.53	27.37	16.58	may	7	13.69	18.16	78.53	17.32			
may	13	03.56	07.99	45.36	15.82	may	13	48.96	53.40	26.55	16.18	may	13	13.55	17.99	77.86	16.92			
may	19	03.44	07.81	44.42	15.43	may	19	48.90	53.26	25.93	15.79	may	19	13.45	17.82	77.38	16.53			
may	25	03.33	07.65	42.99	15.03	may	25	48.82	53.14	24.86	15.40	may	25	13.34	17.66	76.40	16.14			
may	31	03.23	07.50	41.77	14.64	may	31	48.77	53.03	24.01	15.00	may	31	13.25	17.51	75.60	15.74			
jun	6	03.16	07.36	40.17	14.24	jun	6	48.73	52.93	22.85	14.61	jun	6	13.17	17.36	74.47	15.35			
jun	12	03.09	07.25	38.60	13.85	jun	12	48.68	52.84	21.71	14.21	jun	12	13.08	17.24	73.28	14.95			
jun	18	03.06	07.13	36.90	13.46	jun	18	48.69	52.76	20.50	13.82	jun	18	13.04	17.11	72.05	14.56			
jun	24	03.02	07.05	35.09	13.06	jun	24	48.67	52.70	19.17	13.42	jun	24	12.98	17.01	70.59	14.16			
jun	30	03.03	06.98	33.37	12.67	jun	30	48.69	52.64	17.95	13.03	jun	30	12.97	16.91	69.26	13.77			
jul	6	03.03	06.94	31.35	12.27	jul	6	48.70	52.61	16.44	12.64	jul	6	12.93	16.84	67.57	13.38			
jul	12	03.07	06.91	29.63	11.88	jul	12	48.74	52.58	15.23	12.24	jul	12	12.94	16.77	66.16	12.98			
jul	18	03.12	06.89	27.55	11.48	jul	18	48.80	52.57	13.68	11.85	jul	18	12.95	16.72	64.40	12.59			
jul	24	03.19	06.91	25.82	11.09	jul	24	48.85	52.58	12.44	11.45	jul	24	12.97	16.70	62.88	12.19			
jul	30	03.28	06.94	23.92	10.70	jul	30	48.93	52.60	11.05	11.06	jul	30	13.02	16.68	61.22	11.80			
ago	5	03.36	07.00	22.12	10.30	ago	5	49.00	52.64	09.72	10.66	ago	5	13.05	16.69	59.55	11.40			
ago	11	03.50	07.06	20.49	9.91	ago	11	49.12	52.68	08.57	10.27	ago	11	13.14	16.70	58.10	11.01			
ago	17	03.62	07.16	18.80	9.51	ago	17	49.21	52.75	07.30	9.88	ago	17	13.20	16.75	56.47	10.62			
ago	23	03.78	07.27	17.47	9.12	ago	23	49.34	52.83	06.37	9.48	ago	23	13.31	16.80	55.19	10.22			
ago	29	03.93	07.39	15.99	8.72	ago	29	49.45	52.91	05.26	9.09	ago	29	13.41	16.87	53.70	9.83			
sep	4	04.11	07.54	14.97	8.33	sep	4	49.59	53.02	04.58	8.69	sep	4	13.53	16.96	52.62	9.43			
sep	10	04.30	07.68	13.83	7.94	sep	10	49.74	53.12	03.75	8.30	sep	10	13.67	17.06	51.45	9.04			
sep	16	04.49	07.86	13.15	7.54	sep	16	49.89	53.25	03.31	7.90	sep	16	13.81	17.18	50.60	8.64			
sep	22	04.70	08.02	12.53	7.15	sep	22	50.06	53.37	02.90	7.51	sep	22	13.98	17.30	49.85	8.25			
sep	28	04.90	08.21	12.10	6.75	sep	28	50.20	53.51	02.62	7.12	sep	28	14.13	17.44	49.19	7.86			
oct	4	05.14	08.39	12.05	6.36	oct	4	50.39	53.65	02.70	6.72	oct	4	14.33	17.58	48.96	7.46			
oct	10	05.35	08.59	11.98	5.97	oct	10	50.56	53.80	02.68	6.33	oct	10	14.50	17.74	48.62	7.07			
oct	16	05.58	08.78	12.45	5.57	oct	16	50.75	53.94	03.16	5.93	oct	16	14.71	17.90	48.81	6.67			
oct	22	05.80	08.96	12.82	5.18	oct	22	50.92	54.09	03.49	5.54	oct	22	14.90	18.06	48.91	6.28			
oct	28	06.02	09.15	13.71	4.78	oct	28	51.10	54.23	04.28	5.15	oct	28	15.10	18.23	49.46	5.89			
nov	3	06.25	09.32	14.56	4.39	nov	3	51.30	54.37	05.01	4.75	nov	3	15.32	18.38	50.05	5.49			
nov	9	06.45	09.49	15.79	3.99	nov	9	51.47	54.51	06.04	4.36	nov	9	15.52	18.55	50.93	5.10			
nov	15	06.67	09.64	17.17	3.60	nov	15	51.67	54.63	07.19	3.96	nov	15	15.74	18.70	52.03	4.70			
nov	21	06.85	09.79	18.59	3.21	nov	21	51.82	54.76	08.34	3.57	nov	21	15.92	18.86	53.12	4.31			
nov	27	07.04	09.90	20.42	2.81	nov	27	52.01	54.86	09.86	3.17	nov	27	16.14	18.99	54.68	3.91			
dic	3	07.20	10.01	22.04	2.42	dic	3	52.15	54.96	11.14	2.78	dic	3	16.31	19.12	56.03	3.52			
dic	9	07.36	10.10	24.13	2.02	dic	9	52.31	55.05	12.84	2.39	dic	9	16.50	19.24	57.85	3.13			
dic	15	07.48	10.16	25.99	1.63	dic	15	52.44	55.12	14.29	1.99	dic	15	16.66	19.33	59.50	2.73			
dic	21	07.59	10.21	28.13	1.23	dic	21	52.55	55.17	15.99	1.60	dic	21	16.80	19.43	61.39	2.34			
dic	27	07.69	10.22	30.14	0.84	dic	27	52.68	55.21	17.58	1.20	dic	27	16.96	19.49	63.30	1.94			

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

β VOL						α VOL						β CAR					
3.76			K2 III			4.0			A5 V			1.67			A2 IV		
α		α_c	δ			α		α_c	δ			α		α_c	δ		
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'
08 25		08 24	-66 -11		hp	09 02		09 01	-66 -27		hp	09 13		09 12	-69 -47		hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	59.24	64.59	45.25	1.71	ene	1	47.01	52.36	56.92	2.32	ene	1	27.41	32.77	19.33	2.50
ene	7	59.35	64.63	47.37	1.32	ene	7	47.17	52.45	58.99	1.93	ene	7	27.61	32.88	21.38	2.11
ene	13	59.45	64.68	49.69	0.92	ene	13	47.33	52.56	61.24	1.54	ene	13	27.80	33.03	23.59	1.71
ene	19	59.50	64.66	51.99	0.53	ene	19	47.43	52.59	63.56	1.14	ene	19	27.92	33.08	25.89	1.32
ene	25	59.50	64.63	54.16	0.13	ene	25	47.49	52.62	65.73	0.75	ene	25	28.00	33.13	28.06	0.92
ene	31	59.48	64.53	56.55	23.74	ene	31	47.53	52.58	68.19	0.35	ene	31	28.05	33.10	30.54	0.53
feb	6	59.40	64.42	58.58	23.34	feb	6	47.51	52.53	70.30	23.96	feb	6	28.04	33.06	32.67	0.14
feb	12	59.31	64.28	60.84	22.95	feb	12	47.48	52.44	72.66	23.56	feb	12	28.01	32.98	35.06	23.74
feb	18	59.16	64.09	62.73	22.56	feb	18	47.38	52.31	74.71	23.17	feb	18	27.91	32.84	37.16	23.35
feb	24	59.00	63.90	64.72	22.16	feb	24	47.27	52.17	76.86	22.78	feb	24	27.80	32.70	39.36	22.95
mar	2	58.79	63.64	66.46	21.77	mar	2	47.11	51.96	78.82	22.38	mar	2	27.62	32.47	41.40	22.56
mar	8	58.57	63.41	68.12	21.37	mar	8	46.93	51.77	80.67	21.99	mar	8	27.43	32.27	43.32	22.16
mar	14	58.32	63.11	69.68	20.98	mar	14	46.73	51.52	82.48	21.59	mar	14	27.20	31.99	45.23	21.77
mar	20	58.04	62.82	70.89	20.58	mar	20	46.49	51.27	83.94	21.20	mar	20	26.93	31.71	46.78	21.38
mar	26	57.77	62.50	72.23	20.19	mar	26	46.25	50.98	85.56	20.80	mar	26	26.67	31.40	48.50	20.98
abr	1	57.45	62.16	73.06	19.80	abr	1	45.96	50.67	86.68	20.41	abr	1	26.34	31.05	49.73	20.59
abr	7	57.16	61.83	74.02	19.40	abr	7	45.70	50.37	87.92	20.02	abr	7	26.04	30.71	51.09	20.19
abr	13	56.83	61.46	74.55	19.01	abr	13	45.38	50.02	88.77	19.62	abr	13	25.68	30.32	52.06	19.80
abr	19	56.51	61.13	75.04	18.61	abr	19	45.09	49.70	89.55	19.23	abr	19	25.35	29.96	52.96	19.40
abr	25	56.19	60.74	75.27	18.22	abr	25	44.77	49.32	90.14	18.83	abr	25	24.98	29.53	53.68	19.01
may	1	55.87	60.40	75.28	17.82	may	1	44.46	48.99	90.44	18.44	may	1	24.62	29.15	54.10	18.62
may	7	55.56	60.03	75.23	17.43	may	7	44.16	48.63	90.74	18.04	may	7	24.27	28.73	54.52	18.22
may	13	55.25	59.68	74.74	17.04	may	13	43.84	48.28	90.56	17.65	may	13	23.89	28.33	54.46	17.83
may	19	54.97	59.34	74.40	16.64	may	19	43.56	47.92	90.54	17.25	may	19	23.55	27.92	54.56	17.43
may	25	54.67	58.99	73.52	16.25	may	25	43.24	47.56	89.98	16.86	may	25	23.18	27.50	54.12	17.04
may	31	54.43	58.69	72.76	15.85	may	31	42.98	47.25	89.50	16.47	may	31	22.87	27.13	53.75	16.64
jun	6	54.17	58.37	71.64	15.46	jun	6	42.71	46.90	88.68	16.07	jun	6	22.53	26.73	53.05	16.25
jun	12	53.95	58.11	70.41	15.06	jun	12	42.46	46.62	87.71	15.68	jun	12	22.23	26.39	52.16	15.86
jun	18	53.75	57.82	69.11	14.67	jun	18	42.23	46.29	86.69	15.28	jun	18	21.94	26.01	51.25	15.46
jun	24	53.57	57.60	67.52	14.28	jun	24	42.01	46.04	85.31	14.89	jun	24	21.67	25.70	49.96	15.07
jun	30	53.44	57.38	66.03	13.88	jun	30	41.84	45.79	84.04	14.49	jun	30	21.45	25.40	48.76	14.67
jul	6	53.30	57.20	64.14	13.49	jul	6	41.66	45.56	82.34	14.10	jul	6	21.22	25.12	47.13	14.28
jul	12	53.22	57.06	62.50	13.09	jul	12	41.54	45.37	80.85	13.71	jul	12	21.05	24.89	45.69	13.88
jul	18	53.14	56.91	60.46	12.70	jul	18	41.41	45.18	78.98	13.31	jul	18	20.88	24.65	43.87	13.49
jul	24	53.12	56.85	58.64	12.30	jul	24	41.34	45.07	77.23	12.92	jul	24	20.78	24.51	42.16	13.09
jul	30	53.11	56.78	56.65	11.91	jul	30	41.28	44.95	75.34	12.52	jul	30	20.68	24.35	40.29	12.70
ago	5	53.14	56.78	54.62	11.52	ago	5	41.26	44.90	73.34	12.13	ago	5	20.63	24.27	38.29	12.31
ago	11	53.21	56.77	52.80	11.12	ago	11	41.28	44.84	71.55	11.73	ago	11	20.63	24.19	36.51	11.91
ago	17	53.29	56.83	50.76	10.73	ago	17	41.31	44.85	69.49	11.34	ago	17	20.64	24.18	34.43	11.52
ago	23	53.43	56.92	49.07	10.33	ago	23	41.40	44.89	67.74	10.95	ago	23	20.72	24.21	32.66	11.12
ago	29	53.57	57.03	47.16	9.94	ago	29	41.49	44.96	65.76	10.55	ago	29	20.80	24.26	30.64	10.73
sep	4	53.77	57.20	45.65	9.54	sep	4	41.65	45.08	64.12	10.16	sep	4	20.96	24.39	28.94	10.34
sep	10	53.97	57.35	44.04	9.15	sep	10	41.81	45.19	62.41	9.76	sep	10	21.12	24.50	27.17	9.94
sep	16	54.22	57.59	42.76	8.76	sep	16	42.02	45.39	60.93	9.37	sep	16	21.35	24.71	25.62	9.55
sep	22	54.49	57.81	41.60	8.36	sep	22	42.25	45.57	59.59	8.97	sep	22	21.59	24.91	24.20	9.15
sep	28	54.77	58.08	40.52	7.97	sep	28	42.50	45.82	58.28	8.58	sep	28	21.87	25.18	22.79	8.76
oct	4	55.09	58.35	39.90	7.57	oct	4	42.80	46.06	57.44	8.19	oct	4	22.19	25.45	21.84	8.36
oct	10	55.40	58.65	39.18	7.18	oct	10	43.09	46.33	56.46	7.79	oct	10	22.51	25.75	20.76	7.97
oct	16	55.76	58.95	39.03	6.78	oct	16	43.44	46.63	56.04	7.40	oct	16	22.90	26.09	20.23	7.58
oct	22	56.10	59.26	38.81	6.39	oct	22	43.76	46.92	55.56	7.00	oct	22	23.26	26.42	19.63	7.18
oct	28	56.46	59.59	39.07	6.00	oct	28	44.13	47.26	55.52	6.61	oct	28	23.68	26.81	19.46	6.79
nov	3	56.81	59.88	39.42	5.60	nov	3	44.48	47.55	55.62	6.22	nov	3	24.07	27.14	19.45	6.39
nov	9	57.18	60.22	40.08	5.21	nov	9	44.86	47.89	55.98	5.82	nov	9	24.50	27.54	19.68	6.00
nov	15	57.53	60.50	41.03	4.81	nov	15	45.23	48.19	56.66	5.43	nov	15	24.92	27.88	20.25	5.61
nov	21	57.86	60.80	42.00	4.42	nov	21	45.57	48.51	57.36	5.03	nov	21	25.32	28.26	20.83	5.21
nov	27	58.20	61.05	43.49	4.03	nov	27	45.95	48.80	58.62	4.64	nov	27	25.74	28.59	21.98	4.82
dic	3	58.49	61.30	44.82	3.63	dic	3	46.26	49.07	59.73	4.24	dic	3	26.11	28.91	22.99	4.42
dic	9	58.79	61.53	46.68	3.24	dic	9	46.61	49.34	61.36	3.85	dic	9	26.50	29.24	24.52	4.03
dic	15	59.03	61.70	48.41	2.84	dic	15	46.89	49.56	62.92	3.46	dic	15	26.82	29.50	26.00	3.63
dic	21	59.26	61.89	50.43	2.45	dic	21	47.17	49.79	64.76	3.06	dic	21	27.15	29.78	27.76	3.24
dic	27	59.45	61.98	52.52	2.05	dic	27	47.40	49.93	66.76	2.67	dic	27	27.43	29.95	29.71	2.85

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

DK UMA						37 UMA											
4.54			G4 III-IV			3.99			F2 V			5.16			F1 V		
α		α_c	δ			α		α_c	δ			α		α_c	δ		
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'
	09 35	09 35	69 44		hp		10 24	10 23	-74 -06		hp		10 36	10 35	56 59		hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	63.17	08.52	44.77	2.88	ene	1	49.02	54.37	06.84	3.69	ene	1	18.25	23.60	67.38	3.88
ene	7	63.58	08.86	45.70	2.48	ene	7	49.37	54.65	08.61	3.30	ene	7	18.57	23.84	67.56	3.49
ene	13	63.86	09.10	46.77	2.09	ene	13	49.74	54.97	10.50	2.90	ene	13	18.80	24.04	67.97	3.09
ene	19	64.19	09.35	47.96	1.70	ene	19	50.04	55.20	12.63	2.51	ene	19	19.08	24.24	68.47	2.70
ene	25	64.39	09.52	49.47	1.30	ene	25	50.27	55.40	14.64	2.11	ene	25	19.27	24.40	69.37	2.31
ene	31	64.63	09.68	50.76	0.91	ene	31	50.50	55.55	17.06	1.72	ene	31	19.50	24.55	70.07	1.91
feb	6	64.77	09.79	52.48	0.51	feb	6	50.62	55.64	19.18	1.33	feb	6	19.66	24.68	71.27	1.52
feb	12	64.87	09.84	54.00	0.12	feb	12	50.76	55.72	21.60	0.93	feb	12	19.80	24.77	72.35	1.12
feb	18	64.94	09.87	55.81	23.72	feb	18	50.77	55.70	23.85	0.54	feb	18	19.92	24.85	73.73	0.73
feb	24	64.91	09.81	57.48	23.33	feb	24	50.80	55.70	26.18	0.14	feb	24	19.97	24.87	75.12	0.33
mar	2	64.93	09.77	59.15	22.94	mar	2	50.72	55.57	28.53	23.75	mar	2	20.06	24.91	76.49	23.94
mar	8	64.80	09.63	60.86	22.54	mar	8	50.64	55.48	30.69	23.35	mar	8	20.04	24.88	78.06	23.55
mar	14	64.70	09.49	62.40	22.15	mar	14	50.50	55.29	32.97	22.96	mar	14	20.06	24.84	79.48	23.15
mar	20	64.51	09.29	64.10	21.75	mar	20	50.30	55.08	34.90	22.57	mar	20	20.00	24.78	81.16	22.76
mar	26	64.33	09.05	65.35	21.36	mar	26	50.10	54.83	37.07	22.17	mar	26	19.95	24.68	82.48	22.36
abr	1	64.10	08.81	66.81	20.96	abr	1	49.81	54.52	38.81	21.78	abr	1	19.86	24.57	84.03	21.97
abr	7	63.83	08.50	67.87	20.57	abr	7	49.55	54.22	40.65	21.38	abr	7	19.75	24.42	85.32	21.57
abr	13	63.57	08.21	68.98	20.18	abr	13	49.20	53.84	42.23	20.99	abr	13	19.64	24.27	86.65	21.18
abr	19	63.24	07.85	69.85	19.78	abr	19	48.87	53.48	43.66	20.59	abr	19	19.47	24.08	87.87	20.79
abr	25	62.99	07.54	70.46	19.39	abr	25	48.48	53.03	45.06	20.20	abr	25	19.35	23.91	88.82	20.39
may	1	62.64	07.17	71.05	18.99	may	1	48.09	52.62	46.07	19.81	may	1	19.16	23.69	89.86	20.00
may	7	62.36	06.82	71.27	18.60	may	7	47.70	52.17	47.15	19.41	may	7	19.02	23.48	90.52	19.60
may	13	62.03	06.47	71.58	18.20	may	13	47.25	51.69	47.76	19.02	may	13	18.83	23.27	91.33	19.21
may	19	61.74	06.11	71.35	17.81	may	19	46.85	51.22	48.51	18.62	may	19	18.66	23.03	91.64	18.81
may	25	61.47	05.78	71.24	17.42	may	25	46.38	50.70	48.77	18.23	may	25	18.50	22.82	92.06	18.42
may	31	61.17	05.43	70.74	17.02	may	31	45.98	50.24	49.00	17.83	may	31	18.32	22.58	92.17	18.03
jun	6	60.95	05.14	70.20	16.63	jun	6	45.52	49.72	48.99	17.44	jun	6	18.18	22.38	92.17	17.63
jun	12	60.66	04.82	69.52	16.23	jun	12	45.10	49.26	48.69	17.04	jun	12	17.99	22.15	92.11	17.24
jun	18	60.52	04.58	68.48	15.84	jun	18	44.68	48.75	48.44	16.65	jun	18	17.89	21.95	91.61	16.84
jun	24	60.29	04.32	67.54	15.44	jun	24	44.27	48.30	47.69	16.26	jun	24	17.72	21.75	91.27	16.45
jun	30	60.16	04.11	66.23	15.05	jun	30	43.91	47.86	47.04	15.86	jun	30	17.62	21.57	90.51	16.05
jul	6	60.02	03.93	65.09	14.66	jul	6	43.51	47.42	45.93	15.47	jul	6	17.50	21.41	89.90	15.66
jul	12	59.91	03.75	63.52	14.26	jul	12	43.21	47.04	44.93	15.07	jul	12	17.40	21.24	88.88	15.27
jul	18	59.89	03.66	62.08	13.87	jul	18	42.86	46.63	43.58	14.68	jul	18	17.34	21.12	87.88	14.87
jul	24	59.82	03.55	60.40	13.47	jul	24	42.61	46.34	42.17	14.28	jul	24	17.25	20.98	86.71	14.48
jul	30	59.85	03.51	58.73	13.08	jul	30	42.35	46.01	40.65	13.89	jul	30	17.23	20.89	85.42	14.08
ago	5	59.83	03.47	57.10	12.68	ago	5	42.14	45.78	38.86	13.50	ago	5	17.16	20.80	84.20	13.69
ago	11	59.94	03.50	55.13	12.29	ago	11	41.99	45.55	37.29	13.10	ago	11	17.19	20.75	82.54	13.29
ago	17	60.01	03.55	53.43	11.90	ago	17	41.85	45.39	35.31	12.71	ago	17	17.17	20.71	81.14	12.90
ago	23	60.15	03.63	51.44	11.50	ago	23	41.81	45.29	33.57	12.31	ago	23	17.20	20.69	79.40	12.51
ago	29	60.30	03.77	49.74	11.11	ago	29	41.75	45.21	31.56	11.92	ago	29	17.24	20.70	77.86	12.11
sep	4	60.46	03.89	47.80	10.71	sep	4	41.81	45.24	29.72	11.52	sep	4	17.28	20.71	76.08	11.72
sep	10	60.73	04.11	45.98	10.32	sep	10	41.85	45.23	27.86	11.13	sep	10	17.40	20.78	74.29	11.32
sep	16	60.94	04.30	44.15	9.92	sep	16	42.00	45.37	26.02	10.74	sep	16	17.47	20.83	72.51	10.93
sep	22	61.25	04.57	42.36	9.53	sep	22	42.17	45.49	24.35	10.34	sep	22	17.62	20.93	70.63	10.53
sep	28	61.51	04.83	40.80	9.14	sep	28	42.39	45.70	22.56	9.95	sep	28	17.73	21.04	68.99	10.14
oct	4	61.88	05.14	38.98	8.74	oct	4	42.69	45.94	21.23	9.55	oct	4	17.91	21.17	66.99	9.75
oct	10	62.23	05.47	37.58	8.35	oct	10	42.98	46.22	19.70	9.16	oct	10	18.09	21.33	65.35	9.35
oct	16	62.61	05.81	35.98	7.95	oct	16	43.38	46.57	18.64	8.76	oct	16	18.29	21.49	63.48	8.96
oct	22	63.03	06.19	34.78	7.56	oct	22	43.75	46.91	17.54	8.37	oct	22	18.52	21.68	61.89	8.56
oct	28	63.42	06.55	33.52	7.17	oct	28	44.22	47.35	16.76	7.98	oct	28	18.74	21.87	60.26	8.17
nov	3	63.91	06.98	32.42	6.77	nov	3	44.66	47.73	16.22	7.58	nov	3	19.03	22.10	58.65	7.78
nov	9	64.33	07.36	31.53	6.38	nov	9	45.17	48.21	15.79	7.19	nov	9	19.28	22.32	57.27	7.38
nov	15	64.83	07.80	30.69	5.98	nov	15	45.68	48.65	15.78	6.79	nov	15	19.60	22.56	55.84	6.99
nov	21	65.27	08.21	30.27	5.59	nov	21	46.18	49.12	15.74	6.40	nov	21	19.87	22.81	54.82	6.59
nov	27	65.77	08.63	29.67	5.19	nov	27	46.74	49.60	16.30	6.01	nov	27	20.20	23.06	53.57	6.20
dic	3	66.25	09.06	29.60	4.80	dic	3	47.23	50.04	16.75	5.61	dic	3	20.52	23.33	52.80	5.80
dic	9	66.71	09.45	29.44	4.41	dic	9	47.78	50.52	17.69	5.22	dic	9	20.83	23.57	51.95	5.41
dic	15	67.19	09.87	29.71	4.01	dic	15	48.25	50.92	18.70	4.82	dic	15	21.17	23.84	51.46	5.02
dic	21	67.59	10.21	30.09	3.62	dic	21	48.75	51.37	19.94	4.43	dic	21	21.46	24.08	51.14	4.62
dic	27	68.07	10.60	30.57	3.22	dic	27	49.18	51.71	21.52	4.04	dic	27	21.81	24.34	50.83	4.23

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

β UMA						δ LEO						β VIR											
2.34			A1 V			2.56			A4 V			3.6			F9 V								
α		α_c	δ			α		α_c	δ			α		α_c	δ								
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'	hp					
11 02		11 01		56 16		hp		11 15		11 14		20 25		hp		11 51		11 50		01 39		hp	
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	54.48	59.84	53.95	4.33	ene	1	03.43	08.79	24.18	4.53	ene	1	37.56	42.91	49.77	5.14						
ene	7	54.81	60.09	53.90	3.93	ene	7	03.65	08.92	23.28	4.13	ene	7	37.77	43.04	48.46	4.74						
ene	13	55.06	60.29	54.13	3.54	ene	13	03.82	09.05	22.60	3.74	ene	13	37.94	43.17	47.37	4.35						
ene	19	55.34	60.50	54.43	3.14	ene	19	04.01	09.17	21.89	3.35	ene	19	38.13	43.29	46.14	3.95						
ene	25	55.56	60.68	55.17	2.75	ene	25	04.15	09.27	21.55	2.95	ene	25	38.27	43.40	45.25	3.56						
ene	31	55.80	60.85	55.73	2.35	ene	31	04.32	09.37	20.99	2.56	ene	31	38.45	43.50	44.09	3.17						
feb	6	55.98	61.00	56.77	1.96	feb	6	04.44	09.45	20.89	2.16	feb	6	38.57	43.59	43.34	2.77						
feb	12	56.14	61.11	57.75	1.57	feb	12	04.56	09.52	20.70	1.77	feb	12	38.71	43.67	42.49	2.38						
feb	18	56.29	61.22	59.03	1.17	feb	18	04.65	09.58	20.78	1.37	feb	18	38.81	43.74	41.84	1.98						
feb	24	56.37	61.27	60.37	0.78	feb	24	04.72	09.62	20.95	0.98	feb	24	38.90	43.80	41.32	1.59						
mar	2	56.48	61.33	61.68	0.38	mar	2	04.80	09.65	21.09	0.59	mar	2	39.00	43.84	40.72	1.20						
mar	8	56.49	61.33	63.24	23.99	mar	8	04.82	09.66	21.54	0.19	mar	8	39.04	43.87	40.47	0.80						
mar	14	56.54	61.32	64.65	23.60	mar	14	04.87	09.66	21.86	23.80	mar	14	39.11	43.89	40.08	0.41						
mar	20	56.50	61.28	66.36	23.20	mar	20	04.86	09.64	22.53	23.40	mar	20	39.11	43.89	40.05	0.01						
mar	26	56.48	61.21	67.73	22.81	mar	26	04.87	09.60	22.94	23.01	mar	26	39.16	43.88	39.80	23.62						
abr	1	56.42	61.13	69.34	22.41	abr	1	04.85	09.55	23.66	22.61	abr	1	39.15	43.86	39.88	23.22						
abr	7	56.33	61.00	70.73	22.02	abr	7	04.82	09.49	24.25	22.22	abr	7	39.15	43.82	39.90	22.83						
abr	13	56.25	60.88	72.15	21.62	abr	13	04.78	09.42	24.95	21.83	abr	13	39.14	43.77	40.01	22.44						
abr	19	56.10	60.71	73.52	21.23	abr	19	04.72	09.33	25.70	21.43	abr	19	39.10	43.71	40.28	22.04						
abr	25	56.00	60.55	74.59	20.84	abr	25	04.69	09.24	26.26	21.04	abr	25	39.09	43.64	40.36	21.65						
may	1	55.83	60.36	75.79	20.44	may	1	04.60	09.13	27.06	20.64	may	1	39.03	43.56	40.78	21.25						
may	7	55.70	60.16	76.62	20.05	may	7	04.55	09.02	27.58	20.25	may	7	39.00	43.47	40.97	20.86						
may	13	55.52	59.96	77.59	19.65	may	13	04.46	08.90	28.36	19.85	may	13	38.93	43.37	41.45	20.46						
may	19	55.37	59.74	78.09	19.26	may	19	04.40	08.77	28.79	19.46	may	19	38.89	43.26	41.68	20.07						
may	25	55.21	59.53	78.67	18.86	may	25	04.32	08.64	29.41	19.07	may	25	38.83	43.15	42.12	19.68						
may	31	55.03	59.30	78.97	18.47	may	31	04.24	08.51	29.87	18.67	may	31	38.77	43.03	42.52	19.28						
jun	6	54.89	59.09	79.14	18.08	jun	6	04.18	08.38	30.28	18.28	jun	6	38.71	42.91	42.88	18.89						
jun	12	54.70	58.86	79.27	17.68	jun	12	04.09	08.24	30.78	17.88	jun	12	38.63	42.79	43.43	18.49						
jun	18	54.59	58.66	78.93	17.29	jun	18	04.05	08.12	30.90	17.49	jun	18	38.60	42.66	43.64	18.10						
jun	24	54.42	58.45	78.76	16.89	jun	24	03.96	07.99	31.29	17.09	jun	24	38.51	42.54	44.20	17.70						
jun	30	54.30	58.25	78.17	16.50	jun	30	03.91	07.86	31.35	16.70	jun	30	38.47	42.42	44.48	17.31						
jul	6	54.17	58.08	77.70	16.10	jul	6	03.84	07.75	31.59	16.31	jul	6	38.39	42.30	44.98	16.92						
jul	12	54.05	57.89	76.84	15.71	jul	12	03.79	07.63	31.55	15.91	jul	12	38.34	42.18	45.29	16.52						
jul	18	53.98	57.75	75.94	15.31	jul	18	03.76	07.53	31.52	15.52	jul	18	38.29	42.07	45.62	16.13						
jul	24	53.87	57.59	74.90	14.92	jul	24	03.70	07.43	31.43	15.12	jul	24	38.23	41.96	45.99	15.73						
jul	30	53.82	57.48	73.69	14.53	jul	30	03.68	07.35	31.21	14.73	jul	30	38.20	41.86	46.22	15.34						
ago	5	53.73	57.37	72.57	14.13	ago	5	03.63	07.27	31.11	14.33	ago	5	38.13	41.77	46.65	14.94						
ago	11	53.72	57.29	70.97	13.74	ago	11	03.64	07.20	30.59	13.94	ago	11	38.12	41.69	46.67	14.55						
ago	17	53.68	57.22	69.62	13.34	ago	17	03.61	07.15	30.34	13.55	ago	17	38.07	41.61	46.99	14.16						
ago	23	53.68	57.17	67.92	12.95	ago	23	03.62	07.11	29.74	13.15	ago	23	38.06	41.55	47.02	13.76						
ago	29	53.69	57.15	66.39	12.56	ago	29	03.62	07.08	29.31	12.76	ago	29	38.04	41.50	47.18	13.37						
sep	4	53.70	57.13	64.64	12.16	sep	4	03.63	07.06	28.67	12.36	sep	4	38.03	41.46	47.20	12.97						
sep	10	53.78	57.16	62.80	11.77	sep	10	03.67	07.06	27.91	11.97	sep	10	38.05	41.43	47.05	12.58						
sep	16	53.82	57.19	61.01	11.37	sep	16	03.70	07.06	27.16	11.58	sep	16	38.06	41.42	46.98	12.18						
sep	22	53.94	57.26	59.07	10.98	sep	22	03.77	07.09	26.21	11.18	sep	22	38.09	41.40	46.88	11.79						
sep	28	54.02	57.33	57.37	10.58	sep	28	03.81	07.12	25.44	10.79	sep	28	38.11	41.42	46.60	11.40						
oct	4	54.17	57.43	55.29	10.19	oct	4	03.92	07.17	24.25	10.39	oct	4	38.19	41.45	46.02	11.00						
oct	10	54.31	57.55	53.54	9.80	oct	10	04.00	07.24	23.30	10.00	oct	10	38.25	41.49	45.65	10.61						
oct	16	54.49	57.68	51.56	9.40	oct	16	04.12	07.31	22.04	9.60	oct	16	38.35	41.54	44.98	10.21						
oct	22	54.69	57.86	49.83	9.01	oct	22	04.24	07.40	20.92	9.21	oct	22	38.44	41.60	44.35	9.82						
oct	28	54.88	58.01	48.07	8.61	oct	28	04.36	07.49	19.70	8.82	oct	28	38.55	41.68	43.62	9.42						
nov	3	55.15	58.22	46.28	8.22	nov	3	04.54	07.60	18.32	8.42	nov	3	38.69	41.76	42.64	9.03						
nov	9	55.38	58.41	44.75	7.82	nov	9	04.68	07.72	17.10	8.03	nov	9	38.82	41.86	41.80	8.64						
nov	15	55.67	58.64	43.12	7.43	nov	15	04.88	07.85	15.65	7.63	nov	15	39.00	41.96	40.64	8.24						
nov	21	55.93	58.87	41.91	7.04	nov	21	05.04	07.98	14.49	7.24	nov	21	39.14	42.08	39.69	7.85						
nov	27	56.24	59.10	40.46	6.64	nov	27	05.26	08.11	12.99	6.84	nov	27	39.34	42.20	38.36	7.45						
dic	3	56.55	59.36	39.46	6.25	dic	3	05.45	08.26	11.80	6.45	dic	3	39.51	42.32	37.23	7.06						
dic	9	56.86	59.59	38.42	5.85	dic	9	05.66	08.40	10.46	6.06	dic	9	39.71	42.45	35.91	6.67						
dic	15	57.19	59.86	37.69	5.46	dic	15	05.87	08.55	09.28	5.66	dic	15	39.91	42.59	34.62	6.27						
dic	21	57.47	60.09	37.18	5.07	dic	21	06.06	08.69	08.22	5.27	dic	21	40.10	42.72	33.42	5.88						
dic	27	57.83	60.36	36.63	4.67	dic	27	06.30	08.83	07.01	4.87	dic	27	40.33	42.85	31.95	5.48						

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

γ UMA					5.25					9 VIR							
2.41		A0 VE			5.25		F6 V			4.12		G8 III					
α		α _c		δ	α		α _c		δ	α		α _c		δ			
h m		h m		°	h m		h m		°	h m		h m		°			
11 54		11 53		53 35	12 04		12 03		-42 -31	12 06		12 05		08 38			
mes	d	s	s	“	h	mes	d	s	s	“	h	mes	d	s	s	“	h
ene	1	45.31	50.66	27.80	5.19	ene	1	35.88	41.23	47.83	5.35	ene	1	06.96	12.31	59.31	5.38
ene	7	45.63	50.90	27.27	4.80	ene	7	36.11	41.39	49.26	4.96	ene	7	07.17	12.45	58.05	4.98
ene	13	45.88	51.11	27.12	4.40	ene	13	36.33	41.56	50.64	4.57	ene	13	07.34	12.58	57.05	4.59
ene	19	46.17	51.33	26.99	4.01	ene	19	36.56	41.72	52.33	4.17	ene	19	07.54	12.70	55.93	4.20
ene	25	46.41	51.53	27.34	3.61	ene	25	36.73	41.86	53.84	3.78	ene	25	07.69	12.82	55.18	3.80
ene	31	46.67	51.72	27.54	3.22	ene	31	36.95	42.00	55.76	3.38	ene	31	07.88	12.93	54.18	3.41
feb	6	46.88	51.90	28.23	2.82	feb	6	37.10	42.12	57.42	2.99	feb	6	08.01	13.03	53.59	3.01
feb	12	47.07	52.04	28.93	2.43	feb	12	37.27	42.24	59.28	2.59	feb	12	08.15	13.12	52.95	2.62
feb	18	47.25	52.18	29.90	2.04	feb	18	37.39	42.32	61.09	2.20	feb	18	08.27	13.20	52.50	2.23
feb	24	47.38	52.28	31.05	1.64	feb	24	37.51	42.41	62.85	1.81	feb	24	08.36	13.26	52.22	1.83
mar	2	47.53	52.38	32.15	1.25	mar	2	37.61	42.46	64.79	1.41	mar	2	08.47	13.31	51.85	1.44
mar	8	47.60	52.43	33.59	0.85	mar	8	37.68	42.51	66.43	1.02	mar	8	08.52	13.35	51.84	1.04
mar	14	47.69	52.47	34.91	0.46	mar	14	37.76	42.54	68.28	0.62	mar	14	08.59	13.38	51.70	0.65
mar	20	47.71	52.49	36.56	0.07	mar	20	37.77	42.55	69.81	0.23	mar	20	08.61	13.39	51.93	0.25
mar	26	47.74	52.47	37.95	23.67	mar	26	37.82	42.55	71.56	23.83	mar	26	08.66	13.39	51.95	23.86
abr	1	47.73	52.44	39.59	23.28	abr	1	37.81	42.52	73.00	23.44	abr	1	08.66	13.37	52.27	23.47
abr	7	47.70	52.37	41.10	22.88	abr	7	37.82	42.49	74.47	23.05	abr	7	08.67	13.34	52.55	23.07
abr	13	47.66	52.30	42.63	22.49	abr	13	37.79	42.43	75.85	22.65	abr	13	08.67	13.30	52.90	22.68
abr	19	47.57	52.18	44.20	22.09	abr	19	37.75	42.37	77.01	22.26	abr	19	08.63	13.25	53.42	22.28
abr	25	47.52	52.07	45.46	21.70	abr	25	37.72	42.27	78.30	21.86	abr	25	08.63	13.18	53.71	21.89
may	1	47.39	51.92	46.92	21.31	may	1	37.65	42.18	79.17	21.47	may	1	08.57	13.10	54.34	21.49
may	7	47.29	51.76	48.02	20.91	may	7	37.60	42.07	80.21	21.07	may	7	08.55	13.02	54.72	21.10
may	13	47.16	51.60	49.27	20.52	may	13	37.50	41.94	80.86	20.68	may	13	08.48	12.92	55.36	20.71
may	19	47.03	51.40	50.13	20.12	may	19	37.45	41.82	81.64	20.29	may	19	08.45	12.81	55.76	20.31
may	25	46.90	51.22	51.01	19.73	may	25	37.34	41.66	82.11	19.89	may	25	08.38	12.70	56.32	19.92
may	31	46.74	51.01	51.70	19.33	may	31	37.26	41.52	82.48	19.50	may	31	08.32	12.59	56.83	19.52
jun	6	46.62	50.81	52.19	18.94	jun	6	37.16	41.35	82.78	19.10	jun	6	08.27	12.47	57.27	19.13
jun	12	46.44	50.60	52.71	18.55	jun	12	37.04	41.19	82.76	18.71	jun	12	08.18	12.34	57.87	18.73
jun	18	46.33	50.39	52.72	18.15	jun	18	36.95	41.02	82.94	18.31	jun	18	08.15	12.22	58.11	18.34
jun	24	46.16	50.19	52.92	17.76	jun	24	36.82	40.85	82.60	17.92	jun	24	08.06	12.09	58.67	17.95
jun	30	46.03	49.98	52.68	17.36	jun	30	36.73	40.68	82.41	17.53	jun	30	08.02	11.96	58.94	17.55
jul	6	45.89	49.80	52.53	16.97	jul	6	36.60	40.50	81.87	17.13	jul	6	07.94	11.84	59.38	17.16
jul	12	45.75	49.59	52.03	16.57	jul	12	36.51	40.34	81.36	16.74	jul	12	07.88	11.72	59.63	16.76
jul	18	45.65	49.43	51.41	16.18	jul	18	36.39	40.17	80.70	16.34	jul	18	07.83	11.60	59.86	16.37
jul	24	45.52	49.24	50.70	15.79	jul	24	36.29	40.02	79.84	15.95	jul	24	07.76	11.49	60.11	15.97
jul	30	45.43	49.10	49.74	15.39	jul	30	36.20	39.86	79.01	15.55	jul	30	07.72	11.39	60.19	15.58
ago	5	45.31	48.95	48.88	15.00	ago	5	36.08	39.72	77.84	15.16	ago	5	07.65	11.29	60.46	15.19
ago	11	45.25	48.82	47.51	14.60	ago	11	36.03	39.59	76.95	14.77	ago	11	07.63	11.20	60.31	14.79
ago	17	45.17	48.71	46.35	14.21	ago	17	35.93	39.47	75.63	14.37	ago	17	07.57	11.12	60.43	14.40
ago	23	45.12	48.60	44.84	13.81	ago	23	35.89	39.37	74.51	13.98	ago	23	07.56	11.04	60.25	14.00
ago	29	45.08	48.54	43.41	13.42	ago	29	35.81	39.28	73.17	13.58	ago	29	07.52	10.99	60.18	13.61
sep	4	45.03	48.46	41.81	13.03	sep	4	35.78	39.21	71.87	13.19	sep	4	07.50	10.93	59.99	13.21
sep	10	45.05	48.44	40.01	12.63	sep	10	35.76	39.15	70.67	12.79	sep	10	07.52	10.90	59.60	12.82
sep	16	45.04	48.40	38.29	12.24	sep	16	35.76	39.12	69.30	12.40	sep	16	07.51	10.87	59.32	12.43
sep	22	45.09	48.41	36.35	11.84	sep	22	35.78	39.10	68.16	12.01	sep	22	07.54	10.86	58.78	12.03
sep	28	45.11	48.42	34.62	11.45	sep	28	35.79	39.10	66.81	11.61	sep	28	07.55	10.86	58.39	11.64
oct	4	45.20	48.45	32.50	11.05	oct	4	35.87	39.12	65.86	11.22	oct	4	07.62	10.87	57.58	11.24
oct	10	45.28	48.52	30.63	10.66	oct	10	35.92	39.16	64.71	10.82	oct	10	07.66	10.90	56.96	10.85
oct	16	45.40	48.59	28.54	10.27	oct	16	36.03	39.23	63.87	10.43	oct	16	07.75	10.94	56.05	10.45
oct	22	45.54	48.70	26.60	9.87	oct	22	36.13	39.29	63.04	10.04	oct	22	07.84	11.00	55.19	10.06
oct	28	45.67	48.80	24.69	9.48	oct	28	36.27	39.40	62.35	9.64	oct	28	07.93	11.06	54.27	9.67
nov	3	45.88	48.95	22.62	9.08	nov	3	36.43	39.50	61.98	9.25	nov	3	08.07	11.14	53.08	9.27
nov	9	46.05	49.09	20.85	8.69	nov	9	36.60	39.63	61.53	8.85	nov	9	08.19	11.23	52.07	8.88
nov	15	46.29	49.26	18.91	8.29	nov	15	36.81	39.77	61.51	8.46	nov	15	08.36	11.33	50.75	8.48
nov	21	46.51	49.45	17.36	7.90	nov	21	36.98	39.92	61.39	8.06	nov	21	08.50	11.43	49.67	8.09
nov	27	46.78	49.63	15.58	7.51	nov	27	37.23	40.09	61.78	7.67	nov	27	08.69	11.55	48.23	7.70
dic	3	47.04	49.85	14.17	7.11	dic	3	37.44	40.25	62.10	7.28	dic	3	08.86	11.67	47.00	7.30
dic	9	47.32	50.06	12.77	6.72	dic	9	37.70	40.43	62.74	6.88	dic	9	09.06	11.80	45.62	6.91
dic	15	47.62	50.29	11.59	6.32	dic	15	37.93	40.60	63.53	6.49	dic	15	09.26	11.93	44.28	6.51
dic	21	47.89	50.51	10.68	5.93	dic	21	38.17	40.79	64.37	6.09	dic	21	09.44	12.07	43.08	6.12
dic	27	48.22	50.75	09.66	5.54	dic	27	38.43	40.96	65.66	5.70	dic	27	09.67	12.20	41.61	5.72

