

**Observatorio Astronómico "Félix Aguilar"**

**Facultad de Ciencias Exactas, Físicas y Naturales**

**San Juan**

**ANUARIO ASTRONÓMICO**

**2020**



**Volumen XXX**



UNIVERSIDAD NACIONAL DE SAN JUAN  
FACULTAD DE CIENCIAS EXACTAS, FÍSICAS Y NATURALES  
OBSERVATORIO ASTRONÓMICO “FELIX AGUILAR”

ANUARIO ASTRONÓMICO 2020  
Claudio Carlos Mallamaci - José Alberto Pérez

San Juan - República Argentina - 2020



## Contenido

Introducción		<b>7</b>
Fenómenos		<b>9</b>
Sol	11	
Fases de la Luna	11	
Eclipses y Tránsitos	11	
Artículos del calendario	12	
Entrada del Sol en los signos del Zodíaco	12	
Reporte de las estaciones	12	
Perigeo y apogeo de la Luna	12	
Fenómenos planetarios geo y heliocéntricos (Mercurio, Venus y planetas superiores)	13	
Datos de Planetas	13	
Configuración diaria del Sol, Luna y Planetas	14	
Sol		<b>19</b>
Luna		<b>27</b>
Tiempo sidéreo y coordenadas del Sol		<b>35</b>
Planetas		<b>43</b>
Posiciones aparentes de estrellas		<b>53</b>
Tablas		<b>95</b>
Refracción Astronómica Normal	95	
Correcciones a las Refracciones Normales	96	
Calendario		<b>97</b>



## Introducción

Este anuario astronómico, preparado y publicado por el Observatorio Astronómico "Félix Aguilar", tiene como objeto principal proporcionar, a docentes y aficionados en general, datos útiles sobre temas astronómicos.

La publicación fue originalmente pensada para proveer, fundamentalmente, las circunstancias locales (San Juan) de las salidas y puestas del Sol y la Luna, pues esta información es la que con mayor frecuencia se nos solicita. Sin embargo, hemos creído interesante incluir, además, datos generales sobre planetas, estrellas y eclipses, como así también algunos elementos del calendario y el cómputo eclesiástico.

Las secciones "Sol", "Luna", "Tiempo sidéreo y coordenadas del Sol", "Planetas" y "Posiciones aparentes de estrellas" fueron calculadas por nosotros en nuestro Observatorio en tanto que la sección "Fenómenos" se obtuvo de la siguiente publicación:

- Fenómenos Astronómicos 2020  
Real Instituto y Observatorio de la Armada  
San Fernando-Cádiz  
España

Importante

**Todos los tiempos indicados en este Anuario han sido calculados en Tiempo Universal por lo que habrá que hacer la conversión para el Huso Horario que esté en vigencia. Si por ejemplo la salida de un astro es a las 09<sup>h</sup> 28<sup>m</sup> 15<sup>s</sup> de Tiempo Universal, para el huso de -3h al Oeste de Greenwich habrá que restar 3h a dicho tiempo (09<sup>h</sup> 28<sup>m</sup> 15<sup>s</sup> -3h = 06<sup>h</sup> 28<sup>m</sup> 15<sup>s</sup>). Si el huso horario fuese -2h, entonces habrá que restarle 2h.**

Las circunstancias de salida y puesta del Sol y la Luna están calculadas para el lugar geográfico que ocupa nuestro Observatorio (**latitud = -31°30'38.5" y longitud = -4h 34m 28.8s**) y para un horizonte teórico sin montañas ni irregularidades. Por lo tanto las horas calculadas deben ser tomadas sólo a modo orientativo.

Todas las observaciones y sugerencias que se puedan hacer sobre el contenido y el aspecto de esta publicación serán bienvenidas y agradeceremos nos las hagan llegar a nuestra dirección.

Claudio Carlos Mallamaci - José Alberto Pérez  
Observatorio Astronómico "Félix Aguilar"  
Av. Benavidez 8175 oeste - 5407 Marquesado  
e-mail: [ccmalla@gmail.com](mailto:ccmalla@gmail.com)  
e-mail: [joeperez635@yahoo.com.ar](mailto:joeperez635@yahoo.com.ar)  
San Juan - República Argentina

Agradecemos a la siguiente Institución el envío de la publicación que se indica, la que ha sido utilizada para la realización de esta publicación:

- **Real Instituto Y Observatorio de la Armada,**  
San Fernando, Cádiz, España,  
"Fenómenos Astronómicos".

Agradecemos también la colaboración del personal del **Círculo Meridiano** de nuestro Instituto, quienes colaboraron en la revisión del anuario.

Claudio Carlos Mallamaci - José Alberto Pérez



## Fenómenos

En esta sección se dan las fechas de las circunstancias más notables por las que pasan el Sol, la Luna y los planetas, durante el año, con la precisión suficiente para una primera localización del fenómeno.

Para el Sol se dan las fechas y los tiempos de los equinoccios y solsticios, es decir los comienzos de las cuatro estaciones, como también sus máximos acercamientos y alejamientos respecto a la Tierra (perigeo y apogeo).

Los cambios de fases de la Luna están dados en horas y minutos y las lunaciones allí indicadas se enumeran siguiendo la serie de Brown, en la que la número 1 comenzó el 16 de enero de 1923.

Se presentan, también, los fenómenos geocéntricos y heliocéntricos de los planetas, es decir aquellos que son medidos tomando a la Tierra y al Sol como cuerpo de referencia, respectivamente.

Por último se detallan algunos fenómenos que, por su importancia, merecen ser destacados para su eventual observación y/o estudio.



## Fenómenos Astronómicos para 2020

### Sol (UT)

		d	h		d	h	m		d	h	m	
Perigeo:	Ene	05	08	Equinoccios:	Mar	20	03	50	Sep	22	13	31
Apogeo :	Jul	04	12	Solsticios :	Jun	20	21	44	Dic	21	10	02

### Fases de la Luna

Lunación	LUNA NUEVA		CUARTO CRECIENTE		LUNA LLENA		CUARTO MENGUANTE	
		h m		h m		h m		h m
1200			3 Ene	04 45	10 Ene	19 21	17 Ene	12 58
1201	24 Ene	21 42	2 Feb	01 42	9 Feb	07 33	15 Feb	22 17
1202	23 Feb	15 32	2 Mar	19 57	9 Mar	17 48	16 Mar	09 34
1203	24 Mar	09 28	1 Abr	10 21	8 Abr	02 35	14 Abr	22 56
1204	23 Abr	02 26	30 Abr	20 38	7 May	10 45	14 May	14 03
1205	22 May	17 39	30 May	03 30	5 Jun	19 12	13 Jun	06 24
1206	21 Jun	06 41	28 Jun	08 16	5 Jul	04 44	12 Jul	23 29
1207	20 Jul	17 33	27 Jul	12 33	3 Ago	15 59	11 Ago	16 45
1208	19 Ago	02 42	25 Ago	17 58	2 Sep	05 22	10 Sep	09 26
1209	17 Sep	11 00	24 Sep	01 55	1 Oct	21 05	10 Oct	00 40
1210	16 Oct	19 31	23 Oct	13 23	31 Oct	14 49	8 Nov	13 46
1211	15 Nov	05 07	22 Nov	04 45	30 Nov	09 30	8 Dic	00 37
1212	14 Dic	16 17	21 Dic	23 41	30 Dic	03 28		

### Eclipses

- I. **Eclipse penumbral de Luna, el 10 de enero de 2020.** Visible en el extremo norte de Norteamérica, extremo este de Sudamérica, África, Europa, Asia y Oceanía. Principio del eclipse penumbral a 17<sup>h</sup> 5.7<sup>m</sup> UT. Fin del eclipse penumbral a 21<sup>h</sup> 14.4<sup>m</sup> UT
- II. **Eclipse penumbral de Luna, el 5 de junio de 2020.** Visible en el extremo sur de Sudamérica, Europa, África, Oceanía y Asia salvo su extremo NE. Principio del eclipse penumbral a 17<sup>h</sup> 43.5<sup>m</sup> UT. Fin del eclipse penumbral a 21<sup>h</sup> 6.5<sup>m</sup> UT.
- III. **Eclipse central anular de Sol, el 21 de junio de 2020.** Visible en la mitad E de África, sur de Europa y de Asia y norte de Australia. Principio del eclipse 3<sup>h</sup> 46.0<sup>m</sup> UT. Fin del eclipse a 9<sup>h</sup> 34.0<sup>m</sup> UT.
- IV. **Eclipse penumbral de Luna, el 5 de julio de 2020.** Visible en América salvo el extremo N, África y la parte occidental de Europa. Principio del eclipse penumbral 3<sup>h</sup> 4.3<sup>m</sup> UT. Fin del eclipse penumbral a 5<sup>h</sup> 55.4<sup>m</sup>
- V. **Eclipse penumbral de Luna, el 30 de noviembre de 2020.** Visible en América, extremo norte de Europa, Oceanía y mitad oriental de Asia. Principio del eclipse penumbral a 7<sup>h</sup> 30<sup>m</sup> UT. Fin del eclipse penumbral a 11<sup>h</sup> 55.7<sup>m</sup> UT.
- VI. **Eclipse central total de Sol, el 14 de diciembre de 2020.** Visible en la mitad sur de Sudamérica, extremo sur de África y parte de la Antártida. Principio del eclipse a 13<sup>h</sup> 33.9<sup>m</sup> UT. Fin del eclipse a 18<sup>h</sup> 53.1<sup>m</sup> UT.

## Artículos principales del calendario

### Eras cronológicas

Año del periodo juliano	6733
Año de la era de los judíos, que comienza el 19 de septiembre †	5781
Año de la era de la fundación de Roma, que comienza el 14 de Enero	2773
Año de la era de Nabonasar, que comienza en 18 de abril	2769
Año de la era española, según "L'art de verifier les dates"	2058
Año de la Hégira, que comienza el 20 de agosto †	1442
† Comienza al ocaso del día anterior	

Todas las fechas se refieren al calendario gregoriano.

### Cómputo eclesiástico

Áureo número	VII Indicción romana	13
Epacta	5 Letra dominical	ED
Ciclo solar	13 Letra del martirologio romano	e

### Calendario Religioso, 2020

Epifanía (lunes)	6 ene	Día de la ascensión	21 may
Miércoles de Ceniza	26 feb	Pentecostés	31 may
Domingo de Ramos	5 abr	Corpus Christi	11 jun
Viernes Santo	10 abr	Primer domingo de adviento	29 nov
Pascua de Resurrección	12 abr	Navidad (viernes)	25 dic
Pesach (primer día de Pascua, 5780)	9 abr	Yom Kippur (Día de la expiación, 5781)	28 sep
Shavuot (Fiesta de las semanas, 5780)	29 may	Succoth (Fiesta de los tabernáculos, 5781)	3 oct
Rosh Hashanah (Año Nuevo judío, 5781)	19 sep		
Primer día de Ramadán(1441)	24 abr	Año Nuevo islámico(1442)	20 ago

Las festividades judías e islámicas comienzan a la puesta del Sol del día anterior y termina a la puesta del Sol del día tabulado.

### Reporte de las estaciones (UT)

Equinoccio de marzo:	20/03/2020 03 <sup>h</sup> 52 <sup>m</sup>	Longitud del otoño:	92.75 días
Solsticio de junio:	20/06/2020 21 43	Longitud del invierno:	93.66 días
Equinoccio de septiembre:	22/09/2020 13 30	Longitud de la primavera:	89.85 días
Solsticio de diciembre:	21/12/2020 09 59	Longitud del verano:	88.99 días

### PERIGEO Y APOGEO DE LA LUNA

APOGEO	PERIGEO	APOGEO	PERIGEO	APOGEO	PERIGEO
h	h	h	h	h	h
2 Ene 02	13 Ene 20	29 Ene 21	10 Feb 20	26 Feb 12	10 Mar 06
24 Mar 15	7 Abr 18	20 Abr 19	6 May 03	18 May 08	3 Jun 04
15 Jun 01	30 Jun 02	12 Jul 19	25 Jul 05	9 Ago 14	21 Ago 11
6 Sep 06	18 Sep 14	3 Oct 17	17 Oct 00	30 Oct 19	14 Nov 12
27 Nov 00	12 Dic 21	24 Dic 17			

## FENOMENOS GEOCENTRICOS, 2020

### MERCURIO

	h	h	h	h
Conjunción superior . . . .	10 Ene 15	4 May 22	17 Ago 15	20 Dic 03
Máxima Elongación E . . .	10 Feb 14 (18°)	4 Jun 13 (24°)	1 Oct 16 (26°)	
Estacionario . . . . .	16 Feb 10	17 Jun 20	14 Oct 05	
Conjunción inferior . . . .	26 Feb 02	1 Jul 03	25 Oct 18	
Estacionario . . . . .	9 Mar 08	12 Jul 07	3 Nov 08	
Máxima Elongación W . . .	24 Mar 02 (28°)	22 Jul 15 (20°)	10 Nov 17 (19°)	

### VENUS

	h	h
Máxima Elongación E . . .	24 Mar 22 (46°)	Estacionario . . . . . 24 Jun 18
Estacionario . . . . .	13 May 10	Máxima Elongación W . . 13 Ago 00 (46°)
Conjunción inferior . . . . .	3 Jun 18	.....