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

δ UMA						γ CRU						n CEN						
3.31			A3 V			1.63			M3.5 III			4.25			A7 III			
α		α_c	δ			α		α_c	δ			α		α_c	δ			
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'	
12	16	12	15	56	55	12	32	12	31	-57	-12	12	54	12	53	-40	-16	hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h	
ene	1	17.42	22.77	44.61	5.55	ene	1	10.58	15.93	27.44	5.81	ene	1	25.93	31.28	16.72	6.18	
ene	7	17.76	23.04	43.97	5.15	ene	7	10.88	16.15	28.63	5.42	ene	7	26.17	31.45	17.93	5.79	
ene	13	18.04	23.27	43.73	4.76	ene	13	11.17	16.40	29.76	5.03	ene	13	26.40	31.63	19.02	5.40	
ene	19	18.36	23.51	43.51	4.37	ene	19	11.47	16.63	31.28	4.63	ene	19	26.64	31.80	20.45	5.00	
ene	25	18.62	23.75	43.79	3.97	ene	25	11.71	16.84	32.68	4.24	ene	25	26.83	31.96	21.72	4.61	
ene	31	18.91	23.95	43.93	3.58	ene	31	12.00	17.05	34.52	3.84	ene	31	27.07	32.12	23.38	4.21	
feb	6	19.15	24.17	44.56	3.18	feb	6	12.21	17.23	36.18	3.45	feb	6	27.24	32.26	24.83	3.82	
feb	12	19.37	24.34	45.24	2.79	feb	12	12.45	17.41	38.06	3.05	feb	12	27.44	32.41	26.45	3.42	
feb	18	19.58	24.52	46.18	2.40	feb	18	12.62	17.55	39.98	2.66	feb	18	27.59	32.53	28.09	3.03	
feb	24	19.74	24.64	47.34	2.00	feb	24	12.80	17.70	41.88	2.27	feb	24	27.74	32.65	29.64	2.64	
mar	2	19.92	24.77	48.43	1.61	mar	2	12.95	17.80	44.02	1.87	mar	2	27.89	32.74	31.43	2.24	
mar	8	20.02	24.85	49.91	1.21	mar	8	13.07	17.90	45.89	1.48	mar	8	27.99	32.83	32.91	1.85	
mar	14	20.13	24.92	51.26	0.82	mar	14	13.19	17.97	48.02	1.08	mar	14	28.11	32.90	34.62	1.45	
mar	20	20.18	24.96	52.97	0.42	mar	20	13.23	18.01	49.88	0.69	mar	20	28.16	32.94	36.06	1.06	
mar	26	20.23	24.95	54.45	0.03	mar	26	13.32	18.05	51.97	0.29	mar	26	28.26	32.99	37.69	0.67	
abr	1	20.24	24.95	56.15	23.64	abr	1	13.33	18.04	53.82	23.90	abr	1	28.29	33.00	39.10	0.27	
abr	7	20.22	24.89	57.77	23.24	abr	7	13.36	18.04	55.67	23.51	abr	7	28.34	33.02	40.49	23.88	
abr	13	20.20	24.84	59.38	22.85	abr	13	13.34	17.98	57.50	23.11	abr	13	28.36	33.00	41.86	23.48	
abr	19	20.11	24.73	61.09	22.45	abr	19	13.32	17.93	59.10	22.72	abr	19	28.36	32.98	43.00	23.09	
abr	25	20.07	24.62	62.45	22.06	abr	25	13.29	17.84	60.87	22.32	abr	25	28.38	32.93	44.34	22.69	
may	1	19.94	24.48	64.05	21.66	may	1	13.21	17.74	62.20	21.93	may	1	28.34	32.87	45.25	22.30	
may	7	19.85	24.32	65.28	21.27	may	7	13.15	17.62	63.70	21.53	may	7	28.33	32.80	46.34	21.91	
may	13	19.71	24.15	66.65	20.88	may	13	13.03	17.47	64.85	21.14	may	13	28.27	32.71	47.12	21.51	
may	19	19.58	23.95	67.66	20.48	may	19	12.96	17.32	66.08	20.75	may	19	28.25	32.62	47.98	21.12	
may	25	19.44	23.76	68.65	20.09	may	25	12.81	17.13	67.03	20.35	may	25	28.17	32.49	48.64	20.72	
may	31	19.27	23.53	69.49	19.69	may	31	12.70	16.96	67.83	19.96	may	31	28.11	32.38	49.13	20.33	
jun	6	19.13	23.33	70.10	19.30	jun	6	12.55	16.75	68.58	19.56	jun	6	28.04	32.24	49.64	19.93	
jun	12	18.94	23.10	70.74	18.90	jun	12	12.39	16.54	68.96	19.17	jun	12	27.94	32.10	49.81	19.54	
jun	18	18.81	22.87	70.86	18.51	jun	18	12.25	16.32	69.53	18.77	jun	18	27.88	31.95	50.22	19.15	
jun	24	18.62	22.65	71.16	18.12	jun	24	12.06	16.09	69.55	18.38	jun	24	27.76	31.79	50.12	18.75	
jun	30	18.46	22.41	71.03	17.72	jun	30	11.92	15.87	69.67	17.99	jun	30	27.69	31.64	50.16	18.36	
jul	6	18.30	22.21	70.94	17.33	jul	6	11.71	15.62	69.45	17.59	jul	6	27.56	31.46	49.91	17.96	
jul	12	18.13	21.97	70.54	16.93	jul	12	11.56	15.40	69.18	17.20	jul	12	27.47	31.31	49.63	17.57	
jul	18	18.01	21.78	69.96	16.54	jul	18	11.37	15.15	68.75	16.80	jul	18	27.36	31.13	49.29	17.17	
jul	24	17.84	21.57	69.32	16.14	jul	24	11.21	14.94	68.04	16.41	jul	24	27.25	30.98	48.67	16.78	
jul	30	17.73	21.39	68.39	15.75	jul	30	11.05	14.71	67.35	16.01	jul	30	27.15	30.81	48.13	16.39	
ago	5	17.58	21.22	67.56	15.36	ago	5	10.86	14.50	66.27	15.62	ago	5	27.02	30.66	47.23	15.99	
ago	11	17.49	21.05	66.21	14.96	ago	11	10.74	14.31	65.41	15.23	ago	11	26.95	30.52	46.59	15.60	
ago	17	17.37	20.92	65.04	14.57	ago	17	10.58	14.12	64.09	14.83	ago	17	26.83	30.37	45.54	15.20	
ago	23	17.29	20.78	63.53	14.17	ago	23	10.48	13.96	62.89	14.44	ago	23	26.77	30.25	44.63	14.81	
ago	29	17.22	20.69	62.07	13.78	ago	29	10.34	13.80	61.46	14.04	ago	29	26.67	30.13	43.55	14.41	
sep	4	17.15	20.58	60.45	13.38	sep	4	10.26	13.69	59.98	13.65	sep	4	26.61	30.04	42.41	14.02	
sep	10	17.14	20.53	58.60	12.99	sep	10	10.19	13.57	58.60	13.25	sep	10	26.56	29.94	41.41	13.63	
sep	16	17.10	20.46	56.84	12.60	sep	16	10.14	13.51	56.96	12.86	sep	16	26.51	29.88	40.17	13.23	
sep	22	17.13	20.44	54.82	12.20	sep	22	10.13	13.45	55.53	12.47	sep	22	26.50	29.82	39.16	12.84	
sep	28	17.12	20.44	53.02	11.81	sep	28	10.10	13.42	53.84	12.07	sep	28	26.47	29.78	37.90	12.44	
oct	4	17.19	20.44	50.82	11.41	oct	4	10.17	13.42	52.50	11.68	oct	4	26.51	29.77	36.99	12.05	
oct	10	17.25	20.49	48.85	11.02	oct	10	10.20	13.44	50.95	11.28	oct	10	26.52	29.76	35.90	11.65	
oct	16	17.35	20.54	46.68	10.62	oct	16	10.31	13.51	49.66	10.89	oct	16	26.60	29.79	35.02	11.26	
oct	22	17.47	20.64	44.63	10.23	oct	22	10.41	13.57	48.38	10.49	oct	22	26.66	29.82	34.19	10.87	
oct	28	17.59	20.72	42.62	9.84	oct	28	10.56	13.69	47.18	10.10	oct	28	26.76	29.89	33.39	10.47	
nov	3	17.79	20.86	40.43	9.44	nov	3	10.74	13.81	46.33	9.71	nov	3	26.89	29.96	32.95	10.08	
nov	9	17.95	20.99	38.54	9.05	nov	9	10.93	13.97	45.35	9.31	nov	9	27.01	30.05	32.36	9.68	
nov	15	18.19	21.16	36.47	8.65	nov	15	11.17	14.14	44.83	8.92	nov	15	27.19	30.16	32.19	9.29	
nov	21	18.41	21.34	34.80	8.26	nov	21	11.39	14.33	44.21	8.52	nov	21	27.34	30.28	31.91	8.89	
nov	27	18.67	21.53	32.90	7.86	nov	27	11.69	14.55	44.08	8.13	nov	27	27.57	30.42	32.06	8.50	
dic	3	18.95	21.75	31.35	7.47	dic	3	11.94	14.75	43.94	7.74	dic	3	27.75	30.56	32.20	8.11	
dic	9	19.22	21.96	29.84	7.08	dic	9	12.26	15.00	44.10	7.34	dic	9	27.99	30.73	32.57	7.71	
dic	15	19.54	22.21	28.52	6.68	dic	15	12.55	15.23	44.47	6.95	dic	15	28.21	30.89	33.14	7.32	
dic	21	19.82	22.44	27.50	6.29	dic	21	12.86	15.48	44.90	6.55	dic	21	28.44	31.06	33.70	6.92	
dic	27	20.17	22.70	26.36	5.89	dic	27	13.19	15.72	45.85	6.16	dic	27	28.71	31.23	34.75	6.53	

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

ϵ VIR					β COM					ι CEN							
2.81		G8			4.26		G0			2.76		A2					
α		α_c		δ	a		a_c		d	α		α_c		δ			
h m		h m		°	h m		h m		°	h m		h m		°			
13 03		13 02		10 51	13 12		13 11		27 46	13 21		13 20		-36 -48			
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	03.44	08.79	46.93	6.33	ene	1	41.60	46.95	70.06	6.49	ene	1	36.13	41.49	06.38	6.64
ene	7	03.65	08.93	45.55	5.93	ene	7	41.83	47.11	68.73	6.09	ene	7	36.37	41.65	07.50	6.24
ene	13	03.83	09.07	44.50	5.54	ene	13	42.02	47.25	67.80	5.70	ene	13	36.59	41.82	08.45	5.85
ene	19	04.04	09.20	43.31	5.15	ene	19	42.25	47.41	66.78	5.31	ene	19	36.83	41.99	09.75	5.45
ene	25	04.21	09.34	42.48	4.75	ene	25	42.43	47.56	66.19	4.91	ene	25	37.02	42.15	10.89	5.06
ene	31	04.41	09.46	41.45	4.36	ene	31	42.65	47.70	65.45	4.52	ene	31	37.27	42.32	12.39	4.67
feb	6	04.57	09.58	40.80	3.96	feb	6	42.82	47.84	65.13	4.12	feb	6	37.44	42.46	13.71	4.27
feb	12	04.73	09.70	40.15	3.57	feb	12	43.00	47.97	64.88	3.73	feb	12	37.65	42.62	15.16	3.88
feb	18	04.88	09.81	39.65	3.17	feb	18	43.16	48.09	64.81	3.34	feb	18	37.81	42.74	16.66	3.48
feb	24	05.00	09.90	39.40	2.78	feb	24	43.30	48.20	65.03	2.94	feb	24	37.97	42.87	18.03	3.09
mar	2	05.14	09.98	39.01	2.39	mar	2	43.45	48.30	65.14	2.55	mar	2	38.13	42.98	19.68	2.70
mar	8	05.22	10.06	39.05	1.99	mar	8	43.55	48.39	65.71	2.15	mar	8	38.25	43.08	21.00	2.30
mar	14	05.33	10.12	38.95	1.60	mar	14	43.67	48.46	66.17	1.76	mar	14	38.38	43.17	22.56	1.91
mar	20	05.38	10.16	39.21	1.20	mar	20	43.74	48.52	67.00	1.36	mar	20	38.46	43.24	23.86	1.51
mar	26	05.47	10.19	39.34	0.81	mar	26	43.82	48.55	67.72	0.97	mar	26	38.57	43.30	25.33	1.12
abr	1	05.51	10.21	39.70	0.41	abr	1	43.87	48.58	68.66	0.58	abr	1	38.62	43.33	26.63	0.72
abr	7	05.55	10.22	40.12	0.02	abr	7	43.91	48.59	69.66	0.18	abr	7	38.69	43.36	27.87	0.33
abr	13	05.57	10.21	40.54	23.63	abr	13	43.95	48.58	70.65	23.79	abr	13	38.73	43.37	29.15	23.94
abr	19	05.57	10.19	41.20	23.23	abr	19	43.94	48.56	71.88	23.39	abr	19	38.75	43.37	30.16	23.54
abr	25	05.60	10.15	41.61	22.84	abr	25	43.97	48.52	72.81	23.00	abr	25	38.79	43.34	31.42	23.15
may	1	05.57	10.10	42.38	22.44	may	1	43.94	48.47	74.09	22.60	may	1	38.77	43.31	32.25	22.75
may	7	05.57	10.04	42.90	22.05	may	7	43.93	48.40	75.10	22.21	may	7	38.79	43.26	33.27	22.36
may	13	05.53	09.97	43.65	21.66	may	13	43.89	48.32	76.30	21.82	may	13	38.75	43.19	34.01	21.96
may	19	05.52	09.89	44.23	21.26	may	19	43.86	48.23	77.29	21.42	may	19	38.75	43.12	34.81	21.57
may	25	05.48	09.79	44.87	20.87	may	25	43.81	48.13	78.29	21.03	may	25	38.69	43.01	35.47	21.18
may	31	05.43	09.69	45.55	20.47	may	31	43.75	48.01	79.29	20.63	may	31	38.65	42.92	35.94	20.78
jun	6	05.39	09.59	46.07	20.08	jun	6	43.70	47.90	80.08	20.24	jun	6	38.60	42.80	36.48	20.39
jun	12	05.31	09.47	46.80	19.68	jun	12	43.61	47.77	81.04	19.84	jun	12	38.52	42.67	36.68	19.99
jun	18	05.29	09.35	47.13	19.29	jun	18	43.57	47.63	81.53	19.45	jun	18	38.47	42.54	37.13	19.60
jun	24	05.20	09.23	47.78	18.90	jun	24	43.47	47.49	82.29	19.06	jun	24	38.37	42.39	37.10	19.20
jun	30	05.15	09.10	48.14	18.50	jun	30	43.40	47.35	82.71	18.66	jun	30	38.30	42.25	37.21	18.81
jul	6	05.07	08.97	48.61	18.11	jul	6	43.31	47.21	83.18	18.27	jul	6	38.19	42.09	37.08	18.42
jul	12	05.01	08.84	48.96	17.71	jul	12	43.22	47.06	83.48	17.87	jul	12	38.11	41.94	36.89	18.02
jul	18	04.94	08.72	49.17	17.32	jul	18	43.15	46.92	83.57	17.48	jul	18	38.00	41.78	36.69	17.63
jul	24	04.86	08.59	49.48	16.92	jul	24	43.05	46.78	83.73	17.08	jul	24	37.90	41.63	36.19	17.23
jul	30	04.80	08.47	49.55	16.53	jul	30	42.98	46.64	83.58	16.69	jul	30	37.80	41.47	35.80	16.84
ago	5	04.71	08.35	49.82	16.14	ago	5	42.87	46.51	83.59	16.30	ago	5	37.67	41.31	35.05	16.44
ago	11	04.67	08.24	49.66	15.74	ago	11	42.81	46.38	83.12	15.90	ago	11	37.60	41.17	34.57	16.05
ago	17	04.59	08.13	49.74	15.35	ago	17	42.72	46.26	82.84	15.51	ago	17	37.48	41.02	33.70	15.66
ago	23	04.54	08.03	49.55	14.95	ago	23	42.66	46.14	82.26	15.11	ago	23	37.41	40.90	32.93	15.26
ago	29	04.48	07.94	49.39	14.56	ago	29	42.58	46.05	81.67	14.72	ago	29	37.30	40.77	32.03	14.87
sep	4	04.43	07.86	49.18	14.16	sep	4	42.52	45.95	81.01	14.32	sep	4	37.23	40.66	31.04	14.47
sep	10	04.41	07.79	48.69	13.77	sep	10	42.48	45.87	80.02	13.93	sep	10	37.17	40.55	30.22	14.08
sep	16	04.37	07.73	48.37	13.38	sep	16	42.43	45.79	79.18	13.54	sep	16	37.11	40.47	29.12	13.68
sep	22	04.37	07.69	47.73	12.98	sep	22	42.42	45.74	78.01	13.14	sep	22	37.09	40.40	28.26	13.29
sep	28	04.34	07.65	47.28	12.59	sep	28	42.38	45.69	77.01	12.75	sep	28	37.03	40.35	27.14	12.90
oct	4	04.38	07.63	46.43	12.19	oct	4	42.40	45.66	75.62	12.35	oct	4	37.06	40.32	26.34	12.50
oct	10	04.38	07.62	45.72	11.80	oct	10	42.40	45.64	74.35	11.96	oct	10	37.05	40.29	25.38	12.11
oct	16	04.43	07.63	44.77	11.40	oct	16	42.44	45.63	72.87	11.56	oct	16	37.10	40.30	24.59	11.71
oct	22	04.48	07.65	43.80	11.01	oct	22	42.49	45.65	71.36	11.17	oct	22	37.14	40.31	23.86	11.32
oct	28	04.55	07.68	42.83	10.62	oct	28	42.54	45.67	69.90	10.78	oct	28	37.22	40.35	23.11	10.92
nov	3	04.66	07.72	41.53	10.22	nov	3	42.65	45.72	68.11	10.38	nov	3	37.33	40.39	22.73	10.53
nov	9	04.74	07.78	40.46	9.83	nov	9	42.73	45.77	66.58	9.99	nov	9	37.43	40.47	22.15	10.14
nov	15	04.89	07.85	39.05	9.43	nov	15	42.87	45.84	64.75	9.59	nov	15	37.59	40.56	22.00	9.74
nov	21	05.00	07.94	37.87	9.04	nov	21	42.99	45.92	63.19	9.20	nov	21	37.72	40.65	21.72	9.35
nov	27	05.17	08.03	36.38	8.64	nov	27	43.16	46.01	61.37	8.80	nov	27	37.92	40.78	21.85	8.95
dic	3	05.32	08.13	35.02	8.25	dic	3	43.32	46.13	59.72	8.41	dic	3	38.09	40.90	21.96	8.56
dic	9	05.51	08.24	33.60	7.86	dic	9	43.50	46.24	58.07	8.02	dic	9	38.31	41.05	22.26	8.17
dic	15	05.69	08.37	32.15	7.46	dic	15	43.70	46.37	56.43	7.62	dic	15	38.52	41.19	22.78	7.77
dic	21	05.87	08.49	30.89	7.07	dic	21	43.88	46.50	55.06	7.23	dic	21	38.73	41.35	23.26	7.38
dic	27	06.09	08.62	29.31	6.67	dic	27	44.12	46.65	53.43	6.83	dic	27	38.98	41.51	24.22	6.98

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

ζ VIR						89 VIR						π HYA					
3.35			A3			4.98			K1			3.27			K2		
α		α _c	δ			α		α _c	δ			α		α _c	δ		
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'
13 35		13 34	-00 -40		hp	13 50		13 49	-18 -12		hp	14 07		14 06	-26 -45		hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	35.68	41.04	08.32	6.87	ene	1	50.11	55.47	11.21	7.12	ene	1	22.92	28.27	50.81	7.40
ene	7	35.89	41.17	09.71	6.48	ene	7	50.33	55.60	12.42	6.73	ene	7	23.14	28.42	51.86	7.01
ene	13	36.07	41.30	10.80	6.08	ene	13	50.52	55.75	13.39	6.34	ene	13	23.34	28.57	52.67	6.61
ene	19	36.28	41.44	12.09	5.69	ene	19	50.73	55.89	14.65	5.94	ene	19	23.57	28.73	53.82	6.22
ene	25	36.45	41.57	13.08	5.29	ene	25	50.91	56.04	15.67	5.55	ene	25	23.75	28.88	54.78	5.82
ene	31	36.66	41.71	14.28	4.90	ene	31	51.13	56.18	16.97	5.15	ene	31	23.99	29.04	56.03	5.43
feb	6	36.81	41.83	15.18	4.51	feb	6	51.30	56.31	18.06	4.76	feb	6	24.17	29.19	57.12	5.03
feb	12	36.99	41.96	16.07	4.11	feb	12	51.48	56.45	19.18	4.36	feb	12	24.37	29.34	58.26	4.64
feb	18	37.14	42.07	16.89	3.72	feb	18	51.64	56.58	20.32	3.97	feb	18	24.54	29.47	59.47	4.25
feb	24	37.28	42.18	17.46	3.32	feb	24	51.79	56.70	21.25	3.58	feb	24	24.71	29.61	60.50	3.85
mar	2	37.43	42.28	18.22	2.93	mar	2	51.96	56.81	22.44	3.18	mar	2	24.89	29.73	61.81	3.46
mar	8	37.53	42.36	18.55	2.53	mar	8	52.07	56.91	23.23	2.79	mar	8	25.02	29.85	62.76	3.06
mar	14	37.65	42.44	19.04	2.14	mar	14	52.21	57.00	24.22	2.39	mar	14	25.17	29.96	63.94	2.67
mar	20	37.72	42.50	19.19	1.75	mar	20	52.29	57.07	24.93	2.00	mar	20	25.27	30.05	64.87	2.28
mar	26	37.83	42.56	19.45	1.35	mar	26	52.41	57.14	25.76	1.61	mar	26	25.41	30.13	65.92	1.88
abr	1	37.88	42.59	19.51	0.96	abr	1	52.48	57.19	26.44	1.21	abr	1	25.49	30.19	66.85	1.49
abr	7	37.95	42.62	19.47	0.56	abr	7	52.56	57.23	27.00	0.82	abr	7	25.58	30.25	67.67	1.09
abr	13	37.99	42.63	19.47	0.17	abr	13	52.62	57.26	27.63	0.42	abr	13	25.65	30.29	68.59	0.70
abr	19	38.02	42.63	19.18	23.77	abr	19	52.65	57.27	27.97	0.03	abr	19	25.70	30.32	69.21	0.30
abr	25	38.06	42.62	19.15	23.38	abr	25	52.71	57.27	28.57	23.63	abr	25	25.78	30.33	70.11	23.91
may	1	38.06	42.59	18.73	22.99	may	1	52.72	57.25	28.77	23.24	may	1	25.79	30.33	70.60	23.52
may	7	38.08	42.55	18.52	22.59	may	7	52.76	57.22	29.16	22.85	may	7	25.85	30.31	71.28	23.12
may	13	38.06	42.50	18.09	22.20	may	13	52.74	57.18	29.32	22.45	may	13	25.84	30.28	71.76	22.73
may	19	38.06	42.43	17.77	21.80	may	19	52.76	57.13	29.54	22.06	may	19	25.87	30.24	72.26	22.33
may	25	38.04	42.36	17.40	21.41	may	25	52.74	57.06	29.70	21.66	may	25	25.85	30.17	72.71	21.94
may	31	38.01	42.27	16.91	21.01	may	31	52.72	56.98	29.69	21.27	may	31	25.84	30.11	72.96	21.54
jun	6	37.98	42.18	16.58	20.62	jun	6	52.70	56.90	29.81	20.87	jun	6	25.82	30.02	73.35	21.15
jun	12	37.92	42.08	16.00	20.23	jun	12	52.64	56.80	29.63	20.48	jun	12	25.77	29.93	73.41	20.76
jun	18	37.90	41.97	15.78	19.83	jun	18	52.63	56.69	29.76	20.09	jun	18	25.76	29.83	73.77	20.36
jun	24	37.83	41.85	15.21	19.44	jun	24	52.55	56.58	29.49	19.69	jun	24	25.68	29.71	73.71	19.97
jun	30	37.79	41.74	14.88	19.04	jun	30	52.51	56.46	29.39	19.30	jun	30	25.65	29.59	73.79	19.57
jul	6	37.71	41.61	14.43	18.65	jul	6	52.43	56.33	29.15	18.90	jul	6	25.56	29.46	73.73	19.18
jul	12	37.65	41.49	14.03	18.25	jul	12	52.37	56.21	28.86	18.51	jul	12	25.50	29.33	73.57	18.78
jul	18	37.58	41.36	13.77	17.86	jul	18	52.30	56.07	28.68	18.11	jul	18	25.41	29.19	73.52	18.39
jul	24	37.50	41.23	13.33	17.47	jul	24	52.21	55.94	28.24	17.72	jul	24	25.32	29.05	73.15	18.00
jul	30	37.44	41.11	13.13	17.07	jul	30	52.14	55.81	27.99	17.33	jul	30	25.24	28.91	72.96	17.60
ago	5	37.34	40.98	12.68	16.68	ago	5	52.03	55.67	27.43	16.93	ago	5	25.12	28.77	72.44	17.21
ago	11	37.30	40.86	12.62	16.28	ago	11	51.98	55.54	27.19	16.54	ago	11	25.06	28.63	72.19	16.81
ago	17	37.20	40.74	12.31	15.89	ago	17	51.87	55.42	26.64	16.14	ago	17	24.94	28.49	71.62	16.42
ago	23	37.15	40.64	12.20	15.49	ago	23	51.81	55.30	26.23	15.75	ago	23	24.87	28.36	71.13	16.02
ago	29	37.07	40.53	12.07	15.10	ago	29	51.72	55.18	25.77	15.35	ago	29	24.76	28.23	70.59	15.63
sep	4	37.01	40.44	11.93	14.71	sep	4	51.65	55.08	25.22	14.96	sep	4	24.68	28.11	69.90	15.24
sep	10	36.97	40.35	12.08	14.31	sep	10	51.60	54.98	24.92	14.57	sep	10	24.61	28.00	69.47	14.84
sep	16	36.91	40.28	12.01	13.92	sep	16	51.53	54.89	24.35	14.17	sep	16	24.54	27.90	68.71	14.45
sep	22	36.90	40.22	12.27	13.52	sep	22	51.50	54.82	24.07	13.78	sep	22	24.49	27.81	68.22	14.05
sep	28	36.85	40.16	12.32	13.13	sep	28	51.44	54.76	23.56	13.38	sep	28	24.42	27.73	67.48	13.66
oct	4	36.87	40.12	12.72	12.73	oct	4	51.45	54.71	23.36	12.99	oct	4	24.42	27.68	67.02	13.26
oct	10	36.86	40.10	13.01	12.34	oct	10	51.43	54.67	23.06	12.59	oct	10	24.38	27.62	66.44	12.87
oct	16	36.89	40.08	13.47	11.95	oct	16	51.46	54.65	22.89	12.20	oct	16	24.41	27.60	65.96	12.48
oct	22	36.92	40.08	14.05	11.55	oct	22	51.48	54.64	22.85	11.81	oct	22	24.42	27.58	65.59	12.08
oct	28	36.96	40.09	14.59	11.16	oct	28	51.52	54.65	22.69	11.41	oct	28	24.45	27.58	65.12	11.69
nov	3	37.05	40.12	15.50	10.76	nov	3	51.60	54.67	22.90	11.02	nov	3	24.53	27.60	65.04	11.29
nov	9	37.13	40.16	16.17	10.37	nov	9	51.67	54.71	22.90	10.62	nov	9	24.59	27.63	64.70	10.90
nov	15	37.25	40.22	17.22	9.98	nov	15	51.80	54.77	23.31	10.23	nov	15	24.71	27.68	64.76	10.51
nov	21	37.35	40.29	18.07	9.58	nov	21	51.89	54.83	23.57	9.84	nov	21	24.80	27.74	64.69	10.11
nov	27	37.51	40.37	19.24	9.19	nov	27	52.06	54.92	24.16	9.44	nov	27	24.97	27.83	64.93	9.72
dic	3	37.65	40.46	20.34	8.79	dic	3	52.20	55.00	24.74	9.05	dic	3	25.11	27.91	65.21	9.32
dic	9	37.82	40.56	21.51	8.40	dic	9	52.38	55.11	25.41	8.65	dic	9	25.29	28.03	65.57	8.93
dic	15	37.99	40.67	22.80	8.00	dic	15	52.55	55.23	26.28	8.26	dic	15	25.47	28.14	66.17	8.53
dic	21	38.16	40.79	23.91	7.61	dic	21	52.73	55.35	27.02	7.86	dic	21	25.65	28.27	66.64	8.14
dic	27	38.38	40.91	25.40	7.22	dic	27	52.95	55.48	28.20	7.47	dic	27	25.88	28.41	67.58	7.75

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

		θ CEN				μ VIR					β UMI						
		2.06		K0		3.88			F2 V		2.08			K4			
		α	α _c	δ						α	α _c	δ					
		h m	h m	°						h m	h m	°					
		14 07	14 06	-36 -26						14 43	14 43	-05 -43	hp				
mes	d	s	s	“	h	mes	d	s	s	“	h	mes	d	s	s	“	h
ene	1	43.72	49.07	09.76	7.41	ene	1	59.27	04.62	59.52	8.01	ene	1	36.27	41.62	45.92	8.12
ene	7	43.95	49.23	10.66	7.01	ene	7	59.46	04.74	60.82	7.62	ene	7	36.75	42.02	44.25	7.73
ene	13	44.17	49.40	11.35	6.62	ene	13	59.64	04.87	61.79	7.22	ene	13	37.20	42.43	43.11	7.33
ene	19	44.42	49.58	12.41	6.22	ene	19	59.85	05.01	63.01	6.83	ene	19	37.71	42.87	41.92	6.94
ene	25	44.62	49.74	13.32	5.83	ene	25	60.02	05.14	63.98	6.43	ene	25	38.24	43.37	41.19	6.54
ene	31	44.87	49.92	14.56	5.43	ene	31	60.24	05.28	65.12	6.04	ene	31	38.75	43.80	40.49	6.15
feb	6	45.06	50.08	15.68	5.04	feb	6	60.40	05.42	66.07	5.65	feb	6	39.30	44.32	40.15	5.76
feb	12	45.29	50.25	16.88	4.65	feb	12	60.60	05.56	66.94	5.25	feb	12	39.81	44.77	40.08	5.36
feb	18	45.47	50.40	18.20	4.25	feb	18	60.77	05.70	67.86	4.86	feb	18	40.35	45.28	40.14	4.97
feb	24	45.65	50.55	19.37	3.86	feb	24	60.93	05.83	68.47	4.46	feb	24	40.83	45.73	40.68	4.57
mar	2	45.84	50.69	20.85	3.46	mar	2	61.11	05.95	69.33	4.07	mar	2	41.33	46.18	41.10	4.18
mar	8	45.98	50.82	21.99	3.07	mar	8	61.24	06.07	69.75	3.67	mar	8	41.76	46.59	42.09	3.79
mar	14	46.15	50.94	23.39	2.68	mar	14	61.40	06.18	70.33	3.28	mar	14	42.18	46.97	43.04	3.39
mar	20	46.26	51.04	24.58	2.28	mar	20	61.50	06.28	70.64	2.89	mar	20	42.57	47.35	44.36	3.00
mar	26	46.41	51.13	25.91	1.89	mar	26	61.64	06.37	70.97	2.49	mar	26	42.89	47.62	45.75	2.60
abr	1	46.49	51.20	27.13	1.49	abr	1	61.74	06.45	71.21	2.10	abr	1	43.21	47.92	47.27	2.21
abr	7	46.60	51.27	28.26	1.10	abr	7	61.84	06.52	71.26	1.70	abr	7	43.43	48.10	49.02	1.81
abr	13	46.67	51.31	29.50	0.70	abr	13	61.93	06.57	71.41	1.31	abr	13	43.65	48.29	50.69	1.42
abr	19	46.73	51.34	30.46	0.31	abr	19	62.00	06.61	71.24	0.91	abr	19	43.78	48.39	52.71	1.03
abr	25	46.81	51.36	31.70	23.92	abr	25	62.09	06.64	71.34	0.52	abr	25	43.89	48.44	54.42	0.63
may	1	46.82	51.35	32.53	23.52	may	1	62.12	06.65	71.05	0.13	may	1	43.92	48.45	56.47	0.24
may	7	46.87	51.34	33.55	23.13	may	7	62.19	06.65	70.93	23.73	may	7	43.92	48.38	58.31	23.84
may	13	46.86	51.30	34.36	22.73	may	13	62.20	06.64	70.67	23.34	may	13	43.88	48.32	60.23	23.45
may	19	46.90	51.26	35.19	22.34	may	19	62.25	06.62	70.40	22.94	may	19	43.76	48.13	62.08	23.05
may	25	46.87	51.19	35.96	21.94	may	25	62.26	06.58	70.18	22.55	may	25	43.64	47.96	63.75	22.66
may	31	46.86	51.12	36.51	21.55	may	31	62.26	06.53	69.74	22.15	may	31	43.43	47.69	65.52	22.27
jun	6	46.83	51.03	37.19	21.16	jun	6	62.27	06.46	69.53	21.76	jun	6	43.22	47.42	66.95	21.87
jun	12	46.77	50.93	37.52	20.76	jun	12	62.23	06.39	69.03	21.37	jun	12	42.95	47.10	68.54	21.48
jun	18	46.75	50.82	38.12	20.37	jun	18	62.24	06.31	68.88	20.97	jun	18	42.65	46.72	69.64	21.08
jun	24	46.66	50.69	38.28	19.97	jun	24	62.19	06.21	68.40	20.58	jun	24	42.32	46.35	70.88	20.69
jun	30	46.61	50.56	38.56	19.58	jun	30	62.16	06.11	68.09	20.18	jun	30	41.95	45.90	71.79	20.29
jul	6	46.51	50.41	38.66	19.18	jul	6	62.10	06.00	67.75	19.79	jul	6	41.60	45.50	72.58	19.90
jul	12	46.44	50.27	38.65	18.79	jul	12	62.05	05.89	67.35	19.39	jul	12	41.16	45.00	73.27	19.51
jul	18	46.34	50.11	38.70	18.40	jul	18	61.99	05.76	67.17	19.00	jul	18	40.77	44.55	73.53	19.11
jul	24	46.23	49.96	38.40	18.00	jul	24	61.91	05.64	66.71	18.61	jul	24	40.31	44.04	73.89	18.72
jul	30	46.14	49.80	38.26	17.61	jul	30	61.85	05.51	66.54	18.21	jul	30	39.88	43.55	73.80	18.32
ago	5	46.00	49.64	37.75	17.21	ago	5	61.74	05.38	66.11	17.82	ago	5	39.43	43.07	73.79	17.93
ago	11	45.93	49.49	37.48	16.82	ago	11	61.69	05.25	66.00	17.42	ago	11	38.97	42.53	73.30	17.53
ago	17	45.79	49.33	36.85	16.42	ago	17	61.58	05.12	65.69	17.03	ago	17	38.53	42.07	72.82	17.14
ago	23	45.70	49.19	36.28	16.03	ago	23	61.51	04.99	65.50	16.63	ago	23	38.07	41.55	72.08	16.74
ago	29	45.58	49.04	35.61	15.64	ago	29	61.41	04.87	65.35	16.24	ago	29	37.66	41.12	71.13	16.35
sep	4	45.48	48.91	34.78	15.24	sep	4	61.32	04.75	65.09	15.85	sep	4	37.21	40.64	70.18	15.96
sep	10	45.40	48.78	34.16	14.85	sep	10	61.25	04.64	65.17	15.45	sep	10	36.83	40.21	68.74	15.56
sep	16	45.31	48.68	33.19	14.45	sep	16	61.17	04.53	64.96	15.06	sep	16	36.42	39.78	67.47	15.17
sep	22	45.26	48.58	32.47	14.06	sep	22	61.12	04.43	65.08	14.66	sep	22	36.08	39.40	65.77	14.77
sep	28	45.18	48.49	31.47	13.66	sep	28	61.03	04.35	65.00	14.27	sep	28	35.75	39.07	64.19	14.38
oct	4	45.18	48.43	30.73	13.27	oct	4	61.01	04.27	65.20	13.87	oct	4	35.44	38.70	62.27	13.98
oct	10	45.13	48.37	29.85	12.88	oct	10	60.96	04.20	65.35	13.48	oct	10	35.20	38.44	60.31	13.59
oct	16	45.15	48.35	29.06	12.48	oct	16	60.96	04.15	65.58	13.09	oct	16	34.96	38.16	58.26	13.20
oct	22	45.16	48.32	28.36	12.09	oct	22	60.95	04.11	65.96	12.69	oct	22	34.82	37.98	56.04	12.80
oct	28	45.20	48.33	27.55	11.69	oct	28	60.96	04.09	66.21	12.30	oct	28	34.67	37.80	53.96	12.41
nov	3	45.28	48.35	27.14	11.30	nov	3	61.01	04.07	66.87	11.90	nov	3	34.61	37.68	51.48	12.01
nov	9	45.35	48.39	26.46	10.91	nov	9	61.04	04.08	67.28	11.51	nov	9	34.57	37.60	49.31	11.62
nov	15	45.48	48.44	26.19	10.51	nov	15	61.13	04.09	68.07	11.12	nov	15	34.60	37.57	46.84	11.22
nov	21	45.57	48.51	25.79	10.12	nov	21	61.19	04.12	68.73	10.72	nov	21	34.69	37.63	44.60	10.83
nov	27	45.76	48.61	25.72	9.72	nov	27	61.32	04.17	69.60	10.33	nov	27	34.81	37.66	42.25	10.44
dic	3	45.90	48.71	25.69	9.33	dic	3	61.42	04.23	70.53	9.93	dic	3	35.02	37.83	39.95	10.04
dic	9	46.10	48.84	25.76	8.93	dic	9	61.57	04.30	71.42	9.54	dic	9	35.23	37.97	37.82	9.65
dic	15	46.29	48.96	26.09	8.54	dic	15	61.72	04.39	72.54	9.14	dic	15	35.55	38.22	35.62	9.25
dic	21	46.49	49.11	26.32	8.15	dic	21	61.86	04.49	73.45	8.75	dic	21	35.86	38.49	33.83	8.86
dic	27	46.73	49.26	27.06	7.75	dic	27	62.07	04.59	74.77	8.36	dic	27	36.26	38.79	31.78	8.47

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

σ LIB						β CIR											
3.28			M2.5 III			5.15			F8			4.07			A3 Vb		
α		α_c	δ			α		α_c	δ			α		α_c	δ		
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'
15 05		15 04	-25 -20		hp	15 14		15 13	67 16		hp	15 18		15 17	58 51		hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	06.12	11.47	51.53	8.36	ene	1	48.00	53.35	36.00	8.52	ene	1	53.96	59.31	39.35	8.59
ene	7	06.33	11.60	52.38	7.97	ene	7	48.33	53.61	34.11	8.13	ene	7	54.27	59.54	39.33	8.20
ene	13	06.51	11.75	52.95	7.57	ene	13	48.65	53.89	32.74	7.74	ene	13	54.57	59.80	39.11	7.80
ene	19	06.74	11.90	53.85	7.18	ene	19	49.02	54.18	31.31	7.34	ene	19	54.91	60.07	39.32	7.41
ene	25	06.92	12.05	54.59	6.79	ene	25	49.39	54.52	30.31	6.95	ene	25	55.20	60.33	39.50	7.02
ene	31	07.16	12.21	55.55	6.39	ene	31	49.77	54.82	29.37	6.55	ene	31	55.59	60.63	40.00	6.62
feb	6	07.34	12.36	56.44	6.00	feb	6	50.17	55.19	28.74	6.16	feb	6	55.88	60.90	40.55	6.23
feb	12	07.55	12.52	57.29	5.60	feb	12	50.54	55.51	28.41	5.76	feb	12	56.23	61.20	41.17	5.83
feb	18	07.74	12.67	58.30	5.21	feb	18	50.94	55.88	28.18	5.37	feb	18	56.53	61.46	42.08	5.44
feb	24	07.92	12.83	59.06	4.81	feb	24	51.30	56.21	28.46	4.98	feb	24	56.84	61.75	42.87	5.04
mar	2	08.12	12.97	60.15	4.42	mar	2	51.68	56.53	28.63	4.58	mar	2	57.17	62.01	44.11	4.65
mar	8	08.28	13.11	60.87	4.03	mar	8	52.01	56.85	29.37	4.19	mar	8	57.43	62.27	45.08	4.26
mar	14	08.46	13.24	61.81	3.63	mar	14	52.35	57.13	30.09	3.79	mar	14	57.74	62.52	46.39	3.86
mar	20	08.58	13.36	62.56	3.24	mar	20	52.65	57.43	31.18	3.40	mar	20	57.96	62.74	47.64	3.47
mar	26	08.75	13.48	63.36	2.84	mar	26	52.92	57.65	32.39	3.01	mar	26	58.25	62.97	49.02	3.07
abr	1	08.87	13.58	64.14	2.45	abr	1	53.18	57.89	33.72	2.61	abr	1	58.45	63.15	50.49	2.68
abr	7	09.00	13.67	64.74	2.05	abr	7	53.38	58.05	35.34	2.22	abr	7	58.68	63.35	51.84	2.29
abr	13	09.11	13.75	65.51	1.66	abr	13	53.58	58.21	36.88	1.82	abr	13	58.86	63.50	53.46	1.89
abr	19	09.20	13.81	65.97	1.27	abr	19	53.71	58.33	38.81	1.43	abr	19	59.02	63.64	54.83	1.50
abr	25	09.31	13.86	66.73	0.87	abr	25	53.84	58.39	40.46	1.03	abr	25	59.21	63.76	56.55	1.10
may	1	09.36	13.89	67.11	0.48	may	1	53.91	58.44	42.47	0.64	may	1	59.31	63.84	57.95	0.71
may	7	09.45	13.92	67.66	0.08	may	7	53.96	58.43	44.31	0.25	may	7	59.46	63.92	59.53	0.31
may	13	09.48	13.92	68.09	23.69	may	13	53.98	58.42	46.23	23.85	may	13	59.51	63.95	61.04	23.92
may	19	09.55	13.92	68.48	23.30	may	19	53.95	58.32	48.15	23.46	may	19	59.62	63.99	62.51	23.53
may	25	09.57	13.89	68.93	22.90	may	25	53.91	58.23	49.88	23.06	may	25	59.64	63.96	64.06	23.13
may	31	09.59	13.86	69.12	22.51	may	31	53.81	58.07	51.77	22.67	may	31	59.68	63.94	65.32	22.74
jun	6	09.61	13.81	69.53	22.11	jun	6	53.71	57.91	53.32	22.27	jun	6	59.69	63.88	66.79	22.34
jun	12	09.59	13.74	69.62	21.72	jun	12	53.55	57.71	55.05	21.88	jun	12	59.64	63.80	67.92	21.95
jun	18	09.61	13.67	70.01	21.32	jun	18	53.39	57.46	56.33	21.49	jun	18	59.64	63.71	69.29	21.55
jun	24	09.55	13.58	70.04	20.93	jun	24	53.19	57.22	57.75	21.09	jun	24	59.54	63.57	70.28	21.16
jun	30	09.54	13.49	70.18	20.54	jun	30	52.97	56.92	58.88	20.70	jun	30	59.49	63.44	71.30	20.77
jul	6	09.47	13.37	70.27	20.14	jul	6	52.74	56.65	59.87	20.30	jul	6	59.35	63.25	72.21	20.37
jul	12	09.42	13.26	70.20	19.75	jul	12	52.47	56.31	60.81	19.91	jul	12	59.25	63.09	72.90	19.98
jul	18	09.36	13.13	70.33	19.35	jul	18	52.22	55.99	61.30	19.51	jul	18	59.10	62.87	73.70	19.58
jul	24	09.28	13.00	70.10	18.96	jul	24	51.91	55.64	61.92	19.12	jul	24	58.94	62.67	74.05	19.19
jul	30	09.20	12.87	70.10	18.56	jul	30	51.62	55.29	62.09	18.73	jul	30	58.78	62.44	74.53	18.79
ago	5	09.08	12.72	69.79	18.17	ago	5	51.31	54.95	62.34	18.33	ago	5	58.56	62.20	74.62	18.40
ago	11	09.02	12.59	69.70	17.78	ago	11	51.00	54.56	62.13	17.94	ago	11	58.41	61.97	74.81	18.01
ago	17	08.90	12.44	69.37	17.38	ago	17	50.68	54.22	61.90	17.54	ago	17	58.17	61.71	74.67	17.61
ago	23	08.81	12.30	69.05	16.99	ago	23	50.36	53.85	61.44	17.15	ago	23	58.00	61.48	74.42	17.22
ago	29	08.69	12.16	68.75	16.59	ago	29	50.06	53.52	60.74	16.75	ago	29	57.76	61.22	74.08	16.82
sep	4	08.59	12.02	68.24	16.20	sep	4	49.73	53.16	60.05	16.36	sep	4	57.57	61.00	73.42	16.43
sep	10	08.51	11.89	68.01	15.80	sep	10	49.45	52.83	58.84	15.97	sep	10	57.38	60.76	72.94	16.03
sep	16	08.41	11.77	67.42	15.41	sep	16	49.15	52.51	57.81	15.57	sep	16	57.18	60.55	71.96	15.64
sep	22	08.34	11.66	67.10	15.02	sep	22	48.89	52.21	56.33	15.18	sep	22	57.03	60.35	71.15	15.25
sep	28	08.24	11.55	66.53	14.62	sep	28	48.63	51.94	54.95	14.78	sep	28	56.84	60.15	70.01	14.85
oct	4	08.21	11.46	66.16	14.23	oct	4	48.40	51.65	53.23	14.39	oct	4	56.75	60.00	68.95	14.46
oct	10	08.13	11.37	65.72	13.83	oct	10	48.20	51.44	51.43	13.99	oct	10	56.60	59.84	67.75	14.06
oct	16	08.12	11.31	65.28	13.44	oct	16	48.01	51.20	49.55	13.60	oct	16	56.54	59.74	66.43	13.67
oct	22	08.09	11.26	65.01	13.04	oct	22	47.88	51.04	47.43	13.21	oct	22	56.47	59.63	65.22	13.27
oct	28	08.09	11.22	64.55	12.65	oct	28	47.74	50.87	45.47	12.81	oct	28	56.44	59.57	63.74	12.88
nov	3	08.13	11.20	64.49	12.26	nov	3	47.68	50.75	43.07	12.42	nov	3	56.46	59.53	62.62	12.49
nov	9	08.16	11.20	64.17	11.86	nov	9	47.62	50.66	40.94	12.02	nov	9	56.48	59.52	61.15	12.09
nov	15	08.24	11.21	64.17	11.47	nov	15	47.63	50.60	38.51	11.63	nov	15	56.58	59.55	60.00	11.70
nov	21	08.29	11.23	64.03	11.07	nov	21	47.67	50.60	36.25	11.23	nov	21	56.65	59.59	58.73	11.30
nov	27	08.43	11.28	64.11	10.68	nov	27	47.73	50.59	33.89	10.84	nov	27	56.84	59.69	57.65	10.91
dic	3	08.53	11.34	64.31	10.28	dic	3	47.86	50.67	31.51	10.45	dic	3	56.97	59.78	56.68	10.51
dic	9	08.68	11.42	64.47	9.89	dic	9	48.00	50.74	29.31	10.05	dic	9	57.20	59.93	55.68	10.12
dic	15	08.83	11.51	64.93	9.50	dic	15	48.21	50.88	26.98	9.66	dic	15	57.41	60.09	55.02	9.73
dic	21	08.99	11.61	65.21	9.10	dic	21	48.42	51.04	25.04	9.26	dic	21	57.65	60.28	54.23	9.33
dic	27	09.20	11.73	65.95	8.71	dic	27	48.70	51.23	22.84	8.87	dic	27	57.96	60.49	53.95	8.94

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

ι DRA						ε TRA						ε SER					
3.29			K2			4.11			K0			3.71			A2		
α		α _c	δ			α		α _c	δ			α		α _c	δ		
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'
15 25		15 24	58 53		hp	15 38		15 37	-66 -21		hp	15 51		15 50	04 25		hp
mes	d	s	s	“	h	mes	d	s	s	“	h	mes	d	s	s	“	h
ene	1	17.37	22.72	66.97	8.70	ene	1	20.23	25.59	10.79	8.92	ene	1	41.15	46.50	34.85	9.14
ene	7	17.63	22.91	65.00	8.30	ene	7	20.60	25.88	10.46	8.52	ene	7	41.32	46.60	33.41	8.74
ene	13	17.88	23.11	63.53	7.91	ene	13	20.97	26.20	09.93	8.13	ene	13	41.48	46.71	32.36	8.35
ene	19	18.16	23.32	61.99	7.52	ene	19	21.39	26.55	09.83	7.73	ene	19	41.67	46.83	31.09	7.96
ene	25	18.44	23.57	60.85	7.12	ene	25	21.75	26.88	09.74	7.34	ene	25	41.82	46.95	30.05	7.56
ene	31	18.75	23.80	59.79	6.73	ene	31	22.22	27.27	09.94	6.95	ene	31	42.04	47.08	28.97	7.17
feb	6	19.05	24.06	59.00	6.33	feb	6	22.59	27.61	10.25	6.55	feb	6	42.20	47.22	28.00	6.77
feb	12	19.34	24.31	58.53	5.94	feb	12	23.04	28.00	10.63	6.16	feb	12	42.39	47.36	27.23	6.38
feb	18	19.65	24.58	58.14	5.55	feb	18	23.43	28.36	11.34	5.76	feb	18	42.57	47.50	26.39	5.98
feb	24	19.93	24.83	58.26	5.15	feb	24	23.83	28.73	11.94	5.37	feb	24	42.74	47.64	25.93	5.59
mar	2	20.23	25.08	58.26	4.76	mar	2	24.24	29.09	13.01	4.97	mar	2	42.93	47.78	25.25	5.20
mar	8	20.49	25.32	58.84	4.36	mar	8	24.60	29.43	13.86	4.58	mar	8	43.08	47.91	25.03	4.80
mar	14	20.75	25.54	59.41	3.97	mar	14	25.00	29.78	15.05	4.19	mar	14	43.26	48.05	24.70	4.41
mar	20	20.99	25.77	60.35	3.57	mar	20	25.30	30.08	16.23	3.79	mar	20	43.39	48.17	24.62	4.01
mar	26	21.21	25.94	61.43	3.18	mar	26	25.68	30.41	17.55	3.40	mar	26	43.56	48.29	24.65	3.62
abr	1	21.42	26.13	62.62	2.79	abr	1	25.96	30.67	19.02	3.00	abr	1	43.68	48.39	24.70	3.23
abr	7	21.59	26.26	64.13	2.39	abr	7	26.27	30.94	20.37	2.61	abr	7	43.82	48.49	25.04	2.83
abr	13	21.76	26.39	65.55	2.00	abr	13	26.53	31.17	22.02	2.22	abr	13	43.94	48.58	25.24	2.44
abr	19	21.87	26.49	67.38	1.60	abr	19	26.76	31.38	23.45	1.82	abr	19	44.04	48.65	25.83	2.04
abr	25	22.00	26.55	68.96	1.21	abr	25	27.01	31.56	25.26	1.43	abr	25	44.17	48.72	26.16	1.65
may	1	22.07	26.60	70.90	0.81	may	1	27.17	31.70	26.77	1.03	may	1	44.24	48.77	26.86	1.25
may	7	22.14	26.60	72.69	0.42	may	7	27.37	31.84	28.47	0.64	may	7	44.34	48.80	27.44	0.86
may	13	22.17	26.61	74.58	0.03	may	13	27.47	31.90	30.15	0.24	may	13	44.39	48.83	28.09	0.47
may	19	22.18	26.55	76.49	23.63	may	19	27.62	31.99	31.77	23.85	may	19	44.47	48.84	28.86	0.07
may	25	22.17	26.49	78.22	23.24	may	25	27.67	31.99	33.52	23.46	may	25	44.51	48.83	29.47	23.68
may	31	22.12	26.39	80.12	22.84	may	31	27.73	32.00	34.98	23.06	may	31	44.55	48.81	30.35	23.28
jun	6	22.08	26.27	81.70	22.45	jun	6	27.75	31.95	36.67	22.67	jun	6	44.59	48.78	30.95	22.89
jun	12	21.98	26.14	83.49	22.05	jun	12	27.71	31.87	38.03	22.27	jun	12	44.58	48.74	31.82	22.49
jun	18	21.90	25.96	84.83	21.66	jun	18	27.72	31.79	39.64	21.88	jun	18	44.62	48.68	32.38	22.10
jun	24	21.76	25.79	86.33	21.27	jun	24	27.61	31.63	40.88	21.48	jun	24	44.59	48.61	33.16	21.71
jun	30	21.63	25.58	87.56	20.87	jun	30	27.54	31.49	42.13	21.09	jun	30	44.59	48.53	33.81	21.31
jul	6	21.47	25.38	88.64	20.48	jul	6	27.37	31.28	43.32	20.70	jul	6	44.54	48.45	34.37	20.92
jul	12	21.29	25.13	89.71	20.08	jul	12	27.25	31.08	44.24	20.30	jul	12	44.51	48.35	35.07	20.52
jul	18	21.12	24.90	90.33	19.69	jul	18	27.05	30.83	45.30	19.91	jul	18	44.46	48.24	35.42	20.13
jul	24	20.91	24.64	91.10	19.29	jul	24	26.85	30.58	45.88	19.51	jul	24	44.40	48.12	36.05	19.73
jul	30	20.71	24.38	91.41	18.90	jul	30	26.64	30.30	46.60	19.12	jul	30	44.34	48.00	36.35	19.34
ago	5	20.48	24.12	91.81	18.51	ago	5	26.35	29.99	46.92	18.72	ago	5	44.24	47.88	36.83	18.95
ago	11	20.27	23.83	91.78	18.11	ago	11	26.15	29.72	47.32	18.33	ago	11	44.18	47.74	37.04	18.55
ago	17	20.04	23.58	91.71	17.72	ago	17	25.84	29.38	47.38	17.94	ago	17	44.07	47.61	37.31	18.16
ago	23	19.81	23.29	91.43	17.32	ago	23	25.60	29.09	47.29	17.54	ago	23	43.99	47.48	37.51	17.76
ago	29	19.58	23.04	90.89	16.93	ago	29	25.29	28.75	47.12	17.15	ago	29	43.88	47.34	37.54	17.37
sep	4	19.34	22.77	90.39	16.53	sep	4	25.03	28.46	46.59	16.75	sep	4	43.78	47.21	37.74	16.97
sep	10	19.14	22.52	89.36	16.14	sep	10	24.76	28.15	46.22	16.36	sep	10	43.69	47.07	37.51	16.58
sep	16	18.91	22.27	88.50	15.75	sep	16	24.49	27.86	45.32	15.96	sep	16	43.58	46.94	37.57	16.19
sep	22	18.72	22.04	87.19	15.35	sep	22	24.27	27.59	44.57	15.57	sep	22	43.50	46.82	37.27	15.79
sep	28	18.52	21.83	85.96	14.96	sep	28	24.00	27.31	43.46	15.18	sep	28	43.39	46.71	37.10	15.40
oct	4	18.35	21.61	84.42	14.56	oct	4	23.85	27.11	42.38	14.78	oct	4	43.34	46.60	36.73	15.00
oct	10	18.19	21.43	82.76	14.17	oct	10	23.63	26.87	41.15	14.39	oct	10	43.25	46.50	36.28	14.61
oct	16	18.05	21.25	81.03	13.77	oct	16	23.53	26.72	39.75	13.99	oct	16	43.21	46.40	35.84	14.21
oct	22	17.95	21.11	79.03	13.38	oct	22	23.40	26.56	38.45	13.60	oct	22	43.16	46.33	35.14	13.82
oct	28	17.85	20.98	77.19	12.99	oct	28	23.33	26.46	36.84	13.20	oct	28	43.13	46.26	34.64	13.43
nov	3	17.81	20.88	74.90	12.59	nov	3	23.32	26.39	35.55	12.81	nov	3	43.14	46.20	33.69	13.03
nov	9	17.76	20.80	72.86	12.20	nov	9	23.31	26.35	33.90	12.42	nov	9	43.13	46.16	33.01	12.64
nov	15	17.77	20.74	70.51	11.80	nov	15	23.40	26.37	32.52	12.02	nov	15	43.17	46.14	31.99	12.24
nov	21	17.80	20.73	68.29	11.41	nov	21	23.45	26.39	31.04	11.63	nov	21	43.19	46.13	31.04	11.85
nov	27	17.86	20.72	65.98	11.01	nov	27	23.65	26.50	29.68	11.23	nov	27	43.27	46.13	29.98	11.46
dic	3	17.95	20.76	63.62	10.62	dic	3	23.79	26.60	28.45	10.84	dic	3	43.34	46.15	28.77	11.06
dic	9	18.07	20.81	61.43	10.23	dic	9	24.04	26.77	27.14	10.44	dic	9	43.44	46.18	27.69	10.67
dic	15	18.23	20.90	59.09	9.83	dic	15	24.28	26.95	26.18	10.05	dic	15	43.55	46.23	26.34	10.27
dic	21	18.39	21.02	57.11	9.44	dic	21	24.55	27.18	25.08	9.66	dic	21	43.66	46.29	25.25	9.88
dic	27	18.61	21.14	54.86	9.04	dic	27	24.91	27.44	24.48	9.26	dic	27	43.83	46.36	23.79	9.48

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

γ SER						γ APS						γ SER					
3.85			F6			3.88			K0			4.91			G7.5		
α		α _c	δ			α		α _c	δ			α		α _c	δ		
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'
15 57		15 56	15 36		hp	16 36		16 35	-78 -55		hp	16 42		16 41	-17 -46		hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	15.35	20.71	17.63	9.23	ene	1	08.58	13.93	43.40	9.88	ene	1	34.95	40.31	22.00	9.99
ene	7	15.52	20.80	15.93	8.84	ene	7	09.18	14.46	42.39	9.49	ene	7	35.12	40.39	22.71	9.59
ene	13	15.67	20.91	14.65	8.44	ene	13	09.80	15.03	41.17	9.09	ene	13	35.26	40.49	23.10	9.20
ene	19	15.86	21.02	13.19	8.05	ene	19	10.54	15.70	40.35	8.70	ene	19	35.45	40.61	23.76	8.80
ene	25	16.02	21.15	11.99	7.65	ene	25	11.20	16.33	39.58	8.30	ene	25	35.60	40.73	24.32	8.41
ene	31	16.23	21.28	10.80	7.26	ene	31	12.07	17.11	39.03	7.91	ene	31	35.81	40.86	24.91	8.02
feb	6	16.40	21.42	09.74	6.87	feb	6	12.79	17.81	38.68	7.52	feb	6	35.98	41.00	25.55	7.62
feb	12	16.59	21.56	08.93	6.47	feb	12	13.65	18.62	38.35	7.12	feb	12	36.18	41.14	26.02	7.23
feb	18	16.78	21.71	08.07	6.08	feb	18	14.45	19.38	38.44	6.73	feb	18	36.36	41.29	26.70	6.83
feb	24	16.95	21.85	07.64	5.68	feb	24	15.27	20.17	38.41	6.33	feb	24	36.54	41.44	27.06	6.44
mar	2	17.14	21.99	07.03	5.29	mar	2	16.14	20.99	38.90	5.94	mar	2	36.75	41.60	27.71	6.04
mar	8	17.30	22.13	06.91	4.90	mar	8	16.92	21.75	39.21	5.55	mar	8	36.91	41.75	28.02	5.65
mar	14	17.48	22.27	06.73	4.50	mar	14	17.78	22.57	39.88	5.15	mar	14	37.11	41.90	28.46	5.26
mar	20	17.62	22.40	06.82	4.11	mar	20	18.50	23.28	40.65	4.76	mar	20	37.27	42.05	28.81	4.86
mar	26	17.79	22.52	07.06	3.71	mar	26	19.35	24.07	41.53	4.36	mar	26	37.46	42.19	29.05	4.47
abr	1	17.92	22.63	07.33	3.32	abr	1	20.02	24.73	42.68	3.97	abr	1	37.61	42.32	29.40	4.07
abr	7	18.06	22.73	07.93	2.92	abr	7	20.76	25.43	43.72	3.57	abr	7	37.78	42.45	29.46	3.68
abr	13	18.18	22.82	08.41	2.53	abr	13	21.42	26.05	45.15	3.18	abr	13	37.94	42.57	29.75	3.29
abr	19	18.28	22.90	09.29	2.14	abr	19	22.02	26.63	46.41	2.79	abr	19	38.07	42.68	29.71	2.89
abr	25	18.41	22.96	09.94	1.74	abr	25	22.65	27.20	48.07	2.39	abr	25	38.23	42.78	29.94	2.50
may	1	18.48	23.01	10.95	1.35	may	1	23.11	27.64	49.55	2.00	may	1	38.34	42.87	29.88	2.10
may	7	18.58	23.05	11.86	0.95	may	7	23.65	28.11	51.22	1.60	may	7	38.48	42.95	29.91	1.71
may	13	18.64	23.07	12.85	0.56	may	13	23.99	28.43	52.99	1.21	may	13	38.57	43.01	29.95	1.31
may	19	18.71	23.08	13.96	0.16	may	19	24.42	28.79	54.68	0.82	may	19	38.69	43.06	29.83	0.92
may	25	18.76	23.08	14.90	23.77	may	25	24.67	28.99	56.63	0.42	may	25	38.77	43.09	29.93	0.53
may	31	18.79	23.05	16.11	23.38	may	31	24.91	29.17	58.29	0.03	may	31	38.85	43.11	29.72	0.13
jun	6	18.82	23.02	17.03	22.98	jun	6	25.08	29.27	60.25	23.63	jun	6	38.92	43.12	29.80	23.74
jun	12	18.82	22.98	18.21	22.59	jun	12	25.12	29.27	61.95	23.24	jun	12	38.95	43.11	29.61	23.34
jun	18	18.85	22.91	19.05	22.19	jun	18	25.23	29.29	63.89	22.84	jun	18	39.03	43.09	29.68	22.95
jun	24	18.82	22.84	20.10	21.80	jun	24	25.10	29.13	65.57	22.45	jun	24	39.03	43.05	29.55	22.55
jun	30	18.81	22.76	20.99	21.40	jun	30	25.05	29.00	67.23	22.06	jun	30	39.06	43.01	29.47	22.16
jul	6	18.76	22.67	21.78	21.01	jul	6	24.80	28.71	68.92	21.66	jul	6	39.04	42.94	29.49	21.77
jul	12	18.72	22.56	22.68	20.62	jul	12	24.60	28.44	70.32	21.27	jul	12	39.03	42.87	29.29	21.37
jul	18	18.67	22.45	23.19	20.22	jul	18	24.28	28.05	71.92	20.87	jul	18	39.01	42.78	29.43	20.98
jul	24	18.60	22.33	23.96	19.83	jul	24	23.90	27.63	73.04	20.48	jul	24	38.96	42.69	29.20	20.58
jul	30	18.53	22.20	24.36	19.43	jul	30	23.50	27.16	74.31	20.08	jul	30	38.92	42.58	29.26	20.19
ago	5	18.43	22.07	24.91	19.04	ago	5	22.95	26.59	75.22	19.69	ago	5	38.82	42.46	29.11	19.79
ago	11	18.36	21.93	25.17	18.64	ago	11	22.53	26.09	76.13	19.30	ago	11	38.78	42.34	29.11	19.40
ago	17	18.25	21.79	25.43	18.25	ago	17	21.90	25.44	76.79	18.90	ago	17	38.67	42.21	29.03	19.01
ago	23	18.16	21.64	25.60	17.86	ago	23	21.37	24.86	77.20	18.51	ago	23	38.59	42.08	28.90	18.61
ago	29	18.04	21.51	25.56	17.46	ago	29	20.71	24.17	77.59	18.11	ago	29	38.48	41.94	28.92	18.22
sep	4	17.93	21.36	25.66	17.07	sep	4	20.10	23.53	77.52	17.72	sep	4	38.37	41.80	28.66	17.82
sep	10	17.84	21.22	25.29	16.67	sep	10	19.49	22.88	77.62	17.32	sep	10	38.28	41.66	28.76	17.43
sep	16	17.72	21.09	25.17	16.28	sep	16	18.85	22.21	77.14	16.93	sep	16	38.16	41.52	28.50	17.03
sep	22	17.64	20.96	24.67	15.88	sep	22	18.28	21.60	76.74	16.53	sep	22	38.07	41.38	28.49	16.64
sep	28	17.52	20.83	24.27	15.49	sep	28	17.62	20.94	75.99	16.14	sep	28	37.93	41.25	28.33	16.25
oct	4	17.46	20.71	23.64	15.10	oct	4	17.16	20.42	75.13	15.75	oct	4	37.87	41.12	28.23	15.85
oct	10	17.37	20.61	22.90	14.70	oct	10	16.58	19.83	74.14	15.35	oct	10	37.76	41.00	28.20	15.46
oct	16	17.31	20.51	22.15	14.31	oct	16	16.19	19.38	72.84	14.96	oct	16	37.70	40.89	28.03	15.06
oct	22	17.26	20.42	21.12	13.91	oct	22	15.75	18.92	71.62	14.56	oct	22	37.63	40.79	28.11	14.67
oct	28	17.22	20.35	20.26	13.52	oct	28	15.42	18.55	70.00	14.17	oct	28	37.57	40.70	27.91	14.27
nov	3	17.21	20.28	18.95	13.12	nov	3	15.20	18.27	68.62	13.77	nov	3	37.55	40.62	28.10	13.88
nov	9	17.19	20.23	17.89	12.73	nov	9	14.98	18.01	66.83	13.38	nov	9	37.52	40.56	28.00	13.49
nov	15	17.23	20.20	16.49	12.34	nov	15	14.93	17.90	65.20	12.99	nov	15	37.54	40.51	28.16	13.09
nov	21	17.24	20.18	15.16	11.94	nov	21	14.84	17.78	63.46	12.59	nov	21	37.53	40.47	28.28	12.70
nov	27	17.32	20.17	13.73	11.55	nov	27	15.00	17.86	61.69	12.20	nov	27	37.60	40.46	28.40	12.30
dic	3	17.38	20.18	12.15	11.15	dic	3	15.09	17.90	60.07	11.80	dic	3	37.64	40.45	28.67	11.91
dic	9	17.47	20.21	10.71	10.76	dic	9	15.37	18.11	58.25	11.41	dic	9	37.72	40.46	28.89	11.51
dic	15	17.58	20.25	09.01	10.37	dic	15	15.68	18.35	56.77	11.01	dic	15	37.82	40.49	29.41	11.12
dic	21	17.69	20.31	07.60	9.97	dic	21	16.05	18.67	55.08	10.62	dic	21	37.91	40.54	29.67	10.73
dic	27	17.85	20.38	05.83	9.58	dic	27	16.59	19.12	53.84	10.23	dic	27	38.07	40.60	30.30	10.33

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

η HER						ε SCO						ζ ARA					
3.51			G7			2.29			K2.5			3.13			K5		
α		α _c		δ		α		α _c		δ		α		α _c		δ	
h m		h m		°		h m		h m		°		h m		h m		°	
16 43		16 42		38 53		16 51		16 50		-34 -19		17 00		16 59		-56 -00	
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	28.69	34.04	20.87	10.00	ene	1	17.65	23.00	15.15	10.13	ene	1	03.74	09.09	44.79	10.28
ene	7	28.84	34.12	18.75	9.61	ene	7	17.82	23.10	15.30	9.74	ene	7	03.97	09.25	44.20	9.88
ene	13	28.98	34.21	17.06	9.21	ene	13	17.98	23.22	15.15	9.34	ene	13	04.19	09.42	43.36	9.49
ene	19	29.16	34.32	15.24	8.82	ene	19	18.19	23.35	15.31	8.95	ene	19	04.47	09.63	42.86	9.10
ene	25	29.33	34.46	13.68	8.42	ene	25	18.36	23.49	15.42	8.56	ene	25	04.70	09.83	42.38	8.70
ene	31	29.54	34.58	12.25	8.03	ene	31	18.60	23.65	15.62	8.16	ene	31	05.04	10.08	42.03	8.31
feb	6	29.72	34.74	10.92	7.64	feb	6	18.79	23.81	15.92	7.77	feb	6	05.29	10.31	41.85	7.91
feb	12	29.93	34.90	09.94	7.24	feb	12	19.01	23.98	16.10	7.37	feb	12	05.61	10.58	41.61	7.52
feb	18	30.14	35.07	08.93	6.85	feb	18	19.22	24.15	16.56	6.98	feb	18	05.90	10.84	41.73	7.12
feb	24	30.34	35.24	08.43	6.45	feb	24	19.43	24.33	16.77	6.58	feb	24	06.20	11.10	41.67	6.73
mar	2	30.56	35.41	07.81	6.06	mar	2	19.66	24.51	17.33	6.19	mar	2	06.54	11.38	42.05	6.34
mar	8	30.75	35.59	07.72	5.67	mar	8	19.85	24.69	17.61	5.80	mar	8	06.81	11.65	42.22	5.94
mar	14	30.96	35.75	07.66	5.27	mar	14	20.08	24.87	18.09	5.40	mar	14	07.14	11.93	42.66	5.55
mar	20	31.15	35.93	07.87	4.88	mar	20	20.26	25.04	18.55	5.01	mar	20	07.40	12.18	43.17	5.15
mar	26	31.35	36.08	08.37	4.48	mar	26	20.49	25.21	18.95	4.61	mar	26	07.73	12.46	43.69	4.76
abr	1	31.53	36.24	08.89	4.09	abr	1	20.66	25.37	19.53	4.22	abr	1	07.99	12.69	44.47	4.37
abr	7	31.70	36.37	09.85	3.69	abr	7	20.85	25.53	19.86	3.82	abr	7	08.27	12.94	45.07	3.97
abr	13	31.87	36.50	10.69	3.30	abr	13	21.03	25.67	20.48	3.43	abr	13	08.53	13.17	46.03	3.58
abr	19	32.01	36.62	12.01	2.91	abr	19	21.19	25.80	20.82	3.04	abr	19	08.77	13.38	46.77	3.18
abr	25	32.17	36.72	13.15	2.51	abr	25	21.38	25.93	21.47	2.64	abr	25	09.04	13.59	47.87	2.79
may	1	32.28	36.81	14.66	2.12	may	1	21.51	26.04	21.87	2.25	may	1	09.23	13.76	48.79	2.39
may	7	32.40	36.87	16.15	1.72	may	7	21.67	26.14	22.39	1.85	may	7	09.47	13.93	49.85	2.00
may	13	32.49	36.93	17.69	1.33	may	13	21.78	26.22	22.96	1.46	may	13	09.62	14.06	51.02	1.61
may	19	32.58	36.95	19.44	0.93	may	19	21.93	26.29	23.38	1.07	may	19	09.83	14.20	52.06	1.21
may	25	32.65	36.97	20.98	0.54	may	25	22.02	26.34	24.04	0.67	may	25	09.97	14.29	53.39	0.82
may	31	32.70	36.97	22.84	0.15	may	31	22.11	26.38	24.40	0.28	may	31	10.10	14.37	54.42	0.42
jun	6	32.75	36.95	24.39	23.75	jun	6	22.20	26.40	25.06	23.88	jun	6	10.23	14.42	55.77	0.03
jun	12	32.75	36.91	26.19	23.36	jun	12	22.24	26.40	25.46	23.49	jun	12	10.28	14.44	56.88	23.64
jun	18	32.78	36.85	27.71	22.96	jun	18	22.33	26.39	26.09	23.09	jun	18	10.40	14.46	58.21	23.24
jun	24	32.75	36.78	29.34	22.57	jun	24	22.33	26.36	26.54	22.70	jun	24	10.40	14.43	59.35	22.85
jun	30	32.74	36.69	30.86	22.18	jun	30	22.37	26.32	26.99	22.31	jun	30	10.45	14.40	60.47	22.45
jul	6	32.69	36.59	32.20	21.78	jul	6	22.35	26.25	27.55	21.91	jul	6	10.41	14.32	61.70	22.06
jul	12	32.63	36.47	33.67	21.39	jul	12	22.35	26.18	27.85	21.52	jul	12	10.40	14.24	62.63	21.66
jul	18	32.57	36.34	34.69	20.99	jul	18	22.32	26.09	28.45	21.12	jul	18	10.35	14.12	63.84	21.27
jul	24	32.47	36.20	35.93	20.60	jul	24	22.26	25.99	28.66	20.73	jul	24	10.26	13.99	64.60	20.88
jul	30	32.38	36.05	36.77	20.20	jul	30	22.22	25.88	29.11	20.33	jul	30	10.18	13.84	65.57	20.48
ago	5	32.25	35.90	37.68	19.81	ago	5	22.11	25.75	29.31	19.94	ago	5	10.02	13.66	66.25	20.09
ago	11	32.15	35.72	38.31	19.42	ago	11	22.06	25.62	29.60	19.55	ago	11	09.93	13.49	66.95	19.69
ago	17	32.01	35.55	38.83	19.02	ago	17	21.93	25.47	29.79	19.15	ago	17	09.73	13.28	67.50	19.30
ago	23	31.88	35.36	39.25	18.63	ago	23	21.84	25.33	29.84	18.76	ago	23	09.59	13.08	67.84	18.90
ago	29	31.72	35.19	39.35	18.23	ago	29	21.70	25.17	30.00	18.36	ago	29	09.38	12.85	68.23	18.51
sep	4	31.57	35.00	39.58	17.84	sep	4	21.58	25.01	29.83	17.97	sep	4	09.20	12.63	68.22	18.12
sep	10	31.43	34.81	39.27	17.44	sep	10	21.47	24.85	29.95	17.57	sep	10	09.02	12.40	68.43	17.72
sep	16	31.26	34.63	39.15	17.05	sep	16	21.33	24.69	29.64	17.18	sep	16	08.80	12.17	68.13	17.33
sep	22	31.12	34.44	38.60	16.66	sep	22	21.22	24.54	29.53	16.79	sep	22	08.63	11.95	67.96	16.93
sep	28	30.96	34.27	38.06	16.26	sep	28	21.07	24.38	29.22	16.39	sep	28	08.40	11.71	67.51	16.54
oct	4	30.84	34.09	37.32	15.87	oct	4	20.99	24.24	28.89	16.00	oct	4	08.26	11.52	66.96	16.14
oct	10	30.70	33.94	36.33	15.47	oct	10	20.85	24.09	28.59	15.60	oct	10	08.06	11.30	66.38	15.75
oct	16	30.58	33.77	35.35	15.08	oct	16	20.78	23.97	28.07	15.21	oct	16	07.93	11.12	65.50	15.36
oct	22	30.47	33.64	33.99	14.68	oct	22	20.69	23.85	27.76	14.81	oct	22	07.78	10.95	64.76	14.96
oct	28	30.37	33.50	32.81	14.29	oct	28	20.62	23.75	27.12	14.42	oct	28	07.66	10.79	63.64	14.57
nov	3	30.31	33.38	31.13	13.90	nov	3	20.60	23.66	26.82	14.03	nov	3	07.61	10.67	62.79	14.17
nov	9	30.24	33.28	29.65	13.50	nov	9	20.55	23.58	26.20	13.63	nov	9	07.52	10.56	61.56	13.78
nov	15	30.22	33.19	27.83	13.11	nov	15	20.57	23.53	25.80	13.24	nov	15	07.52	10.49	60.49	13.38
nov	21	30.19	33.12	26.01	12.71	nov	21	20.55	23.49	25.35	12.84	nov	21	07.48	10.42	59.35	12.99
nov	27	30.21	33.06	24.16	12.32	nov	27	20.62	23.48	24.88	12.45	nov	27	07.56	10.41	58.14	12.60
dic	3	30.22	33.03	22.06	11.92	dic	3	20.66	23.47	24.62	12.05	dic	3	07.59	10.40	57.12	12.20
dic	9	30.27	33.01	20.16	11.53	dic	9	20.75	23.49	24.14	11.66	dic	9	07.70	10.44	55.85	11.81
dic	15	30.35	33.02	17.96	11.14	dic	15	20.85	23.52	23.98	11.27	dic	15	07.82	10.49	54.93	11.41
dic	21	30.42	33.05	16.07	10.74	dic	21	20.95	23.57	23.59	10.87	dic	21	07.95	10.57	53.77	11.02
dic	27	30.55	33.08	13.86	10.35	dic	27	21.12	23.65	23.59	10.48	dic	27	08.17	10.70	53.00	10.62