## FENÓMENOS HELIOCÉNTRICOS, 2020

	PERIHELIO	Máxima latitud N	Nodo descendente	AFELIO	Máxima latitud S	Nodo ascendente
	h	h	h	h	h	h
Mercurio . . . .	—	—	—	—	19 Ene 12	7 Feb 13
	12 Feb 05	22 Feb 10	16 Mar 20	27 Mar 05	16 Abr 11	5 May 12
	10 May 04	20 May 09	12 Jun 19	23 Jun 04	13 Jul 10	1 Ago 12
	6 Ago 04	16 Ago 09	8 Sep 18	19 Sep 03	9 Oct 09	28 Oct 11
	2 Nov 03	12 Nov 08	5 Dic 18	16 Dic 03	—	—
Venus . . . . .	—	—	—	—	—	15 Feb 06
	20 Mar 02	10 Abr 18	5 Jun 19	10 Jul 15	1 Ago 15	26 Sep 23
	30 Oct 23	21 Nov 11	—	—	—	—
Marte . . . . .	3 Ago 09	—	1 Feb 18	—	8 Jul 00	2 Dic 04
Júpiter . . . . .	—	—	26 Feb 01	—	—	—
Saturno . . . . .	—	—	13 Feb 01	—	—	—
Ceres . . . . .	—	—	—	19 Ago 17	16 Nov 02	—
Pallas . . . . .	—	5 Feb 13	—	11 Nov 09	—	—
Vesta . . . . .	—	—	—	2 Mar 07	—	6 Jul 21

Urano, Neptuno, Plutón, Juno: sin fenómenos en 2020

### Datos de Planetas

Planeta	Periodo de Revolución	Inclina- ción	Diámetro ecuatorial	Planeta	Periodo de Revolución	Inclina- ción	Diámetro ecuatorial
Mercurio	88 días	7°	4880 km	Saturno	29.42 años	2.5°	120000 Km
Venus	224.7 días	3.4°	12100	Urano	84 años	0.8°	52290
Tierra	365.26 días	0°	12756	Neptuno	164 años	1.8°	50450
Marte	687 días	1.9°	6794	Plutón	248 años	17.2°	2200-2300
Júpiter	11.86 años	1.3°	143200				

## Fenómenos diarios 2020

### Configuración del Sol, Luna y Planetas (UT)

#### Enero

1 21	Vesta estacionario	13 18	Ceres en conjunción
2 02	Luna en el apogeo	13 20	Luna en el perigeo
3 05	CUARTO CRECIENTE	17 00	Juno 2°.8 al S de la Luna
4 18	Urano 4.7° al N de la Luna	17 03	Spica 7°.7 al S de la Luna
5 08	Sol en el perigeo	17 04	Antares 4°.8 al S de Marte
5 17	Vesta 2°.0 al S de la Luna	17 13	CUARTO MENGUANTE
7 22	Aldebarán 3°.0 al S de la Luna	20 15	Antares 7°.2 al S de la Luna
10 15	Mercurio en conjunción superior	20 19	Marte 2°.3 al S de la Luna
10 19	LUNA LLENA. ECL. DE LUNA	23 03	Júpiter 0°.4 al N de la Luna
11 03	Pollux 5°.3 al N de la Luna	24 22	LUNA NUEVA
11 07	Urano estacionario	27 19	Neptuno 0°.07 al N de Venus
13 12	Regulus 3°.8 al S de la Luna	28 06	Neptuno 4°.1 al N de la Luna
13 13	Plutón en conjunción	28 07	Venus 4°.1 al N de la Luna
13 15	Saturno en conjunción	29 21	Luna en el apogeo

#### Febrero

1 03	Urano 4°.6 al N de la Luna	16 10	Mercurio estacionario
2 02	CUARTO CRECIENTE	16 20	Antares 7°.1 al S de la Luna
2 09	Vesta 0°.6 al S de la Luna	18 13	Marte 0°.8 al S de la Luna
4 07	Aldebarán 3°.1 al S de la Luna	19 20	Júpiter 0°.9 al N de la Luna
7 13	Pollux 5°.3 al N de la Luna	20 08	Plutón 0°.7 al N de la Luna
9 08	LUNA LLENA	20 14	Saturno 1°.7 al N de la Luna
9 22	Regulus 3°.8 al S de la Luna	21 13	Ceres 2°.7 al S de la Luna
10 14	Mercurio en máx. elong. E(18°)	23 16	LUNA NUEVA
10 20	Luna en el perigeo	26 02	Mercurio en conjunción inferior
13 07	Juno estacionario	26 12	Luna en el apogeo
13 10	Spica 7°.6 al S de la Luna	27 12	Venus 6°.3 al N de la Luna
13 10	Juno 0°.6 al S de la Luna	28 12	Urano 4°.3 al N de la Luna
15 22	CUARTO MENGUANTE		

#### Marzo

1 06	Vesta 0°.1 al N de la Luna	18 15	Plutón 0°.9 al N de la Luna
2 16	Aldebarán 3°.3 al S de la Luna	19 00	Saturno 2°.1 al N de la Luna
2 20	CUARTO CRECIENTE	20 04	Equinoccio
6 00	Pollux 5°.2 al N de la Luna	20 06	Júpiter 0°.7 al N de Marte
8 09	Regulus 3°.8 al S de la Luna	20 16	Ceres 2°.7 al S de la Luna
8 12	Neptuno en conjunción	21 18	Mercurio 3°.6 al N de la Luna
9 08	Mercurio estacionario	23 05	Plutón 0°.01 al N de Marte
9 15	Urano 2°.4 al S de Venus	24 02	Mercurio en máx. elong. W(28°)
9 18	LUNA LLENA	24 09	LUNA NUEVA
10 06	Luna en el perigeo	24 15	Luna en el apogeo
11 16	Juno 1°.7 al N de la Luna	24 22	Venus en máx. elong. E(46°)
11 20	Spica 7°.4 al S de la Luna	26 21	Urano 4°.1 al N de la Luna
15 03	Antares 6°.8 al S de la Luna	28 11	Venus 6°.8 al N de la Luna
16 10	CUARTO MENGUANTE	29 07	Vesta 0°.1 al N de la Luna
18 08	Marte 0°.7 al N de la Luna	29 22	Aldebarán 3°.6 al S de la Luna
18 10	Júpiter 1°.5 al N de la Luna	31 11	Saturno 0°.9 al N de Marte

## Fenómenos diarios 2020

### Configuración del Sol, Luna y Planetas (UT)

#### Abril

1 10	CUARTO CRECIENTE	16 05	Marte 2°.0 al N de la Luna
2 08	Pollux 4°.9 al N de la Luna	17 10	Vesta 6°.4 al S de Venus
2 20	Juno en oposición	17 17	Ceres 3°.2 al S de la Luna
3 15	Neptuno 1°.4 al N de Mercurio	17 20	Aldebarán 10°.1 al S de Venus
4 19	Regulus 4°.0 al S de la Luna	19 07	Neptuno 4°.2 al N de la Luna
6 10	Plutón 0°.8 al S de Júpiter	20 19	Luna en el apogeo
7 18	Luna en el perigeo	21 17	Mercurio 3°.1 al N de la Luna
7 19	Juno 3°.3 al N de la Luna	23 02	LUNA NUEVA
8 03	LUNA LLENA	26 04	Aldebarán 3°.8 al S de la Luna
8 07	Spica 7°.3 al S de la Luna	26 09	Urano en conjunción
11 12	Antares 6°.6 al S de la Luna	26 11	Vesta 0°.1 al S de la Luna
14 22	Plutón 1°.2 al N de la Luna	26 13	Plutón estacionario
14 23	CUARTO MENGUANTE	26 15	Venus 6°.1 al N de la Luna
14 23	Júpiter 2°.0 al N de la Luna	29 15	Pollux 4°.7 al N de la Luna
15 09	Saturno 2°.5 al N de la Luna	30 21	CUARTO CRECIENTE

#### Mayo

2 03	Regulus 4°.2 al S de la Luna	15 16	Ceres 4°.2 al S de la Luna
4 21	Juno 3°.9 al N de la Luna	16 15	Neptuno 4°.4 al N de la Luna
4 22	Mercurio en conjunción superior	17 09	Aldebarán 7°.4 al S de Mercurio
5 17	Spica 7°.4 al S de la Luna	18 08	Luna en el apogeo
6 03	Luna en el perigeo	20 16	Urano 3°.9 al N de la Luna
7 11	LUNA LLENA	22 08	Venus 0°.9 al N de Mercurio
8 22	Antares 6°.5 al S de la Luna	22 18	LUNA NUEVA
11 09	Saturno estacionario	24 03	Venus 3°.7 al N de la Luna
11 11	Palas estacionario	24 11	Mercurio 2°.8 al N de la Luna
12 06	Plutón 1°.3 al N de la Luna	24 15	Vesta 0°.6 al S de la Luna
12 10	Júpiter 2°.3 al N de la Luna	26 06	Vesta 3°.1 al S de Mercurio
12 18	Saturno 2°.7 al N de la Luna	26 20	Pollux 4°.5 al N de la Luna
13 10	Venus estacionario	27 14	Juno estacionario
14 14	CUARTO MENGUANTE	29 09	Regulus 4°.3 al S de la Luna
14 17	Vesta 5°.3 al S de Venus	30 03	CUARTO CRECIENTE
14 18	Júpiter estacionario	31 11	Ceres 8°.0 al S de Marte
15 02	Marte 2°.8 al N de la Luna		

#### Junio

1 03	Juno 3°.8 al N de la Luna	15 01	Luna en el apogeo
2 02	Spica 7°.5 al S de la Luna	17 02	Urano 3°.9 al N de la Luna
3 04	Luna en el perigeo	17 20	Mercurio estacionario
3 18	Venus en conjunción inferior	19 09	Venus 0°.7 al S de la Luna (oc.)
4 13	Mercurio en máx. elong. E(24°)	19 17	Aldebarán 3°.8 al S de la Luna
5 08	Antares 6°.5 al S de la Luna	20 22	Solsticio
5 19	LUNA LLENA. ECL. DE LUNA	21 07	LUNA NUEVA. ECL. DE SOL
8 15	Plutón 1°.3 al N de la Luna	23 02	Pollux 4°.5 al N de la Luna
8 17	Júpiter 2°.2 al N de la Luna	23 18	Neptuno estacionario
9 02	Saturno 2°.7 al N de la Luna	24 18	Venus estacionario
12 12	Ceres 5°.9 al S de la Luna	25 15	Regulus 4.4 al S de la Luna
12 12	Neptuno 1°.7 al N de Marte	28 08	CUARTO CRECIENTE
12 23	Neptuno 4°.5 al N de la Luna	28 13	Juno 3°.5 al N de la Luna
13 00	Marte 2°.7 al N de la Luna	28 23	Plutón 0°.7 al S de Júpiter
13 06	CUARTO MENGUANTE	29 08	Spica 7°.5 al S de la Luna

## Fenómenos diarios 2020

### Configuración del Sol, Luna y Planetas (UT)

#### Julio

1 03	Mercurio en conjunción inferior	13 02	Palas en oposición
2 17	Antares 6°.5 al S de la Luna	14 08	Júpiter en oposición
4 12	Sol en el apogeo	14 12	Urano 3°.7 al N de la Luna
5 05	LUNA LLENA. ECL. DE LUNA	15 19	Plutón en oposición
5 06	Vesta en conjunción	17 02	Aldebarán 3°.9 al S de la Luna
5 22	Júpiter 1°.9 al N de la Luna	17 07	Venus 3°.1 al S de la Luna
5 23	Plutón 1°.2 al N de la Luna	19 04	Mercurio 3°.9 al S de la Luna
6 09	Saturno 2°.5 al N de la Luna	20 18	LUNA NUEVA
10 02	Ceres 8°.2 al S de la Luna	20 22	Saturno en oposición
10 07	Neptuno 4°.4 al N de la Luna	22 15	Mercurio en máx. elong. W(20°)
11 20	Marte 2°.0 al N de la Luna	22 21	Regulus 4°.3 al S de la Luna
12 07	Aldebarán 1°.0 al S de Venus	25 05	Luna en el perigeo
12 07	Mercurio estacionario	26 03	Juno 3°.4 al N de la Luna
12 19	Luna en el apogeo	26 14	Spica 7°.4 al S de la Luna
12 23	CUARTO MENGUANTE	27 13	CUARTO CRECIENTE
13 02	Ceres estacionario	29 23	Antares 6°.4 al S de la Luna