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

η SCO						β OPH						μ ARA					
3.32			F2			2.77			K2			5.12			G5		
α		α _c	δ		δ	α		α _c	δ		δ	α		α _c	δ		
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'
17 13		17 12	-43	-15	hp	17 44		17 43	04 33	hp	17 45		17 44	51	-50	hp	
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h
ene	1	24.07	29.42	27.77	10.50	ene	1	19.71	25.06	45.57	11.02	ene	1	31.33	36.68	19.32	11.04
ene	7	24.25	29.53	27.53	10.11	ene	7	19.82	25.10	44.28	10.62	ene	7	31.51	36.79	18.65	10.64
ene	13	24.42	29.65	27.00	9.71	ene	13	19.93	25.16	43.31	10.23	ene	13	31.68	36.91	17.71	10.25
ene	19	24.64	29.79	26.78	9.32	ene	19	20.07	25.23	42.17	9.83	ene	19	31.91	37.07	17.05	9.85
ene	25	24.81	29.94	26.55	8.92	ene	25	20.19	25.31	41.13	9.44	ene	25	32.09	37.22	16.41	9.46
ene	31	25.07	30.12	26.38	8.53	ene	31	20.36	25.41	40.22	9.04	ene	31	32.37	37.42	15.80	9.06
feb	6	25.27	30.29	26.38	8.14	feb	6	20.50	25.52	39.23	8.65	feb	6	32.59	37.61	15.42	8.67
feb	12	25.52	30.49	26.26	7.74	feb	12	20.66	25.63	38.54	8.26	feb	12	32.86	37.83	14.89	8.28
feb	18	25.75	30.68	26.47	7.35	feb	18	20.83	25.76	37.67	7.86	feb	18	33.12	38.05	14.73	7.88
feb	24	25.98	30.88	26.44	6.95	feb	24	20.99	25.89	37.22	7.47	feb	24	33.37	38.28	14.36	7.49
mar	2	26.25	31.09	26.80	6.56	mar	2	21.17	26.02	36.58	7.07	mar	2	33.68	38.53	14.38	7.09
mar	8	26.46	31.29	26.92	6.16	mar	8	21.33	26.16	36.32	6.68	mar	8	33.92	38.76	14.22	6.70
mar	14	26.72	31.51	27.26	5.77	mar	14	21.52	26.30	36.06	6.29	mar	14	34.23	39.02	14.28	6.31
mar	20	26.92	31.70	27.63	5.38	mar	20	21.67	26.45	35.90	5.89	mar	20	34.47	39.25	14.44	5.91
mar	26	27.19	31.91	27.95	4.98	mar	26	21.86	26.59	36.03	5.50	mar	26	34.78	39.51	14.54	5.52
abr	1	27.39	32.10	28.52	4.59	abr	1	22.01	26.72	36.04	5.10	abr	1	35.03	39.74	14.95	5.12
abr	7	27.62	32.29	28.85	4.19	abr	7	22.18	26.86	36.46	4.71	abr	7	35.30	39.98	15.14	4.73
abr	13	27.83	32.47	29.52	3.80	abr	13	22.35	26.98	36.69	4.31	abr	13	35.57	40.21	15.71	4.33
abr	19	28.02	32.64	29.94	3.40	abr	19	22.49	27.11	37.32	3.92	abr	19	35.80	40.42	16.08	3.94
abr	25	28.25	32.80	30.68	3.01	abr	25	22.67	27.22	37.79	3.53	abr	25	36.08	40.63	16.77	3.55
may	1	28.40	32.94	31.22	2.62	may	1	22.79	27.32	38.52	3.13	may	1	36.28	40.81	17.34	3.15
may	7	28.61	33.07	31.89	2.22	may	7	22.94	27.41	39.28	2.74	may	7	36.54	41.00	18.02	2.76
may	13	28.74	33.18	32.66	1.83	may	13	23.06	27.49	39.99	2.34	may	13	36.71	41.15	18.88	2.36
may	19	28.92	33.29	33.27	1.43	may	19	23.20	27.56	40.98	1.95	may	19	36.94	41.31	19.57	1.97
may	25	29.04	33.36	34.17	1.04	may	25	23.30	27.62	41.71	1.55	may	25	37.11	41.43	20.61	1.58
may	31	29.16	33.43	34.77	0.65	may	31	23.40	27.66	42.78	1.16	may	31	37.27	41.54	21.37	1.18
jun	6	29.27	33.47	35.69	0.25	jun	6	23.50	27.69	43.57	0.77	jun	6	37.43	41.63	22.45	0.79
jun	12	29.34	33.49	36.37	23.86	jun	12	23.55	27.71	44.59	0.37	jun	12	37.52	41.68	23.36	0.39
jun	18	29.45	33.51	37.28	23.46	jun	18	23.65	27.71	45.44	23.98	jun	18	37.68	41.74	24.47	24.00
jun	24	29.47	33.49	38.03	23.07	jun	24	23.68	27.70	46.35	23.58	jun	24	37.72	41.75	25.48	23.60
jun	30	29.52	33.47	38.77	22.67	jun	30	23.73	27.68	47.27	23.19	jun	30	37.81	41.76	26.47	23.21
jul	6	29.51	33.42	39.63	22.28	jul	6	23.74	27.64	47.98	22.80	jul	6	37.82	41.72	27.63	22.82
jul	12	29.52	33.36	40.22	21.89	jul	12	23.75	27.59	48.94	22.40	jul	12	37.85	41.68	28.50	22.42
jul	18	29.50	33.27	41.13	21.49	jul	18	23.75	27.53	49.48	22.01	jul	18	37.84	41.62	29.70	22.03
jul	24	29.45	33.18	41.62	21.10	jul	24	23.73	27.45	50.32	21.61	jul	24	37.80	41.53	30.50	21.63
jul	30	29.40	33.07	42.34	20.70	jul	30	23.70	27.37	50.83	21.22	jul	30	37.76	41.43	31.52	21.24
ago	5	29.29	32.93	42.82	20.31	ago	5	23.63	27.27	51.44	20.82	ago	5	37.65	41.29	32.33	20.84
ago	11	29.24	32.80	43.34	19.91	ago	11	23.60	27.16	51.93	20.43	ago	11	37.60	41.16	33.12	20.45
ago	17	29.10	32.64	43.77	19.52	ago	17	23.51	27.05	52.31	20.04	ago	17	37.45	40.99	33.87	20.06
ago	23	29.00	32.49	44.01	19.13	ago	23	23.44	26.93	52.75	19.64	ago	23	37.34	40.82	34.38	19.66
ago	29	28.85	32.31	44.37	18.73	ago	29	23.34	26.80	52.89	19.25	ago	29	37.17	40.63	35.02	19.27
sep	4	28.71	32.14	44.35	18.34	sep	4	23.24	26.67	53.27	18.85	sep	4	37.01	40.44	35.25	18.87
sep	10	28.58	31.97	44.60	17.94	sep	10	23.15	26.53	53.23	18.46	sep	10	36.86	40.24	35.72	18.48
sep	16	28.42	31.78	44.39	17.55	sep	16	23.03	26.39	53.43	18.06	sep	16	36.66	40.03	35.72	18.08
sep	22	28.29	31.61	44.34	17.15	sep	22	22.93	26.25	53.33	17.67	sep	22	36.51	39.83	35.83	17.69
sep	28	28.11	31.43	44.07	16.76	sep	28	22.79	26.11	53.24	17.28	sep	28	36.29	39.61	35.73	17.30
oct	4	28.01	31.27	43.71	16.37	oct	4	22.71	25.97	53.13	16.88	oct	4	36.16	39.41	35.46	16.90
oct	10	27.86	31.10	43.38	15.97	oct	10	22.59	25.83	52.78	16.49	oct	10	35.96	39.20	35.22	16.51
oct	16	27.76	30.95	42.77	15.58	oct	16	22.51	25.70	52.57	16.09	oct	16	35.83	39.02	34.63	16.11
oct	22	27.65	30.81	42.34	15.18	oct	22	22.41	25.58	52.01	15.70	oct	22	35.67	38.84	34.21	15.72
oct	28	27.55	30.68	41.56	14.79	oct	28	22.33	25.46	51.68	15.30	oct	28	35.54	38.67	33.38	15.32
nov	3	27.51	30.57	41.06	14.39	nov	3	22.28	25.35	50.96	14.91	nov	3	35.46	38.53	32.78	14.93
nov	9	27.44	30.47	40.22	14.00	nov	9	22.21	25.25	50.42	14.52	nov	9	35.35	38.39	31.83	14.54
nov	15	27.44	30.41	39.54	13.61	nov	15	22.19	25.16	49.65	14.12	nov	15	35.32	38.29	30.96	14.14
nov	21	27.40	30.34	38.82	13.21	nov	21	22.15	25.09	48.81	13.73	nov	21	35.25	38.19	30.05	13.75
nov	27	27.46	30.32	38.01	12.82	nov	27	22.17	25.03	48.05	13.33	nov	27	35.28	38.13	28.97	13.35
dic	3	27.49	30.30	37.42	12.42	dic	3	22.17	24.98	46.98	12.94	dic	3	35.28	38.08	28.10	12.96
dic	9	27.57	30.31	36.57	12.03	dic	9	22.21	24.94	46.14	12.54	dic	9	35.33	38.07	26.93	12.56
dic	15	27.66	30.33	36.06	11.63	dic	15	22.25	24.93	44.95	12.15	dic	15	35.41	38.08	26.08	12.17
dic	21	27.76	30.38	35.30	11.24	dic	21	22.30	24.92	44.01	11.76	dic	21	35.49	38.11	24.96	11.78
dic	27	27.93	30.46	34.90	10.85	dic	27	22.41	24.94	42.77	11.36	dic	27	35.65	38.18	24.15	11.38

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

α LYR					δ PAV					ψ CAP							
0.03		A0			3.55		G8			4.13		F5					
α		α_c	δ		α		α_c	δ		α		α_c	δ				
h	m	h	m	°	h	m	h	m	°	h	m	h	m	°			
18 37		18 36	38 47		hp	20 10		20 09	-66 -07		hp	20 47		20 46	-25 -12		hp
mes	d	s	s	''	h	mes	d	s	s	''	h	mes	d	s	s	''	h
ene	1	30.75	36.10	69.92	11.90	ene	1	23.46	28.81	66.58	13.45	ene	1	07.22	12.57	21.91	14.06
ene	7	30.81	36.09	67.83	11.51	ene	7	23.52	28.80	65.15	13.06	ene	7	07.25	12.52	21.80	13.67
ene	13	30.88	36.11	66.02	11.11	ene	13	23.54	28.77	63.50	12.66	ene	13	07.25	12.48	21.52	13.27
ene	19	30.98	36.14	64.09	10.72	ene	19	23.67	28.83	61.87	12.27	ene	19	07.30	12.46	21.22	12.88
ene	25	31.08	36.21	62.23	10.33	ene	25	23.76	28.89	60.33	11.87	ene	25	07.32	12.45	21.04	12.49
ene	31	31.22	36.27	60.60	9.93	ene	31	23.97	29.01	58.56	11.48	ene	31	07.41	12.46	20.50	12.09
feb	6	31.35	36.37	58.87	9.54	feb	6	24.13	29.15	57.10	11.08	feb	6	07.46	12.48	20.22	11.70
feb	12	31.51	36.47	57.52	9.14	feb	12	24.35	29.32	55.37	10.69	feb	12	07.55	12.52	19.62	11.30
feb	18	31.67	36.60	56.03	8.75	feb	18	24.60	29.53	53.97	10.30	feb	18	07.64	12.58	19.25	10.91
feb	24	31.84	36.74	55.03	8.35	feb	24	24.84	29.75	52.39	9.90	feb	24	07.74	12.64	18.64	10.51
mar	2	32.03	36.88	53.95	7.96	mar	2	25.19	30.03	51.03	9.51	mar	2	07.88	12.73	18.08	10.12
mar	8	32.20	37.04	53.27	7.57	mar	8	25.45	30.29	49.68	9.11	mar	8	07.99	12.82	17.48	9.73
mar	14	32.41	37.20	52.71	7.17	mar	14	25.82	30.61	48.38	8.72	mar	14	08.14	12.93	16.76	9.33
mar	20	32.59	37.37	52.30	6.78	mar	20	26.13	30.91	47.34	8.33	mar	20	08.27	13.05	16.22	8.94
mar	26	32.81	37.54	52.32	6.38	mar	26	26.53	31.26	46.13	7.93	mar	26	08.45	13.17	15.32	8.54
abr	1	33.00	37.71	52.28	5.99	abr	1	26.89	31.60	45.36	7.54	abr	1	08.60	13.31	14.74	8.15
abr	7	33.21	37.88	52.76	5.59	abr	7	27.28	31.95	44.38	7.14	abr	7	08.77	13.45	13.83	7.75
abr	13	33.40	38.04	53.14	5.20	abr	13	27.69	32.33	43.80	6.75	abr	13	08.96	13.60	13.15	7.36
abr	19	33.59	38.21	53.98	4.81	abr	19	28.06	32.67	43.17	6.36	abr	19	09.13	13.74	12.31	6.97
abr	25	33.80	38.35	54.83	4.41	abr	25	28.52	33.07	42.75	5.96	abr	25	09.35	13.90	11.49	6.57
may	1	33.97	38.50	55.95	4.02	may	1	28.88	33.41	42.49	5.57	may	1	09.52	14.05	10.76	6.18
may	7	34.15	38.62	57.23	3.62	may	7	29.31	33.78	42.25	5.17	may	7	09.74	14.20	09.88	5.78
may	13	34.31	38.74	58.49	3.23	may	13	29.69	34.12	42.39	4.78	may	13	09.91	14.35	09.29	5.39
may	19	34.48	38.84	60.17	2.84	may	19	30.10	34.47	42.35	4.38	may	19	10.13	14.50	08.37	5.00
may	25	34.61	38.93	61.61	2.44	may	25	30.49	34.81	42.80	3.99	may	25	10.33	14.65	07.85	4.60
may	31	34.74	39.01	63.45	2.05	may	31	30.84	35.10	43.10	3.60	may	31	10.51	14.78	07.10	4.21
jun	6	34.86	39.06	65.08	1.65	jun	6	31.21	35.41	43.74	3.20	jun	6	10.71	14.91	06.59	3.81
jun	12	34.95	39.11	66.94	1.26	jun	12	31.50	35.66	44.45	2.81	jun	12	10.87	15.03	06.09	3.42
jun	18	35.05	39.12	68.75	0.86	jun	18	31.88	35.94	45.23	2.41	jun	18	11.09	15.15	05.55	3.02
jun	24	35.10	39.13	70.56	0.47	jun	24	32.12	36.14	46.27	2.02	jun	24	11.22	15.25	05.28	2.63
jun	30	35.16	39.11	72.45	0.08	jun	30	32.40	36.35	47.22	1.63	jun	30	11.39	15.34	04.86	2.24
jul	6	35.18	39.08	74.08	23.68	jul	6	32.60	36.51	48.56	1.23	jul	6	11.51	15.42	04.81	1.84
jul	12	35.20	39.04	76.01	23.29	jul	12	32.80	36.64	49.65	0.84	jul	12	11.65	15.48	04.50	1.45
jul	18	35.19	38.97	77.50	22.89	jul	18	32.98	36.76	51.15	0.44	jul	18	11.77	15.54	04.57	1.05
jul	24	35.16	38.89	79.25	22.50	jul	24	33.08	36.81	52.45	0.05	jul	24	11.85	15.57	04.50	0.66
jul	30	35.13	38.79	80.67	22.10	jul	30	33.19	36.86	53.94	23.65	jul	30	11.94	15.60	04.63	0.26
ago	5	35.05	38.69	82.10	21.71	ago	5	33.19	36.84	55.48	23.26	ago	5	11.96	15.61	04.88	23.87
ago	11	34.99	38.56	83.45	21.32	ago	11	33.26	36.83	56.87	22.87	ago	11	12.04	15.60	04.98	23.48
ago	17	34.88	38.43	84.56	20.92	ago	17	33.20	36.74	58.48	22.47	ago	17	12.04	15.58	05.42	23.08
ago	23	34.79	38.27	85.72	20.53	ago	23	33.15	36.64	59.81	22.08	ago	23	12.06	15.54	05.63	22.69
ago	29	34.66	38.12	86.47	20.13	ago	29	33.04	36.51	61.38	21.68	ago	29	12.03	15.49	06.20	22.29
sep	4	34.53	37.96	87.41	19.74	sep	4	32.89	36.33	62.61	21.29	sep	4	12.00	15.43	06.52	21.90
sep	10	34.39	37.77	87.88	19.34	sep	10	32.77	36.15	63.99	20.89	sep	10	11.97	15.35	07.06	21.50
sep	16	34.23	37.60	88.47	18.95	sep	16	32.54	35.91	65.09	20.50	sep	16	11.89	15.26	07.49	21.11
sep	22	34.09	37.41	88.70	18.56	sep	22	32.36	35.68	66.14	20.11	sep	22	11.84	15.16	07.98	20.72
sep	28	33.91	37.23	88.81	18.16	sep	28	32.08	35.39	67.15	19.71	sep	28	11.73	15.04	08.59	20.32
oct	4	33.77	37.03	88.89	17.77	oct	4	31.87	35.13	67.79	19.32	oct	4	11.66	14.92	08.91	19.93
oct	10	33.60	36.84	88.57	17.37	oct	10	31.58	34.82	68.57	18.92	oct	10	11.55	14.79	09.54	19.53
oct	16	33.46	36.65	88.34	16.98	oct	16	31.32	34.51	68.85	18.53	oct	16	11.46	14.65	09.83	19.14
oct	22	33.30	36.47	87.64	16.58	oct	22	31.04	34.21	69.27	18.13	oct	22	11.34	14.51	10.38	18.75
oct	28	33.16	36.29	87.10	16.19	oct	28	30.75	33.88	69.25	17.74	oct	28	11.23	14.36	10.66	18.35
nov	3	33.04	36.11	86.11	15.80	nov	3	30.53	33.60	69.23	17.35	nov	3	11.15	14.22	11.02	17.96
nov	9	32.91	35.95	85.17	15.40	nov	9	30.23	33.27	68.94	16.95	nov	9	11.03	14.06	11.31	17.56
nov	15	32.82	35.79	83.97	15.01	nov	15	30.03	33.00	68.44	16.56	nov	15	10.96	13.92	11.48	17.17
nov	21	32.72	35.65	82.57	14.61	nov	21	29.78	32.72	67.95	16.16	nov	21	10.84	13.78	11.80	16.77
nov	27	32.66	35.52	81.26	14.22	nov	27	29.62	32.48	66.99	15.77	nov	27	10.79	13.65	11.74	16.38
dic	3	32.60	35.41	79.52	13.82	dic	3	29.44	32.25	66.23	15.37	dic	3	10.71	13.52	11.99	15.99
dic	9	32.57	35.31	77.99	13.43	dic	9	29.31	32.05	64.99	14.98	dic	9	10.66	13.40	11.86	15.59
dic	15	32.55	35.23	76.05	13.04	dic	15	29.22	31.89	63.91	14.58	dic	15	10.62	13.30	11.95	15.20
dic	21	32.55	35.17	74.32	12.64	dic	21	29.11	31.73	62.54	14.19	dic	21	10.57	13.20	11.85	14.80
dic	27	32.59	35.12	72.34	12.25	dic	27	29.14	31.67	61.14	13.80	dic	27	10.59	13.12	11.70	14.41

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

α CEP						γ PAV						ϵ IND								
2.45		A7				4.21		F8				4.69		K5						
α		α_c		δ		α		α_c		δ		α		α_c		δ				
h	m	h	m	°	'	h	m	h	m	°	'	h	m	h	m	°	'			
21	18	21	18	62	39	21	27	21	26	-65	-16	22	04	22	03	-56	-42	hp	hp	hp
mes	d	s	s	"	h	mes	d	s	s	"	h	mes	d	s	s	"	h			
ene	1	58.56	03.91	56.37	14.59	ene	1	50.14	55.49	72.75	14.74	ene	1	40.27	45.63	54.36	15.36			
ene	7	58.40	03.68	54.72	14.20	ene	7	50.10	55.38	71.41	14.35	ene	7	40.23	45.51	53.39	14.96			
ene	13	58.28	03.51	52.99	13.80	ene	13	50.00	55.24	69.90	13.95	ene	13	40.14	45.37	52.30	14.57			
ene	19	58.19	03.35	51.18	13.41	ene	19	50.01	55.17	68.25	13.56	ene	19	40.13	45.29	50.99	14.17			
ene	25	58.11	03.24	49.12	13.02	ene	25	49.98	55.11	66.70	13.16	ene	25	40.08	45.21	49.79	13.78			
ene	31	58.09	03.14	47.33	12.62	ene	31	50.06	55.11	64.78	12.77	ene	31	40.12	45.17	48.16	13.38			
feb	6	58.06	03.08	45.19	12.23	feb	6	50.10	55.12	63.15	12.38	feb	6	40.13	45.15	46.81	12.99			
feb	12	58.10	03.07	43.31	11.83	feb	12	50.20	55.16	61.20	11.98	feb	12	40.17	45.14	45.12	12.60			
feb	18	58.14	03.07	41.22	11.44	feb	18	50.33	55.26	59.47	11.59	feb	18	40.25	45.18	43.58	12.20			
feb	24	58.23	03.13	39.36	11.05	feb	24	50.45	55.35	57.58	11.19	feb	24	40.31	45.21	41.89	11.81			
mar	2	58.34	03.19	37.56	10.65	mar	2	50.67	55.52	55.75	10.80	mar	2	40.46	45.31	40.15	11.41			
mar	8	58.48	03.32	35.82	10.26	mar	8	50.83	55.67	53.99	10.40	mar	8	40.55	45.39	38.52	11.02			
mar	14	58.66	03.45	34.32	9.86	mar	14	51.09	55.87	52.15	10.01	mar	14	40.72	45.51	36.73	10.62			
mar	20	58.84	03.62	32.74	9.47	mar	20	51.31	56.09	50.60	9.62	mar	20	40.87	45.65	35.20	10.23			
mar	26	59.08	03.81	31.69	9.07	mar	26	51.60	56.33	48.78	9.22	mar	26	41.07	45.80	33.36	9.84			
abr	1	59.31	04.02	30.51	8.68	abr	1	51.89	56.60	47.39	8.83	abr	1	41.27	45.98	31.89	9.44			
abr	7	59.59	04.26	29.79	8.29	abr	7	52.19	56.86	45.80	8.43	abr	7	41.49	46.16	30.23	9.05			
abr	13	59.85	04.49	29.08	7.89	abr	13	52.54	57.18	44.51	8.04	abr	13	41.74	46.38	28.79	8.65			
abr	19	60.15	04.77	28.69	7.50	abr	19	52.85	57.46	43.24	7.65	abr	19	41.97	46.58	27.38	8.26			
abr	25	60.46	05.01	28.59	7.10	abr	25	53.26	57.81	42.06	7.25	abr	25	42.28	46.83	25.97	7.86			
may	1	60.76	05.30	28.57	6.71	may	1	53.58	58.11	41.14	6.86	may	1	42.52	47.05	24.84	7.47			
may	7	61.09	05.56	28.96	6.31	may	7	53.98	58.45	40.16	6.46	may	7	42.83	47.30	23.60	7.08			
may	13	61.39	05.83	29.29	5.92	may	13	54.35	58.79	39.61	6.07	may	13	43.11	47.55	22.76	6.68			
may	19	61.73	06.09	30.20	5.53	may	19	54.75	59.12	38.86	5.67	may	19	43.43	47.80	21.70	6.29			
may	25	62.01	06.33	30.99	5.13	may	25	55.14	59.46	38.60	5.28	may	25	43.75	48.07	21.10	5.89			
may	31	62.33	06.59	32.20	4.74	may	31	55.50	59.77	38.26	4.89	may	31	44.04	48.30	20.44	5.50			
jun	6	62.60	06.80	33.43	4.34	jun	6	55.90	60.10	38.21	4.49	jun	6	44.37	48.57	20.02	5.11			
jun	12	62.88	07.03	34.83	3.95	jun	12	56.23	60.39	38.35	4.10	jun	12	44.64	48.80	19.80	4.71			
jun	18	63.14	07.20	36.56	3.56	jun	18	56.64	60.71	38.47	3.70	jun	18	44.99	49.06	19.53	4.32			
jun	24	63.36	07.39	38.19	3.16	jun	24	56.94	60.97	39.01	3.31	jun	24	45.25	49.28	19.71	3.92			
jun	30	63.58	07.53	40.16	2.77	jun	30	57.28	61.23	39.44	2.92	jun	30	45.55	49.50	19.77	3.53			
jul	6	63.75	07.65	41.93	2.37	jul	6	57.56	61.47	40.32	2.52	jul	6	45.80	49.71	20.27	3.13			
jul	12	63.93	07.77	44.11	1.98	jul	12	57.83	61.67	41.03	2.13	jul	12	46.05	49.89	20.64	2.74			
jul	18	64.04	07.82	46.10	1.58	jul	18	58.10	61.88	42.13	1.73	jul	18	46.30	50.08	21.38	2.35			
jul	24	64.16	07.89	48.29	1.19	jul	24	58.28	62.01	43.19	1.34	jul	24	46.48	50.21	22.14	1.95			
jul	30	64.23	07.89	50.42	0.80	jul	30	58.49	62.15	44.41	0.94	jul	30	46.69	50.36	23.05	1.56			
ago	5	64.26	07.90	52.47	0.40	ago	5	58.59	62.23	45.84	0.55	ago	5	46.82	50.46	24.23	1.16			
ago	11	64.29	07.86	54.78	0.01	ago	11	58.75	62.32	47.07	0.16	ago	11	46.99	50.56	25.20	0.77			
ago	17	64.26	07.80	56.77	23.61	ago	17	58.80	62.34	48.69	23.76	ago	17	47.07	50.62	26.61	0.38			
ago	23	64.23	07.72	58.97	23.22	ago	23	58.85	62.33	50.05	23.37	ago	23	47.16	50.65	27.81	23.98			
ago	29	64.14	07.60	60.82	22.82	ago	29	58.84	62.31	51.72	22.97	ago	29	47.21	50.67	29.34	23.59			
sep	4	64.05	07.48	62.86	22.43	sep	4	58.79	62.22	53.15	22.58	sep	4	47.21	50.64	30.70	23.19			
sep	10	63.91	07.30	64.67	22.04	sep	10	58.76	62.14	54.71	22.18	sep	10	47.24	50.62	32.17	22.80			
sep	16	63.77	07.13	66.45	21.64	sep	16	58.62	61.98	56.15	21.79	sep	16	47.18	50.54	33.63	22.40			
sep	22	63.59	06.91	68.10	21.25	sep	22	58.51	61.83	57.52	21.40	sep	22	47.15	50.46	35.02	22.01			
sep	28	63.39	06.70	69.46	20.85	sep	28	58.31	61.62	58.97	21.00	sep	28	47.03	50.34	36.57	21.62			
oct	4	63.19	06.45	70.99	20.46	oct	4	58.16	61.41	60.01	20.61	oct	4	46.96	50.21	37.73	21.22			
oct	10	62.95	06.19	72.04	20.06	oct	10	57.93	61.17	61.28	20.21	oct	10	46.82	50.06	39.16	20.83			
oct	16	62.72	05.91	73.22	19.67	oct	16	57.70	60.90	62.09	19.82	oct	16	46.69	49.88	40.19	20.43			
oct	22	62.45	05.61	73.93	19.28	oct	22	57.47	60.63	63.02	19.42	oct	22	46.54	49.70	41.35	20.04			
oct	28	62.21	05.34	74.67	18.88	oct	28	57.19	60.32	63.60	19.03	oct	28	46.35	49.48	42.24	19.64			
nov	3	61.93	05.00	75.15	18.49	nov	3	56.98	60.05	64.07	18.64	nov	3	46.22	49.29	43.00	19.25			
nov	9	61.67	04.71	75.41	18.09	nov	9	56.68	59.72	64.39	18.24	nov	9	46.02	49.05	43.68	18.86			
nov	15	61.41	04.37	75.55	17.70	nov	15	56.46	59.42	64.40	17.85	nov	15	45.87	48.84	44.05	18.46			
nov	21	61.13	04.06	75.25	17.30	nov	21	56.18	59.11	64.46	17.45	nov	21	45.67	48.61	44.51	18.07			
nov	27	60.89	03.75	75.10	16.91	nov	27	55.97	58.83	63.97	17.06	nov	27	45.52	48.38	44.44	17.67			
dic	3	60.62	03.43	74.40	16.52	dic	3	55.74	58.55	63.67	16.66	dic	3	45.36	48.17	44.54	17.28			
dic	9	60.40	03.14	73.78	16.12	dic	9	55.53	58.27	62.88	16.27	dic	9	45.21	47.94	44.19	16.88			
dic	15	60.16	02.84	72.71	15.73	dic	15	55.37	58.05	62.14	15.88	dic	15	45.08	47.76	43.86	16.49			
dic	21	59.96	02.59	71.57	15.33	dic	21	55.18	57.80	61.14	15.48	dic	21	44.93	47.55	43.32	16.10			
dic	27	59.78	02.31	70.32	14.94	dic	27	55.10	57.63	59.93	15.09	dic	27	44.87	47.40	42.50	15.70			

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

υ AQR						λ PEG						ε GRU					
5.18			F3			3.94			G8			3.48			A2		
α		α _c		δ		α		α _c		δ		α		α _c		δ	
h m		h m		° ′		h m		h m		° ′		h m		h m		° ′	
22 35		22 34		-20 -36		22 47		22 46		23 39		22 49		22 48		-51 -12	
hp						hp						hp					
mes	d	s	s	″	h	mes	d	s	s	″	h	mes	d	s	s	″	h
ene	1	38.87	44.22	65.25	15.87	ene	1	22.84	28.19	42.62	16.07	ene	1	35.56	40.92	95.76	16.10
ene	7	38.84	44.12	65.27	15.48	ene	7	22.78	28.06	41.79	15.67	ene	7	35.49	40.77	95.07	15.71
ene	13	38.78	44.02	65.27	15.08	ene	13	22.71	27.94	40.81	15.28	ene	13	35.38	40.61	94.29	15.32
ene	19	38.77	43.93	65.08	14.69	ene	19	22.67	27.83	39.89	14.88	ene	19	35.32	40.48	93.25	14.92
ene	25	38.72	43.85	65.05	14.29	ene	25	22.60	27.73	38.69	14.49	ene	25	35.24	40.37	92.30	14.53
ene	31	38.74	43.79	64.59	13.90	ene	31	22.60	27.65	37.83	14.10	ene	31	35.22	40.27	90.89	14.13
feb	6	38.72	43.74	64.41	13.51	feb	6	22.56	27.58	36.61	13.70	feb	6	35.18	40.20	89.71	13.74
feb	12	38.74	43.71	63.92	13.11	feb	12	22.55	27.52	35.63	13.31	feb	12	35.17	40.14	88.20	13.34
feb	18	38.76	43.69	63.54	12.72	feb	18	22.55	27.48	34.49	12.91	feb	18	35.18	40.11	86.76	12.95
feb	24	38.78	43.68	62.99	12.32	feb	24	22.55	27.46	33.46	12.52	feb	24	35.18	40.09	85.18	12.56
mar	2	38.84	43.69	62.29	11.93	mar	2	22.59	27.44	32.58	12.12	mar	2	35.26	40.11	83.46	12.16
mar	8	38.88	43.71	61.66	11.53	mar	8	22.62	27.45	31.61	11.73	mar	8	35.29	40.12	81.86	11.77
mar	14	38.96	43.75	60.80	11.14	mar	14	22.68	27.47	30.90	11.34	mar	14	35.39	40.17	80.03	11.37
mar	20	39.02	43.80	60.12	10.75	mar	20	22.73	27.51	30.02	10.94	mar	20	35.46	40.24	78.43	10.98
mar	26	39.13	43.86	59.05	10.35	mar	26	22.83	27.56	29.61	10.55	mar	26	35.60	40.32	76.50	10.58
abr	1	39.23	43.94	58.22	9.96	abr	1	22.91	27.62	29.03	10.15	abr	1	35.72	40.43	74.87	10.19
abr	7	39.35	44.02	57.13	9.56	abr	7	23.03	27.71	28.78	9.76	abr	7	35.87	40.54	73.05	9.80
abr	13	39.48	44.12	56.11	9.17	abr	13	23.15	27.79	28.56	9.36	abr	13	36.05	40.69	71.37	9.40
abr	19	39.61	44.22	55.05	8.77	abr	19	23.28	27.90	28.48	8.97	abr	19	36.21	40.82	69.74	9.01
abr	25	39.79	44.34	53.81	8.38	abr	25	23.45	28.00	28.72	8.58	abr	25	36.45	41.00	68.00	8.61
may	1	39.93	44.46	52.78	7.99	may	1	23.59	28.12	28.88	8.18	may	1	36.63	41.16	66.59	8.22
may	7	40.12	44.59	51.50	7.59	may	7	23.78	28.25	29.42	7.79	may	7	36.88	41.35	64.99	7.82
may	13	40.28	44.72	50.49	7.20	may	13	23.94	28.38	29.82	7.39	may	13	37.11	41.54	63.77	7.43
may	19	40.49	44.86	49.16	6.80	may	19	24.15	28.51	30.70	7.00	may	19	37.37	41.74	62.33	7.04
may	25	40.68	45.00	48.12	6.41	may	25	24.33	28.65	31.45	6.61	may	25	37.63	41.95	61.28	6.64
may	31	40.87	45.13	46.97	6.02	may	31	24.52	28.79	32.45	6.21	may	31	37.88	42.15	60.22	6.25
jun	6	41.08	45.27	45.90	5.62	jun	6	24.72	28.92	33.53	5.82	jun	6	38.17	42.37	59.31	5.85
jun	12	41.25	45.41	44.98	5.23	jun	12	24.90	29.06	34.61	5.42	jun	12	38.41	42.57	58.66	5.46
jun	18	41.48	45.55	43.85	4.83	jun	18	25.12	29.18	36.06	5.03	jun	18	38.73	42.79	57.89	5.07
jun	24	41.65	45.67	43.11	4.44	jun	24	25.28	29.31	37.27	4.63	jun	24	38.96	42.99	57.60	4.67
jun	30	41.85	45.80	42.18	4.04	jun	30	25.48	29.43	38.80	4.24	jun	30	39.24	43.18	57.20	4.28
jul	6	42.01	45.92	41.62	3.65	jul	6	25.63	29.54	40.12	3.85	jul	6	39.48	43.38	57.22	3.88
jul	12	42.19	46.02	40.88	3.26	jul	12	25.81	29.65	41.72	3.45	jul	12	39.71	43.55	57.15	3.49
jul	18	42.35	46.13	40.40	2.86	jul	18	25.96	29.74	43.22	3.06	jul	18	39.96	43.74	57.40	3.09
jul	24	42.49	46.22	39.96	2.47	jul	24	26.10	29.83	44.76	2.66	jul	24	40.15	43.88	57.77	2.70
jul	30	42.63	46.30	39.62	2.07	jul	30	26.23	29.90	46.31	2.27	jul	30	40.36	44.03	58.25	2.31
ago	5	42.73	46.37	39.55	1.68	ago	5	26.32	29.96	47.68	1.87	ago	5	40.51	44.15	59.07	1.91
ago	11	42.86	46.43	39.25	1.28	ago	11	26.45	30.01	49.37	1.48	ago	11	40.69	44.26	59.68	1.52
ago	17	42.93	46.47	39.40	0.89	ago	17	26.51	30.05	50.67	1.09	ago	17	40.80	44.35	60.77	1.12
ago	23	43.01	46.50	39.37	0.50	ago	23	26.59	30.08	52.19	0.69	ago	23	40.92	44.41	61.70	0.73
ago	29	43.05	46.51	39.69	0.10	ago	29	26.62	30.09	53.40	0.30	ago	29	41.00	44.46	62.97	0.33
sep	4	43.08	46.51	39.92	23.71	sep	4	26.66	30.09	54.71	23.90	sep	4	41.04	44.47	64.16	23.94
sep	10	43.12	46.50	40.26	23.31	sep	10	26.69	30.07	55.96	23.51	sep	10	41.10	44.49	65.43	23.55
sep	16	43.11	46.47	40.71	22.92	sep	16	26.68	30.04	57.05	23.11	sep	16	41.09	44.45	66.82	23.15
sep	22	43.11	46.43	41.13	22.53	sep	22	26.68	30.00	58.15	22.72	sep	22	41.10	44.41	68.12	22.76
sep	28	43.06	46.37	41.83	22.13	sep	28	26.63	29.95	58.92	22.33	sep	28	41.03	44.34	69.66	22.36
oct	4	43.05	46.30	42.22	21.74	oct	4	26.62	29.88	59.96	21.93	oct	4	41.00	44.25	70.84	21.97
oct	10	42.98	46.22	42.97	21.34	oct	10	26.56	29.80	60.57	21.54	oct	10	40.91	44.15	72.33	21.58
oct	16	42.93	46.13	43.47	20.95	oct	16	26.51	29.71	61.33	21.14	oct	16	40.82	44.01	73.49	21.18
oct	22	42.86	46.03	44.19	20.55	oct	22	26.44	29.60	61.77	20.75	oct	22	40.72	43.88	74.79	20.79
oct	28	42.78	45.91	44.80	20.16	oct	28	26.36	29.49	62.19	20.35	oct	28	40.57	43.70	75.90	20.39
nov	3	42.72	45.79	45.34	19.77	nov	3	26.30	29.36	62.58	19.96	nov	3	40.48	43.54	76.84	20.00
nov	9	42.62	45.66	45.99	19.37	nov	9	26.20	29.24	62.70	19.57	nov	9	40.31	43.34	77.82	19.60
nov	15	42.56	45.52	46.43	18.98	nov	15	26.13	29.10	62.88	19.17	nov	15	40.19	43.15	78.45	19.21
nov	21	42.45	45.39	47.10	18.58	nov	21	26.02	28.96	62.67	18.78	nov	21	40.01	42.95	79.22	18.82
nov	27	42.39	45.24	47.36	18.19	nov	27	25.96	28.81	62.71	18.38	nov	27	39.89	42.74	79.48	18.42
dic	3	42.30	45.11	47.90	17.79	dic	3	25.85	28.66	62.32	17.99	dic	3	39.74	42.54	79.90	18.03
dic	9	42.22	44.96	48.15	17.40	dic	9	25.78	28.51	62.04	17.59	dic	9	39.59	42.33	79.92	17.63
dic	15	42.16	44.83	48.49	17.01	dic	15	25.69	28.36	61.50	17.20	dic	15	39.46	42.14	79.91	17.24
dic	21	42.07	44.69	48.75	16.61	dic	21	25.60	28.22	60.84	16.81	dic	21	39.31	41.93	79.74	16.84
dic	27	42.04	44.57	48.77	16.22	dic	27	25.54	28.07	60.30	16.41	dic	27	39.23	41.76	79.22	16.45