#### Agosto

2 00	Júpiter 1°.5 al N de la Luna	15 17	Urano estacionario
2 06	Pollux 6°.6 al N de Mercurio	16 20	Pollux 4°.5 al N de la Luna
2 06	Plutón 1°.1 al N de la Luna	17 09	Vesta 2°.0 al S de la Luna
2 13	Saturno 2°.3 al N de la Luna	17 15	Mercurio en conjunción superior
3 05	Vesta 0°.2 al N de Mercurio	19 03	LUNA NUEVA
3 16	LUNA LLENA	21 11	Luna en el perigeo
6 06	Ceres 10°.5 al S de la Luna	22 20	Spica 7°.2 al S de la Luna
6 15	Neptuno 4°.3 al N de la Luna	22 22	Juno 3°.7 al N de la Luna
9 08	Marte 0°.8 al N de la Luna	25 18	CUARTO CRECIENTE
9 14	Luna en el apogeo	26 05	Antares 6°.2 al S de la Luna
10 21	Urano 3°.5 al N de la Luna	28 12	Ceres en oposición
11 17	CUARTO MENGUANTE	29 02	Júpiter 1°.4 al N de la Luna
13 00	Venus en máx. elong. W(46°)	29 11	Plutón 1°.2 al N de la Luna
13 11	Aldebarán 4°.0 al S de la Luna	29 17	Saturno 2°.2 al N de la Luna
15 13	Venus 4°.0 al S de la Luna		

#### Septiembre

1 17	Pollux 8°.7 al N de Venus	15 16	Regulus 4°.3 al S de la Luna
2 03	Ceres 11°.5 al S de la Luna	17 11	LUNA NUEVA
2 05	LUNA LLENA	18 14	Luna en el perigeo
2 13	Palas estacionario	18 22	Mercurio 6°.4 al S de la Luna
2 21	Neptuno 4°.2 al N de la Luna	19 05	Spica 7°.0 al S de la Luna
6 05	Marte 0°.03 al S de la Luna	19 21	Juno 4°.2 al N de la Luna
6 06	Luna en el apogeo	22 09	Spica 0°.3 al S de Mercurio
7 04	Urano 3°.3 al N de la Luna	22 11	Antares 5°.9 al S de la Luna
9 18	Marte estacionario	22 14	Equinoccio
9 19	Aldebarán 4°.2 al S de la Luna	23 09	Vesta 2°.2 al N de Venus
10 09	CUARTO MENGUANTE	24 02	CUARTO CRECIENTE
11 20	Neptuno en oposición	25 07	Júpiter 1°.6 al N de la Luna
13 00	Júpiter estacionario	25 16	Plutón 1°.3 al N de la Luna
13 05	Pollux 4°.3 al N de la Luna	25 21	Saturno 2°.3 al N de la Luna
14 05	Venus 4°.5 al S de la Luna	28 23	Ceres 10°.7 al S de la Luna
14 16	Vesta 2°.3 al S de la Luna	29 03	Saturno estacionario



## Fenómenos diarios 2020

### Configuración del Sol, Luna y Planetas (UT)

#### Octubre

1 16	Mercurio en máx. elong. E(26°)	16 20	LUNA NUEVA
1 21	LUNA LLENA	17 00	Luna en el perigeo
3 00	Regulus 0°.09 al N de Venus	17 22	Juno 5°.0 al N de la Luna
3 03	Marte 0°.7 al N de la Luna	19 20	Antares 5°.7 al S de la Luna
3 17	Luna en el apogeo	22 17	Júpiter 2°.0 al N de la Luna
4 06	Plutón estacionario	22 22	Plutón 1°.5 al N de la Luna
4 09	Urano 3°.2 al N de la Luna	23 03	Ceres estacionario
7 02	Aldebarán 4°.5 al S de la Luna	23 04	Saturno 2°.6 al N de la Luna
7 18	Juno 12°.0 al N de Mercurio	23 13	CUARTO CRECIENTE
10 01	CUARTO MENGUANTE	25 18	Mercurio en conjunción inferior
10 14	Pollux 4°.1 al N de la Luna	26 01	Ceres 8°.8 al S de la Luna
12 21	Vesta 2°.3 al S de la Luna	27 06	Neptuno 4°.3 al N de la Luna
13 21	Regulus 4°.5 al S de la Luna	29 16	Marte 3°.0 al N de la Luna
13 23	Marte en oposición	30 19	Luna en el apogeo
14 00	Venus 4°.3 al S de la Luna	31 13	Urano 3°.2 al N de la Luna
14 05	Mercurio estacionario	31 15	LUNA LLENA
14 08	Juno 12°.0 al N de Mercurio	31 16	Urano en oposición

#### Noviembre

3 08	Aldebarán 4°.6 al S de la Luna	15 13	Spica 4°.1 al S de Venus
3 08	Mercurio estacionario	15 19	Marte estacionario
6 20	Pollux 3°.8 al N de la Luna	19 07	Plutón 1°.7 al N de la Luna
8 09	Juno en conjunción	19 09	Júpiter 2°.5 al N de la Luna
8 14	CUARTO MENGUANTE	19 15	Saturno 2°.9 al N de la Luna
9 11	Regulus 4°.7 al S de la Luna	22 05	CUARTO CRECIENTE
10 00	Vesta 1°.8 al S de la Luna	22 13	Ceres 6°.7 al S de la Luna
10 17	Mercurio en máx. elong. W(19°)	23 12	Neptuno 4°.5 al N de la Luna
12 22	Venus 3°.1 al S de la Luna	25 20	Marte 4°.9 al N de la Luna
13 03	Spica 7°.0 al S de la Luna	27 00	Luna en el apogeo
13 17	Plutón 0°.7 al S de Júpiter	27 17	Urano 3°.3 al N de la Luna
13 21	Mercurio 1°.7 al S de la Luna	28 20	Juno 8°.2 al N de Mercurio
14 12	Luna en el perigeo	29 09	Neptuno estacionario
15 05	LUNA NUEVA	30 09	LUNA LLENA. ECL. DE LUNA

#### Diciembre

4 02	Pollux 3°.8 al N de la Luna	20 09	Ceres 5°.1 al S de la Luna
6 17	Regulus 4°.8 al S de la Luna	20 20	Neptuno 4°.6 al N de la Luna
7 22	Vesta 0°.5 al S de la Luna	21 10	Solsticio
8 01	CUARTO MENGUANTE	21 14	Saturno 0°.1 al N de Júpiter
10 12	Spica 7°.1 al S de la Luna	22 00	CUARTO CRECIENTE
12 21	Venus 0°.8 al S de la Luna	23 01	Antares 5°.6 al S de Venus
12 21	Luna en el perigeo	23 19	Marte 5°.6 al N de la Luna
13 02	Juno 7°.4 al N de la Luna	23 21	Palas 19°.9 al N de Saturno
14 16	LUNA NUEVA. ECL. DE SOL	24 17	Luna en el apogeo
16 10	Juno 8°.1 al N de Venus	24 23	Urano 3°.4 al N de la Luna
16 19	Plutón 1°.8 al N de la Luna	27 00	Palas 19°.8 al N de Júpiter
17 04	Júpiter 2°.9 al N de la Luna	27 21	Aldebarán 4°.7 al S de la Luna
17 05	Saturno 3°.1 al N de la Luna	30 03	LUNA LLENA
20 03	Mercurio en conjunción superior	31 08	Pollux 3°.8 al N de la Luna



## Sol

En estas tablas se proporciona, para todos los días del año, la siguiente información:

- Hora (en Tiempo Universal) y acimut de la salida y puesta del limbo superior del Sol.  
(El acimut está medido sobre el horizonte a partir del Norte hacia el Este. Esto es:  $N = 0^\circ$  ;  $E = 90^\circ$  ;  $S = 180^\circ$  ;  $O = 270^\circ$ ).
- Hora (en Tiempo Universal) y altura de paso por el meridiano.
- Hora (en Tiempo Universal) de comienzo y fin del crepúsculo civil.  
Este se produce cuando el centro del sol alcanza una distancia cenital de  $96^\circ$  ( $6^\circ$  bajo el horizonte). (\*)
- Horas de luz (horas comprendidas entre la salida y puesta del sol).

(\*) *El grado de iluminación al comienzo o fin del crepúsculo civil se dice que es tal que las estrellas más brillantes son visibles y que el horizonte está claramente definido.*



# SOL

Longitud : -04h 34m 28.8s

Latitud : -31° 30' 38.5"

San Juan - Argentina

Día del Mes	Día de la Semana	Día del Año	Comienzo			Paso		Puesta		Fin		Horas de luz
			Crepúsculo Civil	Salida Hora	Az.	Meridiano Hora	h.	Hora	Az.	Crepúsculo Civil		
			h m	h m	°	h m	h.	h m	°	h m	h	
Todas las horas son en Tiempo Universal												
1	Miércoles	1	09 05	09 33	118	16 38	82N	23 43	242	00 10	14,1	<b>Enero 2020</b>
2	Jueves	2	09 06	09 34	118	16 38	82N	23 43	242	00 11	14,1	
3	Viernes	3	09 07	09 34	118	16 39	82N	23 43	242	00 11	14,1	
4	Sábado	4	09 07	09 35	118	16 39	82N	23 43	243	00 11	14,1	
5	Domingo	5	09 08	09 36	117	16 40	82N	23 43	243	00 11	14,1	
6	Lunes	6	09 09	09 37	117	16 40	82N	23 43	243	00 11	14,1	
7	Martes	7	09 10	09 38	117	16 41	82N	23 44	243	00 11	14,1	
8	Miércoles	8	09 11	09 38	117	16 41	81N	23 44	243	00 11	14,1	
9	Jueves	9	09 12	09 39	117	16 41	81N	23 44	243	00 11	14,0	
10	Viernes	10	09 12	09 40	117	16 42	81N	23 43	243	00 11	14,0	
11	Sábado	11	09 13	09 41	116	16 42	81N	23 43	244	00 11	14,0	
12	Domingo	12	09 14	09 42	116	16 43	81N	23 43	244	00 11	14,0	
13	Lunes	13	09 15	09 43	116	16 43	81N	23 43	244	00 11	14,0	
14	Martes	14	09 16	09 43	116	16 43	81N	23 43	244	00 11	14,0	
15	Miércoles	15	09 17	09 44	116	16 44	80N	23 43	244	00 10	13,9	
16	Jueves	16	09 18	09 45	115	16 44	80N	23 43	245	00 10	13,9	
17	Viernes	17	09 19	09 46	115	16 44	80N	23 42	245	00 10	13,9	
18	Sábado	18	09 20	09 47	115	16 45	80N	23 42	245	00 10	13,9	
19	Domingo	19	09 21	09 48	115	16 45	80N	23 42	245	00 09	13,9	
20	Lunes	20	09 22	09 49	114	16 45	79N	23 42	246	00 09	13,8	
21	Martes	21	09 23	09 50	114	16 46	79N	23 41	246	00 09	13,8	
22	Miércoles	22	09 24	09 51	114	16 46	79N	23 41	246	00 08	13,8	
23	Jueves	23	09 25	09 52	114	16 46	79N	23 40	247	00 08	13,8	
24	Viernes	24	09 26	09 53	113	16 46	78N	23 40	247	00 07	13,7	
25	Sábado	25	09 27	09 54	113	16 47	78N	23 40	247	00 07	13,7	
26	Domingo	26	09 28	09 54	113	16 47	78N	23 39	247	00 06	13,7	
27	Lunes	27	09 29	09 55	112	16 47	78N	23 39	248	00 06	13,7	
28	Martes	28	09 30	09 56	112	16 47	77N	23 38	248	00 05	13,7	
29	Miércoles	29	09 31	09 57	112	16 48	77N	23 37	248	00 04	13,6	
30	Jueves	30	09 32	09 58	112	16 48	77N	23 37	249	00 04	13,6	
31	Viernes	31	09 33	09 59	111	16 48	77N	23 36	249	00 03	13,6	

1	Sábado	32	09 34	10 00	111	16 48	76N	23 36	249	00 02	13,6	<b>Febrero 2020</b>
2	Domingo	33	09 35	10 01	110	16 48	76N	23 35	250	00 02	13,5	
3	Lunes	34	09 36	10 02	110	16 48	76N	23 34	250	00 01	13,5	
4	Martes	35	09 37	10 03	110	16 48	75N	23 33	250	00 00	13,5	
5	Miércoles	36	09 38	10 04	109	16 48	75N	23 33	251	23 59	13,4	
6	Jueves	37	09 39	10 05	109	16 49	75N	23 32	251	23 58	13,4	
7	Viernes	38	09 40	10 06	109	16 49	75N	23 31	252	23 57	13,4	
8	Sábado	39	09 41	10 06	108	16 49	74N	23 30	252	23 56	13,4	
9	Domingo	40	09 42	10 07	108	16 49	74N	23 30	252	23 55	13,3	
10	Lunes	41	09 43	10 08	108	16 49	74N	23 29	253	23 54	13,3	
11	Martes	42	09 43	10 09	107	16 49	73N	23 28	253	23 53	13,3	
12	Miércoles	43	09 44	10 10	107	16 49	73N	23 27	253	23 52	13,2	
13	Jueves	44	09 45	10 11	106	16 49	73N	23 26	254	23 51	13,2	
14	Viernes	45	09 46	10 12	106	16 49	72N	23 25	254	23 50	13,2	
15	Sábado	46	09 47	10 13	106	16 49	72N	23 24	255	23 49	13,1	
16	Domingo	47	09 48	10 13	105	16 49	72N	23 23	255	23 48	13,1	
17	Lunes	48	09 49	10 14	105	16 48	71N	23 22	255	23 47	13,1	
18	Martes	49	09 50	10 15	104	16 48	71N	23 21	256	23 46	13,1	
19	Miércoles	50	09 51	10 16	104	16 48	70N	23 20	256	23 45	13,0	
20	Jueves	51	09 52	10 17	104	16 48	70N	23 19	257	23 44	13,0	
21	Viernes	52	09 53	10 18	103	16 48	70N	23 18	257	23 43	13,0	
22	Sábado	53	09 53	10 18	103	16 48	69N	23 17	258	23 42	12,9	
23	Domingo	54	09 54	10 19	102	16 48	69N	23 16	258	23 41	12,9	
24	Lunes	55	09 55	10 20	102	16 48	69N	23 15	258	23 40	12,9	
25	Martes	56	09 56	10 21	101	16 48	68N	23 14	259	23 39	12,8	
26	Miércoles	57	09 57	10 22	101	16 47	68N	23 13	259	23 38	12,8	
27	Jueves	58	09 58	10 22	100	16 47	68N	23 12	260	23 36	12,8	
28	Viernes	59	09 58	10 23	100	16 47	67N	23 10	260	23 35	12,7	
29	Sábado	60	09 59	10 24	100	16 47	67N	23 09	261	23 34	12,7	

# SOL

Longitud : -04h 34m 28.8s

Latitud : -31° 30' 38.5"

San Juan - Argentina

Día del Mes	Día de la Semana	Día del Año	Comienzo			Paso		Puesta		Fin		Horas de luz	
			Crepúsculo Civil	Salida Hora	Az. °	Meridiano Hora	h. °	Hora	Az. °	Crepúsculo Civil	de luz h		
Todas las horas son en Tiempo Universal													
1	Domingo	61	10 00	10 25	99	16 47	66N	23 08	261	23 33	12,7	<b>Marzo 2020</b>	
2	Lunes	62	10 01	10 25	99	16 46	66N	23 07	262	23 32	12,7		
3	Martes	63	10 02	10 26	98	16 46	66N	23 06	262	23 30	12,6		
4	Miércoles	64	10 02	10 27	98	16 46	65N	23 05	262	23 29	12,6		
5	Jueves	65	10 03	10 28	97	16 46	65N	23 03	263	23 28	12,5		
6	Viernes	66	10 04	10 28	97	16 46	64N	23 02	263	23 27	12,5		
7	Sábado	67	10 05	10 29	96	16 45	64N	23 01	264	23 25	12,5		
8	Domingo	68	10 05	10 30	96	16 45	64N	23 00	264	23 24	12,5		
9	Lunes	69	10 06	10 31	95	16 45	63N	22 59	265	23 23	12,4		
10	Martes	70	10 07	10 31	95	16 45	63N	22 57	265	23 22	12,4		
11	Miércoles	71	10 08	10 32	95	16 44	63N	22 56	266	23 20	12,4		
12	Jueves	72	10 08	10 33	94	16 44	62N	22 55	266	23 19	12,3		
13	Viernes	73	10 09	10 33	94	16 44	62N	22 54	267	23 18	12,3		
14	Sábado	74	10 10	10 34	93	16 44	61N	22 52	267	23 17	12,3		
15	Domingo	75	10 10	10 35	93	16 43	61N	22 51	268	23 15	12,2		
16	Lunes	76	10 11	10 35	92	16 43	61N	22 50	268	23 14	12,2		
17	Martes	77	10 12	10 36	92	16 43	60N	22 49	268	23 13	12,2		
18	Miércoles	78	10 13	10 37	91	16 42	60N	22 47	269	23 12	12,1		
19	Jueves	79	10 13	10 38	91	16 42	59N	22 46	269	23 10	12,1		
20	Viernes	80	10 14	10 38	90	16 42	59N	22 45	270	23 09	12,1		
21	Sábado	81	10 15	10 39	90	16 41	59N	22 44	270	23 08	12,0		
22	Domingo	82	10 15	10 40	89	16 41	58N	22 42	271	23 07	12,0		
23	Lunes	83	10 16	10 40	89	16 41	58N	22 41	271	23 05	12,0		
24	Martes	84	10 17	10 41	89	16 41	57N	22 40	272	23 04	11,9		
25	Miércoles	85	10 17	10 42	88	16 40	57N	22 39	272	23 03	11,9		
26	Jueves	86	10 18	10 42	88	16 40	57N	22 37	273	23 01	11,9		
27	Viernes	87	10 19	10 43	87	16 40	56N	22 36	273	23 00	11,8		
28	Sábado	88	10 19	10 44	87	16 39	56N	22 35	274	22 59	11,8		
29	Domingo	89	10 20	10 44	86	16 39	55N	22 33	274	22 58	11,8		
30	Lunes	90	10 21	10 45	86	16 39	55N	22 32	274	22 56	11,7		
31	Martes	91	10 21	10 46	85	16 38	55N	22 31	275	22 55	11,7		
-----													
1	Miércoles	92	10 22	10 46	85	16 38	54N	22 30	275	22 54	11,7	<b>Abril 2020</b>	
2	Jueves	93	10 22	10 47	84	16 38	54N	22 28	276	22 53	11,6		
3	Viernes	94	10 23	10 47	84	16 38	54N	22 27	276	22 52	11,6		
4	Sábado	95	10 24	10 48	84	16 37	53N	22 26	277	22 50	11,6		
5	Domingo	96	10 24	10 49	83	16 37	53N	22 25	277	22 49	11,6		
6	Lunes	97	10 25	10 49	83	16 37	52N	22 24	278	22 48	11,5		
7	Martes	98	10 26	10 50	82	16 36	52N	22 22	278	22 47	11,5		
8	Miércoles	99	10 26	10 51	82	16 36	52N	22 21	278	22 46	11,5		
9	Jueves	100	10 27	10 51	81	16 36	51N	22 20	279	22 44	11,4		
10	Viernes	101	10 28	10 52	81	16 36	51N	22 19	279	22 43	11,4		
11	Sábado	102	10 28	10 53	80	16 35	51N	22 18	280	22 42	11,4		
12	Domingo	103	10 29	10 53	80	16 35	50N	22 16	280	22 41	11,3		
13	Lunes	104	10 29	10 54	80	16 35	50N	22 15	281	22 40	11,3		
14	Martes	105	10 30	10 55	79	16 35	49N	22 14	281	22 39	11,3		
15	Miércoles	106	10 31	10 55	79	16 34	49N	22 13	281	22 38	11,3		
16	Jueves	107	10 31	10 56	78	16 34	49N	22 12	282	22 37	11,2		
17	Viernes	108	10 32	10 57	78	16 34	48N	22 11	282	22 35	11,2		
18	Sábado	109	10 33	10 57	78	16 34	48N	22 10	283	22 34	11,2		
19	Domingo	110	10 33	10 58	77	16 33	48N	22 09	283	22 33	11,1		
20	Lunes	111	10 34	10 59	77	16 33	47N	22 07	283	22 32	11,1		
21	Martes	112	10 35	10 59	76	16 33	47N	22 06	284	22 31	11,1		
22	Miércoles	113	10 35	11 00	76	16 33	47N	22 05	284	22 30	11,0		
23	Jueves	114	10 36	11 01	76	16 33	46N	22 04	285	22 29	11,0		
24	Viernes	115	10 36	11 01	75	16 33	46N	22 03	285	22 28	11,0		
25	Sábado	116	10 37	11 02	75	16 32	46N	22 02	285	22 27	11,0		
26	Domingo	117	10 38	11 03	74	16 32	45N	22 01	286	22 26	10,9		
27	Lunes	118	10 38	11 03	74	16 32	45N	22 00	286	22 25	10,9		
28	Martes	119	10 39	11 04	74	16 32	45N	21 59	287	22 24	10,9		
29	Miércoles	120	10 40	11 05	73	16 32	44N	21 58	287	22 24	10,8		
30	Jueves	121	10 40	11 05	73	16 32	44N	21 58	287	22 23	10,8		

# SOL

Longitud : -04h 34m 28.8s

Latitud : -31° 30' 38.5"

San Juan - Argentina

Día del Mes	Día de la Semana	Día del Año	Comienzo			Paso			Puesta		Fin		Horas de luz	
			Crepúsculo Civil	Salida Hora	Az. °	Meridiano Hora	h. °	h m	Az. °	Crepúsculo Civil	h m			
Todas las horas son en Tiempo Universal														
1	Viernes	122	10 41	11 06	73	16 32	44N	21 57	288	22 22	10,8	Mayo 2020		
2	Sábado	123	10 41	11 07	72	16 31	44N	21 56	288	22 21	10,8			
3	Domingo	124	10 42	11 07	72	16 31	43N	21 55	288	22 20	10,8			
4	Lunes	125	10 43	11 08	71	16 31	43N	21 54	289	22 19	10,7			
5	Martes	126	10 43	11 09	71	16 31	43N	21 53	289	22 19	10,7			
6	Miércoles	127	10 44	11 09	71	16 31	42N	21 52	289	22 18	10,7			
7	Jueves	128	10 45	11 10	70	16 31	42N	21 52	290	22 17	10,7			
8	Viernes	129	10 45	11 11	70	16 31	42N	21 51	290	22 16	10,6			
9	Sábado	130	10 46	11 11	70	16 31	42N	21 50	290	22 16	10,6			
10	Domingo	131	10 47	11 12	70	16 31	41N	21 49	291	22 15	10,6			
11	Lunes	132	10 47	11 13	69	16 31	41N	21 49	291	22 14	10,6			
12	Martes	133	10 48	11 13	69	16 31	41N	21 48	291	22 14	10,5			
13	Miércoles	134	10 48	11 14	69	16 31	41N	21 47	292	22 13	10,5			
14	Jueves	135	10 49	11 15	68	16 31	40N	21 47	292	22 12	10,5			
15	Viernes	136	10 50	11 15	68	16 31	40N	21 46	292	22 12	10,5			
16	Sábado	137	10 50	11 16	68	16 31	40N	21 45	292	22 11	10,4			
17	Domingo	138	10 51	11 17	68	16 31	40N	21 45	293	22 11	10,4			
18	Lunes	139	10 51	11 17	67	16 31	39N	21 44	293	22 10	10,4			
19	Martes	140	10 52	11 18	67	16 31	39N	21 44	293	22 10	10,4			
20	Miércoles	141	10 53	11 19	67	16 31	39N	21 43	293	22 09	10,4			
21	Jueves	142	10 53	11 19	67	16 31	39N	21 43	294	22 09	10,4			
22	Viernes	143	10 54	11 20	66	16 31	39N	21 42	294	22 08	10,3			
23	Sábado	144	10 54	11 21	66	16 31	38N	21 42	294	22 08	10,3			
24	Domingo	145	10 55	11 21	66	16 31	38N	21 41	294	22 08	10,3			
25	Lunes	146	10 56	11 22	66	16 32	38N	21 41	294	22 07	10,3			
26	Martes	147	10 56	11 22	65	16 32	38N	21 41	295	22 07	10,3			
27	Miércoles	148	10 57	11 23	65	16 32	38N	21 40	295	22 07	10,2			
28	Jueves	149	10 57	11 24	65	16 32	38N	21 40	295	22 06	10,2			
29	Viernes	150	10 58	11 24	65	16 32	37N	21 40	295	22 06	10,2			
30	Sábado	151	10 58	11 25	65	16 32	37N	21 39	295	22 06	10,2			
31	Domingo	152	10 59	11 25	64	16 32	37N	21 39	296	22 06	10,2			
-----														
1	Lunes	153	10 59	11 26	64	16 32	37N	21 39	296	22 05	10,2	Junio 2020		
2	Martes	154	11 00	11 26	64	16 33	37N	21 39	296	22 05	10,2			
3	Miércoles	155	11 00	11 27	64	16 33	37N	21 38	296	22 05	10,1			
4	Jueves	156	11 01	11 27	64	16 33	37N	21 38	296	22 05	10,1			
5	Viernes	157	11 01	11 28	64	16 33	37N	21 38	296	22 05	10,1			
6	Sábado	158	11 02	11 28	64	16 33	36N	21 38	296	22 05	10,1			
7	Domingo	159	11 02	11 29	64	16 33	36N	21 38	297	22 05	10,1			
8	Lunes	160	11 03	11 29	63	16 34	36N	21 38	297	22 05	10,1			
9	Martes	161	11 03	11 30	63	16 34	36N	21 38	297	22 05	10,1			
10	Miércoles	162	11 03	11 30	63	16 34	36N	21 38	297	22 05	10,1			
11	Jueves	163	11 04	11 31	63	16 34	36N	21 38	297	22 05	10,1			
12	Viernes	164	11 04	11 31	63	16 34	36N	21 38	297	22 05	10,1			
13	Sábado	165	11 05	11 31	63	16 35	36N	21 38	297	22 05	10,1			
14	Domingo	166	11 05	11 32	63	16 35	36N	21 38	297	22 05	10,1			
15	Lunes	167	11 05	11 32	63	16 35	36N	21 38	297	22 05	10,1			
16	Martes	168	11 05	11 32	63	16 35	36N	21 38	297	22 05	10,1			
17	Miércoles	169	11 06	11 33	63	16 36	36N	21 38	297	22 05	10,0			
18	Jueves	170	11 06	11 33	63	16 36	36N	21 39	297	22 05	10,1			
19	Viernes	171	11 06	11 33	63	16 36	36N	21 39	297	22 06	10,1			
20	Sábado	172	11 07	11 33	63	16 36	36N	21 39	297	22 06	10,1			
21	Domingo	173	11 07	11 34	63	16 36	36N	21 39	297	22 06	10,0			
22	Lunes	174	11 07	11 34	63	16 37	36N	21 39	297	22 06	10,0			
23	Martes	175	11 07	11 34	63	16 37	36N	21 40	297	22 07	10,1			
24	Miércoles	176	11 07	11 34	63	16 37	36N	21 40	297	22 07	10,1			
25	Jueves	177	11 07	11 34	63	16 37	36N	21 40	297	22 07	10,1			
26	Viernes	178	11 08	11 34	63	16 38	36N	21 41	297	22 08	10,1			
27	Sábado	179	11 08	11 35	63	16 38	36N	21 41	297	22 08	10,1			
28	Domingo	180	11 08	11 35	63	16 38	36N	21 41	297	22 08	10,1			
29	Lunes	181	11 08	11 35	63	16 38	36N	21 42	297	22 09	10,1			
30	Martes	182	11 08	11 35	63	16 38	36N	21 42	297	22 09	10,1			