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

		ι CEP					μ PEG					α PEG				
		3.53		K0			3.48		G8			2.48		B9		
		α		α _c		δ			α		α _c		δ			
		h	m	h	m	°	'	''	h	m	h	m	°	'	''	
		22	50	22	49	66	17	hp	22	50	22	49	24	41	hp	
mes	d	s	s	"			h	mes	d	s	s	"			h	
ene	1	18.52	23.88	57.36	16.12			ene	1	51.29	56.64	53.27	16.12			
ene	7	18.26	23.53	56.42	15.72			ene	7	51.23	56.51	52.44	15.73			
ene	13	18.03	23.26	55.21	15.33			ene	13	51.16	56.39	51.46	15.34			
ene	19	17.81	22.97	53.96	14.93			ene	19	51.11	56.27	50.53	14.94			
ene	25	17.60	22.73	52.30	14.54			ene	25	51.04	56.17	49.32	14.55			
ene	31	17.46	22.51	50.89	14.14			ene	31	51.04	56.09	48.45	14.15			
feb	6	17.30	22.32	49.03	13.75			feb	6	50.99	56.01	47.21	13.76			
feb	12	17.21	22.18	47.32	13.36			feb	12	50.99	55.95	46.21	13.36			
feb	18	17.11	22.04	45.37	12.96			feb	18	50.97	55.91	45.05	12.97			
feb	24	17.08	21.99	43.46	12.57			feb	24	50.98	55.88	43.99	12.58			
mar	2	17.07	21.92	41.65	12.17			mar	2	51.02	55.87	43.08	12.18			
mar	8	17.10	21.93	39.69	11.78			mar	8	51.04	55.87	42.07	11.79			
mar	14	17.17	21.96	37.97	11.38			mar	14	51.10	55.89	41.33	11.39			
mar	20	17.25	22.03	36.05	10.99			mar	20	51.15	55.93	40.42	11.00			
mar	26	17.42	22.15	34.59	10.60			mar	26	51.25	55.98	39.97	10.61			
abr	1	17.56	22.27	32.96	10.20			abr	1	51.33	56.04	39.36	10.21			
abr	7	17.79	22.26	31.67	9.81			abr	7	51.45	56.12	39.07	9.82			
abr	13	18.00	22.64	30.43	9.41			abr	13	51.57	56.21	38.81	9.42			
abr	19	18.27	22.89	29.35	9.02			abr	19	51.70	56.31	38.69	9.03			
abr	25	18.56	23.11	28.65	8.62			abr	25	51.87	56.42	38.91	8.63			
may	1	18.86	23.39	27.91	8.23			may	1	52.01	56.54	39.02	8.24			
may	7	19.20	23.67	27.62	7.84			may	7	52.20	56.66	39.53	7.85			
may	13	19.52	23.95	27.25	7.44			may	13	52.35	56.79	39.91	7.45			
may	19	19.90	24.27	27.43	7.05			may	19	52.56	56.93	40.76	7.06			
may	25	20.23	24.55	27.57	6.65			may	25	52.74	57.06	41.49	6.66			
may	31	20.62	24.88	28.05	6.26			may	31	52.94	57.20	42.47	6.27			
jun	6	20.96	25.16	28.70	5.87			jun	6	53.14	57.34	43.54	5.87			
jun	12	21.32	25.47	29.43	5.47			jun	12	53.32	57.47	44.60	5.48			
jun	18	21.68	25.74	30.65	5.08			jun	18	53.54	57.60	46.05	5.09			
jun	24	22.00	26.02	31.72	4.68			jun	24	53.70	57.73	47.25	4.69			
jun	30	22.34	26.28	33.22	4.29			jun	30	53.90	57.85	48.78	4.30			
jul	6	22.61	26.51	34.59	3.89			jul	6	54.06	57.96	50.10	3.90			
jul	12	22.92	26.76	36.35	3.50			jul	12	54.24	58.08	51.71	3.51			
jul	18	23.15	26.93	38.12	3.11			jul	18	54.39	58.17	53.22	3.12			
jul	24	23.40	27.13	40.02	2.71			jul	24	54.53	58.26	54.76	2.72			
jul	30	23.60	27.26	42.03	2.32			jul	30	54.67	58.33	56.34	2.33			
ago	5	23.76	27.40	43.93	1.92			ago	5	54.76	58.40	57.72	1.93			
ago	11	23.93	27.49	46.25	1.53			ago	11	54.89	58.45	59.44	1.54			
ago	17	24.02	27.56	48.27	1.14			ago	17	54.95	58.49	60.76	1.14			
ago	23	24.13	27.61	50.57	0.74			ago	23	55.03	58.52	62.31	0.75			
ago	29	24.15	27.61	52.62	0.35			ago	29	55.07	58.53	63.56	0.36			
sep	4	24.19	27.62	54.83	23.95			sep	4	55.11	58.54	64.90	23.96			
sep	10	24.16	27.55	57.03	23.56			sep	10	55.14	58.52	66.18	23.57			
sep	16	24.13	27.50	59.11	23.16			sep	16	55.13	58.50	67.31	23.17			
sep	22	24.06	27.38	61.23	22.77			sep	22	55.13	58.45	68.44	22.78			
sep	28	23.94	27.26	63.04	22.38			sep	28	55.09	58.40	69.26	22.38			
oct	4	23.85	27.10	65.12	21.98			oct	4	55.08	58.33	70.33	21.99			
oct	10	23.67	26.91	66.78	21.59			oct	10	55.01	58.25	70.97	21.60			
oct	16	23.52	26.71	68.57	21.19			oct	16	54.97	58.16	71.77	21.20			
oct	22	23.29	26.46	70.01	20.80			oct	22	54.90	58.06	72.25	20.81			
oct	28	23.10	26.23	71.40	20.40			oct	28	54.82	57.95	72.70	20.41			
nov	3	22.86	25.92	72.71	20.01			nov	3	54.76	57.82	73.13	20.02			
nov	9	22.61	25.65	73.69	19.62			nov	9	54.66	57.70	73.28	19.62			
nov	15	22.35	25.32	74.67	19.22			nov	15	54.59	57.56	73.49	19.23			
nov	21	22.06	25.00	75.17	18.83			nov	21	54.48	57.42	73.31	18.84			
nov	27	21.81	24.67	75.84	18.43			nov	27	54.42	57.27	73.37	18.44			
dic	3	21.50	24.31	75.99	18.04			dic	3	54.31	57.12	73.00	18.05			
dic	9	21.24	23.98	76.14	17.64			dic	9	54.23	56.97	72.74	17.65			
dic	15	20.93	23.60	75.92	17.25			dic	15	54.14	56.82	72.21	17.26			
dic	21	20.66	23.28	75.48	16.86			dic	21	54.05	56.67	71.57	16.86			
dic	27	20.39	22.92	75.04	16.46			dic	27	54.00	56.53	71.04	16.47			

Posiciones aparentes de estrellas brillantes, 2018 (a las 0^h del meridiano 90° W.G.)

γ SCL						υ PEG					κ PSC												
4.41			G8			4.40		F8			4.94		A0										
α		α _c		δ		α		α _c		δ		α		α _c		δ							
h m		h m		°		h m		h m		°		h m		h m		°							
23 19		23 18		-32 -26		hp		23 26		23 25		23 29		hp		23 27		23 26		01 20		hp	
mes	d	s	s	“	h	mes	d	s	s	“	h	mes	d	s	s	“	h	mes	d	s	s	“	h
ene	1	45.92	51.27	76.65	16.61	ene	1	15.89	21.24	15.14	16.71	ene	1	50.21	55.56	10.99	16.74	ene	1	50.21	55.56	10.99	16.74
ene	7	45.86	51.14	76.48	16.21	ene	7	15.82	21.10	14.49	16.32	ene	7	50.16	55.44	10.57	16.35	ene	7	50.16	55.44	10.57	16.35
ene	13	45.77	51.01	76.31	15.82	ene	13	15.74	20.97	13.64	15.93	ene	13	50.09	55.32	10.03	15.95	ene	13	50.09	55.32	10.03	15.95
ene	19	45.73	50.89	75.86	15.42	ene	19	15.68	20.84	12.88	15.53	ene	19	50.05	55.21	09.66	15.56	ene	19	50.05	55.21	09.66	15.56
ene	25	45.65	50.78	75.54	15.03	ene	25	15.60	20.73	11.81	15.14	ene	25	49.98	55.11	09.06	15.16	ene	25	49.98	55.11	09.06	15.16
ene	31	45.64	50.69	74.75	14.64	ene	31	15.58	20.63	11.07	14.74	ene	31	49.97	55.02	08.85	14.77	ene	31	49.97	55.02	08.85	14.77
feb	6	45.59	50.61	74.20	14.24	feb	6	15.51	20.53	09.98	14.35	feb	6	49.92	54.94	08.34	14.38	feb	6	49.92	54.94	08.34	14.38
feb	12	45.57	50.54	73.34	13.85	feb	12	15.49	20.45	09.08	13.95	feb	12	49.91	54.87	08.08	13.98	feb	12	49.91	54.87	08.08	13.98
feb	18	45.56	50.49	72.51	13.45	feb	18	15.45	20.39	08.05	13.56	feb	18	49.89	54.82	07.75	13.59	feb	18	49.89	54.82	07.75	13.59
feb	24	45.55	50.45	71.56	13.06	feb	24	15.44	20.34	07.06	13.17	feb	24	49.87	54.77	07.50	13.19	feb	24	49.87	54.77	07.50	13.19
mar	2	45.59	50.43	70.39	12.66	mar	2	15.45	20.30	06.26	12.77	mar	2	49.90	54.75	07.46	12.80	mar	2	49.90	54.75	07.46	12.80
mar	8	45.59	50.42	69.36	12.27	mar	8	15.45	20.29	05.30	12.38	mar	8	49.90	54.73	07.31	12.40	mar	8	49.90	54.73	07.31	12.40
mar	14	45.65	50.43	68.04	11.88	mar	14	15.49	20.28	04.61	11.98	mar	14	49.94	54.72	07.44	12.01	mar	14	49.94	54.72	07.44	12.01
mar	20	45.68	50.46	66.91	11.48	mar	20	15.51	20.29	03.74	11.59	mar	20	49.96	54.74	07.29	11.62	mar	20	49.96	54.74	07.29	11.62
mar	26	45.77	50.49	65.41	11.09	mar	26	15.60	20.32	03.30	11.20	mar	26	50.04	54.76	07.62	11.22	mar	26	50.04	54.76	07.62	11.22
abr	1	45.84	50.55	64.14	10.69	abr	1	15.65	20.36	02.70	10.80	abr	1	50.09	54.80	07.79	10.83	abr	1	50.09	54.80	07.79	10.83
abr	7	45.94	50.61	62.66	10.30	abr	7	15.75	20.42	02.37	10.41	abr	7	50.18	54.85	08.21	10.43	abr	7	50.18	54.85	08.21	10.43
abr	13	46.06	50.70	61.22	9.90	abr	13	15.85	20.49	02.11	10.01	abr	13	50.28	54.92	08.67	10.04	abr	13	50.28	54.92	08.67	10.04
abr	19	46.17	50.78	59.81	9.51	abr	19	15.96	20.57	01.92	9.62	abr	19	50.38	54.99	09.17	9.64	abr	19	50.38	54.99	09.17	9.64
abr	25	46.34	50.89	58.20	9.12	abr	25	16.11	20.66	02.10	9.22	abr	25	50.53	55.08	09.98	9.25	abr	25	50.53	55.08	09.98	9.25
may	1	46.47	51.00	56.87	8.72	may	1	16.24	20.77	02.13	8.83	may	1	50.64	55.17	10.60	8.86	may	1	50.64	55.17	10.60	8.86
may	7	46.66	51.12	55.29	8.33	may	7	16.41	20.88	02.57	8.44	may	7	50.80	55.27	11.57	8.46	may	7	50.80	55.27	11.57	8.46
may	13	46.82	51.26	54.00	7.93	may	13	16.56	21.00	02.87	8.04	may	13	50.94	55.38	12.34	8.07	may	13	50.94	55.38	12.34	8.07
may	19	47.02	51.39	52.46	7.54	may	19	16.76	21.13	03.61	7.65	may	19	51.13	55.49	13.49	7.67	may	19	51.13	55.49	13.49	7.67
may	25	47.22	51.54	51.20	7.14	may	25	16.93	21.25	04.28	7.25	may	25	51.29	55.61	14.48	7.28	may	25	51.29	55.61	14.48	7.28
may	31	47.41	51.68	49.92	6.75	may	31	17.13	21.39	05.14	6.86	may	31	51.47	55.73	15.60	6.89	may	31	51.47	55.73	15.60	6.89
jun	6	47.64	51.83	48.70	6.36	jun	6	17.32	21.52	06.12	6.46	jun	6	51.66	55.86	16.79	6.49	jun	6	51.66	55.86	16.79	6.49
jun	12	47.82	51.98	47.70	5.96	jun	12	17.50	21.66	07.07	6.07	jun	12	51.83	55.98	17.85	6.10	jun	12	51.83	55.98	17.85	6.10
jun	18	48.07	52.14	46.50	5.57	jun	18	17.73	21.79	08.44	5.68	jun	18	52.05	56.11	19.25	5.70	jun	18	52.05	56.11	19.25	5.70
jun	24	48.26	52.29	45.75	5.17	jun	24	17.90	21.93	09.53	5.28	jun	24	52.21	56.23	20.31	5.31	jun	24	52.21	56.23	20.31	5.31
jun	30	48.49	52.43	44.85	4.78	jun	30	18.11	22.06	10.97	4.89	jun	30	52.41	56.36	21.63	4.91	jun	30	52.41	56.36	21.63	4.91
jul	6	48.68	52.58	44.32	4.39	jul	6	18.27	22.18	12.21	4.49	jul	6	52.57	56.47	22.70	4.52	jul	6	52.57	56.47	22.70	4.52
jul	12	48.88	52.72	43.69	3.99	jul	12	18.46	22.30	13.71	4.10	jul	12	52.75	56.59	23.94	4.13	jul	12	52.75	56.59	23.94	4.13
jul	18	49.08	52.86	43.30	3.60	jul	18	18.63	22.41	15.18	3.71	jul	18	52.92	56.69	25.07	3.73	jul	18	52.92	56.69	25.07	3.73
jul	24	49.24	52.97	43.07	3.20	jul	24	18.79	22.52	16.63	3.31	jul	24	53.07	56.79	26.12	3.34	jul	24	53.07	56.79	26.12	3.34
jul	30	49.42	53.09	42.89	2.81	jul	30	18.94	22.61	18.15	2.92	jul	30	53.22	56.88	27.19	2.94	jul	30	53.22	56.88	27.19	2.94
ago	5	49.55	53.19	43.06	2.41	ago	5	19.05	22.69	19.46	2.52	ago	5	53.33	56.97	27.99	2.55	ago	5	53.33	56.97	27.99	2.55
ago	11	49.72	53.28	43.01	2.02	ago	11	19.20	22.77	21.13	2.13	ago	11	53.48	57.04	29.08	2.15	ago	11	53.48	57.04	29.08	2.15
ago	17	49.82	53.36	43.44	1.63	ago	17	19.28	22.83	22.41	1.73	ago	17	53.56	57.10	29.74	1.76	ago	17	53.56	57.10	29.74	1.76
ago	23	49.93	53.42	43.74	1.23	ago	23	19.39	22.88	23.91	1.34	ago	23	53.67	57.15	30.58	1.37	ago	23	53.67	57.15	30.58	1.37
ago	29	50.01	53.48	44.37	0.84	ago	29	19.45	22.91	25.14	0.95	ago	29	53.73	57.19	31.11	0.97	ago	29	53.73	57.19	31.11	0.97
sep	4	50.07	53.50	44.98	0.44	sep	4	19.51	22.94	26.44	0.55	sep	4	53.79	57.22	31.67	0.58	sep	4	53.79	57.22	31.67	0.58
sep	10	50.15	53.53	45.66	0.05	sep	10	19.57	22.95	27.73	0.16	sep	10	53.85	57.24	32.21	0.18	sep	10	53.85	57.24	32.21	0.18
sep	16	50.16	53.52	46.53	23.65	sep	16	19.59	22.95	28.83	23.76	sep	16	53.87	57.24	32.53	23.79	sep	16	53.87	57.24	32.53	23.79
sep	22	50.19	53.51	47.33	23.26	sep	22	19.61	22.93	29.98	23.37	sep	22	53.91	57.23	32.90	23.39	sep	22	53.91	57.23	32.90	23.39
sep	28	50.16	53.48	48.43	22.87	sep	28	19.59	22.90	30.79	22.97	sep	28	53.89	57.20	32.94	23.00	sep	28	53.89	57.20	32.94	23.00
oct	4	50.17	53.43	49.22	22.47	oct	4	19.61	22.86	31.88	22.58	oct	4	53.91	57.16	33.26	22.61	oct	4	53.91	57.16	33.26	22.61
oct	10	50.13	53.37	50.36	22.08	oct	10	19.56	22.80	32.57	22.19	oct	10	53.87	57.11	33.18	22.21	oct	10	53.87	57.11	33.18	22.21
oct	16	50.09	53.28	51.26	21.68	oct	16	19.55	22.74	33.39	21.79	oct	16	53.86	57.05	33.27	21.82	oct	16	53.86	57.05	33.27	21.82
oct	22	50.04	53.20	52.33	21.29	oct	22	19.49	22.65	33.93	21.40	oct	22	53.81	56.98	33.12	21.42	oct	22	53.81	56.98	33.12	21.42
oct	28	49.96	53.08	53.32	20.89	oct	28	19.44	22.57	34.41	21.00	oct	28	53.76	56.89	32.95	21.03	oct	28	53.76	56.89	32.95	21.03
nov	3	49.91	52.97	54.16	20.50	nov	3	19.39	22.46	34.93	20.61	nov	3	53.73	56.80	32.86	20.63	nov	3	53.73	56.80	32.86	20.63
nov	9	49.80	52.84	55.14	20.11	nov	9	19.31	22.35	35.14	20.21	nov	9	53.65	56.69	32.51	20.24	nov	9	53.65	56.69	32.51	20.24
nov	15	49.74	52.70	55.83	19.71	nov	15	19.25	22.22	35.46	19.82	nov	15	53.61	56.58	32.34	19.85	nov	15	53.61	56.58	32.34	19.85
nov	21																						

Posiciones aparentes de la estrella Polar, 2018 (a las 0^h del meridiano 90° W.G.)

		α_c			α			δ			hp
mes	día	h	m	s	h	m	s	°	'	"	h
ene	1	2	54	42	2	55	37	89	20	32	20.2
ene	2	2	54	41	2	55	35	89	20	33	20.1
ene	3	2	54	39	2	55	34	89	20	33	20.1
ene	4	2	54	38	2	55	33	89	20	33	20.0
ene	5	2	54	36	2	55	31	89	20	34	19.9
ene	6	2	54	34	2	55	29	89	20	34	19.9
ene	7	2	54	33	2	55	27	89	20	34	19.8
ene	8	2	54	31	2	55	26	89	20	34	19.7
ene	9	2	54	29	2	55	24	89	20	34	19.7
ene	10	2	54	28	2	55	22	89	20	34	19.6
ene	11	2	54	26	2	55	21	89	20	35	19.5
ene	12	2	54	25	2	55	19	89	20	35	19.5
ene	13	2	54	23	2	55	18	89	20	35	19.4
ene	14	2	54	21	2	55	16	89	20	35	19.3
ene	15	2	54	20	2	55	15	89	20	35	19.3
ene	16	2	54	18	2	55	13	89	20	35	19.2
ene	17	2	54	16	2	55	11	89	20	36	19.1
ene	18	2	54	15	2	55	9	89	20	36	19.1
ene	19	2	54	13	2	55	7	89	20	36	19.0
ene	20	2	54	11	2	55	6	89	20	36	18.9
ene	21	2	54	9	2	55	3	89	20	36	18.9
ene	22	2	54	7	2	55	1	89	20	36	18.8
ene	23	2	54	5	2	54	59	89	20	36	18.7
ene	24	2	54	3	2	54	58	89	20	36	18.7
ene	25	2	54	1	2	54	56	89	20	37	18.6
ene	26	2	53	59	2	54	54	89	20	37	18.5
ene	27	2	53	58	2	54	52	89	20	37	18.5
ene	28	2	53	56	2	54	51	89	20	37	18.4
ene	29	2	53	54	2	54	49	89	20	37	18.3
ene	30	2	53	53	2	54	47	89	20	37	18.3
ene	31	2	53	51	2	54	46	89	20	37	18.2
feb	1	2	53	49	2	54	44	89	20	37	18.1
feb	2	2	53	46	2	54	41	89	20	37	18.1
feb	3	2	53	44	2	54	39	89	20	37	18.0
feb	4	2	53	42	2	54	37	89	20	37	17.9
feb	5	2	53	40	2	54	35	89	20	37	17.9
feb	6	2	53	38	2	54	33	89	20	37	17.8
feb	7	2	53	36	2	54	31	89	20	37	17.7
feb	8	2	53	35	2	54	30	89	20	37	17.7
feb	9	2	53	33	2	54	28	89	20	37	17.6
feb	10	2	53	31	2	54	26	89	20	37	17.5
feb	11	2	53	29	2	54	24	89	20	37	17.5
feb	12	2	53	27	2	54	22	89	20	37	17.4
feb	13	2	53	25	2	54	21	89	20	37	17.3
feb	14	2	53	24	2	54	19	89	20	37	17.3
feb	15	2	53	21	2	54	17	89	20	37	17.2
feb	16	2	53	19	2	54	14	89	20	37	17.1
feb	17	2	53	17	2	54	12	89	20	37	17.1
feb	18	2	53	15	2	54	10	89	20	37	17.0
feb	19	2	53	13	2	54	8	89	20	37	16.9
feb	20	2	53	11	2	54	6	89	20	37	16.9
feb	21	2	53	9	2	54	4	89	20	37	16.8
feb	22	2	53	8	2	54	3	89	20	37	16.7
feb	23	2	53	6	2	54	1	89	20	36	16.7
feb	24	2	53	4	2	53	59	89	20	36	16.6
feb	25	2	53	3	2	53	58	89	20	36	16.5
feb	26	2	53	1	2	53	56	89	20	36	16.5
feb	27	2	52	59	2	53	55	89	20	36	16.4
feb	28	2	52	58	2	53	53	89	20	36	16.3
mar	1	2	52	56	2	53	51	89	20	36	16.3
mar	2	2	52	54	2	53	49	89	20	36	16.2
mar	3	2	52	52	2	53	47	89	20	36	16.1

Posiciones aparentes de la estrella Polar, 2018 (a las 0^h del meridiano 90° W.G.)

		α_c			α			δ			hp
mes	día	h	m	s	h	m	s	°	'	"	h
mar	4	2	52	50	2	53	45	89	20	36	16.1
mar	5	2	52	48	2	53	43	89	20	35	16.0
mar	6	2	52	47	2	53	42	89	20	35	16.0
mar	7	2	52	45	2	53	40	89	20	35	15.9
mar	8	2	52	44	2	53	39	89	20	35	15.8
mar	9	2	52	42	2	53	37	89	20	35	15.8
mar	10	2	52	41	2	53	36	89	20	34	15.7
mar	11	2	52	39	2	53	34	89	20	34	15.6
mar	12	2	52	38	2	53	33	89	20	34	15.6
mar	13	2	52	36	2	53	31	89	20	34	15.5
mar	14	2	52	35	2	53	30	89	20	34	15.4
mar	15	2	52	33	2	53	28	89	20	34	15.4
mar	16	2	52	31	2	53	27	89	20	33	15.3
mar	17	2	52	30	2	53	25	89	20	33	15.2
mar	18	2	52	28	2	53	23	89	20	33	15.2
mar	19	2	52	27	2	53	22	89	20	33	15.1
mar	20	2	52	25	2	53	21	89	20	32	15.0
mar	21	2	52	24	2	53	19	89	20	32	15.0
mar	22	2	52	23	2	53	18	89	20	32	14.9
mar	23	2	52	22	2	53	17	89	20	32	14.8
mar	24	2	52	21	2	53	16	89	20	31	14.8
mar	25	2	52	20	2	53	15	89	20	31	14.7
mar	26	2	52	19	2	53	14	89	20	31	14.6
mar	27	2	52	18	2	53	13	89	20	31	14.6
mar	28	2	52	17	2	53	12	89	20	31	14.5
mar	29	2	52	15	2	53	11	89	20	30	14.4
mar	30	2	52	14	2	53	9	89	20	30	14.4
mar	31	2	52	13	2	53	8	89	20	30	14.3
abr	1	2	52	12	2	53	7	89	20	29	14.2
abr	2	2	52	11	2	53	6	89	20	29	14.2
abr	3	2	52	10	2	53	5	89	20	29	14.1
abr	4	2	52	9	2	53	5	89	20	28	14.0
abr	5	2	52	9	2	53	4	89	20	28	14.0
abr	6	2	52	8	2	53	3	89	20	28	13.9
abr	7	2	52	7	2	53	3	89	20	28	13.8
abr	8	2	52	7	2	53	2	89	20	27	13.8
abr	9	2	52	6	2	53	1	89	20	27	13.7
abr	10	2	52	5	2	53	0	89	20	27	13.6
abr	11	2	52	4	2	53	0	89	20	27	13.6
abr	12	2	52	4	2	52	59	89	20	26	13.5
abr	13	2	52	3	2	52	58	89	20	26	13.4
abr	14	2	52	2	2	52	57	89	20	26	13.4
abr	15	2	52	1	2	52	57	89	20	25	13.3
abr	16	2	52	1	2	52	56	89	20	25	13.2
abr	17	2	52	1	2	52	56	89	20	25	13.2
abr	18	2	52	0	2	52	56	89	20	24	13.1
abr	19	2	52	0	2	52	56	89	20	24	13.0
abr	20	2	52	0	2	52	56	89	20	24	13.0
abr	21	2	52	0	2	52	55	89	20	23	12.9
abr	22	2	52	0	2	52	55	89	20	23	12.9
abr	23	2	52	0	2	52	55	89	20	23	12.8
abr	24	2	51	59	2	52	55	89	20	23	12.7
abr	25	2	51	59	2	52	54	89	20	22	12.7
abr	26	2	51	59	2	52	54	89	20	22	12.6
abr	27	2	51	58	2	52	54	89	20	22	12.5
abr	28	2	51	58	2	52	54	89	20	21	12.5
abr	29	2	51	58	2	52	54	89	20	21	12.4
abr	30	2	51	58	2	52	54	89	20	21	12.3
may	1	2	51	59	2	52	54	89	20	20	12.3
may	2	2	51	59	2	52	54	89	20	20	12.2
may	3	2	51	59	2	52	55	89	20	20	12.1
may	4	2	51	59	2	52	55	89	20	19	12.1

Posiciones aparentes de la estrella Polar, 2018 (a las 0^h del meridiano 90° W.G.)

mes	día	α_c			α			δ			hp
		h	m	s	h	m	s	°	'	"	h
may	5	2	52	0	2	52	55	89	20	19	12.0
may	6	2	52	0	2	52	55	89	20	19	11.9
may	7	2	52	0	2	52	56	89	20	19	11.9
may	8	2	52	0	2	52	56	89	20	18	11.8
may	9	2	52	1	2	52	56	89	20	18	11.7
may	10	2	52	1	2	52	56	89	20	18	11.7
may	11	2	52	1	2	52	56	89	20	17	11.6
may	12	2	52	1	2	52	57	89	20	17	11.5
may	13	2	52	2	2	52	57	89	20	17	11.5
may	14	2	52	2	2	52	58	89	20	16	11.4
may	15	2	52	3	2	52	58	89	20	16	11.3
may	16	2	52	4	2	52	59	89	20	16	11.3
may	17	2	52	4	2	53	0	89	20	16	11.2
may	18	2	52	5	2	53	1	89	20	15	11.1
may	19	2	52	6	2	53	2	89	20	15	11.1
may	20	2	52	7	2	53	3	89	20	15	11.0
may	21	2	52	8	2	53	3	89	20	15	10.9
may	22	2	52	8	2	53	4	89	20	14	10.9
may	23	2	52	9	2	53	4	89	20	14	10.8
may	24	2	52	9	2	53	5	89	20	14	10.7
may	25	2	52	10	2	53	6	89	20	14	10.7
may	26	2	52	11	2	53	7	89	20	13	10.6
may	27	2	52	12	2	53	8	89	20	13	10.6
may	28	2	52	13	2	53	9	89	20	13	10.5
may	29	2	52	14	2	53	10	89	20	12	10.4
may	30	2	52	15	2	53	11	89	20	12	10.4
may	31	2	52	16	2	53	12	89	20	12	10.3
jun	1	2	52	18	2	53	13	89	20	12	10.2
jun	2	2	52	19	2	53	14	89	20	11	10.2
jun	3	2	52	20	2	53	16	89	20	11	10.1
jun	4	2	52	21	2	53	17	89	20	11	10.0
jun	5	2	52	22	2	53	18	89	20	11	10.0
jun	6	2	52	23	2	53	19	89	20	11	9.9
jun	7	2	52	24	2	53	20	89	20	10	9.8
jun	8	2	52	25	2	53	21	89	20	10	9.8
jun	9	2	52	26	2	53	22	89	20	10	9.7
jun	10	2	52	27	2	53	23	89	20	10	9.6
jun	11	2	52	29	2	53	24	89	20	9	9.6
jun	12	2	52	30	2	53	26	89	20	9	9.5
jun	13	2	52	32	2	53	28	89	20	9	9.4
jun	14	2	52	34	2	53	29	89	20	9	9.4
jun	15	2	52	35	2	53	31	89	20	9	9.3
jun	16	2	52	37	2	53	33	89	20	9	9.2
jun	17	2	52	38	2	53	34	89	20	8	9.2
jun	18	2	52	39	2	53	35	89	20	8	9.1
jun	19	2	52	41	2	53	37	89	20	8	9.1
jun	20	2	52	42	2	53	38	89	20	8	9.0
jun	21	2	52	43	2	53	39	89	20	8	8.9
jun	22	2	52	45	2	53	41	89	20	8	8.9
jun	23	2	52	46	2	53	42	89	20	7	8.8
jun	24	2	52	48	2	53	44	89	20	7	8.7
jun	25	2	52	50	2	53	46	89	20	7	8.7
jun	26	2	52	52	2	53	48	89	20	7	8.6
jun	27	2	52	53	2	53	49	89	20	7	8.5
jun	28	2	52	55	2	53	51	89	20	7	8.5
jun	29	2	52	57	2	53	53	89	20	6	8.4
jun	30	2	52	59	2	53	55	89	20	6	8.3
jul	1	2	53	0	2	53	56	89	20	6	8.3
jul	2	2	53	2	2	53	58	89	20	6	8.2
jul	3	2	53	3	2	53	59	89	20	6	8.1
jul	4	2	53	5	2	54	1	89	20	6	8.1
jul	5	2	53	6	2	54	3	89	20	6	8.0

Posiciones aparentes de la estrella Polar, 2018 (a las 0^h del meridiano 90° W.G.)

		α_c			α			δ			hp
mes	día	h	m	s	h	m	s	°	'	"	h
jul	6	2	53	8	2	54	4	89	20	6	7.9
jul	7	2	53	10	2	54	6	89	20	6	7.9
jul	8	2	53	12	2	54	8	89	20	6	7.8
jul	9	2	53	14	2	54	10	89	20	5	7.7
jul	10	2	53	16	2	54	12	89	20	5	7.7
jul	11	2	53	18	2	54	14	89	20	5	7.6
jul	12	2	53	20	2	54	16	89	20	5	7.5
jul	13	2	53	22	2	54	18	89	20	5	7.5
jul	14	2	53	24	2	54	20	89	20	5	7.4
jul	15	2	53	26	2	54	22	89	20	5	7.4
jul	16	2	53	27	2	54	23	89	20	5	7.3
jul	17	2	53	29	2	54	25	89	20	5	7.2
jul	18	2	53	31	2	54	27	89	20	5	7.2
jul	19	2	53	32	2	54	29	89	20	5	7.1
jul	20	2	53	34	2	54	31	89	20	5	7.0
jul	21	2	53	36	2	54	33	89	20	5	7.0
jul	22	2	53	38	2	54	35	89	20	5	6.9
jul	23	2	53	41	2	54	37	89	20	5	6.8
jul	24	2	53	43	2	54	39	89	20	5	6.8
jul	25	2	53	45	2	54	41	89	20	5	6.7
jul	26	2	53	47	2	54	43	89	20	5	6.6
jul	27	2	53	49	2	54	45	89	20	5	6.6
jul	28	2	53	51	2	54	47	89	20	5	6.5
jul	29	2	53	52	2	54	49	89	20	5	6.4
jul	30	2	53	54	2	54	51	89	20	5	6.4
jul	31	2	53	56	2	54	52	89	20	5	6.3
ago	1	2	53	58	2	54	54	89	20	5	6.2
ago	2	2	54	0	2	54	56	89	20	5	6.2
ago	3	2	54	1	2	54	58	89	20	5	6.1
ago	4	2	54	3	2	55	0	89	20	5	6.1
ago	5	2	54	6	2	55	2	89	20	5	6.0
ago	6	2	54	8	2	55	4	89	20	5	5.9
ago	7	2	54	10	2	55	6	89	20	5	5.9
ago	8	2	54	12	2	55	9	89	20	6	5.8
ago	9	2	54	14	2	55	11	89	20	6	5.7
ago	10	2	54	16	2	55	13	89	20	6	5.7
ago	11	2	54	18	2	55	15	89	20	6	5.6
ago	12	2	54	20	2	55	17	89	20	6	5.5
ago	13	2	54	22	2	55	18	89	20	6	5.5
ago	14	2	54	24	2	55	20	89	20	6	5.4
ago	15	2	54	25	2	55	22	89	20	6	5.3
ago	16	2	54	27	2	55	24	89	20	6	5.3
ago	17	2	54	29	2	55	26	89	20	7	5.2
ago	18	2	54	31	2	55	28	89	20	7	5.1
ago	19	2	54	34	2	55	30	89	20	7	5.1
ago	20	2	54	36	2	55	32	89	20	7	5.0
ago	21	2	54	38	2	55	34	89	20	7	4.9
ago	22	2	54	40	2	55	36	89	20	7	4.9
ago	23	2	54	42	2	55	38	89	20	7	4.8
ago	24	2	54	44	2	55	40	89	20	8	4.7
ago	25	2	54	45	2	55	42	89	20	8	4.7
ago	26	2	54	47	2	55	44	89	20	8	4.6
ago	27	2	54	49	2	55	45	89	20	8	4.6
ago	28	2	54	50	2	55	47	89	20	8	4.5
ago	29	2	54	52	2	55	49	89	20	8	4.4
ago	30	2	54	54	2	55	50	89	20	9	4.4
ago	31	2	54	56	2	55	52	89	20	9	4.3
sep	1	2	54	58	2	55	54	89	20	9	4.2
sep	2	2	55	0	2	55	56	89	20	9	4.2
sep	3	2	55	2	2	55	58	89	20	9	4.1
sep	4	2	55	4	2	56	0	89	20	9	4.0
sep	5	2	55	6	2	56	2	89	20	10	4.0

Posiciones aparentes de la estrella Polar, 2018 (a las 0^h del meridiano 90° W.G.)

mes	día	α_c			α			δ			hp
		h	m	s	h	m	s	°	'	"	h
sep	6	2	55	8	2	56	4	89	20	10	3.9
sep	7	2	55	9	2	56	6	89	20	10	3.8
sep	8	2	55	11	2	56	8	89	20	10	3.8
sep	9	2	55	13	2	56	9	89	20	11	3.7
sep	10	2	55	14	2	56	11	89	20	11	3.6
sep	11	2	55	16	2	56	12	89	20	11	3.6
sep	12	2	55	17	2	56	14	89	20	11	3.5
sep	13	2	55	19	2	56	16	89	20	12	3.4
sep	14	2	55	21	2	56	17	89	20	12	3.4
sep	15	2	55	23	2	56	19	89	20	12	3.3
sep	16	2	55	24	2	56	21	89	20	12	3.2
sep	17	2	55	26	2	56	23	89	20	13	3.2
sep	18	2	55	28	2	56	25	89	20	13	3.1
sep	19	2	55	30	2	56	26	89	20	13	3.1
sep	20	2	55	31	2	56	28	89	20	13	3.0
sep	21	2	55	32	2	56	29	89	20	14	2.9
sep	22	2	55	34	2	56	31	89	20	14	2.9
sep	23	2	55	35	2	56	32	89	20	14	2.8
sep	24	2	55	36	2	56	33	89	20	15	2.7
sep	25	2	55	38	2	56	34	89	20	15	2.7
sep	26	2	55	39	2	56	36	89	20	15	2.6
sep	27	2	55	40	2	56	37	89	20	15	2.5
sep	28	2	55	42	2	56	39	89	20	16	2.5
sep	29	2	55	44	2	56	40	89	20	16	2.4
sep	30	2	55	45	2	56	42	89	20	16	2.3
oct	1	2	55	47	2	56	43	89	20	16	2.3
oct	2	2	55	48	2	56	45	89	20	17	2.2
oct	3	2	55	50	2	56	46	89	20	17	2.1
oct	4	2	55	51	2	56	48	89	20	17	2.1
oct	5	2	55	52	2	56	49	89	20	18	2.0
oct	6	2	55	53	2	56	50	89	20	18	1.9
oct	7	2	55	54	2	56	51	89	20	19	1.9
oct	8	2	55	55	2	56	52	89	20	19	1.8
oct	9	2	55	56	2	56	53	89	20	19	1.7
oct	10	2	55	57	2	56	54	89	20	19	1.7
oct	11	2	55	59	2	56	55	89	20	20	1.6
oct	12	2	56	0	2	56	57	89	20	20	1.5
oct	13	2	56	1	2	56	58	89	20	20	1.5
oct	14	2	56	2	2	56	59	89	20	21	1.4
oct	15	2	56	4	2	57	0	89	20	21	1.4
oct	16	2	56	5	2	57	1	89	20	21	1.3
oct	17	2	56	6	2	57	2	89	20	22	1.2
oct	18	2	56	6	2	57	3	89	20	22	1.2
oct	19	2	56	7	2	57	4	89	20	23	1.1
oct	20	2	56	8	2	57	5	89	20	23	1.0
oct	21	2	56	9	2	57	5	89	20	23	1.0
oct	22	2	56	9	2	57	6	89	20	24	0.9
oct	23	2	56	10	2	57	7	89	20	24	0.8
oct	24	2	56	11	2	57	7	89	20	24	0.8
oct	25	2	56	11	2	57	8	89	20	25	0.7
oct	26	2	56	12	2	57	9	89	20	25	0.6
oct	27	2	56	13	2	57	10	89	20	25	0.6
oct	28	2	56	14	2	57	11	89	20	26	0.5
oct	29	2	56	15	2	57	12	89	20	26	0.4
oct	30	2	56	16	2	57	13	89	20	26	0.4
oct	31	2	56	16	2	57	13	89	20	27	0.3
nov	1	2	56	17	2	57	14	89	20	27	0.2
nov	2	2	56	17	2	57	14	89	20	28	0.2
nov	3	2	56	17	2	57	14	89	20	28	0.1
nov	4	2	56	18	2	57	14	89	20	28	0.0
nov	5	2	56	18	2	57	15	89	20	29	24.0
nov	6	2	56	18	2	57	15	89	20	29	23.9

Posiciones aparentes de la estrella Polar, 2018 (a las 0^h del meridiano 90° W.G.)