# SOL

Longitud : -04h 34m 28.8s

Latitud : -31° 30' 38.5"

San Juan - Argentina

Día del Mes	Día de la Semana	Día del Año	Comienzo			Paso			Fin			Horas de luz h
			Crepúsculo Civil	Salida Hora	Az. °	Meridiano Hora	h. °	Puesta Hora	Az. °	Crepúsculo Civil		
			h	m		h	m	h	m			
Todas las horas son en Tiempo Universal												
1	Martes	245	10 26	10 50	81	16 34	51N	22 19	279	22 43	11,4	<b>Septiembre 2020</b>
2	Miércoles	246	10 25	10 49	82	16 34	52N	22 19	278	22 44	11,5	
3	Jueves	247	10 23	10 48	82	16 34	52N	22 20	278	22 44	11,5	
4	Viernes	248	10 22	10 47	82	16 33	52N	22 20	277	22 45	11,5	
5	Sábado	249	10 21	10 45	83	16 33	53N	22 21	277	22 45	11,6	
6	Domingo	250	10 20	10 44	83	16 33	53N	22 22	277	22 46	11,6	
7	Lunes	251	10 18	10 43	84	16 32	53N	22 22	276	22 47	11,6	
8	Martes	252	10 17	10 41	84	16 32	54N	22 23	276	22 47	11,7	
9	Miércoles	253	10 16	10 40	85	16 32	54N	22 23	275	22 48	11,7	
10	Jueves	254	10 15	10 39	85	16 31	55N	22 24	275	22 48	11,7	
11	Viernes	255	10 13	10 38	85	16 31	55N	22 25	274	22 49	11,7	
12	Sábado	256	10 12	10 36	86	16 31	55N	22 25	274	22 49	11,8	
13	Domingo	257	10 11	10 35	86	16 30	56N	22 26	273	22 50	11,8	
14	Lunes	258	10 09	10 34	87	16 30	56N	22 26	273	22 51	11,8	
15	Martes	259	10 08	10 32	87	16 29	57N	22 27	273	22 51	11,9	
16	Miércoles	260	10 07	10 31	88	16 29	57N	22 28	272	22 52	11,9	
17	Jueves	261	10 06	10 30	88	16 29	57N	22 28	272	22 52	11,9	
18	Viernes	262	10 04	10 29	89	16 28	58N	22 29	271	22 53	12,0	
19	Sábado	263	10 03	10 27	89	16 28	58N	22 29	271	22 54	12,0	
20	Domingo	264	10 02	10 26	90	16 28	58N	22 30	270	22 54	12,0	
21	Lunes	265	10 00	10 25	90	16 27	59N	22 31	270	22 55	12,1	
22	Martes	266	09 59	10 23	90	16 27	59N	22 31	269	22 55	12,1	
23	Miércoles	267	09 58	10 22	91	16 27	60N	22 32	269	22 56	12,1	
24	Jueves	268	09 56	10 21	91	16 26	60N	22 32	268	22 57	12,1	
25	Viernes	269	09 55	10 19	92	16 26	60N	22 33	268	22 57	12,2	
26	Sábado	270	09 54	10 18	92	16 26	61N	22 34	267	22 58	12,2	
27	Domingo	271	09 52	10 17	93	16 25	61N	22 34	267	22 59	12,2	
28	Lunes	272	09 51	10 15	93	16 25	62N	22 35	267	22 59	12,3	
29	Martes	273	09 50	10 14	94	16 25	62N	22 35	266	23 00	12,3	
30	Miércoles	274	09 49	10 13	94	16 24	62N	22 36	266	23 00	12,3	

---

1	Jueves	275	09 47	10 12	95	16 24	63N	22 37	265	23 01	12,4	<b>Octubre 2020</b>
2	Viernes	276	09 46	10 10	95	16 24	63N	22 37	265	23 02	12,4	
3	Sábado	277	09 45	10 09	95	16 23	64N	22 38	264	23 02	12,4	
4	Domingo	278	09 43	10 08	96	16 23	64N	22 39	264	23 03	12,5	
5	Lunes	279	09 42	10 07	96	16 23	64N	22 39	263	23 04	12,5	
6	Martes	280	09 41	10 05	97	16 22	65N	22 40	263	23 04	12,5	
7	Miércoles	281	09 40	10 04	97	16 22	65N	22 41	262	23 05	12,6	
8	Jueves	282	09 38	10 03	98	16 22	65N	22 41	262	23 06	12,6	
9	Viernes	283	09 37	10 02	98	16 22	66N	22 42	262	23 07	12,6	
10	Sábado	284	09 36	10 00	99	16 21	66N	22 43	261	23 07	12,7	
11	Domingo	285	09 35	09 59	99	16 21	67N	22 43	261	23 08	12,7	
12	Lunes	286	09 33	09 58	99	16 21	67N	22 44	260	23 09	12,7	
13	Martes	287	09 32	09 57	100	16 21	67N	22 45	260	23 10	12,8	
14	Miércoles	288	09 31	09 56	100	16 20	68N	22 45	259	23 10	12,8	
15	Jueves	289	09 30	09 55	101	16 20	68N	22 46	259	23 11	12,8	
16	Viernes	290	09 29	09 53	101	16 20	68N	22 47	259	23 12	12,9	
17	Sábado	291	09 27	09 52	102	16 20	69N	22 48	258	23 13	12,9	
18	Domingo	292	09 26	09 51	102	16 20	69N	22 48	258	23 13	12,9	
19	Lunes	293	09 25	09 50	103	16 19	70N	22 49	257	23 14	12,9	
20	Martes	294	09 24	09 49	103	16 19	70N	22 50	257	23 15	13,0	
21	Miércoles	295	09 23	09 48	103	16 19	70N	22 51	256	23 16	13,0	
22	Jueves	296	09 22	09 47	104	16 19	71N	22 51	256	23 17	13,0	
23	Viernes	297	09 21	09 46	104	16 19	71N	22 52	256	23 17	13,1	
24	Sábado	298	09 19	09 45	105	16 19	71N	22 53	255	23 18	13,1	
25	Domingo	299	09 18	09 44	105	16 18	72N	22 54	255	23 19	13,1	
26	Lunes	300	09 17	09 43	105	16 18	72N	22 55	254	23 20	13,2	
27	Martes	301	09 16	09 42	106	16 18	72N	22 55	254	23 21	13,2	
28	Miércoles	302	09 15	09 41	106	16 18	73N	22 56	254	23 22	13,2	
29	Jueves	303	09 14	09 40	107	16 18	73N	22 57	253	23 23	13,2	
30	Viernes	304	09 13	09 39	107	16 18	73N	22 58	253	23 23	13,3	
31	Sábado	305	09 12	09 38	107	16 18	74N	22 59	252	23 24	13,3	

# SOL

Longitud : -04h 34m 28.8s

Latitud : -31° 30' 38.5"

San Juan - Argentina

Día del Mes	Día de la Semana	Día del Año	Comienzo			Paso			Fin			Horas de luz		
			Crepúsculo Civil	Salida Hora	Az. °	Meridiano Hora	h. °	Puesta Hora	Az. °	Crepúsculo Civil				
			h m	h m		h m	h. °	h m	h m	h m	h			
Todas las horas son en Tiempo Universal														
1	Domingo	306	09 11	09 37	108	16 18	74N	22 59	252	23 25	13,3	Noviembre	2020	
2	Lunes	307	09 10	09 36	108	16 18	74N	23 00	252	23 26	13,4			
3	Martes	308	09 10	09 35	109	16 18	75N	23 01	251	23 27	13,4			
4	Miércoles	309	09 09	09 35	109	16 18	75N	23 02	251	23 28	13,4			
5	Jueves	310	09 08	09 34	109	16 18	75N	23 03	251	23 29	13,4			
6	Viernes	311	09 07	09 33	110	16 18	75N	23 04	250	23 30	13,5			
7	Sábado	312	09 06	09 32	110	16 18	76N	23 05	250	23 31	13,5			
8	Domingo	313	09 05	09 32	110	16 18	76N	23 05	250	23 32	13,5			
9	Lunes	314	09 05	09 31	111	16 18	76N	23 06	249	23 33	13,5			
10	Martes	315	09 04	09 30	111	16 18	77N	23 07	249	23 34	13,6			
11	Miércoles	316	09 03	09 30	111	16 19	77N	23 08	249	23 34	13,6			
12	Jueves	317	09 02	09 29	112	16 19	77N	23 09	248	23 35	13,6			
13	Viernes	318	09 02	09 28	112	16 19	77N	23 10	248	23 36	13,7			
14	Sábado	319	09 01	09 28	112	16 19	78N	23 11	248	23 37	13,7			
15	Domingo	320	09 01	09 27	113	16 19	78N	23 12	247	23 38	13,7			
16	Lunes	321	09 00	09 27	113	16 19	78N	23 12	247	23 39	13,7			
17	Martes	322	08 59	09 26	113	16 20	78N	23 13	247	23 40	13,7			
18	Miércoles	323	08 59	09 26	113	16 20	79N	23 14	246	23 41	13,8			
19	Jueves	324	08 58	09 25	114	16 20	79N	23 15	246	23 42	13,8			
20	Viernes	325	08 58	09 25	114	16 20	79N	23 16	246	23 43	13,8			
21	Sábado	326	08 57	09 24	114	16 21	79N	23 17	246	23 44	13,8			
22	Domingo	327	08 57	09 24	115	16 21	80N	23 18	245	23 45	13,9			
23	Lunes	328	08 57	09 24	115	16 21	80N	23 19	245	23 46	13,9			
24	Martes	329	08 56	09 23	115	16 21	80N	23 20	245	23 47	13,9			
25	Miércoles	330	08 56	09 23	115	16 22	80N	23 20	245	23 48	13,9			
26	Jueves	331	08 56	09 23	115	16 22	80N	23 21	244	23 49	13,9			
27	Viernes	332	08 55	09 23	116	16 22	80N	23 22	244	23 50	13,9			
28	Sábado	333	08 55	09 23	116	16 23	81N	23 23	244	23 50	14,0			
29	Domingo	334	08 55	09 22	116	16 23	81N	23 24	244	23 51	14,0			
30	Lunes	335	08 55	09 22	116	16 23	81N	23 25	244	23 52	14,0			
-----														
1	Martes	336	08 55	09 22	117	16 24	81N	23 26	243	23 53	14,0	Diciembre	2020	
2	Miércoles	337	08 55	09 22	117	16 24	81N	23 26	243	23 54	14,0			
3	Jueves	338	08 55	09 22	117	16 25	81N	23 27	243	23 55	14,0			
4	Viernes	339	08 54	09 22	117	16 25	82N	23 28	243	23 56	14,1			
5	Sábado	340	08 54	09 22	117	16 25	82N	23 29	243	23 57	14,1			
6	Domingo	341	08 54	09 22	117	16 26	82N	23 30	243	23 57	14,1			
7	Lunes	342	08 55	09 22	117	16 26	82N	23 30	242	23 58	14,1			
8	Martes	343	08 55	09 22	118	16 27	82N	23 31	242	23 59	14,1			
9	Miércoles	344	08 55	09 23	118	16 27	82N	23 32	242	24 00	14,1			
10	Jueves	345	08 55	09 23	118	16 28	82N	23 32	242	////	14,1			
11	Viernes	346	08 55	09 23	118	16 28	82N	23 33	242	00 00	14,1			
12	Sábado	347	08 55	09 23	118	16 28	82N	23 34	242	00 01	14,1			
13	Domingo	348	08 56	09 23	118	16 29	82N	23 35	242	00 02	14,2			
14	Lunes	349	08 56	09 24	118	16 29	82N	23 35	242	00 03	14,1			
15	Martes	350	08 56	09 24	118	16 30	83N	23 36	242	00 03	14,2			
16	Miércoles	351	08 56	09 24	118	16 30	83N	23 36	242	00 04	14,2			
17	Jueves	352	08 57	09 25	118	16 31	83N	23 37	242	00 04	14,2			
18	Viernes	353	08 57	09 25	118	16 31	83N	23 38	242	00 05	14,2			
19	Sábado	354	08 58	09 26	118	16 32	83N	23 38	242	00 06	14,2			
20	Domingo	355	08 58	09 26	118	16 32	83N	23 39	242	00 06	14,2			
21	Lunes	356	08 59	09 27	118	16 33	83N	23 39	242	00 07	14,2			
22	Martes	357	08 59	09 27	118	16 33	83N	23 40	242	00 07	14,2			
23	Miércoles	358	09 00	09 28	118	16 34	83N	23 40	242	00 08	14,2			
24	Jueves	359	09 00	09 28	118	16 34	83N	23 40	242	00 08	14,2			
25	Viernes	360	09 01	09 29	118	16 35	83N	23 41	242	00 08	14,2			
26	Sábado	361	09 01	09 29	118	16 35	83N	23 41	242	00 09	14,2			
27	Domingo	362	09 02	09 30	118	16 36	82N	23 42	242	00 09	14,2			
28	Lunes	363	09 03	09 31	118	16 36	82N	23 42	242	00 10	14,1			
29	Martes	364	09 03	09 31	118	16 37	82N	23 42	242	00 10	14,1			
30	Miércoles	365	09 04	09 32	118	16 37	82N	23 42	242	00 10	14,1			
31	Jueves	366	09 05	09 33	118	16 38	82N	23 43	242	00 10	14,1			

## Luna

En esta sección se dan los siguientes datos:

- Hora (en Tiempo Universal) y acimut de salida y puesta del limbo superior de la Luna.  
El acimut está medido sobre el horizonte a partir del norte hacia el este.  $N = 0^\circ$  ;  $E = 90^\circ$  ;  $S = 180^\circ$  ;  $O = 270^\circ$ ).
- Hora (UT) y altura de paso por el meridiano
- Paralaje horizontal Geocéntrica
- Semi-diámetro
- Porcentaje de iluminación de la Luna
- Fases de la Luna

Todas las horas son en Tiempo Universal

El porcentaje de iluminación representa la fracción de la Luna que vemos iluminada y está calculada para la 0h de UT, del día correspondiente.

Los días en que los fenómenos de salida, paso por el meridiano y puesta no ocurren, se han dejado en blanco.







# LUNA

Longitud -04h 34m 28.8s

Latitud -31° 30' 38.5"

San Juan - Argentina

Día del Mes	Día de la Semana	Día del Año	Salida		Paso Meridiano		Puesta		Paralaje Horizontal		Semi-diámetro	Ilum. %	Fase
			Hora	Az. °	Hora	h. °	Hora	Az. °	'	"			
Todas las horas son en Tiempo Universal													
1	Viernes	122	18 28	69	23 55	42N	04 21	293	58 15.35	15 52.09	51.7	Mayo 2020	
2	Sábado	123	19 09	75			05 26	289	59 01.30	16 04.60	62.7		
3	Domingo	124	19 47	81	00 48	47N	06 33	282	59 44.75	16 16.44	73.4		
4	Lunes	125	20 24	88	01 41	53N	07 41	275	60 21.56	16 26.46	83.1		
5	Martes	126	21 01	96	02 33	59N	08 50	268	60 47.27	16 33.47	91.1		
6	Miércoles	127	21 40	103	03 26	65N	09 59	261	60 57.97	16 36.38	96.7		
7	Jueves	128	22 22	109	04 21	71N	11 10	254	60 51.32	16 34.57	99.6	LUNA LLENA	
8	Viernes	129	23 07	114	05 17	76N	12 20	248	60 27.33	16 28.04	99.5		
9	Sábado	130	23 58	117	06 15	80N	13 29	244	59 48.43	16 17.44	96.6		
10	Domingo	131			07 14	82N	14 33	242	58 58.89	16 03.95	91.2		
11	Lunes	132	00 53	118	08 12	83N	15 31	242	58 03.85	15 48.96	83.9		
12	Martes	133	01 51	118	09 08	82N	16 22	243	57 08.31	15 33.83	75.2		
13	Miércoles	134	02 50	116	10 01	80N	17 07	246	56 16.44	15 19.70	65.7		
14	Jueves	135	03 48	112	10 49	77N	17 45	250	55 31.34	15 07.42	55.9	CUARTO MENGUANTE	
15	Viernes	136	04 45	108	11 35	73N	18 18	255	54 54.96	14 57.51	46.1		
16	Sábado	137	05 40	103	12 18	68N	18 49	260	54 28.29	14 50.24	36.6		
17	Domingo	138	06 34	97	12 59	64N	19 18	266	54 11.52	14 45.68	27.7		
18	Lunes	139	07 27	91	13 39	59N	19 46	272	54 04.26	14 43.70	19.7		
19	Martes	140	08 20	86	14 20	54N	20 14	277	54 05.68	14 44.09	12.7		
20	Miércoles	141	09 13	80	15 02	49N	20 44	283	54 14.67	14 46.53	07.1		
21	Jueves	142	10 09	74	15 45	44N	21 16	288	54 29.95	14 50.70	03.0		
22	Viernes	143	11 05	70	16 31	40N	21 53	292	54 50.23	14 56.22	00.6	LUNA NUEVA	
23	Sábado	144	12 03	66	17 20	37N	22 34	296	55 14.30	15 02.78	00.1		
24	Domingo	145	13 02	63	18 12	35N	23 20	298	55 41.17	15 10.10	01.6		
25	Lunes	146	13 59	61	19 06	34N			56 10.09	15 17.97	05.2		
26	Martes	147	14 53	62	20 01	35N	00 13	299	56 40.55	15 26.27	10.7		
27	Miércoles	148	15 43	64	20 56	37N	01 11	298	57 12.24	15 34.90	18.1		
28	Jueves	149	16 28	68	21 50	40N	02 13	295	57 44.80	15 43.77	27.1		
29	Viernes	150	17 09	73	22 43	45N	03 17	290	58 17.70	15 52.73	37.4		
30	Sábado	151	17 47	79	23 34	50N	04 23	285	58 49.90	16 01.50	48.5	CUARTO CRECIENTE	
31	Domingo	152	18 23	85			05 28	278	59 19.77	16 09.64	59.8		
-----													
1	Lunes	153	18 58	92	00 25	56N	06 34	271	59 45.02	16 16.51	70.9	Junio 2020	
2	Martes	154	19 34	99	01 15	62N	07 41	264	60 02.90	16 21.38	80.9		
3	Miércoles	155	20 13	106	02 07	68N	08 49	257	60 10.66	16 23.49	89.3		
4	Jueves	156	20 56	111	03 02	74N	09 58	251	60 06.15	16 22.27	95.5		
5	Viernes	157	21 44	116	03 58	78N	11 07	246	59 48.51	16 17.46	99.1	LUNA LLENA	
6	Sábado	158	22 37	118	04 57	81N	12 14	243	59 18.51	16 09.29	99.9		
7	Domingo	159	23 35	118	05 56	83N	13 16	242	58 38.51	15 58.40	98.1		
8	Lunes	160			06 54	83N	14 12	242	57 52.07	15 45.75	93.9		
9	Martes	161	00 34	117	07 49	81N	15 00	245	57 03.25	15 32.45	87.8		
10	Miércoles	162	01 35	114	08 41	78N	15 42	248	56 15.98	15 19.58	80.2		
11	Jueves	163	02 33	110	09 29	75N	16 18	253	55 33.61	15 08.04	71.5		
12	Viernes	164	03 30	105	10 13	70N	16 50	258	54 58.69	14 58.52	62.3		
13	Sábado	165	04 25	99	10 56	66N	17 20	264	54 32.91	14 51.50	52.7	CUARTO MENGUANTE	
14	Domingo	166	05 19	94	11 36	61N	17 48	269	54 17.20	14 47.22	43.2		
15	Lunes	167	06 12	88	12 17	56N	18 16	275	54 11.75	14 45.74	33.9		
16	Martes	168	07 05	82	12 58	51N	18 45	281	54 16.20	14 46.95	25.2		
17	Miércoles	169	07 59	76	13 40	46N	19 16	286	54 29.63	14 50.61	17.4		
18	Jueves	170	08 56	71	14 25	42N	19 51	291	54 50.72	14 56.35	10.7		
19	Viernes	171	09 53	67	15 13	38N	20 30	295	55 17.75	15 03.72	05.4		
20	Sábado	172	10 52	64	16 05	36N	21 15	297	55 48.79	15 12.17	01.7		
21	Domingo	173	11 51	62	16 59	34N	22 06	299	56 21.82	15 21.17	00.1	LUNA NUEVA	
22	Lunes	174	12 47	61	17 55	35N	23 04	298	56 54.93	15 30.19	00.6		
23	Martes	175	13 40	63	18 51	36N			57 26.49	15 38.78	03.4		
24	Miércoles	176	14 27	66	19 47	39N	00 06	296	57 55.32	15 46.63	08.4		
25	Jueves	177	15 10	71	20 40	43N	01 10	292	58 20.69	15 53.54	15.6		
26	Viernes	178	15 49	77	21 31	49N	02 16	287	58 42.26	15 59.42	24.5		
27	Sábado	179	16 24	83	22 21	54N	03 21	280	58 59.88	16 04.22	34.9		
28	Domingo	180	16 59	90	23 11	60N	04 26	273	59 13.36	16 07.89	46.2	CUARTO CRECIENTE	
29	Lunes	181	17 34	97			05 31	266	59 22.26	16 10.31	57.7		
30	Martes	182	18 11	104	00 01	66N	06 36	259	59 25.83	16 11.28	68.8		







# LUNA

Longitud -04h 34m 28.8s

Latitud -31° 30' 38.5"