		α_c			α			δ			hp
mes	día	h	m	s	h	m	s	°	'	"	h
nov	7	2	56	19	2	57	15	89	20	29	23.8
nov	8	2	56	19	2	57	16	89	20	30	23.8
nov	9	2	56	19	2	57	16	89	20	30	23.7
nov	10	2	56	20	2	57	17	89	20	30	23.6
nov	11	2	56	20	2	57	17	89	20	31	23.6
nov	12	2	56	21	2	57	18	89	20	31	23.5
nov	13	2	56	21	2	57	18	89	20	32	23.5
nov	14	2	56	21	2	57	18	89	20	32	23.4
nov	15	2	56	21	2	57	18	89	20	32	23.3
nov	16	2	56	21	2	57	18	89	20	33	23.3
nov	17	2	56	21	2	57	18	89	20	33	23.2
nov	18	2	56	20	2	57	17	89	20	34	23.1
nov	19	2	56	20	2	57	17	89	20	34	23.1
nov	20	2	56	20	2	57	17	89	20	34	23.0
nov	21	2	56	20	2	57	17	89	20	35	22.9
nov	22	2	56	20	2	57	17	89	20	35	22.9
nov	23	2	56	20	2	57	17	89	20	35	22.8
nov	24	2	56	20	2	57	17	89	20	36	22.7
nov	25	2	56	20	2	57	17	89	20	36	22.7
nov	26	2	56	20	2	57	17	89	20	36	22.6
nov	27	2	56	20	2	57	17	89	20	37	22.5
nov	28	2	56	19	2	57	16	89	20	37	22.5
nov	29	2	56	19	2	57	16	89	20	38	22.4
nov	30	2	56	18	2	57	15	89	20	38	22.3
dic	1	2	56	17	2	57	14	89	20	38	22.3
dic	2	2	56	17	2	57	14	89	20	39	22.2
dic	3	2	56	16	2	57	13	89	20	39	22.1
dic	4	2	56	15	2	57	13	89	20	39	22.1
dic	5	2	56	15	2	57	12	89	20	40	22.0
dic	6	2	56	15	2	57	12	89	20	40	21.9
dic	7	2	56	14	2	57	11	89	20	40	21.9
dic	8	2	56	14	2	57	11	89	20	41	21.8
dic	9	2	56	13	2	57	10	89	20	41	21.7
dic	10	2	56	12	2	57	10	89	20	41	21.7
dic	11	2	56	12	2	57	9	89	20	42	21.6
dic	12	2	56	11	2	57	8	89	20	42	21.5
dic	13	2	56	10	2	57	7	89	20	42	21.5
dic	14	2	56	8	2	57	6	89	20	43	21.4
dic	15	2	56	7	2	57	5	89	20	43	21.3
dic	16	2	56	6	2	57	3	89	20	43	21.3
dic	17	2	56	5	2	57	2	89	20	44	21.2
dic	18	2	56	4	2	57	1	89	20	44	21.1
dic	19	2	56	3	2	57	0	89	20	44	21.1
dic	20	2	56	2	2	56	59	89	20	44	21.0
dic	21	2	56	1	2	56	59	89	20	45	20.9
dic	22	2	56	0	2	56	58	89	20	45	20.9
dic	23	2	55	60	2	56	57	89	20	45	20.8
dic	24	2	55	58	2	56	56	89	20	46	20.8
dic	25	2	55	57	2	56	55	89	20	46	20.7
dic	26	2	55	56	2	56	53	89	20	46	20.6
dic	27	2	55	54	2	56	52	89	20	46	20.6
dic	28	2	55	53	2	56	50	89	20	47	20.5
dic	29	2	55	51	2	56	49	89	20	47	20.4
dic	30	2	55	50	2	56	47	89	20	47	20.4
dic	31	2	55	48	2	56	46	89	20	47	20.3

Constelaciones, 2018

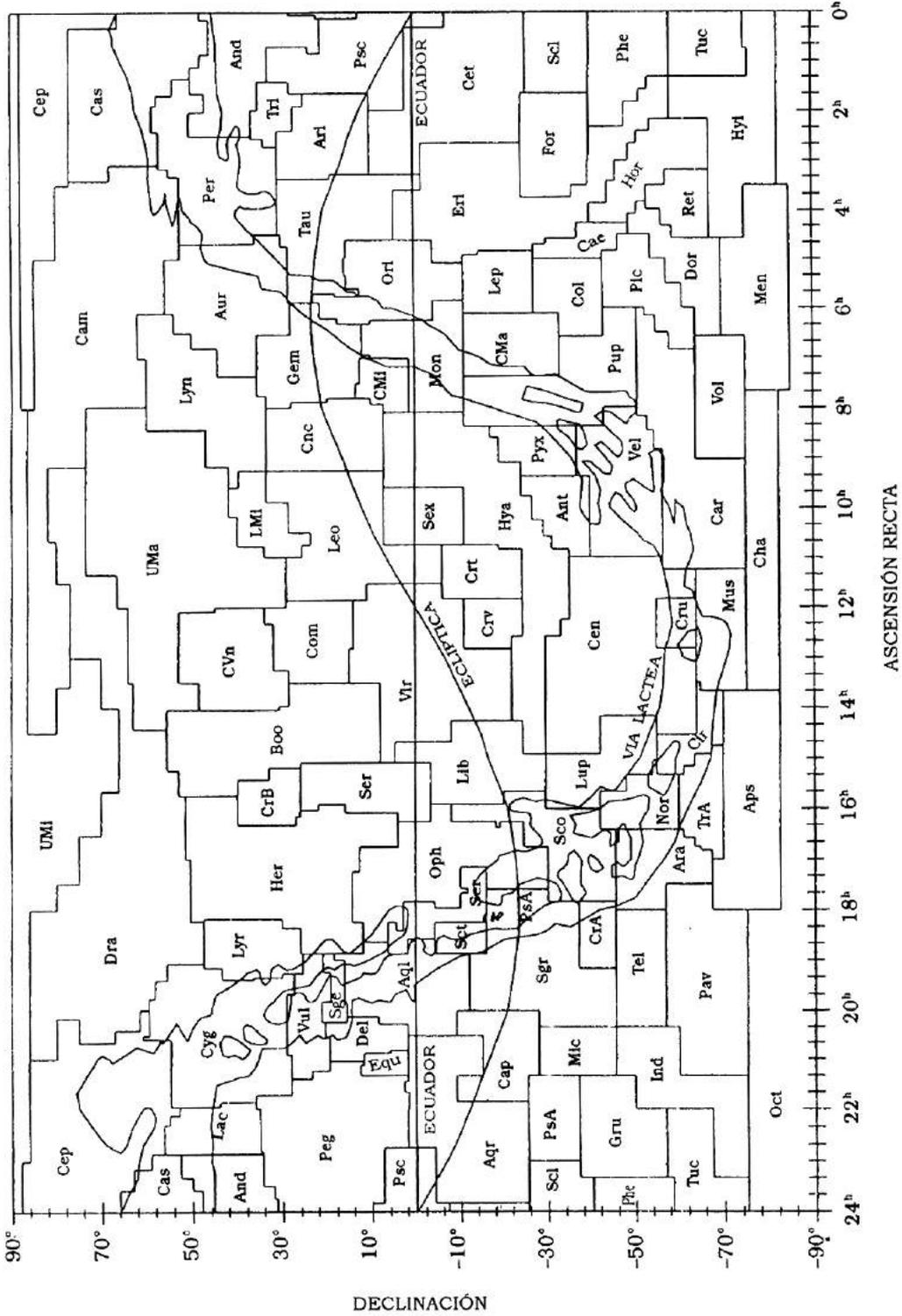
Nombres y significados

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	Centauro
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, 2018

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, 2018



Objetos Messier, 2018

M	NGC	α			δ			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, 2018

M	NGC	α			δ			const	v	tipo	descripción	
		h	m	s	°	'	"					
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 Tierra
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 Vía 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, 2018

Lluvias de estrellas observables a simple vista

Objetos	inicia		máximo		termina		α		δ		núm h	cometa
	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	
Virgínidas	ene	25	mar	25	abr	15	13	00	-04	30	5	
Líridas	abr	16	abr	22	abr	25	18	06	+34	49	15	C/Thatcher (1861 G1)
Púpidas	abr	15	abr	24	abr	28	07	18	-45	18	26	P/Grigg-Skjellerup
Acuáridas	abr	19	may	06	may	28	22	30	-01	66	60	P/Halley
Sagitáridas	abr	15	may	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)
Pupi vélicas	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, 2018

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
enero				2	6	Marte	1.3° al sur de Saturno	2	6	Marte	1.3° al sur de Saturno	2	6	Marte	1.3° al sur de Saturno
1	14	Mercurio	Elongación máxima al O (23°)	3	8	Júpiter	4° al sur de la Luna	3	8	Júpiter	4° al sur de la Luna	3	8	Júpiter	4° al sur de la Luna
1	16	Luna	Perigeo	7	7	Saturno	1.9° al sur de la Luna	7	7	Saturno	1.9° al sur de la Luna	7	7	Saturno	1.9° al sur de la Luna
1	20	Luna	Luna Llena	7	12	Marte	3° al sur de la Luna	7	12	Marte	3° al sur de la Luna	7	12	Marte	3° al sur de la Luna
2	15	Urano	Estacionario	8	0	Luna	Apogeo	8	0	Luna	Apogeo	8	0	Luna	Apogeo
3	0	Tierra	Perihelio	8	1	Luna	Cuarto Menguante	8	1	Luna	Cuarto Menguante	8	1	Luna	Cuarto Menguante
5	2	Régulo	0.9° al sur de la Luna	12	17	Neptuno	1.9° al norte de la Luna	12	17	Neptuno	1.9° al norte de la Luna	12	17	Neptuno	1.9° al norte de la Luna
6	22	Marte	0.2° al sur de Júpiter	13	22	Mercurio	Estacionario	13	22	Mercurio	Estacionario	13	22	Mercurio	Estacionario
8	16	Luna	Cuarto Menguante	14	3	Mercurio	4° al norte de la Luna	14	3	Mercurio	4° al norte de la Luna	14	3	Mercurio	4° al norte de la Luna
9	1	Venus	Conjunción superior	15	20	Luna	Luna Nueva	15	20	Luna	Luna Nueva	15	20	Luna	Luna Nueva
9	4	Plutón	Conjunción con el Sol	17	13	Venus	5° al norte de la Luna	17	13	Venus	5° al norte de la Luna	17	13	Venus	5° al norte de la Luna
11	0	Júpiter	4° al sur de la Luna	17	20	Saturno	Estacionario	17	20	Saturno	Estacionario	17	20	Saturno	Estacionario
11	4	Marte	5° al sur de la Luna	18	8	Urano	Conjunción con el Sol	18	8	Urano	Conjunción con el Sol	18	8	Urano	Conjunción con el Sol
11	22	Vesta	0.4° al norte de la Luna occ	18	23	Aldebarán	1.1° al sur de la Luna	18	23	Aldebarán	1.1° al sur de la Luna	18	23	Aldebarán	1.1° al sur de la Luna
13	1	Mercurio	0.6° al sur de Saturno	20	9	Luna	Perigeo	20	9	Luna	Perigeo	20	9	Luna	Perigeo
14	20	Luna	Apogeo	22	16	Luna	Cuarto Creciente	22	16	Luna	Cuarto Creciente	22	16	Luna	Cuarto Creciente
14	20	Saturno	3° al sur de la Luna	22	20	Plutón	Estacionario	22	20	Plutón	Estacionario	22	20	Plutón	Estacionario
15	1	Mercurio	3° al sur de la Luna	24	14	Régulo	1.2° al sur de la Luna occ	24	14	Régulo	1.2° al sur de la Luna occ	24	14	Régulo	1.2° al sur de la Luna occ
16	20	Luna	Luna Nueva	29	12	Mercurio	Elongación máxima al O(27°)	29	12	Mercurio	Elongación máxima al O(27°)	29	12	Mercurio	Elongación máxima al O(27°)
20	14	Neptuno	1.6° al norte de la Luna	29	19	Luna	Luna Llena	29	19	Luna	Luna Llena	29	19	Luna	Luna Llena
19	19	Urano	5° al norte de la Luna	30	11	Júpiter	4° al sur de la Luna	30	11	Júpiter	4° al sur de la Luna	30	11	Júpiter	4° al sur de la Luna
24	16	Luna	Cuarto Creciente	mayo				3	11	Venus	7° al norte de Aldebarán	3	11	Venus	7° al norte de Aldebarán
27	5	Aldebarán	0.7° al sur de la Luna occ	4	14	Saturno	1.7° al sur de la Luna	4	14	Saturno	1.7° al sur de la Luna	4	14	Saturno	1.7° al sur de la Luna
30	4	Luna	Perigeo	5	19	Luna	Apogeo	5	19	Luna	Apogeo	5	19	Luna	Apogeo
31	7	Ceres	Oposición	6	1	Marte	3° al sur de la Luna	6	1	Marte	3° al sur de la Luna	6	1	Marte	3° al sur de la Luna
31	7	Luna	Luna Llena eclipse	7	20	Luna	Cuarto Menguante	7	20	Luna	Cuarto Menguante	7	20	Luna	Cuarto Menguante
febrero				8	4	Vesta	Estacionario	8	4	Vesta	Estacionario	8	4	Vesta	Estacionario
1	13	Régulo	1.0° al sur de la Luna	8	19	Júpiter	Oposición	8	19	Júpiter	Oposición	8	19	Júpiter	Oposición
7	10	Luna	Cuarto Menguante	10	3	Neptuno	2° al norte de la Luna	10	3	Neptuno	2° al norte de la Luna	10	3	Neptuno	2° al norte de la Luna
7	14	Júpiter	4° al sur de la Luna	12	15	Mercurio	2° al sur de Urano	12	15	Mercurio	2° al sur de Urano	12	15	Mercurio	2° al sur de Urano
8	23	Marte	4° al sur de la Luna	13	9	Urano	5° al norte de la Luna	13	9	Urano	5° al norte de la Luna	13	9	Urano	5° al norte de la Luna
9	7	Vesta	0.9° al norte de la Luna	13	11	Mercurio	2° al norte de la Luna	13	11	Mercurio	2° al norte de la Luna	13	11	Mercurio	2° al norte de la Luna
10	9	Marte	5° al norte de Antares	15	6	Luna	Luna Nueva	15	6	Luna	Luna Nueva	15	6	Luna	Luna Nueva
11	8	Luna	Apogeo	16	7	Aldebarán	1.2° al sur de la Luna occ	16	7	Aldebarán	1.2° al sur de la Luna occ	16	7	Aldebarán	1.2° al sur de la Luna occ
11	9	Saturno	2° al sur de la Luna	17	12	Venus	5° al norte de la Luna	17	12	Venus	5° al norte de la Luna	17	12	Venus	5° al norte de la Luna
14	5	Juno	Conjunción con el Sol	17	15	Luna	Perigeo	17	15	Luna	Perigeo	17	15	Luna	Perigeo
15	15	Luna	Luna Nueva eclipse	21	22	Luna	Cuarto Creciente	21	22	Luna	Cuarto Creciente	21	22	Luna	Cuarto Creciente
17	6	Mercurio	Conjunción Superior	27	12	Júpiter	4° al sur de la Luna	27	12	Júpiter	4° al sur de la Luna	27	12	Júpiter	4° al sur de la Luna
20	2	Urano	5° al norte de la Luna	29	8	Luna	Luna Llena	29	8	Luna	Luna Llena	29	8	Luna	Luna Llena
23	2	Luna	Cuarto Creciente	junio				0	19	Saturno	1.6° al sur de la Luna	0	19	Saturno	1.6° al sur de la Luna
23	12	Aldebarán	0.7° al sur de la Luna occ	2	11	Luna	Apogeo	2	11	Luna	Apogeo	2	11	Luna	Apogeo
27	9	Luna	Perigeo	3	6	Marte	3° al sur de la Luna	3	6	Marte	3° al sur de la Luna	3	6	Marte	3° al sur de la Luna
marzo				5	20	Mercurio	Conjunción superior	5	20	Mercurio	Conjunción superior	5	20	Mercurio	Conjunción superior
1	0	Régulo	0.9° al sur de la Luna occ	6	12	Neptuno	2° al norte de la Luna	6	12	Neptuno	2° al norte de la Luna	6	12	Neptuno	2° al norte de la Luna
1	19	Luna	Luna Llena	6	13	Luna	Cuarto Menguante	6	13	Luna	Cuarto Menguante	6	13	Luna	Cuarto Menguante
4	8	Neptuno	Conjunción con el Sol	8	19	Venus	5° al sur de Polux	8	19	Venus	5° al sur de Polux	8	19	Venus	5° al sur de Polux
5	12	Mercurio	1.4° al norte de Venus	9	21	Urano	5° al norte de la Luna	9	21	Urano	5° al norte de la Luna	9	21	Urano	5° al norte de la Luna
7	1	Júpiter	4° al sur de la Luna	13	14	Luna	Luna Llena	13	14	Luna	Luna Llena	13	14	Luna	Luna Llena
9	4	Júpiter	Estacionario	14	18	Luna	Perigeo	14	18	Luna	Perigeo	14	18	Luna	Perigeo
9	5	Luna	Cuarto Menguante	16	7	Venus	2° al norte de la Luna	16	7	Venus	2° al norte de la Luna	16	7	Venus	2° al norte de la Luna
9	19	Marte	4° al sur de la Luna	19	6	Neptuno	Estacionario	19	6	Neptuno	Estacionario	19	6	Neptuno	Estacionario
10	20	Saturno	2° al sur de la Luna	19	14	Vesta	Oposición	19	14	Vesta	Oposición	19	14	Vesta	Oposición
11	3	Luna	Apogeo	20	5	Luna	Cuarto Creciente	20	5	Luna	Cuarto Creciente	20	5	Luna	Cuarto Creciente
15	9	Mercurio	Elongación máxima al E(18°)	21	4	Sol	Solsticio	21	4	Sol	Solsticio	21	4	Sol	Solsticio
17	7	Luna	Luna Nueva	23	13	Júpiter	4° al sur de la Luna	23	13	Júpiter	4° al sur de la Luna	23	13	Júpiter	4° al sur de la Luna
17	19	Mercurio	4° al norte de Venus	25	10	Mercurio	5° al sur de Polux	25	10	Mercurio	5° al sur de Polux	25	10	Mercurio	5° al sur de Polux
18	12	Mercurio	8° al norte de la Luna	27	3	Vesta	0.3° al sur de la Luna occ	27	3	Vesta	0.3° al sur de la Luna occ	27	3	Vesta	0.3° al sur de la Luna occ
18	13	Venus	4° al norte de la Luna	27	7	Saturno	Oposición	27	7	Saturno	Oposición	27	7	Saturno	Oposición
19	10	Urano	5° al norte de la Luna	27	22	Saturno	1.8° al sur de la Luna	27	22	Saturno	1.8° al sur de la Luna	27	22	Saturno	1.8° al sur de la Luna
20	10	Sol	Equinoccio	27	23	Luna	Luna Llena	27	23	Luna	Luna Llena	27	23	Luna	Luna Llena
20	15	Ceres	Estacionario	28	8	Marte	Estacionario	28	8	Marte	Estacionario	28	8	Marte	Estacionario
22	11	Mercurio	Estacionario	29	21	Luna	Apogeo	29	21	Luna	Apogeo	29	21	Luna	Apogeo
22	17	Aldebarán	0.9° al sur de la Luna occ	julio				0	20	Marte	5° al sur de la Luna	0	20	Marte	5° al sur de la Luna
24	10	Luna	Cuarto Creciente	3	18	Neptuno	3° al norte de la Luna	3	18	Neptuno	3° al norte de la Luna	3	18	Neptuno	3° al norte de la Luna
26	11	Luna	Perigeo	6	2	Luna	Cuarto Menguante	6	2	Luna	Cuarto Menguante	6	2	Luna	Cuarto Menguante
28	8	Régulo	1.0° al sur de la Luna occ	6	11	Tierra	Afelio	6	11	Tierra	Afelio	6	11	Tierra	Afelio
31	7	Luna	Luna Llena	abril				abril				abril			
1	12	Mercurio	Conjunción Inferior	abril				abril				abril			

Eventos Planetarios, 2018

Hora del meridiano 90° W.G.

Mes		Eventos		Mes		Eventos	
d	h	objeto	suceso	d	h	objeto	suceso
7	8	Urano	5° al norte de la Luna	5	12	Mercurio	2° al norte de Espiga
9	14	Venus	1.1° al norte de Régulo	5	16	Luna	Perigeo
10	4	Aldebarán	1.1° al sur de la Luna occ	7	4	Ceres	Conjunción con el Sol
10	22	Júpiter	Estacionario	8	22	Luna	Luna Nueva
11	23	Mercurio	Elongación máxima al E(26°)	10	9	Venus	13° al sur de la Luna
12	4	Plutón	Oposición	11	15	Júpiter	4° al sur de la Luna
12	21	Luna	Luna Nueva eclipse	14	9	Mercurio	7° al norte de Venus
13	2	Luna	Perigeo	14	21	Saturno	1.8° al sur de la Luna
14	16	Mercurio	2° al sur de la Luna	16	12	Luna	Cuarto Creciente
15	22	Venus	1.6° al sur de la Luna	16	12	Juno	Estacionario
19	14	Luna	Cuarto Creciente	17	13	Luna	Apogeo
20	18	Júpiter	4° al sur de la Luna	18	7	Marte	1.9° al sur de la Luna
25	0	Saturno	2° al sur de la Luna	20	16	Neptuno	3° al norte de la Luna
25	1	Mercurio	Estacionario	23	19	Urano	Oposición
26	23	Marte	Oposición	24	7	Urano	5° al norte de la Luna
27	0	Luna	Apogeo	24	11	Luna	Luna Llena
27	14	Luna	Luna Llena	26	8	Venus	Conjunción Inferior
27	16	Marte	7° al sur de la Luna	29	22	Mercurio	3° al sur de Júpiter
31	0	Neptuno	3° al norte de la Luna	31	11	Luna	Cuarto Menguante
31	2	Marte	minima distancia a la Tierra	31	14	Luna	Perigeo
agosto				noviembre			
1	17	Vesta	Estacionario	5	20	Venus	10° al sur de la Luna
3	15	Urano	5° al norte de la Luna	6	9	Mercurio	Elongación máxima al E(23°)
4	12	Luna	Cuarto Menguante	7	10	Luna	Luna Nueva
4	17	Junoo	1.2° al sur de la Luna occ	9	0	Mercurio	1.8° al norte de Antares
6	13	Aldebarán	1.1° al sur de la Luna occ	9	6	Mercurio	7° al sur de la Luna
7	7	Palas	Conjunción con el Sol	11	10	Saturno	1.5° al sur de la Luna
7	15	Urano	Estacionario	12	12	Plutón	0.9° al sur de la Luna occ
8	20	Mercurio	Conjunción Inferior	13	21	Venus	Estacionario
10	12	Luna	Perigeo	14	10	Luna	Apogeo
11	4	Luna	Luna Nueva eclipse	15	9	Luna	Cuarto Creciente
14	8	Venus	6° al sur de la Luna	15	22	Marte	1.0° al norte de la Luna occ
17	5	Júpiter	5° al sur de la Luna	16	23	Mercurio	Estacionario
17	11	Venus	Elongación máxima al E(46°)	17	0	Neptuno	3° al norte de la Luna
18	2	Luna	Cuarto Creciente	17	16	Juno	Oposición
18	6	Mercurio	Estacionario	20	14	Urano	5° al norte de la Luna
21	4	Saturno	2° al sur de la Luna	23	0	Luna	Luna Llena
23	5	Luna	Apogeo	25	2	Neptuno	Estacionario
23	11	Marte	7° al sur de la Luna	26	1	Júpiter	Conjunción con el Sol
26	6	Luna	Luna Llena	26	6	Luna	Perigeo
26	15	Mercurio	Elongación O(18°)	27	3	Mercurio	Conjunción Inferior
27	4	Neptuno	2° al norte de la Luna	29	18	Luna	Cuarto Menguante
28	4	Marte	Estacionario	diciembre			
30	21	Urano	5° al norte de la Luna	1	18	Venus	Máximo brillo
septiembre				3	13	Venus	4° al sur de la Luna
2	3	Venus	1.4° al sur de Espiga	5	15	Mercurio	1.9° al sur de la Luna
2	20	Aldebarán	1.2° al sur de la Luna occ	6	14	Mercurio	Estacionario
2	21	Luna	Cuarto Menguante	7	1	Luna	Luna Nueva
5	17	Mercurio	1.0° al norte de Régulo	7	9	Marte	0.04° al norte de Neptuno
6	4	Estacionario	Estacionario	8	23	Saturno	1.2° al sur de la Luna
7	12	Neptuno	Oposición	9	22	Plutón	0.7° al sur de la Luna occ
7	19	Luna	Perigeo	12	6	Luna	Apogeo
9	12	Luna	Luna Nueva	14	8	Neptuno	3° al norte de la Luna
12	10	Venus	10° al sur de la Luna	14	17	Marte	4° al norte de la Luna
13	20	Júpiter	4° al sur de la Luna	15	6	Luna	Cuarto Creciente
16	17	Luna	Cuarto Creciente	15	6	Mercurio	Elongación máxima al O(21°)
17	10	Saturno	2° al sur de la Luna	17	22	Urano	5° al norte de la Luna
19	19	Luna	Apogeo	19	20	Júpiter	5° al norte de Antares
20	1	Marte	5° al sur de la Luna	21	2	Mercurio	6° al norte de Antares
20	20	Mercurio	Conjunción superior	21	9	Mercurio	0.9° al norte de Júpiter
21	4	Venus	Máximo brillo	21	16	Sol	Solsticio
22	20	Sol	Equinoccio	22	12	Luna	Luna Llena
23	10	Neptuno	2° al norte de la Luna	24	4	Luna	Perigeo
24	21	Luna	Luna Llena	27	9	Juno	Estacionario
27	1	Urano	5° al norte de la Luna	29	4	Luna	Cuarto Menguante
30	10	Plutón	Estacionario	octubre			
2	4	Luna	Cuarto Menguante				
4	22	Venus	Estacionario				

Fases de la Luna, 2018

Hora del meridiano 90° W.G.

Luna Nueva

mes	d	h	m
..
ene	16	20	17
feb	15	15	5
mar	17	7	11
abr	15	19	57
may	15	5	48
jun	13	13	43
jul	12	20	48
ago	11	3	58
sep	9	12	1
oct	8	21	47
nov	7	10	2
dic	7	1	20

Cuarto Creciente

mes	d	h	m
ene	24	16	20
mar	24	9	35
abr	22	15	45
may	21	21	49
jun	20	4	51
jul	19	13	52
ago	18	1	48
sep	16	17	15
oct	16	12	2
nov	15	8	54
dic	15	5	49

Luna Llena

mes	d	h	m
ene	1	20	24
ene	31	7	27
mar	1	18	51
mar	31	6	37
abr	29	18	58
may	29	8	19
jun	27	22	53
jul	27	14	20
ago	26	5	56
sep	24	20	52
oct	24	10	45
nov	22	23	39
dic	22	11	48

Cuarto Menguante

mes	d	h	m
ene	8	16	25
feb	7	9	54
mar	9	5	20
abr	8	1	17
may	7	20	9
jun	6	12	32
jul	6	1	51
ago	4	12	18
sep	2	20	37
oct	2	3	45
oct	31	10	40
nov	29	18	19
dic	29	3	34

Crepúsculos, salidas y puestas de Sol, 2018

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
Jun 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, 2018

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, 2018

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	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	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	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	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	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	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	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 2018

Hora del meridiano 90° W.G.

Durante este año habrá cinco eclipses, tres de Sol y dos de Luna, de los cuales sólo se observará en la República Mexicana el eclipse total de Luna del 31 de enero.

I.- Eclipse total de Luna, el 31 de enero de 2018. Se observará en la República Mexicana

El eclipse penumbral se observará en el hemisferio limitado al Este por la región que va desde el Océano Pacífico frente a las costas de Chile y el sur de Perú, Ecuador, Colombia, la región de Maracaibo en Venezuela, y al norte del Océano Atlántico frente a las costas de Estados Unidos, Canadá y Groenlandia, el Océano Pacífico, Australia con excepción de su costa Oeste, en todas las islas del Pacífico, Filipinas, Vietnam, Asia con excepción de su región Oeste.

El inicio del eclipse umbral se observará en la República Mexicana, en Estados Unidos y Canadá con excepción de las costas Este, también en Groenlandia el Ártico y el Océano Pacífico. El eclipse umbral y el final del eclipse se observará en la República Mexicana con excepción de la región sur de la República y en la Península de Yucatán. Se observará en todo el Océano Pacífico, el Océano Índico, China, Este de Europa, Asia y la península Escandinava.

<i>Circunstancias del eclipse</i>	<i>mes</i>	<i>día</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia eclipse penumbral	ene	31	4	49	48
Inicia eclipse parcial	ene	31	5	48	6
Inicia eclipse total (umbral)	ene	31	6	51	24
Media eclipse	ene	31	7	29	54
Termina eclipse total	ene	31	8	8	18
Termina eclipse parcial	ene	31	9	11	36
Termina el eclipse penumbra	ene	31	10	10	0

II.- Eclipse parcial de Sol el 15 de febrero de 2018. No se observará en la República Mexicana.

Se observará en la Antártica con excepción de su región noreste, en el extremo sur de los Océanos Atlántico y Pacífico y en la región sur de Chile y Argentina.

<i>Circunstancias del eclipse</i>	<i>mes</i>	<i>día</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia el eclipse	feb	15	12	55	48
Máximo del eclipse	feb	15	14	51	24
Termina eclipse	feb	15	16	47	12

Eclipses 2018

Hora del meridiano 90° W.G.

III.- Eclipse parcial de Sol el 12 de julio de 2018. No se observará en la República Mexicana.

Se observará entre el extremo sur del Océano Pacífico entre Australia y la región extrema del norte de la Antártida.

<i>Circunstancias del eclipse</i>	<i>mes</i>	<i>día</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia el eclipse	jul	12	19	48	24
Máximo del eclipse	jul	12	21	1	6
Termina eclipse	jul	12	22	13	47

IV.- Eclipse total de Luna, 27 de julio de 2018. No se observará en la República Mexicana.

El eclipse penumbral se observará en la región Oeste del Océano Pacífico, en la Polinesia, el sur de la Península de Kamchatka, en la región central de Asia, el Océano Índico, Turquía los Países Árabes, el Este de Europa y Centro y Este de África. El eclipse total y el final del eclipse penumbral se observará Australia, China, el centro de Asia, península Escandinava, Europa, Rusia, los Países Árabes, África y la región sur del Océano Atlántico, el extremo Este de Brasil, Argentina y Uruguay.

<i>Circunstancias del eclipse</i>	<i>mes</i>	<i>día</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia el eclipse penumbral	jul	27	11	13	6
Inicia el eclipse parcial	jul	27	12	24	12
Inicia el eclipse total (umbral)	jul	27	13	30	0
Máximo del eclipse	jul	27	14	21	42
Termina el eclipse total	jul	27	15	13	30
Termina el eclipse parcial	jul	27	16	19	18
Termina el eclipse penumbral	jul	27	17	30	24

V.- Eclipse parcial de Sol, el 11 de agosto. No se observará en la República Mexicana

El eclipse se observará en el extremo norte de Canadá, y en el Ártico. En la región central de Asia a partir de la Península Escandinava, China, Mongolia y la región central y Oeste de la Federación Rusa.

<i>Circunstancias del eclipse</i>	<i>mes</i>	<i>día</i>	<i>h</i>	<i>m</i>	<i>s</i>
Inicia el eclipse	ago	11	2	2	6
Máximo del eclipse	ago	11	3	46	16
Termina el eclipse	ago	11	5	30	42

Poblaciones de la República Mexicana, 2018

Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	δm		Δδm /año
	°	'	"	°	'	"		°	'	
AGUASCALIENTES										
Aguascalientes	21	52	43	102	18	4	1888	5	59	-7
Asientos	22	14	18	102	5	29	2164	5	54	-7
Calvillo	21	50	45	102	44	14	1702	6	8	-7
Jesus Maria	21	57	45	102	20	48	1907	6	0	-7
Puertecito	21	57	52	102	15	15	2052	5	58	-7
Rincon de Romos	22	13	49	102	19	22	1957	5	59	-7
BAJA CALIFORNIA										
Bailador Isla	31	56	56	116	5	12	0	11	14	-5
Cedros Isla	28	3	53	115	11	35	0	10	21	-5
Ensenada	31	51	10	116	38	9	2	11	21	-5
Granito Isla	29	33	0	113	32	0	0	10	13	-5
Guadalupe Isla	29	10	45	118	19	30	0	11	10	-4
Mejía Isla	29	33	8	113	35	18	0	10	14	-5
Mexicali	32	40	0	115	27	0	0	11	13	-5
Miramar Isla	30	2	30	114	31	30	0	10	32	-5
Salsipuedes Isla	28	44	0	112	50	30	0	9	55	-5
San Benito Isla	28	18	8	115	36	12	0	10	29	-5
San Felipe	31	1	36	114	49	46	0	10	47	-5
San Jeronimo Isla	29	47	20	115	48	14	0	10	47	-5
San Pedro Mártir	31	2	39	115	27	49	2800	10	56	-5
San Quintín	30	22	16	115	59	10	0	10	56	-5
BAJA CALIFORNIA SUR										
Asunción Isla	27	6	21	114	18	15	0	10	0	-5
Catalina Isla	25	35	35	110	47	48	0	8	56	-5
Cerralvo Isla	24	22	0	109	55	29	0	8	34	-5
Coronados Isla	26	6	12	111	15	38	0	9	8	-5
Danaznte Isla	25	48	0	111	12	0	0	9	4	-5
El Triunfo	23	48	13	110	8	41	432	8	34	-5
Espíritu Santo Isla	24	34	43	110	21	30	0	8	42	-5
José del Cabo	23	4	8	109	40	36	7	8	22	-5
La Paz	24	9	41	110	20	44	10	8	39	-5
Miraflores	23	22	25	109	48	33	183	8	26	-5
Muleje	26	53	33	111	46	41	35	9	22	-5
Roca Alijos Isla	24	58	6	113	44	47	0	9	33	-5
San Bartolo	23	44	16	109	52	15	353	8	29	-5
San Marcos Isla	27	14	35	112	5	23	0	9	30	-5
Santa Inés Isla	27	2	34	111	53	28	0	9	25	-5
Santiago	23	28	24	109	43	21	98	8	25	-5
Tortugas Isla	27	26	59	111	52	59	0	9	28	-5
CAMPECHE										
Becal	20	26	34	90	1	36	12	0	12	-8
Bolonchenticul	20	0	21	89	44	53	14	0	5	-8
Calkini	20	22	21	90	3	3	52	0	13	-8
Campeche	19	50	47	90	32	14	5	0	33	-8
Carmen	18	38	22	91	50	16	3	1	24	-8
Carmen Isla	18	38	44	91	50	16	0	1	24	-8
Champotón	19	21	4	90	43	0	27	0	43	-8
Dzibalchen	19	27	41	89	43	55	100	0	9	-8
Escárcega	18	36	25	90	43	55	75	0	48	-8
Hontun	19	34	49	90	11	12	50	0	23	-8
Holpechen	19	44	47	89	50	35	56	0	10	-8
Iturbide	19	34	58	89	36	4	110	0	3	-8

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Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	δm		$\Delta \delta m$ '/año
	°	'	"	°	'	"		°	'	
Lerma	18	15	39	90	36	12	5	0	47	-8
Palizada	19	6	13	92	4	42	46	1	28	-8
Pital	18	33	3	91	7	41	20	1	2	-8
Río Desenpeno	18	29	50	89	54	6	200	0	22	-8
Sabancury	18	58	34	91	10	51	2	1	0	-8
Xicalango	18	37	55	91	53	38	2	1	26	-8
COAHUILA										
Acuna	29	19	33	100	55	51	200	5	35	-7
Allende	28	20	36	100	51	6	374	5	31	-7
Cuatro Ciénegas	26	58	19	102	4	9	742	6	2	-7
Jiménez	29	4	21	100	40	21	290	5	27	-7
Laguna de Jaco	27	57	28	103	57	6	1350	6	52	-6
Monclova	26	54	14	101	25	8	586	5	44	-7
Muzquiz	27	52	51	101	30	56	504	5	49	-7
Parras	25	27	0	102	10	0	1683	6	1	-7
Piedras Negras	28	42	25	100	31	2	220	5	22	-7
Sabinas	27	50	34	101	7	23	340	5	38	-7
Saltillo	25	26	37	100	59	22	1599	5	30	-7
S. Pedro de Colonias	25	45	24	102	59	1	1103	6	22	-7
Sierra Mojada	27	17	8	103	42	7	1256	6	44	-7
Torreón	25	32	18	103	27	55	1140	6	32	-7
Unión	28	14	0	100	44	30	0	5	28	-7
Viesca	25	20	46	102	48	19	1093	6	16	-7
Zaragoza	28	30	36	100	52	8	540	5	32	-7
COLIMA										
Colima	19	14	29	103	43	47	508	6	26	-6
Madrid	19	4	57	103	52	38	120	6	29	-6
Manzanillo	19	3	15	104	19	46	3	6	37	-6
Socorro Isla	18	42	57	110	56	53	0	8	15	-5
Tecoman	18	54	31	103	52	38	80	6	29	-6
CHIAPAS										
Acapetahua	15	16	20	92	41	59	23	2	13	-8
Arista	15	56	8	93	48	41	0	2	41	-8
Cacahuanton	14	59	31	92	9	46	630	2	0	-8
Catazaja	17	43	56	92	1	57	7	1	36	-8
Cintalapa	16	41	58	93	43	24	545	2	34	-8
Comitán	16	15	12	92	7	41	1530	1	49	-8
Chiapa de Corzo	16	42	28	93	1	5	415	2	13	-8
Escuintla	15	18	53	92	39	58	110	2	12	-8
Huixtla	15	7	41	92	28	34	28	2	8	-8
Jaltenango	15	52	12	92	43	35	677	2	10	-8
Juárez	17	39	8	93	9	47	152	2	11	-8
La Gradeza	15	30	46	92	13	38	1950	1	58	-8
Las Margaritas	15	32	35	93	5	46	1512	2	23	-8
Mapastepec	15	25	52	92	54	27	85	2	18	-8
Mazatán	14	51	43	92	25	59	35	2	9	-8
Ocosingo	16	54	38	92	5	45	908	1	44	-8
Ocozacoautla	16	45	55	93	22	37	864	2	23	-8
Pichucalco	17	31	46	93	7	24	100	2	11	-8
Pueblo Nuevo	15	12	37	92	35	7	28	2	11	-8
Puerto Madero	14	42	59	93	25	37	2	2	38	-8
San Bartolomé	16	19	29	92	33	36	804	2	2	-8
Suchiate	14	40	23	92	9	12	22	2	2	-8
Tonalá	16	5	14	93	45	21	55	2	38	-8