San Juan - Argentina

Día del Mes	Día de la Semana	Día del Año	Salida		Paso Meridiano		Puesta		Paralaje Horizontal		Semi-diámetro	Ilum. %	Fase
			Hora	Az.	Hora	h.	Hora	Az.	'	"			
Todas las horas son en Tiempo Universal													
1	Domingo	306			04 47	45N	10 19	287	54 01.18	14 42.86	99.8		Noviembre 2020
2	Lunes	307	00 04	70	05 31	41N	10 53	292	54 09.95	14 45.25	98.3		
3	Martes	308	01 00	66	06 17	37N	11 30	296	54 23.88	14 49.05	95.0		
4	Miércoles	309	01 57	63	07 06	35N	12 13	298	54 43.33	14 54.34	90.0		
5	Jueves	310	02 52	61	07 57	34N	13 02	300	55 08.75	15 01.27	83.4		
6	Viernes	311	03 46	61	08 50	34N	13 56	299	55 40.56	15 09.93	75.5		
7	Sábado	312	04 35	62	09 44	35N	14 55	297	56 18.89	15 20.37	66.3		
8	Domingo	313	05 21	65	10 37	38N	15 57	293	57 03.37	15 32.48	56.2	CUARTO MENGUANTE	
9	Lunes	314	06 03	69	11 29	42N	17 01	288	57 52.77	15 45.94	45.5		
10	Martes	315	06 41	75	12 21	47N	18 07	282	58 44.76	16 00.10	34.7		
11	Miércoles	316	07 17	82	13 12	53N	19 14	275	59 35.80	16 14.00	24.3		
12	Jueves	317	07 53	89	14 03	60N	20 22	267	60 21.18	16 26.36	15.0		
13	Viernes	318	08 29	97	14 56	66N	21 32	260	60 55.64	16 35.75	07.5		
14	Sábado	319	09 07	104	15 51	72N	22 44	252	61 14.34	16 40.84	02.3		
15	Domingo	320	09 50	110	16 49	78N	23 56	247	61 14.09	16 40.77	00.1	LUNA NUEVA	
16	Lunes	321	10 37	115	17 50	81N			60 54.31	16 35.38	00.9		
17	Martes	322	11 31	118	18 51	84N	01 08	243	60 17.35	16 25.32	04.7		
18	Miércoles	323	12 29	119	19 52	84N	02 14	241	59 27.76	16 11.81	10.8		
19	Jueves	324	13 31	118	20 50	82N	03 14	241	58 31.16	15 56.39	18.9		
20	Viernes	325	14 33	116	21 44	80N	04 05	243	57 33.07	15 40.57	28.1		
21	Sábado	326	15 34	111	22 33	76N	04 49	247	56 38.07	15 25.59	38.1		
22	Domingo	327	16 32	106	23 19	72N	05 26	251	55 49.47	15 12.36	48.2	CUARTO CRESCIENTE	
23	Lunes	328	17 28	101			05 58	257	55 09.32	15 01.42	58.0		
24	Martes	329	18 22	95	00 02	67N	06 28	262	54 38.58	14 53.05	67.4		
25	Miércoles	330	19 16	89	00 42	62N	06 56	268	54 17.37	14 47.27	76.0		
26	Jueves	331	20 09	83	01 23	56N	07 23	274	54 05.25	14 43.97	83.5		
27	Viernes	332	21 03	77	02 03	51N	07 51	280	54 01.34	14 42.90	89.9		
28	Sábado	333	21 58	72	02 45	46N	08 21	286	54 04.59	14 43.79	94.8		
29	Domingo	334	22 54	67	03 28	42N	08 53	290	54 13.87	14 46.32	98.2		
30	Lunes	335	23 51	63	04 14	38N	09 30	295	54 28.14	14 50.20	99.8	LUNA LLENA	
-----													
1	Martes	336			05 02	36N	10 11	298	54 46.55	14 55.22	99.7		Diciembre 2020
2	Miércoles	337	00 48	61	05 54	34N	10 58	299	55 08.52	15 01.20	97.6		
3	Jueves	338	01 42	60	06 47	34N	11 51	299	55 33.75	15 08.08	93.6		
4	Viernes	339	02 34	61	07 40	35N	12 49	298	56 02.20	15 15.82	87.8		
5	Sábado	340	03 20	64	08 33	37N	13 49	295	56 33.90	15 24.46	80.3		
6	Domingo	341	04 03	68	09 25	41N	14 52	290	57 08.81	15 33.96	71.4		
7	Lunes	342	04 41	73	10 15	45N	15 56	284	57 46.52	15 44.24	61.3		
8	Martes	343	05 16	79	11 04	51N	16 59	278	58 26.00	15 54.99	50.4	CUARTO MENGUANTE	
9	Miércoles	344	05 51	86	11 54	57N	18 04	270	59 05.36	16 05.71	39.2		
10	Jueves	345	06 25	93	12 44	63N	19 11	263	59 41.76	16 15.62	28.4		
11	Viernes	346	07 00	100	13 35	69N	20 19	256	60 11.61	16 23.75	18.4		
12	Sábado	347	07 39	107	14 30	75N	21 30	250	60 30.99	16 29.03	10.1		
13	Domingo	348	08 23	113	15 29	80N	22 41	245	60 36.53	16 30.54	04.0		
14	Lunes	349	09 13	117	16 30	83N	23 51	241	60 26.29	16 27.75	00.7	LUNA NUEVA	
15	Martes	350	10 09	119	17 32	84N			60 00.39	16 20.70	00.2		
16	Miércoles	351	11 11	119	18 33	83N	00 56	241	59 21.18	16 10.02	02.4		
17	Jueves	352	12 15	117	19 31	81N	01 52	242	58 32.65	15 56.80	07.1		
18	Viernes	353	13 18	113	20 24	78N	02 41	245	57 39.61	15 42.35	13.8		
19	Sábado	354	14 20	109	21 12	74N	03 22	249	56 46.78	15 27.97	22.0		
20	Domingo	355	15 18	103	21 57	69N	03 58	254	55 58.18	15 14.73	31.0		
21	Lunes	356	16 14	97	22 39	64N	04 29	260	55 16.78	15 03.45	40.6	CUARTO CRESCIENTE	
22	Martes	357	17 08	91	23 20	58N	04 58	266	54 44.53	14 54.67	50.3		
23	Miércoles	358	18 01	85			05 25	272	54 22.42	14 48.65	59.7		
24	Jueves	359	18 55	79	00 00	53N	05 53	278	54 10.67	14 45.45	68.8		
25	Viernes	360	19 49	74	00 41	48N	06 22	283	54 08.85	14 44.95	77.1		
26	Sábado	361	20 45	69	01 24	44N	06 53	289	54 16.03	14 46.91	84.5		
27	Domingo	362	21 42	65	02 09	40N	07 28	293	54 30.90	14 50.96	90.8		
28	Lunes	363	22 39	62	02 56	37N	08 08	297	54 51.89	14 56.67	95.6		
29	Martes	364	23 36	60	03 47	34N	08 53	299	55 17.30	15 03.59	98.7		
30	Miércoles	365			04 40	34N	09 45	300	55 45.43	15 11.26	100.0	LUNA LLENA	
31	Jueves	366	00 29	61	05 34	34N	10 42	299	56 14.80	15 19.26	99.2		

## Tiempo Sidéreo y Coordenadas del Sol

Se tabulan, para todos los días del año,

a las 0h UT    Tiempo sidéreo aparente y medio  
                  Ascensión recta y declinación aparentes, y  
                  distancia geocéntrica verdadera del Sol,  
                  y la ecuación del tiempo,

con las precisiones indicadas a continuación

- Ascensión recta            0<sup>s</sup>.01
- Declinación                0".1
- Tiempo sidéreo            0<sup>s</sup>.001
- Distancia geocéntrica    1x10<sup>-7</sup> u.a.
- Ecuación del tiempo      0<sup>s</sup>.1



## Tiempo sidéreo y coordenadas aparentes del Sol

Fecha 0 UT	Fecha Juliana	Tiempo Sidéreo de Greenwich		Ecuación del tiempo m s	Ascensión Recta h m s	Declinación ° ' "	Distancia Geocéntrica u.a.	
		Medio						Aparente s
		h	m s					
Ene 01	2458849.5	6 40	29.2370	28.2286	- 3 05.1	18 43 33.341	- 23 03 31.75	0.983293045
02	850.5	6 44	25.7924	24.7809	- 3 33.6	18 47 58.344	- 22 58 42.28	0.983273242
03	851.5	6 48	22.3478	21.3327	- 4 01.7	18 52 23.002	- 22 53 25.29	0.983258288
04	852.5	6 52	18.9031	17.8848	- 4 29.4	18 56 47.287	- 22 47 40.93	0.983248416
05	853.5	6 56	15.4585	14.4381	- 4 56.7	19 01 11.170	- 22 41 29.39	0.983243860
06	854.5	7 00	12.0139	10.9934	- 5 23.6	19 05 34.622	- 22 34 50.84	0.983244861
07	855.5	7 04	08.5692	07.5514	- 5 50.1	19 09 57.618	- 22 27 45.50	0.983251655
08	856.5	7 08	05.1246	04.1122	- 6 16.0	19 14 20.132	- 22 20 13.59	0.983264477
09	857.5	7 12	01.6800	00.6755	- 6 41.5	19 18 42.140	- 22 12 15.33	0.983283538
10	858.5	7 15	58.2353	57.2403	- 7 06.4	19 23 03.620	- 22 03 50.98	0.983309019
11	859.5	7 19	54.7907	53.8050	- 7 30.7	19 27 24.549	- 21 55 00.78	0.983341040
12	860.5	7 23	51.3461	50.3680	- 7 54.5	19 31 44.906	- 21 45 44.98	0.983379652
13	861.5	7 27	47.9014	46.9279	- 8 17.7	19 36 04.673	- 21 36 03.86	0.983424810
14	862.5	7 31	44.4568	43.4839	- 8 40.3	19 40 23.832	- 21 25 57.65	0.983476376
15	863.5	7 35	41.0122	40.0368	- 9 02.3	19 44 42.367	- 21 15 26.64	0.983534123
16	864.5	7 39	37.5676	36.5878	- 9 23.7	19 49 00.264	- 21 04 31.10	0.983597753
17	865.5	7 43	34.1229	33.1387	- 9 44.4	19 53 17.509	- 20 53 11.31	0.983666920
18	866.5	7 47	30.6783	29.6912	-10 04.4	19 57 34.086	- 20 41 27.58	0.983741262
19	867.5	7 51	27.2337	26.2463	-10 23.7	20 01 49.981	- 20 29 20.23	0.983820416
20	868.5	7 55	23.7890	22.8045	-10 42.4	20 06 05.177	- 20 16 49.58	0.983904044
21	869.5	7 59	20.3444	19.3652	-11 00.3	20 10 19.656	- 20 03 56.00	0.983991847
22	870.5	8 03	16.8998	15.9276	-11 17.5	20 14 33.403	- 19 50 39.82	0.984083573
23	871.5	8 07	13.4551	12.4904	-11 33.9	20 18 46.401	- 19 37 01.42	0.984179022
24	872.5	8 11	10.0105	09.0522	-11 49.6	20 22 58.632	- 19 23 01.15	0.984278057
25	873.5	8 15	06.5659	05.6122	-12 04.5	20 27 10.083	- 19 08 39.40	0.984380594
26	874.5	8 19	03.1212	02.1696	-12 18.6	20 31 20.740	- 18 53 56.53	0.984486606
27	875.5	8 22	59.6766	58.7244	-12 31.9	20 35 30.592	- 18 38 52.93	0.984596111
28	876.5	8 26	56.2320	55.2768	-12 44.4	20 39 39.630	- 18 23 28.99	0.984709171
29	877.5	8 30	52.7874	51.8274	-12 56.0	20 43 47.848	- 18 07 45.10	0.984825877
30	878.5	8 34	49.3427	48.3772	-13 06.9	20 47 55.238	- 17 51 41.65	0.984946349
31	879.5	8 38	45.8981	44.9269	-13 16.9	20 52 01.798	- 17 35 19.05	0.985070727
<hr/>								
Feb 01	880.5	8 42	42.4535	41.4774	-13 26.0	20 56 07.525	- 17 18 37.71	0.985199170
02	881.5	8 46	39.0088	38.0297	-13 34.4	21 00 12.419	- 17 01 38.02	0.985331850
03	882.5	8 50	35.5642	34.5842	-13 41.9	21 04 16.480	- 16 44 20.42	0.985468960
04	883.5	8 54	32.1196	31.1414	-13 48.6	21 08 19.709	- 16 26 45.31	0.985610703
05	884.5	8 58	28.6749	27.7011	-13 54.4	21 12 22.110	- 16 08 53.13	0.985757298
06	885.5	9 02	25.2303	24.2627	-13 59.4	21 16 23.687	- 15 50 44.28	0.985908966
07	886.5	9 06	21.7857	20.8252	-14 03.6	21 20 24.446	- 15 32 19.19	0.986065923
08	887.5	9 10	18.3410	17.3868	-14 07.0	21 24 24.392	- 15 13 38.28	0.986228357
09	888.5	9 14	14.8964	13.9457	-14 09.6	21 28 23.534	- 14 54 41.95	0.986396400
10	889.5	9 18	11.4518	10.5009	-14 11.4	21 32 21.883	- 14 35 30.61	0.986570103
11	890.5	9 22	08.0071	07.0523	-14 12.4	21 36 19.452	- 14 16 04.65	0.986749415
12	891.5	9 26	04.5625	03.6010	-14 12.7	21 40 16.254	- 13 56 24.44	0.986934171
13	892.5	9 30	01.1179	00.1491	-14 12.2	21 44 12.307	- 13 36 30.37	0.987124107
14	893.5	9 33	57.6733	56.6983	-14 10.9	21 48 07.624	- 13 16 22.82	0.987318881
15	894.5	9 37	54.2286	53.2502	-14 09.0	21 52 02.220	- 12 56 02.19	0.987518104
16	895.5	9 41	50.7840	49.8052	-14 06.3	21 55 56.108	- 12 35 28.90	0.987721373
17	896.5	9 45	47.3394	46.3628	-14 02.9	21 59 49.298	- 12 14 43.34	0.987928294
18	897.5	9 49	43.8947	42.9223	-13 58.9	22 03 41.800	- 11 53 45.95	0.988138500
19	898.5	9 53	40.4501	39.4823	-13 54.1	22 07 33.625	- 11 32 37.15	0.988351659
20	899.5	9 57	37.0055	36.0417	-13 48.7	22 11 24.782	- 11 11 17.35	0.988567483
21	900.5	10 01	33.5608	32.5993	-13 42.7	22 15 15.281	- 10 49 46.99	0.988785732
22	901.5	10 05	30.1162	29.1547	-13 36.0	22 19 05.132	- 10 28 06.49	0.989006207
23	902.5	10 09	26.6716	25.7074	-13 28.6	22 22 54.346	- 10 06 16.27	0.989228760
24	903.5	10 13	23.2269	22.2578	-13 20.7	22 26 42.936	- 9 44 16.74	0.989453285
25	904.5	10 17	19.7823	18.8062	-13 12.1	22 30 30.916	- 9 22 08.33	0.989679721
26	905.5	10 21	16.3377	15.3535	-13 02.9	22 34 18.298	- 8 59 51.46	0.989908043
27	906.5	10 25	12.8931	11.9005	-12 53.2	22 38 05.098	- 8 37 26.54	0.990138264
28	907.5	10 29	09.4484	08.4482	-12 42.9	22 41 51.332	- 8 14 53.98	0.990370430
29	908.5	10 33	06.0038	04.9974	-12 32.0	22 45 37.015	- 7 52 14.21	0.990604614