Poblaciones de la República Mexicana, 2018

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ESTADO Población	latitud			longitud			alt m	δm		$\Delta \delta m$ '/año
	°	'	''	°	'	''		°	'	
Tuxtla Gutiérrez	16	45	20	93	6	46	528	2	15	-8
Villa Flores	16	14	8	93	16	3	610	2	23	-8
Yajalón	17	10	57	92	20	24	849	1	49	-8
CHIHUAHUA										
Ahumada	30	37	18	106	31	12	1181	8	7	-6
Camargo	27	41	49	105	10	9	1653	7	20	-6
Ciénaga de Ortiz	28	8	15	106	12	11	1300	7	46	-6
Ciudad Guerrero	28	32	57	107	29	27	2000	8	16	-6
Ciudad Jiménez	27	7	52	104	55	29	1381	7	12	-6
Ciudad Juárez	31	44	19	106	29	15	1144	8	13	-6
Coyame	29	27	42	105	5	44	1062	7	27	-6
Cuchillo Parado	29	26	34	104	52	58	900	7	22	-6
Cusihuiriachi	28	14	25	106	50	13	1985	8	0	-6
Chihuahua	28	38	12	106	4	42	1430	7	46	-6
Chinipas	27	23	34	108	32	22	1640	8	30	-6
Galeana	30	6	52	107	37	51	1431	8	29	-6
Guadalupe	31	23	27	106	6	13	1113	8	2	-6
Guadalupe y Calvo	26	6	6	106	58	2	1100	7	51	-6
Guerrero	28	32	57	107	29	18	2000	8	16	-6
Meoqui	28	16	36	105	29	16	1155	7	30	-6
Namiquipa	29	15	5	107	24	34	1828	8	19	-6
Ocampo	28	10	59	108	22	27	1732	8	32	-6
Ojinaga	29	33	53	104	25	23	841	7	11	-6
Parral Hidalgo del	26	56	4	105	39	58	1661	7	28	-6
Placer de Guadalupe	29	9	41	105	22	57	900	7	32	-6
San Buenaventura	29	50	47	107	29	10	1574	8	24	-6
San Ignacio	27	10	21	106	19	28	970	7	43	-6
Santa Bárbara	26	48	13	105	49	1	1969	7	31	-6
Santa Isabel	28	20	34	106	22	1	1630	7	51	-6
Satevo	27	57	17	106	6	32	1368	7	43	-6
Temosachic	28	57	12	107	49	50	1900	8	26	-6
Valle de Zaragoza	27	27	40	105	48	35	900	7	34	-6
Valle del Rosario	27	19	5	106	17	41	1480	7	44	-6
DISTRITO FEDERAL										
Álamo	19	23	55	99	8	30	2246	4	46	-7
Atzacapotzalco	19	28	48	99	11	7	2277	4	47	-7
Ciudad Universitaria	19	20	1	99	10	54	2280	4	47	-7
Ciudad Universitaria	19	19	50	99	11	3	2280	4	47	-7
Coyoacán	19	20	54	99	9	45	2278	4	47	-7
Cuajimalpa	19	21	33	99	18	1	2783	4	50	-7
Chapultepec	19	25	11	99	10	52	2310	4	47	-7
Churubusco	19	21	17	99	8	56	2260	4	47	-7
Guadalupe Hidalgo	19	29	9	99	6	56	2200	4	45	-7
Ixtacalco	19	23	22	99	7	16	2261	4	46	-7
Ixtapalapa	19	21	22	99	5	30	2280	4	45	-7
La Piedad	19	24	3	99	9	20	2253	4	47	-7
México	19	25	59	99	7	58	2233	4	46	-7
Mixcoac	19	22	37	99	10	55	2200	4	47	-7
Mixquic	19	13	28	98	57	52	2260	4	42	-7
Nativitas	19	23	12	99	8	48	2246	4	46	-7
San Jerónimo	19	19	33	99	13	20	2394	4	48	-7
San Simón	19	22	36	99	8	39	2100	4	46	-7
Tacubaya	19	24	10	99	11	40	2298	4	48	-7
Tlahuac	19	16	6	99	0	16	2264	4	43	-7

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ESTADO Población	latitud			longitud			alt m	δm		$\Delta \delta m$ ‘/año
	°	‘	“	°	‘	“		°	‘	
Tlalpan	19	17	16	99	9	57	2294	4	47	-7
Villa Obregón	19	20	41	99	11	21	2340	4	48	-7
Xochimilco	19	15	44	99	6	7	2274	4	46	-7
DURANGO										
Ciudad Lerdo	25	32	14	103	31	28	1135	6	34	-7
Cuencame	24	52	18	103	38	6	1889	6	34	-7
Durango	24	1	31	104	40	11	1889	6	55	-6
Gómez Palacio	25	34	18	103	30	17	1195	6	33	-7
Guanacevi	25	55	59	105	57	31	2230	7	29	-6
Inde	25	54	45	105	10	16	2049	7	12	-6
Llano Grande	23	52	2	105	12	7	2406	7	5	-6
Mezquital	23	28	57	104	22	18	1468	6	47	-6
Nazas	25	13	40	104	6	53	1264	6	46	-6
Nombre de Dios	23	51	4	104	15	25	1855	6	45	-6
Pueblo Nuevo	23	22	35	105	22	18	1982	7	7	-6
S. J. de Guadalupe	24	37	0	102	45	8	1520	6	13	-7
San Juan del Río	24	46	45	104	23	22	1737	6	51	-6
Santa María del Oro	25	56	53	105	19	56	1871	7	16	-6
Santa María Ocotlán	22	54	44	104	36	10	365	6	50	-6
Santiago Papasquiaro	25	2	47	105	25	30	1716	7	14	-6
Tamazula	24	58	11	106	58	13	240	7	45	-6
Tayoltita	24	6	27	105	55	30	500	7	21	-6
Tepehuanaes	25	21	19	105	47	9	1967	7	23	-6
Tizonazo	25	58	4	105	15	33	1981	7	15	-6
Topia	25	12	19	106	34	34	1851	7	39	-6
Tlahualilo	26	6	31	103	26	21	1132	6	34	-7
GUERRERO										
Acapulco	16	50	21	99	55	1	82	5	10	-7
Acayahualco	18	13	30	99	28	52	790	4	57	-7
Coahuayutla	18	18	52	101	48	37	358	5	48	-7
Coatepec	18	20	22	99	42	56	1260	5	2	-7
Coyuca de Catalán	18	20	2	100	39	0	210	5	23	-7
Chaucingo	18	18	7	99	6	53	810	4	48	-7
Chilpancingo	17	33	10	99	30	3	1360	4	59	-7
Huamuxtitlán	17	48	37	99	34	2	1125	5	0	-7
Iguana	18	21	1	99	32	24	731	4	58	-7
La Unión	17	58	52	101	48	49	174	5	49	-7
Mayanalan	18	10	29	99	26	1	0	4	56	-7
Mezcala	17	56	13	99	36	6	420	5	1	-7
Pericotepec	17	57	40	100	13	0	770	5	14	-7
Petatlan	17	32	8	101	17	0	0	5	38	-7
Placeres de Oro	18	14	31	100	53	57	0	5	29	-7
San Jerónimo	17	5	55	100	28	26	0	5	22	-7
San L. de La Loma	17	15	42	100	53	48	0	5	31	-7
San Marcos	16	47	31	99	20	41	210	4	58	-7
Santa Fetepetlapa	18	33	5	99	25	19	1090	4	55	-7
Taxco	18	33	16	99	36	20	1755	4	59	-7
Teloloapan	18	22	6	99	52	31	1620	5	6	-7
Tonalapa del Río	18	20	38	99	41	6	750	5	2	-7
Tepantitlancoa	18	0	26	100	17	6	820	5	16	-7
Tepecoacuilco	18	17	10	99	27	55	1012	4	57	-7
Teteladelrio	17	59	7	100	4	50	350	5	11	-7
Tlacoatzotitlan	17	53	29	99	7	51	560	4	50	-7
Tlapehuala	18	14	21	100	31	18	235	5	21	-7

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Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	δm		$\Delta \delta m$ /año
	°	'	"	°	'	"		°	'	
Zihuatanejo	17	38	14	101	33	48	0	5	44	-7
Zirandaro	18	29	4	100	58	0	193	5	30	-7
GUANAJUATO										
Abasolo	20	26	59	100	31	48	1760	5	18	-7
Acambaro	20	2	1	100	43	24	1947	5	23	-7
Apaseo	20	32	37	100	41	7	1767	5	22	-7
Apaseo el Alto	20	27	25	100	37	13	1853	5	20	-7
Atargea	21	16	5	99	43	5	1258	4	58	-7
C. González	21	28	44	101	12	52	2140	5	34	-7
Celaya	20	31	24	100	48	55	1808	5	25	-7
Cerano	20	6	41	101	23	26	1500	5	38	-7
Comonfort	20	43	15	100	45	51	1795	5	23	-7
Coronea	20	11	42	100	21	59	1998	5	14	-7
Cortazar	20	28	59	100	52	58	1800	5	26	-7
Cubilete E	21	0	25	101	22	30	2480	5	37	-7
Cueramaro	20	37	36	101	40	23	1785	5	44	-7
Dolores Hidalgo	21	9	32	100	56	0	1987	5	27	-7
Guanajuato	21	1	1	101	15	20	2050	5	35	-7
Huanimaro	20	22	1	101	29	45	2459	5	40	-7
Ibarra	21	28	53	101	32	23	2110	5	41	-7
Irapuato	20	40	28	101	20	51	1795	5	37	-7
Iturbide	21	0	3	100	23	4	1100	5	14	-7
Jaral del Progreso	20	22	11	101	13	45	1743	5	34	-7
Jerecuaro	20	9	3	100	30	43	1100	5	18	-7
León	21	7	22	101	41	0	1885	5	44	-7
Manuel Doblado	20	43	49	101	57	14	1795	5	50	-7
Mora	21	8	47	100	19	0	2128	5	12	-7
Moroleón	20	7	54	101	11	36	1772	5	33	-7
Penjamo	20	25	44	101	43	22	1700	5	45	-7
Pueblo Nuevo	20	31	35	101	22	18	1714	5	37	-7
Purísima de Bustos	21	1	48	101	52	36	1780	5	49	-7
Romita	20	52	14	101	31	7	1792	5	41	-7
Salamanca	20	34	22	101	11	39	1721	5	33	-7
Salvatierra	20	12	56	100	53	46	1749	5	27	-7
San Diego de La Unión	21	27	56	100	52	25	2080	5	26	-7
San Fco. del Rincón	21	1	2	101	51	36	1721	5	48	-7
San Juan de los Llanos	21	16	47	101	19	4	1000	5	36	-7
San José	20	56	13	100	58	32	2002	5	28	-7
San Luis de la Paz	21	17	57	100	30	52	2020	5	17	-7
San Miguel de Allende	20	54	52	100	44	47	1870	5	23	-7
Santa Catarina	21	8	27	100	14	10	1845	5	10	-7
Sta. Cruz Galeana	20	38	35	100	59	50	1000	5	29	-7
Santiago Maravatío	20	10	28	100	59	38	1790	5	29	-7
Silao	20	56	24	101	25	59	1780	5	39	-7
Tarandacua	20	1	14	100	32	3	1920	5	18	-7
Tarimoro	20	17	39	100	45	20	1790	5	23	-7
Tierra Blanca	21	6	9	100	4	44	1760	5	7	-7
Uriangato	20	8	46	100	8	10	1800	5	9	-7
Valle de Santiago	20	23	31	101	11	21	1760	5	33	-7
Victoria	21	12	23	100	13	9	1760	5	10	-7
Villa Ocampo	21	38	52	101	28	50	2420	5	40	-7
Villagrán	20	29	40	100	59	52	1790	5	29	-7
Xichu	21	18	0	100	3	37	1334	5	6	-7
Yuriria	20	12	51	100	8	19	1882	5	9	-7

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	°	‘	“	°	‘	“		°	‘	
HIDALGO										
Acayuca	20	1	48	98	50	30	2570	4	37	-7
Actopan	20	16	12	96	56	42	2069	3	47	-8
Ahuehuevo	21	1	43	98	54	24	2500	4	37	-7
Altajayucan	20	24	40	99	20	59	1898	4	50	-7
Apan	19	39	35	98	24	10	2493	4	27	-7
Atotonilco Grande	20	17	6	98	40	13	2138	4	33	-7
Bonanza	20	43	12	99	14	36	1900	4	46	-7
Chapantongo	20	17	16	99	24	50	2145	4	51	-7
Chapulhuacan	21	9	29	98	54	22	1500	4	37	-7
Chicautla	20	19	54	99	13	49	1884	4	47	-7
Epazoyuca	20	1	33	98	37	26	2461	4	32	-7
Huasca	20	12	12	98	34	42	1900	4	30	-7
Huautla	21	2	3	98	16	54	1900	4	21	-7
Huejutla	21	8	43	98	24	58	2490	4	24	-7
Huichapan	20	22	37	99	38	58	2102	4	57	-7
Ixmiquilpan	20	29	4	99	13	5	1745	4	46	-7
Metxtitlan	20	35	45	98	45	30	1353	4	34	-7
Mexquititlan	20	32	0	98	38	27	1421	4	31	-7
Nopala	20	15	19	98	38	52	2437	4	32	-7
Orizatlan	21	10	35	98	36	40	1900	4	29	-7
Pachuca	20	7	44	98	43	54	2426	4	35	-7
Pisa Flores	21	11	44	99	0	15	1900	4	40	-7
Real del Monte	20	8	23	98	40	21	2679	4	33	-7
San Agustín Tlaxiaca	20	7	5	98	53	6	2372	4	38	-7
San Gabriel	19	52	44	98	36	58	1900	4	32	-7
San Juanico	19	54	14	98	40	17	1900	4	34	-7
San Pablo	20	38	38	98	55	21	1900	4	38	-7
Sta. Mónica	19	58	55	98	37	16	1900	4	32	-7
Singuilucan	20	1	52	98	19	59	2714	4	25	-7
Tasquillo	20	33	7	99	18	21	1720	4	48	-7
Tepetitlan	20	11	14	99	22	59	2000	4	51	-7
Tezontepec	19	52	44	98	49	10	2326	4	37	-7
Tianguiestengo	20	44	0	98	37	34	1687	4	31	-7
Tulancingo	20	4	58	98	22	8	2222	4	25	-7
Tlaxcoapan	20	5	40	99	13	29	2100	4	47	-7
Yolotepec	20	23	36	99	4	31	1900	4	43	-7
Zempoala	19	54	54	98	40	2	2532	4	33	-7
Zimapan	20	44	20	99	22	58	1813	4	50	-7
JALISCO										
Ameca	20	32	47	104	2	46	1235	6	34	-6
Atoyac	20	0	40	103	31	12	1350	6	23	-7
Autlan de Navarro	19	46	13	104	22	4	688	6	39	-6
Bolanos	21	46	31	103	46	58	910	6	31	-7
Cabo Corriente	20	24	42	105	40	50	81	7	4	-6
Carranza	19	44	46	103	46	18	0	6	27	-6
Cihuatlan	19	14	8	104	33	36	0	6	42	-6
Cd. Guzmán	19	42	13	103	27	53	1507	6	21	-7
Cocula	20	23	55	103	49	27	1432	6	29	-6
Colotlán	22	6	51	103	16	8	0	6	20	-7
Encarnación de Díaz	21	31	37	102	14	6	1814	5	57	-7
Guachinango	20	34	38	104	22	59	1285	6	40	-6
Guadalajara	20	42	32	103	23	9	1567	6	21	-7
Guerrero	21	59	4	103	35	52	1785	6	27	-7

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	°	'	“	°	'	“		°	'	
Hostotipaquillo	21	3	46	104	4	21	1079	6	35	-6
Huejuquilla	22	37	42	103	53	58	1480	6	35	-6
La Barca	20	16	37	102	32	53	1517	6	3	-7
La Rosa	19	45	7	103	10	2	0	6	16	-7
Lagos de Moreno	21	21	20	101	55	24	1942	5	50	-7
Ojuelos	21	52	5	101	35	20	2254	5	42	-7
Puerto Vallarta	20	36	56	105	14	42	5	6	57	-6
San Miguel del Alto	21	1	52	102	24	12	2385	6	0	-7
San Pedro Anasco	21	14	54	103	57	57	0	6	33	-6
Talpa de Allende	20	23	41	104	49	52	1039	6	49	-6
Tapatitlán	20	48	48	102	45	41	1764	6	8	-7
Tecatitlán	19	28	16	103	18	30	1036	6	18	-7
Tecomates	19	33	8	104	29	18	0	6	41	-6
Tecaltiche	21	26	11	102	34	32	2240	6	4	-7
Tequila	20	53	33	103	50	8	1215	6	30	-6
Unión de Tula	19	57	37	104	16	7	1385	6	37	-6
MÉXICO										
Acambay	19	57	18	99	50	47	2552	5	2	-7
Amecameca	19	7	36	98	46	0	2468	4	38	-7
Analco de Becerra	19	15	34	100	1	26	2511	5	8	-7
Atacomulco	19	48	7	98	52	48	2526	4	39	-7
Ayotla	19	18	55	98	56	8	2251	4	41	-7
Chalco	19	15	53	98	54	12	2280	4	41	-7
Chapa de Mota	19	47	24	99	31	23	3070	4	55	-7
Chicoloapan	19	25	3	98	54	11	2235	4	40	-7
Chimalhuacán	19	25	45	98	56	57	2255	4	42	-7
Coatlichan	19	27	4	98	52	34	2200	4	40	-7
Ecatzingo de Hidalgo	18	57	2	98	45	29	2340	4	38	-7
Huexotla	19	28	50	98	52	25	2200	4	40	-7
Huizquilucan	19	21	47	99	21	39	2750	4	52	-7
Ixtapan de La Sal	18	50	13	99	40	28	1900	5	0	-7
Ixtlahuaca	19	52	54	98	51	39	2640	4	38	-7
Jilotepec	19	57	13	99	31	45	2525	4	55	-7
Lerma	19	17	16	99	30	34	2599	4	55	-7
Los Reyes	19	21	27	98	52	42	2200	4	40	-7
Naucalpan	19	28	36	99	13	45	2298	4	48	-7
Otumba	19	41	59	98	45	33	2349	4	36	-7
Ozumba	19	2	3	98	47	50	2500	4	39	-7
Progreso Industrial	19	37	37	99	20	32	2449	4	51	-7
Popocatepetl	19	1	17	98	37	34	5452	4	34	-7
Popocatepetl	19	5	3	98	39	12	5450	4	35	-7
Remedios	19	28	25	99	15	2	2383	4	49	-7
San Antonio del Rosario	18	24	4	100	18	43	3350	5	16	-7
San Cristobal	19	24	24	99	19	40	2239	4	51	-7
San Pedro Atzapatzotongo	19	37	38	99	18	54	2420	4	50	-7
San Pedro Atzompa	19	40	56	99	0	36	2243	4	42	-7
Sultepec	18	50	0	99	51	44	2336	5	5	-7
Tecamac	19	42	21	98	58	10	2300	4	41	-7
Temascalapa	19	49	37	98	54	11	2347	4	39	-7
Temascaltepec	19	2	24	100	2	47	1640	5	9	-7
Tenancingo	18	57	51	99	35	45	2022	4	58	-7
Teoloyucan	19	44	48	99	10	53	2280	4	47	-7
Texcoco	19	30	52	98	52	57	2278	4	40	-7
Tlalmanalco	19	12	36	98	48	27	2412	4	39	-7

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	°	‘	“	°	‘	“		°	‘	
Tlalnepantla	19	32	20	99	11	39	2278	4	47	-7
Toluca	19	17	33	99	39	38	2680	4	59	-7
MICHOACÁN										
Aguililla	18	44	17	102	44	9	970	6	7	-7
Agostitlán	19	32	6	100	37	13	2500	5	21	-7
Apatzingán	19	4	54	102	15	31	682	5	57	-7
Apo	19	26	38	102	25	2	0	6	0	-7
Ario de Rosales	19	12	21	101	44	19	2050	5	46	-7
Buenavista	19	12	3	102	35	35	586	6	4	-7
Coahuayana	18	45	9	103	40	30	20	6	25	-6
Cotija	19	48	41	102	42	26	1751	6	6	-7
Hidalgo	19	41	19	100	33	23	2360	5	19	-7
Huajumbaro	19	40	52	100	44	29	2390	5	24	-7
Irimbo	19	41	54	100	28	58	2015	5	18	-7
Janitzio	19	34	27	101	39	11	2120	5	44	-7
Jiquilpan	19	59	31	102	43	16	1654	6	6	-7
La Huacana	18	57	36	101	48	39	550	5	48	-7
Los Reyes	19	35	23	102	28	57	1280	6	1	-7
Maravatio	19	53	33	100	26	43	2080	5	17	-7
Morelia	19	42	16	101	11	30	1941	5	34	-7
Ostula	18	29	50	103	28	19	229	6	21	-7
Panindicuario	19	59	7	102	45	40	1638	6	7	-7
Paracuaro	19	8	46	103	13	32	586	6	16	-7
Paracho	19	38	44	102	3	1	1567	5	52	-7
Pátzcuaro	19	32	24	101	37	0	2174	5	43	-7
Penjamillo	20	6	31	101	55	40	1645	5	50	-7
Piedad de Cavadas	20	20	44	102	1	32	1696	5	52	-7
Pueblo Viejo	19	46	16	101	34	3	2210	5	42	-7
Puruandiro	20	5	21	101	30	59	1994	5	41	-7
San Pedro Jácuaró	19	43	1	100	38	49	2004	5	21	-7
Senguio	19	44	11	100	21	31	2030	5	15	-7
Tacambaro	19	13	52	101	27	34	1577	5	40	-7
Tequicheo	18	54	0	100	44	21	440	5	25	-7
Tepalcatepec	19	11	31	102	50	35	320	6	9	-7
Tumbiscatio	18	31	33	102	22	28	820	5	59	-7
Turicato	19	3	0	101	25	14	795	5	39	-7
Tuzantla	19	12	19	100	34	39	640	5	20	-7
Uruapan	19	24	56	102	3	46	1634	5	53	-7
Villa Madero	19	23	30	101	16	34	800	5	36	-7
Zacapu	19	49	11	101	47	34	1980	5	47	-7
Zamora	19	59	17	102	18	52	1567	5	58	-7
Zinapécuaro	19	53	5	100	40	32	1920	5	22	-7
Zitacuaro	19	25	51	100	21	50	1781	5	15	-7
MORELOS										
Acapatzingo	18	54	11	99	13	17	1465	4	49	-7
Acatlipa	18	49	30	99	13	42	1215	4	50	-7
Ahuacatitlán	18	58	42	99	15	19	1955	4	50	-7
Atlatlahuacán	18	56	5	98	53	53	1656	4	41	-7
Coatetelco	18	43	55	99	19	48	1029	4	52	-7
Cuajomulco	19	2	2	99	12	17	2651	4	49	-7
Cuautla	18	48	20	98	57	13	1309	4	43	-7
Cuernavaca	18	54	54	99	14	14	1542	4	50	-7
Chapultepec	18	55	11	99	12	49	1492	4	49	-7
Huautla	18	26	24	99	1	44	1075	4	46	-7

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	°	'	“	°	'	“		°	'	
Huitzilac	19	1	39	99	16	2	2540	4	50	-7
Itzamatitlan	18	53	58	99	1	30	1235	4	45	-7
Jojutla	18	36	39	99	10	52	890	4	49	-7
Oaxtepec	18	54	2	98	58	11	1385	4	43	-7
Smiguel	18	41	42	98	48	40	1403	4	40	-7
Tejalpa	18	53	43	99	9	57	1337	4	48	-7
Tepalcingo	18	35	34	98	50	43	1220	4	41	-7
Tetelcingo	18	51	55	98	55	47	1425	4	42	-7
Xiutepec	18	52	31	99	10	27	1355	4	48	-7
Xochitepec	18	47	4	99	13	50	1154	4	50	-7
Yautepec	18	52	38	99	3	46	1282	4	46	-7
Yecapixtla	18	52	56	98	51	55	1603	4	41	-7
NAYARIT										
Acaponeta	22	29	21	105	21	41	30	7	4	-6
Amatlan de Jara	21	23	9	104	8	47	1150	6	37	-6
Huajimic	21	41	29	104	18	18	1170	6	41	-6
Ixtapan	21	18	16	105	9	44	0	6	57	-6
Ixtlan del Río	21	2	9	104	22	16	1042	6	41	-6
Jesus María	22	15	9	104	31	10	610	6	47	-6
Mezcaltitan	21	54	18	105	28	39	0	7	4	-6
Ruiz	21	57	29	105	8	35	24	6	58	-6
San Blas	21	32	27	105	17	16	2	7	0	-6
San Martín de Bolaños	21	29	42	104	1	35	0	6	35	-6
Tepic	21	30	47	104	53	42	915	6	52	-6
Tuxpan	21	54	10	104	8	6	39	6	38	-6
NUEVO LEÓN										
Agualeguas	26	18	38	99	33	3	207	4	52	-7
Arramberri	24	6	10	99	49	3	1076	4	59	-7
Cadereyta Jiménez	25	35	34	99	59	54	360	5	4	-7
Cerralvo	26	5	32	99	36	29	345	4	53	-7
China	25	42	30	99	13	55	163	4	42	-7
Doctor Arroyo	23	40	23	100	10	52	1766	5	8	-7
Galeana	24	49	41	100	3	53	1654	5	5	-7
García	25	48	49	100	35	21	697	5	20	-7
Lampazos de Naranjo	27	1	32	100	30	33	340	5	19	-7
Linares	24	51	39	99	34	5	684	4	52	-7
Los Aldamas	26	3	58	99	11	30	288	4	41	-7
Mier y Noriega	23	25	19	100	7	11	1681	5	7	-7
Montemorelos	25	11	34	99	49	31	432	4	59	-7
Monterrey	25	40	11	100	18	26	538	5	12	-7
Parras	26	30	5	99	31	5	165	4	51	-7
Sabinas Hidalgo	26	29	59	100	10	9	313	5	9	-7
Salinas Victoria	25	57	34	100	18	0	464	5	12	-7
Santiago Huajuco	25	25	35	100	8	17	445	5	8	-7
Vallecillo	26	39	41	99	58	2	274	5	4	-7
Villa Aldama	26	29	49	100	25	50	469	5	17	-7
Zaragoza	23	50	52	99	36	19	1377	4	53	-7
OAXACA										
Ayutla	18	1	48	96	39	46	733	3	48	-8
Ayoquezco	16	41	13	96	50	2	0	3	58	-8
Ayotzintepec	17	40	38	96	8	17	64	3	35	-8
Coatzopan	18	2	56	96	45	31	1922	3	50	-8
Colotepec	15	53	33	96	56	28	0	4	5	-8

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	°	‘	“	°	‘	“		°	‘	
Cuicatlan	17	48	11	96	57	36	595	3	57	-8
Chacalapa	15	55	20	95	55	48	555	3	39	-8
Chalcatongo	17	1	57	97	34	24	2365	4	15	-7
Ecatepec	16	17	8	95	52	39	1690	3	35	-8
Ejutla de Crespo	16	33	48	96	43	44	1440	3	56	-8
Etla	17	12	17	96	47	49	1640	3	55	-8
Guichicovi	16	58	35	95	13	52	297	3	14	-8
Guelatao	17	19	15	96	29	34	1698	3	46	-8
Guelatao	17	19	10	96	29	31	1600	3	46	-8
Huajuapán de León	17	48	30	97	46	31	1680	4	17	-7
Huamelulas Pedro	16	1	39	95	40	1	1030	3	31	-8
Huautulco	15	49	44	96	19	11	325	3	49	-8
Huautla	18	7	53	96	50	45	1714	3	52	-8
Jamiltepec	16	16	33	97	49	23	240	4	24	-7
Juchitlán de Zaragoza	16	25	56	95	1	31	38	3	12	-8
Juguila	16	14	6	97	17	45	1500	4	12	-8
Juxtlahuaca	17	20	11	98	0	56	1650	4	25	-7
Lachiguiri	16	23	9	97	20	8	1780	4	12	-8
Loxicha	16	0	31	96	37	20	1885	3	56	-8
Mazatlán	17	2	11	95	26	48	642	3	20	-8
Miahuatlán	16	20	1	96	35	44	1607	3	54	-8
Nejapa	16	36	50	95	58	48	1000	3	36	-8
Niltepec	16	33	47	94	36	48	110	3	0	-8
Nochixtlán	17	27	33	97	13	29	2200	4	5	-8
Oaxaca de Juárez	17	3	43	96	43	18	1550	3	54	-8
Ocotepc	17	47	53	96	23	47	1636	3	42	-8
Ojitlán	18	3	42	96	23	31	0	3	41	-8
Ojitlán	18	3	35	96	23	34	233	3	41	-8
Pluma Hidalgo	15	54	50	96	25	30	1475	3	51	-8
Pochutla	15	44	21	96	27	57	163	3	53	-8
Puerto Ángel	15	39	24	96	29	35	20	3	54	-8
Putla	17	1	28	97	56	2	1248	4	24	-7
Quiachapa	16	25	34	96	14	54	1900	3	44	-8
Quiotepec	17	54	8	96	59	0	845	3	57	-8
Salinas Cruz	16	9	37	95	12	11	70	3	18	-8
San Jerónimo Ixtepec	16	33	58	95	6	1	121	3	13	-8
San Miguel Peras	16	56	22	97	0	16	50	4	1	-8
San Vicente Coatlán	16	23	15	96	50	42	0	4	0	-8
Sta. María del Mar	16	13	24	94	51	33	0	3	8	-8
Silacayoapan	17	30	14	98	8	38	1720	4	27	-7
Soladevega	16	31	1	96	58	22	1580	4	2	-8
Soyaltepec	18	12	12	96	28	57	0	3	42	-8
Suchixtepec	17	58	28	97	39	26	2842	4	14	-7
Tamazulapan	17	40	30	97	34	19	0	4	13	-7
Tecomavaca	17	57	34	97	1	5	660	3	57	-8
Tehuantepec	16	19	57	95	13	46	100	3	18	-8
Teotitlán del Camino	18	7	53	97	4	26	1067	3	58	-8
Teposcolula	17	30	45	97	29	16	2155	4	11	-7
Tequisistlán	16	24	21	95	36	2	1000	3	27	-8
Teutla	17	59	0	96	42	54	1338	3	49	-8
Tezoatlán	17	40	24	97	48	42	1500	4	19	-7
Tlaxiaco	17	15	59	97	40	58	1210	4	17	-7
Tlucula de Matamoros	16	57	19	96	28	43	1650	3	48	-8
Tololapan	16	40	4	96	18	12	0	3	45	-8

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	°	'	"	°	'	"		°	'	
Tuxtepec	18	5	24	96	6	50	91	3	33	-8
Valle Nacional	17	40	43	96	17	59	65	3	40	-8
Villa Alta	17	20	41	96	9	8	1138	3	37	-8
Yacuane	17	14	25	97	27	3	0	4	11	-7
Yautepec	16	25	52	95	58	11	1100	3	37	-8
Yautepec	16	30	15	96	6	18	1000	3	40	-8
Yalalag	17	11	20	96	10	48	1186	3	39	-8
Zaniza	16	39	7	97	20	19	0	4	11	-8
Zimatlan	16	52	0	96	46	34	1609	3	56	-8
PUEBLA										
Acatepec	19	1	16	98	18	24	2174	4	27	-7
Acatlan de Osorio	18	12	6	98	3	6	1213	4	23	-7
Ahuatempan	18	24	47	98	0	58	1810	4	21	-7
Atezcal	18	23	51	97	43	28	1847	4	14	-7
Atlixco	18	54	32	98	26	27	1881	4	30	-7
Cacalotepec	19	0	3	98	17	28	2337	4	26	-7
Canoa	19	8	55	98	6	4	2000	4	21	-7
Canal de Morelos	18	44	8	97	25	20	2337	4	5	-8
Coronanc	19	7	11	98	17	58	2230	4	26	-7
Coxcatlan	18	15	55	97	8	55	1217	4	0	-8
Oyotzingo	19	11	49	98	26	18	2322	4	29	-7
Cuaultlancingo	19	5	16	98	16	14	2118	4	25	-7
Chachapa	19	2	47	98	5	35	2298	4	21	-7
Chiautla de Tapia	18	17	28	98	35	55	1025	4	36	-7
Chila Asunción	17	58	26	97	51	11	1676	4	19	-7
Cholula	19	3	45	98	18	15	2150	4	26	-7
Huauchinango	20	10	51	98	2	58	1472	4	17	-7
Huejotzingo	19	9	29	98	24	22	2291	4	29	-7
Hueyotlipan	19	5	6	98	12	32	2195	4	24	-7
Ixtaccihuatl	19	11	11	98	38	38	5146	4	34	-7
Izucar de Matamoros	18	36	6	98	27	42	1326	4	32	-7
La Malinche	19	13	48	98	1	47	4461	4	19	-7
Loreto	19	3	24	98	11	5	2221	4	23	-7
Molcaxac	18	44	9	97	54	8	1874	4	17	-7
Momoxpan	19	4	13	98	15	54	2159	4	25	-7
Moyotzingo	19	14	35	98	24	11	2271	4	28	-7
Nextetelco	19	7	13	98	20	21	1500	4	27	-7
Nopalucan	19	12	59	97	49	10	2490	4	14	-7
Ocotlan	19	8	37	98	17	3	2243	4	26	-7
Ocoyucan	18	58	30	98	17	58	2152	4	27	-7
Pantepec	20	31	29	97	56	14	738	4	13	-7
Petaltzingo	18	4	59	97	55	12	1325	4	20	-7
Popocatepetl	19	1	17	98	37	34	5452	4	34	-7
Puebla de Zaragoza	19	2	30	98	11	48	2162	4	24	-7
Resurrección	19	6	4	98	7	36	2366	4	22	-7
San Andrés Chalchico	18	59	10	97	26	52	2540	4	5	-8
San Antonio	19	6	3	98	9	31	2296	4	23	-7
San Aparicio	18	29	42	97	16	51	1771	4	2	-8
San Baltazar	19	1	24	98	12	18	2142	4	24	-7
Sanctorum	19	5	51	98	15	8	2000	4	25	-7
San Juan de los Llanos	19	27	54	97	41	3	2380	4	9	-7
San Martín Texmelucan	19	16	59	98	25	59	2278	4	29	-7
San Salvador el Seco	19	8	7	97	38	32	2450	4	9	-7
Sta. María Chiamecati	18	38	47	98	4	46	2000	4	22	-7

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	°	‘	“	°	‘	“		°	‘	
Sta. Rita Tlahuapan	19	19	56	98	35	9	2291	4	33	-7
Santiago Xalitzintla	19	4	36	98	30	53	2000	4	32	-7
Tecali	18	53	58	97	57	59	2240	4	18	-7
Tecamachalco	18	52	57	97	43	49	2055	4	12	-7
Tehuacán de Las Gran	18	27	51	97	23	20	1676	4	5	-8
Temextatiloyan	19	5	22	98	12	46	2183	4	24	-7
Tepeaca	18	57	43	97	54	8	2257	4	16	-7
Tepeji Rodríguez	18	34	47	97	55	45	1746	4	18	-7
Tetela de Ocampo	19	49	15	97	48	10	1790	4	11	-7
Teziutlan	19	49	30	97	21	17	1990	4	0	-8
Tlacotepec	18	40	54	97	39	9	1977	4	11	-7
Tlaltenango	19	10	10	98	20	36	2246	4	27	-7
Tlancualpican	18	25	41	98	41	41	1100	4	38	-7
Tlaxcalanzingo	19	1	44	98	16	24	2173	4	26	-7
Tonantzintla	19	1	58	98	18	50	2147	4	27	-7
Xalmimilulco	18	12	32	98	22	46	2248	4	31	-7
Xochimehuacan	19	5	23	98	11	51	2200	4	24	-7
Xonacatepec	19	5	12	98	6	8	2209	4	21	-7
Zacapoaxtla	19	52	49	97	35	2	2045	4	5	-7
Zacatlán de las Manzanas	19	56	7	97	57	27	2059	4	15	-7
Zapotitlán	18	19	56	97	28	23	2407	4	8	-7
Zautla	19	43	6	97	40	21	2020	4	8	-7
Zinacatepec	18	19	57	97	14	41	1139	4	2	-8
QUERÉTARO										
Amealco	20	11	17	100	8	38	2075	5	9	-7
Arroyo Seco	21	32	54	99	41	13	1008	4	56	-7
Boye	20	40	58	99	44	47	1000	4	59	-7
Cadereyta	20	41	41	99	48	58	2077	5	1	-7
Ezequiel Montes	20	40	2	99	53	54	1000	5	3	-7
Huimilpan	20	22	39	100	16	32	2307	5	12	-7
Jalpan	21	13	8	99	28	16	860	4	51	-7
Querétaro	20	35	36	100	23	11	1000	5	14	-7
San Juan del Río	20	23	30	99	59	49	1978	5	5	-7
Tequisquiapan	20	31	26	99	53	42	1717	5	3	-7
Tolimán	20	54	35	99	55	45	1535	5	3	-7
QUINTANA ROO										
Ascensión	19	46	31	87	28	0	0	-1	13	-8
Cabo Catoche	21	36	25	87	6	21	157	-1	41	-8
Carrillo Puerto	19	34	50	88	2	38	30	0	-51	-8
Contoy	21	31	45	86	48	12	0	-1	51	-8
Cozumel	20	31	20	86	57	12	0	-1	37	-8
Chetumal	18	29	39	88	17	56	0	0	-33	-8
Filomeno Mata	19	52	8	88	23	47	0	0	-40	-8
Icaiche	18	4	17	89	10	7	183	0	0	-8
Kantunil Kin	21	6	14	87	29	12	20	-1	23	-8
Leona Vicario	20	59	23	87	12	22	0	-1	32	-8
Polyuc	19	36	50	88	33	58	0	0	-33	-8
Put	19	39	8	89	24	46	0	0	-4	-8
Saban	20	2	12	88	32	16	0	0	-37	-8
Sta. Cruz Chico	18	56	3	88	9	44	0	0	-41	-8
Tulum	20	12	34	87	25	34	150	-1	18	-8
Vigia Chico	19	46	27	87	35	2	0	-1	8	-8
Xkalak	18	13	32	87	50	50	0	0	-46	-8
Xkanha	19	6	13	89	20	5	0	0	-2	-8

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	°	′	″	°	′	″		°	′	
SAN LUIS POTOSI										
Ahualco	22	23	56	101	9	58	1902	5	33	-7
Alaquines	22	7	41	99	35	27	1300	4	53	-7
Arista	22	38	46	100	51	2	1560	5	25	-7
Arriaga	21	54	44	101	22	58	2660	5	38	-7
Cárdenas	21	59	49	99	38	28	1201	4	55	-7
Catorce	23	41	34	100	53	23	2756	5	26	-7
Cerritos	22	25	55	100	16	51	1153	5	11	-7
Cd. Del Maíz	22	24	8	99	36	9	1239	4	54	-7
Charcas	23	7	47	101	6	37	2057	5	31	-7
Guadalcazar	22	37	1	100	23	56	1673	5	14	-7
Matehuala	23	38	41	100	38	26	1615	5	20	-7
Moctezuma	22	45	7	101	5	0	1777	5	31	-7
Pastora	22	8	2	100	3	25	920	5	5	-7
Ramos	22	49	59	101	55	3	2210	5	51	-7
Río Verde	21	55	52	99	59	38	991	5	4	-7
Salinas de P. Blanco	22	37	44	101	43	0	2099	5	46	-7
San Luis Potosí	22	9	10	100	58	38	1877	5	28	-7
Sta. Catarina	21	39	37	99	29	36	898	4	51	-7
Sta. María del Río	21	48	4	100	44	9	1703	5	22	-7
Sto. Domingo	23	19	35	101	44	6	1971	5	47	-7
Tamazunchale	21	16	0	98	47	18	206	4	34	-7
Tamuín	21	0	18	98	46	30	275	4	34	-7
Tancanhuitz	21	36	11	98	57	57	241	4	38	-7
Valles	21	59	4	99	0	58	95	4	39	-7
Vieja	22	2	29	99	25	16	10	4	49	-7
Villa de Reyes	21	48	19	100	56	0	1819	5	27	-7
Zaragozas José de	22	2	8	100	43	53	1925	5	22	-7
SINALOA										
Altata	24	38	0	107	55	53	2	8	2	-6
Badiraguato	25	21	40	107	33	7	300	7	59	-6
Cosala	24	24	38	106	41	44	300	7	37	-6
Culiacán	24	48	36	107	23	57	84	7	53	-6
El Fuerte	26	25	14	108	39	0	0	8	25	-6
La Laguna	26	34	58	108	27	25	600	8	23	-6
Mazatlán	23	11	55	106	25	20	3	7	27	-6
Mocorito	25	29	0	107	55	13	838	8	6	-6
Navolato	24	45	57	107	41	48	12	7	58	-6
Rosario	22	59	29	105	51	13	32	7	15	-6
San Blas	26	4	38	108	45	53	37	8	25	-6
San José de Gracia	26	8	38	107	53	38	750	8	9	-6
Sta. María	25	33	56	109	10	26	46	8	29	-6
Sinaloa	25	49	26	108	13	29	55	8	14	-6
Soyatita	25	44	21	107	18	36	1200	7	56	-6
Topolobampo	25	36	1	109	2	52	3	8	27	-6
SONORA										
Agua Prieta	31	19	42	109	33	44	1050	9	19	-6
Aguiabampo	26	21	58	109	8	59	7	8	34	-6
Álamos	27	1	16	108	56	2	410	8	35	-6
Altar	30	42	46	111	44	12	0	9	54	-5
Antimonio	30	44	34	112	36	49	61	10	10	-5
Arizpe	30	20	9	110	10	22	870	9	23	-6
Bacanora	28	59	2	109	23	21	446	8	57	-6
Bacerac	30	21	41	108	49	25	937	8	56	-6

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	°	‘	“	°	‘	“		°	‘	
Baroyeca	27	38	32	109	29	33	0	8	49	-6
Buena Vista	27	51	3	109	52	24	111	8	58	-6
Caborca	30	41	50	112	9	29	305	10	2	-5
Cananea	30	58	57	110	18	1	1489	9	30	-6
Carbo	29	41	0	110	57	29	464	9	32	-5
Carbon	29	41	0	110	57	29	464	9	32	-5
Cedros	27	45	39	109	17	26	475	8	46	-6
Ciudad Obregón	27	29	35	109	56	0	100	8	56	-6
Conicarit	27	14	18	109	5	5	145	8	39	-6
Cucurpe	30	19	51	110	42	18	803	9	33	-5
Guaymas	27	55	28	110	53	31	0	9	16	-5
Hermosillo	29	4	29	110	57	36	237	9	27	-5
Huatabampo	26	49	36	109	38	46	20	8	46	-6
Imuris	30	46	38	110	51	58	826	9	39	-5
Libertad	29	54	12	112	45	7	0	10	4	-5
Macoyahui	27	19	36	108	54	28	201	8	36	-6
Magdalena	30	37	45	111	3	42	693	9	42	-5
Moctezuma	29	48	10	109	41	41	677	9	9	-6
Minas Nuevas	27	3	29	109	0	33	520	8	36	-6
Movas	28	9	40	109	26	34	260	8	52	-6
Naco	31	19	53	109	57	5	1340	9	26	-6
Nacori Grande	29	3	37	110	2	44	634	9	10	-6
Nacozari	30	22	25	109	41	28	1040	9	14	-6
Navojoa	27	4	52	109	27	13	40	8	45	-6
Nogales	31	19	49	110	56	42	1120	9	45	-5
Nabas	28	27	40	109	31	35	170	8	56	-6
Puerto Libertad	29	54	34	102	40	52	8	6	27	-7
Punta Peñasco	31	18	9	113	32	57	61	10	30	-5
Quiriego	27	31	11	109	15	7	251	8	44	-6
Rayón	29	42	47	110	34	36	560	9	25	-5
Sahuaripa	29	3	18	109	13	31	460	8	55	-6
San José de Pimas	28	42	47	110	21	2	415	9	13	-5
Santa Ana	30	32	38	111	7	26	687	9	42	-5
Santa Clara	31	40	41	114	29	30	0	10	49	-5
Soyopa	28	45	49	109	38	7	272	9	0	-6
Suaqui Grande	28	23	44	109	53	30	272	9	2	-6
Tiburón	28	45	55	112	41	56	0	9	53	-5
Torin	27	34	30	110	13	19	64	9	2	-5
Tubutama	30	53	4	111	28	16	682	9	51	-5
Ures	29	25	45	110	23	29	432	9	19	-5
Yabaros	26	42	12	109	30	45	2	8	43	-6
TABASCO										
Alvaro Obregón	18	13	19	92	40	4	33	1	52	-8
Astapa	17	46	42	92	59	18	134	2	5	-8
Cardenas	18	0	42	93	22	10	4	2	15	-8
Comalcalco	18	15	54	93	13	7	5	2	9	-8
Francisco I. Madero	18	25	18	92	44	28	72	1	53	-8
Huimanquillo	17	52	10	93	27	31	193	2	19	-8
Ignacio Allende	18	23	10	92	50	51	32	1	57	-8
Tacotalpa	17	35	47	92	49	26	60	2	1	-8
Tapijulapa	17	27	52	92	46	50	0	2	1	-8
Teapa	17	33	14	92	57	12	50	2	5	-8
Tenosique	17	28	45	91	25	33	60	1	19	-8
Tierra Colorada	17	57	22	92	37	46	144	1	53	-8

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	°	′	″	°	′	″		°	′	
Villahermosa	17	59	15	92	55	0	10	2	2	-8
Xicotencatl	17	30	35	92	40	52	206	1	57	-8
TAMAULIPAS										
Abasolo	24	4	0	98	22	38	61	4	19	-7
Aldama Presas	22	55	6	98	4	12	98	4	12	-7
Altamira	22	23	40	97	55	47	26	4	9	-7
Antiguo Morelos	22	33	3	99	5	9	178	4	40	-7
Burgos	24	57	1	98	46	57	193	4	30	-7
Camargo	26	19	1	98	49	55	68	4	31	-7
Casas	23	43	44	98	44	27	120	4	29	-7
Ciudad Victoria	23	44	6	99	7	51	321	4	40	-7
Cruillas	24	45	32	98	30	59	265	4	22	-7
Guemes	23	55	18	99	0	28	220	4	37	-7
Guerrero	26	46	45	99	20	22	34	4	46	-7
Jaumave	23	24	30	99	22	28	735	4	47	-7
Jimenez	24	12	56	99	28	44	101	4	49	-7
Llera	23	19	11	99	1	15	290	4	37	-7
Magiscatzin	22	48	29	98	42	1	56	4	29	-7
Matamoros	25	52	45	97	31	9	12	3	52	-7
Méndez	25	7	11	98	34	12	128	4	24	-7
Mier	26	25	57	99	8	41	80	4	40	-7
Miquihuana	23	34	15	99	46	32	1892	4	57	-7
Ocampo	20	50	32	99	20	14	348	4	49	-7
Padilla	24	0	39	98	46	27	153	4	30	-7
Reynosa	26	5	50	98	16	42	38	4	15	-7
San Carlos	24	34	50	98	56	26	432	4	34	-7
San Fernando	24	50	56	98	9	30	55	4	12	-7
Tampico	22	13	0	97	51	19	12	4	7	-7
Tula	22	59	50	99	42	55	1173	4	56	-7
Villagran	24	28	33	99	20	21	363	4	46	-7
Xicotencatl	22	59	48	98	56	35	131	4	36	-7
TLAXCALA										
Apizaco	19	24	59	98	8	27	2408	4	21	-7
Calpulalpam	19	35	37	98	34	18	2578	4	32	-7
Cuaula	19	36	10	98	38	44	2703	4	34	-7
Cuauhutototuatlan	19	7	7	98	10	9	2308	4	23	-7
Huamantla	19	18	53	97	55	39	2553	4	16	-7
Tenancingo	19	8	47	98	11	57	2281	4	23	-7
Tlaxcala	19	19	4	98	14	9	2252	4	24	-7
San Aparicio	19	6	0	98	9	30	2293	4	23	-7
S. Juan de los Llanos	19	27	54	97	41	0	2448	4	9	-7
S. Martín Tezmelucán	19	16	59	98	25	59	2278	4	29	-7
VERACRUZ										
Acayucan	17	56	42	95	54	43	88	3	28	-8
Acayucan	17	56	34	94	54	13	88	3	0	-8
Acayucan	17	56	42	94	54	48	158	3	0	-8
Actopan	19	30	11	96	36	45	311	3	41	-8
Alvarado	18	46	14	95	45	56	9	3	20	-8
Ciudad Azueta	18	4	43	95	42	18	0	3	22	-8
Coatepec	19	27	8	96	57	1	1252	3	50	-8
Coatzacoalcos	18	8	56	94	24	40	2	2	45	-8
Coatzintla	20	29	6	97	26	12	144	4	0	-8
Córdoba	18	53	34	96	55	52	924	3	51	-8

Poblaciones de la República Mexicana, 2018

Coordenadas geográficas (Anuario del Observatorio 1984)

ESTADO Población	latitud			longitud			alt m	δm		$\Delta \delta m$ ‘/año
	°	‘	“	°	‘	“		°	‘	
Cosamaloapan	18	21	46	95	48	32	96	3	23	-8
Coscomatepec	19	4	23	97	2	5	1588	3	54	-8
Cuatotlopan	18	7	16	95	18	7	23	3	10	-8
Cuichapa	18	46	28	96	52	8	642	3	50	-8
Chiconamel	21	14	0	98	27	36	158	4	25	-7
Chicontepec	20	58	31	98	9	54	595	4	18	-7
Gral. Alemán	18	11	32	96	5	44	18	3	32	-8
Hidalgotitlan	17	46	20	94	38	47	77	2	54	-8
Huatusco	19	9	1	96	57	9	1344	3	51	-8
Huayacocotla	20	32	27	98	28	38	2100	4	27	-7
Inalambrica	19	10	50	96	7	36	0	3	29	-8
Ixcatepec	21	14	23	98	0	14	295	4	13	-7
Ixhualtan	20	41	30	98	0	35	306	4	15	-7
Jalapa	19	31	35	96	54	51	1427	3	49	-8
Lobos	21	28	0	97	13	3	0	3	51	-8
Martínez de la Torre	20	3	58	97	2	36	151	3	50	-8
Minatitlán	17	58	47	94	32	27	64	2	50	-8
Misantla	19	56	2	96	50	24	410	3	45	-8
Mocayapan	18	12	49	94	50	17	340	2	57	-8
Naolingó	19	39	15	96	51	51	1605	3	47	-8
Nautla	20	12	43	95	45	38	4	3	14	-8
Orizaba	18	50	58	97	5	47	1284	3	56	-8
Ozuluama	21	39	46	97	51	0	229	4	8	-7
Pantepec	20	31	29	97	56	14	738	4	13	-7
Papantla	20	26	53	97	19	7	298	3	57	-8
Perote	19	33	52	97	14	24	2465	3	57	-8
Pico Orizaba	19	2	0	97	15	42	5700	4	0	-8
Pl Vicente	17	50	5	95	48	35	95	3	26	-8
Rizo	19	3	17	95	55	8	0	3	23	-8
Rodríguez Clara	17	59	28	95	24	9	148	3	14	-8
Sacrificios	19	10	26	96	5	27	0	3	28	-8
San Andrés Tuxtla	18	26	42	95	11	53	361	3	6	-8
San Andrés Tuxtla	18	26	40	95	13	1	323	3	6	-8
San Carlos	19	24	17	96	21	25	136	3	34	-8
San Juan de Ulúa	19	12	26	96	7	46	0	3	29	-8
San Juan Evangelista	17	52	59	95	8	12	88	3	7	-8
San Martín	18	33	48	95	10	48	1738	3	5	-8
Santiagoullo	19	8	29	95	48	23	0	3	20	-8
Tamarindo	18	45	23	96	22	49	80	3	37	-8
Tamiahua	21	16	26	97	26	29	4	3	58	-7
Tantoyucan	21	21	7	98	13	31	217	4	19	-7
Tehuipango	18	31	14	97	3	31	2382	3	56	-8
Teocelo de Díaz	19	23	8	96	57	47	1218	3	51	-8
Tepetzintla	21	10	43	96	49	48	351	3	41	-8
Tesechoacan	18	8	12	95	39	47	0	3	20	-8
Tierra Blanca	18	27	3	96	21	28	60	3	38	-8
Tihuatlán	20	43	26	97	32	23	222	4	2	-7
Tlacojalpan	18	13	57	95	57	13	91	3	28	-8
Tlacotalpan	18	36	40	95	39	54	320	3	18	-8
Tlaliscoyan	18	48	7	96	3	26	84	3	28	-8
Tlapacoyan	19	58	13	97	12	35	504	3	55	-8
Tonayan	19	40	54	96	54	45	0	3	48	-8
Tuxpan	20	57	18	97	23	59	14	3	58	-8
Veracruz	19	12	2	96	8	13	14	3	29	-8

Poblaciones de la República Mexicana, 2018

Coordenadas geográficas (Anuario del Observatorio 1984)

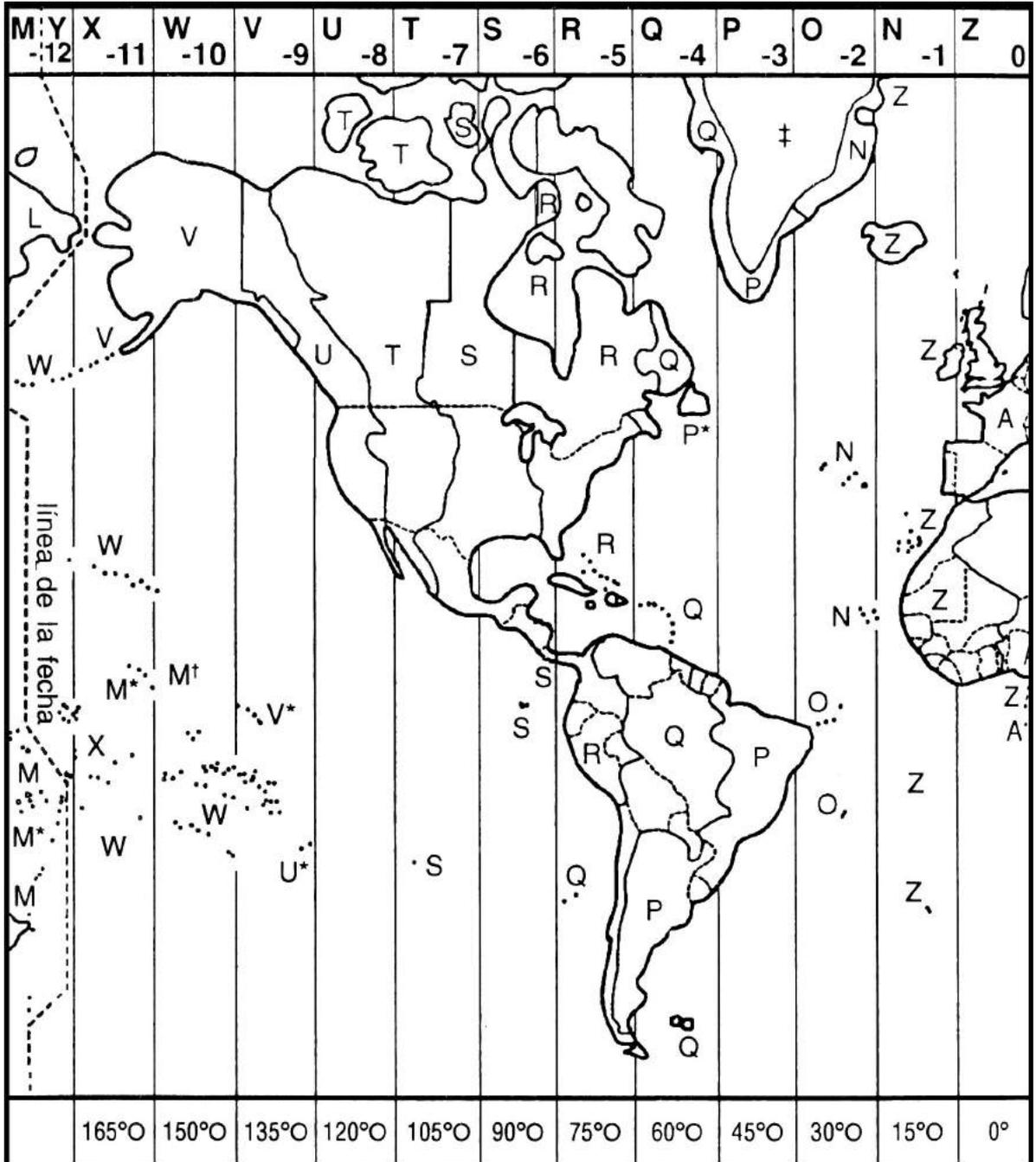
ESTADO Población	latitud			longitud			alt m	δm		$\Delta \delta m$ /año
	°	'	"	°	'	"		°	'	
Verde	19	11	50	96	3	59	0	3	27	-8
Xico	19	25	17	97	0	11	0	3	52	-8
Zongolica	18	40	10	96	59	26	1294	3	54	-8
YUCATÁN										
Becanchen	19	52	32	89	13	3	0	0	-12	-8
Celestum	20	51	36	90	24	5	3	0	22	-8
Cuyo	21	31	9	87	40	48	8	-1	19	-8
Chancenote	20	59	36	87	46	56	0	-1	11	-8
Chavihau	21	21	28	89	7	7	0	0	-26	-8
Espita	21	0	36	88	18	27	22	0	-53	-8
Halacho	20	28	44	90	4	51	6	0	13	-8
Huhi	20	43	42	89	10	0	15	0	-20	-8
Izamal	20	56	16	88	57	14	14	0	-29	-8
Maxcanu	20	35	11	89	59	55	8	0	10	-8
Merida	20	59	0	89	38	43	9	0	-5	-8
Molas	20	49	0	89	37	48	10	0	-5	-8
Progreso	21	18	0	89	39	30	8	0	-7	-8
San Felipe	21	34	8	88	13	58	0	0	-59	-8
Sisal	21	9	59	90	1	55	0	0	7	-8
Tekax	20	12	18	98	17	20	35	4	23	-7
Telchac	21	20	35	89	15	50	10	0	-21	-8
Tzimin	21	8	1	88	9	6	17	0	-59	-8
Valladolid	20	41	24	88	12	23	20	0	-54	-8
Yalkubul	21	31	26	88	36	55	0	0	-45	-8
ZACATECAS										
Calera	22	57	2	102	42	10	2236	6	9	-7
Concepción del Oro	24	36	54	101	25	43	2070	5	41	-7
Chalchihuites	23	28	42	103	53	15	2321	6	36	-7
Fresnillo	23	10	35	102	52	39	2250	6	13	-7
Guadalupe	22	45	30	102	31	9	2265	6	5	-7
Jerez	22	38	51	102	59	48	2027	6	15	-7
Juchipila	21	24	46	103	7	29	1350	6	16	-7
Nieves	23	59	41	103	1	12	2017	6	18	-7
Nochistlán	21	21	47	102	50	55	1930	6	10	-7
Observatorio Astronómico	22	43	56	102	32	26	2717	6	5	-7
Observatorio Astronómico	22	46	1	102	32	56	2425	6	5	-7
Ojo Caliente	22	34	44	102	15	20	2114	5	58	-7
Ojuelos	21	52	5	101	35	20	2000	5	42	-7
Pánuco	22	52	45	102	32	30	2321	6	5	-7
Pinos	22	17	54	101	34	23	2419	5	42	-7
Río Grande	23	49	40	103	2	17	2000	6	18	-7
San Juan del Mezquital	24	17	28	103	23	47	2000	6	27	-7
Sombrerete	23	37	53	103	38	30	2351	6	31	-7
Tlatenango	21	47	0	103	18	44	1724	6	21	-7
Valparaiso	22	46	13	103	34	5	2140	6	28	-7
Villa de Cos	23	17	40	102	20	55	2050	6	1	-7
Villanueva	22	21	16	102	53	13	1955	6	12	-7
Zacatec	22	46	30	102	34	45	2496	6	6	-7

Zonas horarias

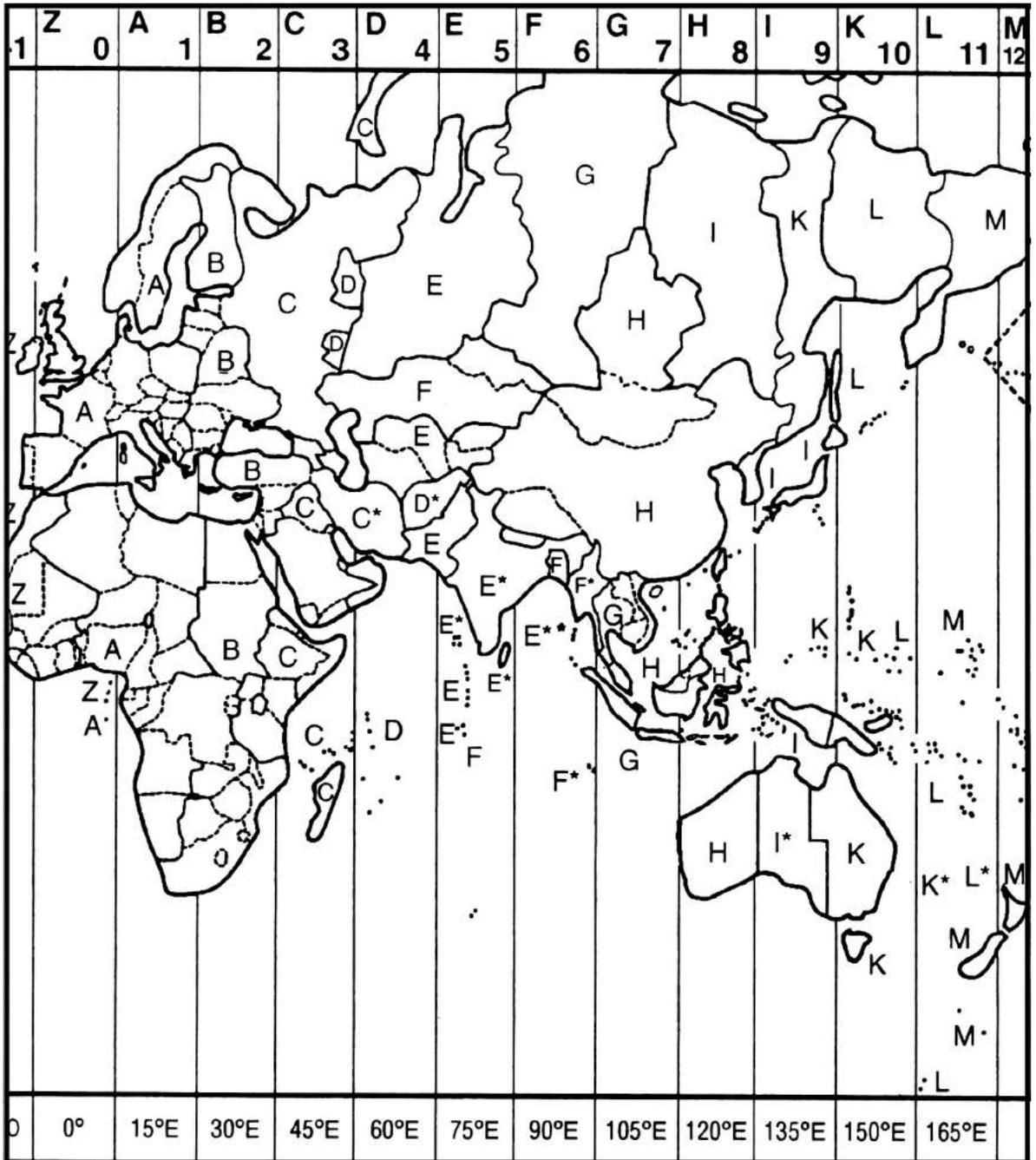
Las zonas horarias dividen a la Tierra en 24 franjas de 15° de anchura; las letras representan el código de uso con los que se corrige la hora del Meridiano de Greenwich. Además de señalarse en el encabezado del mapa, en la tabla se indica el número de horas que deberán sumarse, algebraicamente, a la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

Mapa de zonas horarias



Mapa de zonas horarias



Hora Legal en los Estados Unidos Mexicanos

Sistema de cuatro husos horarios en los Estados Unidos Mexicanos
(*Diario Oficial de la Federación: 31-01-2015*)

Artículo 1. La presente Ley es de aplicación general y regirá en todo el territorio de los Estados Unidos Mexicanos, sus disposiciones son de orden público e interés general, su aplicación y vigilancia estará 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 al 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 reformado Diario Oficial de la Federación 31-01-2015*).

Artículo 3. Para el efecto de la aplicación de esta Ley, se establecen dentro del territorio nacional las siguientes zonas horarias y se reconocen los meridianos que les correspondan:

I. Zona Centro: Referida al meridiano 90 grados al oeste de Greenwich y que comprende la mayor parte del territorio nacional, con la salvedad de lo establecido en los numerales II, III, IV y V de este mismo artículo (*Fracción reformada Diario Oficial de la Federación 31-01-2015*).

II. Zona Pacífico: Referida al meridiano 105 oeste y que comprende los territorios de los estados de Baja California Sur; Chihuahua; 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 (*Fracción reformada Diario Oficial de la Federación 06-01-2010*).

III. Zona Noroeste: Referida al meridiano 120 oeste y que comprende el territorio del Estado de

Baja California (*Fracción reformada Diario Oficial de la Federación 31-01-2015*).

IV. Zona Sureste: Referida al meridiano 75 oeste y que comprende el territorio del Estado de Quintana Roo (*Fracción adicionada Diario Oficial de la Federación 31-01-2015*).

V. Las islas, arrecifes y cayos quedarán comprendidos dentro del meridiano al cual corresponda su situación geográfica y de acuerdo a los instrumentos de derecho internacional aceptados (*Fracción recorrida Diario Oficial de la Federación 31-01-2015*).

Artículo 4. El sistema normal de medición del tiempo en la República, que se establece con la aplicación de los husos horarios y su correspondiente hora en los artículos que anteceden, podrá ser modificado mediante decreto del Honorable Congreso de la Unión que establezca horarios estacionales.

Artículo 5. Cualquier propuesta de establecimiento o modificación de horarios estacionales deberá ser presentada al Honorable Congreso de la Unión, a más tardar el 15 de noviembre del año inmediato anterior al que se pretende modificar el horario. El decreto respectivo deberá ser emitido a más tardar el 15 de diciembre del mismo año.

Artículo 6. En el caso del establecimiento de horarios estacionales, el Ejecutivo Federal en coordinación con los Ejecutivos Estatales y del Distrito Federal, difundirán, con la anticipación debida, el Decreto por medio del cual se establece dicho horario, para el conocimiento de la población.

Artículo 7. Las dependencias de los ejecutivos federal, y estatales y del Distrito Federal, en el ámbito de sus respectivas competencias, tomarán las medidas necesarias a efecto de implementar de forma eficiente los horarios estacionales decretados.

Centros astronómicos en la República Mexicana

ESTADO Población	latitud ° ' "	longitud ° ' "	altura s.n.m.m.	ubicación
Universidad Nacional Autónoma de México Instituto de Astronomía				
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
Centro de Radioastronomía y Astrofísica, U. N. A. M.				
MICHOCÁN				
Morelia	19 42 16	101 11 30	1941	
Instituto Nacional de Astrofísica, Óptica y Electrónica, S.E.P.				
PUEBLA				
Tonantzintla	19 01 58	98 18 50	2147	
SONORA				
Observatorio Cananea Guillermo Haro	31 03 10	110 18 19	2480	Telescopio 2.1 m
Departamento de Astronomía, Universidad de Guanajuato				
GUANAJUATO				
Guanajuato	21 03 10	101 19 28	2425	Mineral de la Luz
Universidad Autónoma de Zacatecas				
ZACATECAS				
Observatorio astronómico	22 43 56	102 32 26	2425	Ciudad Universitaria
Observatorio astronómico	22 46 01	102 32 56	2714	Cerro de la Virgen
Sociedad Astronómica de México				
CIUDAD DE MÉXICO				
Observatorio Luis G. León	19 23 56	99 8 29	2246	Col. Álamos, Cd. de México
ESTADO DE MÉXICO				
Observatorio Chapa de Mota	19 47 24	99 31 23	3070	Municipio de Chapa de Mota
Universidad Autónoma de Sinaloa				
SINALOA				
Observatorio Cosala	24 24 5	106 36 36	595	Municipio de Cosala
Instituto de Geofísica				
MEXART*: Observatorio de centelleo interplanetario	19 48 39	101 41 39		Coeneo, Michoacán
* Mexican Array Radiotelescope				

Refracción

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

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

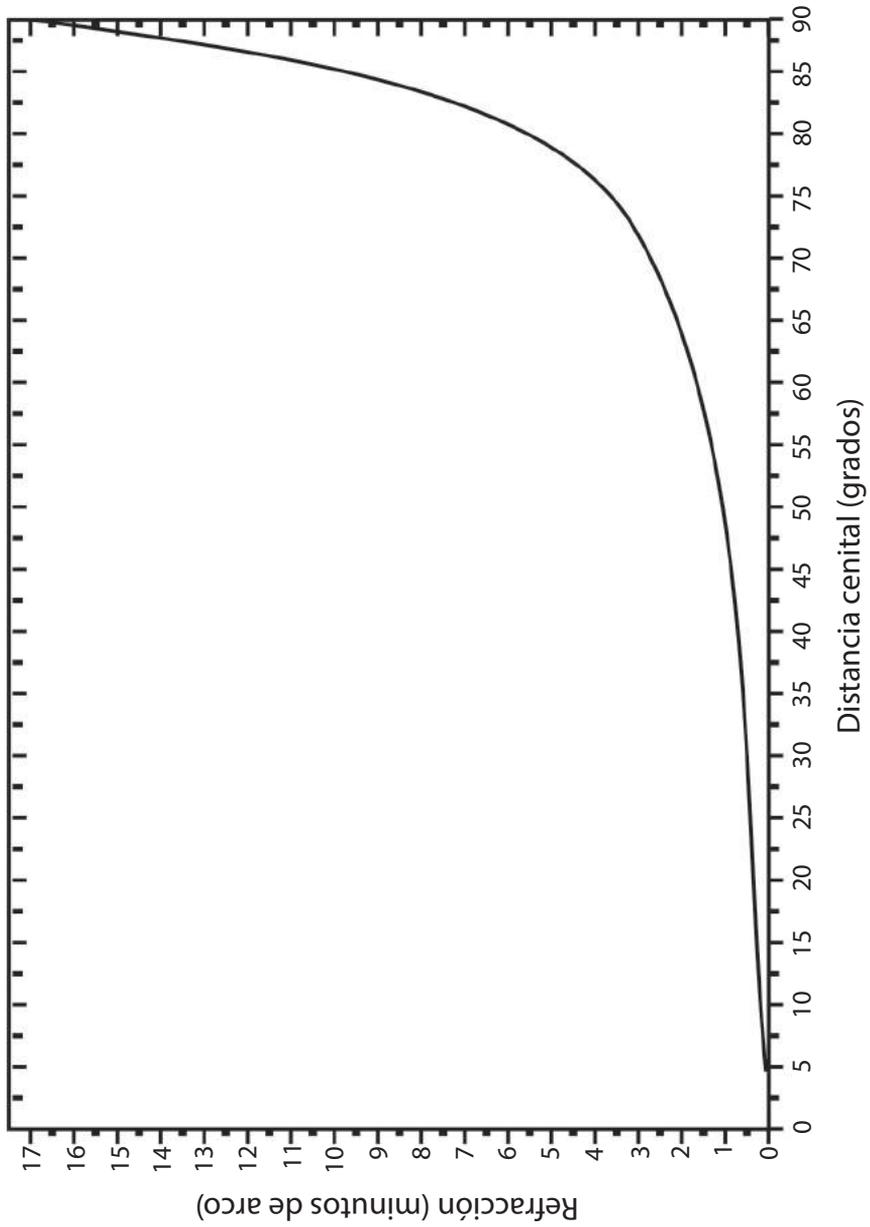
donde r está dada en minutos de arco, y sus coeficientes son:

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	$7.48708 \cdot 10^{-15}$

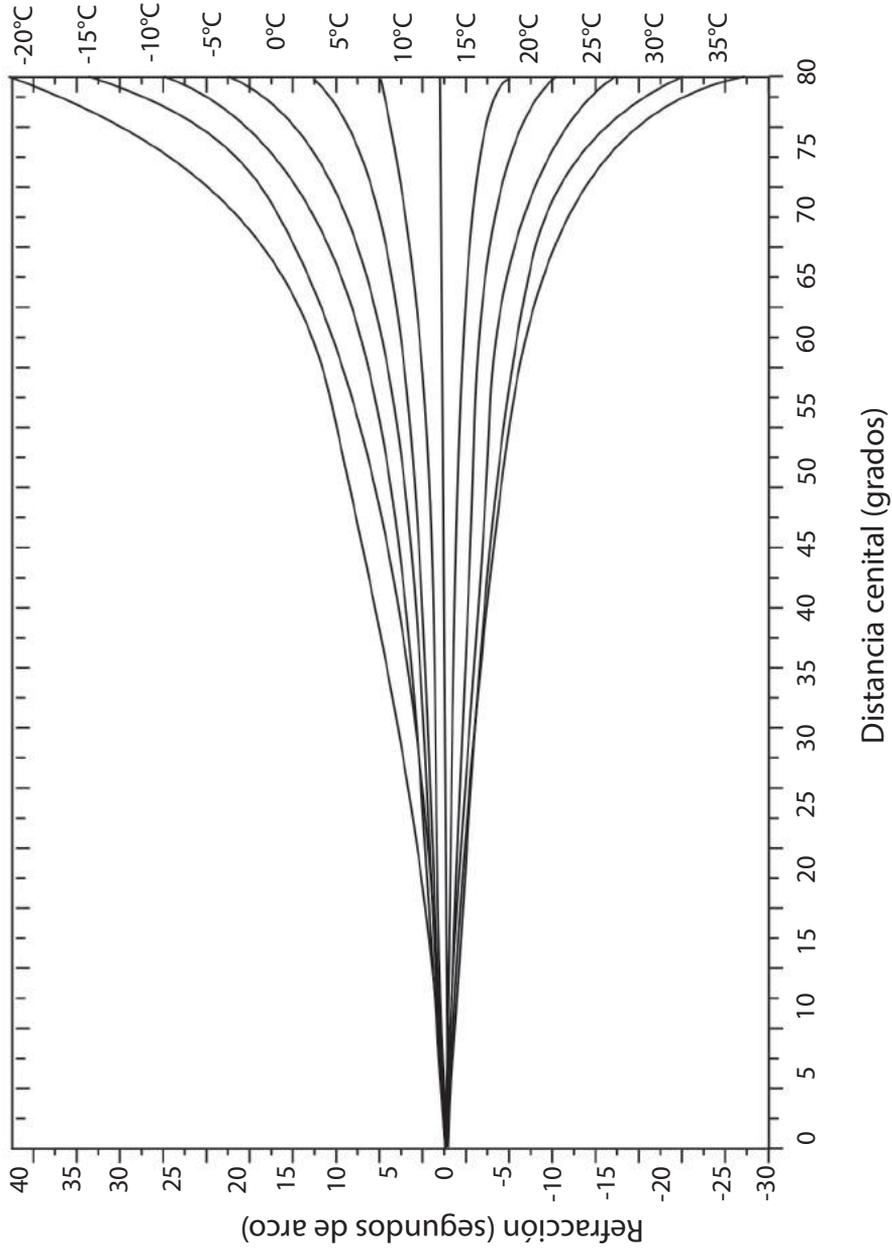
Con la gráfica de corrección por temperatura, se determina el valor en segundos de arco, que se deberá sumar algebraicamente a la refracción media. Cada curva corresponde a las temperaturas, en grados centígrados, señaladas al extremo derecho de cada una de ellas.

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.

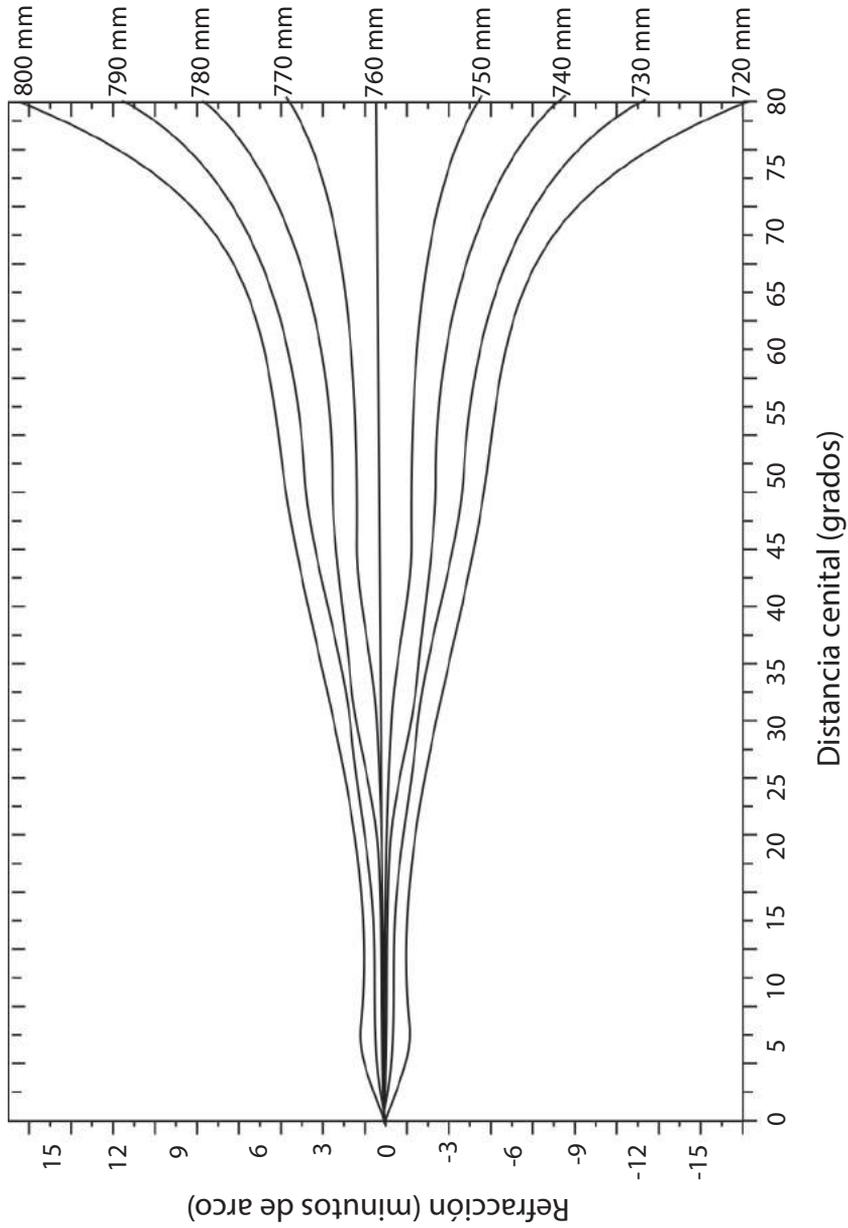
Corrección por distancia cenital



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:

α : ascensión recta

δ : declinación

hp: hora del paso por el meridiano

vh: variación horaria

Δ : distancia geocéntrica

UA: unidad astronómica

Luna

Abreviaturas:

dj: día juliano

α : ascensión recta

δ : declinación

hp: hora del paso por el meridiano

Δ : distancia geocéntrica en radios terrestres

sd: semidiámetro

pax: paralaje horizontal

Planetas

Abreviaturas:

α : ascensión recta

δ : declinación

Δ : distancia geocéntrica

UA: unidad astronómica

hp: hora del paso por el meridiano

Sistema de constantes y parámetros

Abreviaturas:

α : 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:

α : ascensión recta

δ : 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:

N: número de estrella en: Bright Star Catalog. Yale University, EUA

V: magnitud

Esp: tipo espectral

nom: nombre de la estrella en clasificación Bayer

Posiciones aparentes de estrellas brillantes

Abreviaturas de términos astronómicos:

α : ascensión recta

α_c : ascensión recta en el sistema de referencia intermedio

δ : declinación

Hp: hora del paso

Posiciones aparentes de la polar

Abreviaturas:

α : ascensión recta

α_c : ascensión recta coordenadas intermedias

δ : declinación

hp: hora del paso por el meridiano

Lluvias de estrellas

Abreviaturas:

α : ascensión recta

δ : 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).

*: 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 Nebulares

Abreviaturas:

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

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

α : 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 información sobre morfología).

Poblaciones de la República Mexicana

Abreviaturas:

alt: altura sobre el nivel del mar

δm : 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 Trolanos.

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-

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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° 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 sombra 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° 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. Período 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° W.G. Meridiano que atraviesa la Península de Yucatán. Se encuentra 90° 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. Dicese 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. Dícese 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° .

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 0.9° 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 diurno de Sol medio o ficticio, suponiendo un movimiento de rotación terrestre uniforme.

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

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

Apéndice

Explicaciones

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.

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 mexica, 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.

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.

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.

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 Nudo Ascendente; el Verano en , en el instante en que ocurre el Solsticio; el Otoño en , en el instante en que ocurre el equinoccio del Nudo Descendente; y el Invierno que se inicia en , en el instante del Solsticio.

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

La diferencia en longitud (DI) será:

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

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

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

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° , 90° , 105° y 120° 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° centradas en el meridiano horario de referencia, el meridiano de la ciudad de Greenwich, Inglaterra se ha definido como el meridiano 0° . 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° W.G. se escribe numéricamente como -90° . Los meridianos horarios hacia el Este o al Oeste son: 15° , 30° , 45° , 60° , 75° , 90° , 105° , 120° , 135° , 150° , 165° . Al meridiano 180° se le llama Línea Internacional del Tiempo.

El tiempo referido al meridiano de Greenwich o simplemente meridiano 0° , 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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