## Tiempo sidéreo y coordenadas aparentes del Sol

Fecha 0 UT	Fecha Juliana	Tiempo Sidéreo de Greenwich		Ecuación del tiempo m s	Ascensión Recta h m s	Declinación ° ' "	Distancia Geocéntrica u.a.	
		Medio						Aparente s
		h	m s					
Mar 01	2458909.5	10 37 02.5592	01.5487	-12 20.6	22 49 22.164	- 7 29 27.62	0.990840917	
02	910.5	10 40 59.1145	58.1024	-12 08.7	22 53 06.796	- 7 06 34.64	0.991079468	
03	911.5	10 44 55.6699	54.6586	-11 56.3	22 56 50.928	- 6 43 35.68	0.991320421	
04	912.5	10 48 52.2253	51.2169	-11 43.4	23 00 34.579	- 6 20 31.13	0.991563957	
05	913.5	10 52 48.7806	47.7765	-11 30.0	23 04 17.766	- 5 57 21.41	0.991810280	
06	914.5	10 56 45.3360	44.3361	-11 16.2	23 08 00.508	- 5 34 06.93	0.992059610	
07	915.5	11 00 41.8914	40.8940	-11 01.9	23 11 42.825	- 5 10 48.06	0.992312171	
08	916.5	11 04 38.4467	37.4489	-10 47.3	23 15 24.738	- 4 47 25.20	0.992568166	
09	917.5	11 08 35.0021	33.9999	-10 32.3	23 19 06.269	- 4 23 58.72	0.992827747	
10	918.5	11 12 31.5575	30.5476	-10 16.9	23 22 47.444	- 4 00 28.96	0.993090981	
11	919.5	11 16 28.1128	27.0937	-10 01.2	23 26 28.290	- 3 36 56.27	0.993357826	
12	920.5	11 20 24.6682	23.6404	- 9 45.2	23 30 08.834	- 3 13 20.97	0.993628119	
13	921.5	11 24 21.2236	20.1896	- 9 28.9	23 33 49.103	- 2 49 43.41	0.993901587	
14	922.5	11 28 17.7790	16.7422	- 9 12.4	23 37 29.121	- 2 26 03.91	0.994177876	
15	923.5	11 32 14.3343	13.2980	- 8 55.6	23 41 08.911	- 2 02 22.85	0.994456587	
16	924.5	11 36 10.8897	09.8561	- 8 38.6	23 44 48.493	- 1 38 40.58	0.994737303	
17	925.5	11 40 07.4451	06.4150	- 8 21.5	23 48 27.887	- 1 14 57.47	0.995019622	
18	926.5	11 44 04.0004	02.9735	- 8 04.1	23 52 07.110	- 0 51 13.90	0.995303165	
19	927.5	11 47 00.5558	59.5304	- 7 46.7	23 55 46.181	- 0 27 30.24	0.995587585	
20	928.5	11 51 57.1112	56.0851	- 7 29.0	23 59 25.116	- 0 03 46.87	0.995872575	
21	929.5	11 55 53.6665	52.6373	- 7 11.3	0 03 03.934	+ 0 19 55.84	0.996157863	
22	930.5	11 59 50.2219	49.1870	- 6 53.5	0 06 42.653	+ 0 43 37.51	0.996443215	
23	931.5	12 03 46.7773	45.7349	- 6 35.6	0 10 21.290	+ 1 07 17.77	0.996728436	
24	932.5	12 07 43.3326	42.2815	- 6 17.6	0 13 59.864	+ 1 30 56.25	0.997013368	
25	933.5	12 11 39.8880	38.8277	- 5 59.6	0 17 38.394	+ 1 54 32.57	0.997297893	
26	934.5	12 15 36.4434	35.3744	- 5 41.5	0 21 16.896	+ 2 18 06.36	0.997581928	
27	935.5	12 19 32.9988	31.9225	- 5 23.5	0 24 55.389	+ 2 41 37.25	0.997865432	
28	936.5	12 23 29.5541	28.4726	- 5 05.4	0 28 33.892	+ 3 05 04.87	0.998148400	
29	937.5	12 27 26.1095	25.0251	- 4 47.4	0 32 12.421	+ 3 28 28.85	0.998430864	
30	938.5	12 31 22.6649	21.5802	- 4 29.4	0 35 50.994	+ 3 51 48.81	0.998712892	
31	939.5	12 35 19.2202	18.1375	- 4 11.5	0 39 29.628	+ 4 15 04.40	0.998994590	
<hr/>								
Abr.01	940.5	12 39 15.7756	14.6962	- 3 53.6	0 43 08.341	+ 4 38 15.24	0.999276101	
02	941.5	12 43 12.3310	11.2553	- 3 35.9	0 46 47.149	+ 5 01 20.97	0.999557601	
03	942.5	12 47 08.8863	07.8135	- 3 18.3	0 50 26.069	+ 5 24 21.21	0.999839300	
04	943.5	12 51 05.4417	04.3694	- 3 00.8	0 54 05.120	+ 5 47 15.62	1.000121434	
05	944.5	12 55 01.9971	00.9221	- 2 43.4	0 57 44.321	+ 6 10 03.84	1.000404245	
06	945.5	12 58 58.5524	57.4713	- 2 26.2	1 01 23.692	+ 6 32 45.53	1.000687960	
07	946.5	13 02 55.1078	54.0182	- 2 09.2	1 05 03.256	+ 6 55 20.38	1.000972759	
08	947.5	13 06 51.6632	50.5648	- 1 52.5	1 08 43.039	+ 7 17 48.07	1.001258734	
09	948.5	13 10 48.2185	47.1131	- 1 36.0	1 12 23.065	+ 7 40 08.32	1.001545870	
10	949.5	13 14 44.7739	43.6650	- 1 19.7	1 16 03.358	+ 8 02 20.83	1.001834030	
11	950.5	13 18 41.3293	40.2207	- 1 03.7	1 19 43.941	+ 8 24 25.29	1.002122968	
12	951.5	13 22 37.8847	36.7794	- 0 48.1	1 23 24.833	+ 8 46 21.41	1.002412354	
13	952.5	13 26 34.4400	33.3397	- 0 32.7	1 27 06.050	+ 9 08 08.84	1.002701814	
14	953.5	13 30 30.9954	29.8999	- 0 17.7	1 30 47.610	+ 9 29 47.27	1.002990954	
15	954.5	13 34 27.5508	26.4588	- 0 03.1	1 34 29.526	+ 9 51 16.35	1.003279389	
16	955.5	13 38 24.1061	23.0155	+ 0 11.2	1 38 11.813	+ 10 12 35.75	1.003566750	
17	956.5	13 42 20.6615	19.5696	+ 0 25.1	1 41 54.485	+ 10 33 45.11	1.003852698	
18	957.5	13 46 17.2169	16.1212	+ 0 38.6	1 45 37.554	+ 10 54 44.10	1.004136923	
19	958.5	13 50 13.7722	12.6708	+ 0 51.6	1 49 21.035	+ 11 15 32.38	1.004419143	
20	959.5	13 54 10.3276	09.2189	+ 1 04.3	1 53 04.938	+ 11 36 09.59	1.004699108	
21	960.5	13 58 06.8830	05.7665	+ 1 16.5	1 56 49.276	+ 11 56 35.40	1.004976596	
22	961.5	14 02 03.4383	02.3145	+ 1 28.3	2 00 34.061	+ 12 16 49.46	1.005251422	
23	962.5	14 05 59.9937	58.8637	+ 1 39.6	2 04 19.301	+ 12 36 51.43	1.005523433	
24	963.5	14 09 56.5491	55.4149	+ 1 50.4	2 08 05.007	+ 12 56 40.97	1.005792514	
25	964.5	14 13 53.1045	51.9686	+ 2 00.8	2 11 51.188	+ 13 16 17.73	1.006058592	
26	965.5	14 17 49.6598	48.5248	+ 2 10.7	2 15 37.851	+ 13 35 41.37	1.006321638	
27	966.5	14 21 46.2152	45.0834	+ 2 20.1	2 19 25.002	+ 13 54 51.55	1.006581667	
28	967.5	14 25 42.7706	41.6436	+ 2 29.0	2 23 12.648	+ 14 13 47.92	1.006838742	
29	968.5	14 29 39.3259	38.2044	+ 2 37.4	2 27 00.794	+ 14 32 30.15	1.007092972	
30	969.5	14 33 35.8813	34.7645	+ 2 45.3	2 30 49.445	+ 14 50 57.89	1.007344514	

## Tiempo sidéreo y coordenadas aparentes del Sol

Fecha 0 UT	Fecha Juliana	Tiempo Sidéreo de Medio	Greenwich Aparente	Ecuación del tiempo	Ascensión Recta	Declinación	Distancia Geocéntrica
		h m s	s	m s	h m s	° ' "	u.a.
May 01	2458970.5	14 37 32.4367	31.3228	+ 2 52.7	2 34 38.606	+ 15 09 10.81	1.007593566
02	971.5	14 41 28.9920	27.8783	+ 2 59.6	2 38 28.282	+ 15 27 08.57	1.007840367
03	972.5	14 45 25.5474	24.4307	+ 3 06.0	2 42 18.479	+ 15 44 50.84	1.008085180
04	973.5	14 49 22.1028	20.9804	+ 3 11.8	2 46 09.206	+ 16 02 17.33	1.008328279
05	974.5	14 53 18.6581	17.5290	+ 3 17.1	2 50 00.472	+ 16 19 27.72	1.008569920
06	975.5	14 57 15.2135	14.0784	+ 3 21.8	2 53 52.287	+ 16 36 21.74	1.008810308
07	976.5	15 01 11.7689	10.6307	+ 3 26.0	2 57 44.661	+ 16 52 59.11	1.009049569
08	977.5	15 05 08.3242	07.1870	+ 3 29.6	3 01 37.605	+ 17 09 19.58	1.009287722
09	978.5	15 09 04.8796	03.7470	+ 3 32.6	3 05 31.125	+ 17 25 22.89	1.009524674
10	979.5	15 13 01.4350	00.3096	+ 3 35.1	3 09 25.227	+ 17 41 08.76	1.009760231
11	980.5	15 16 57.9904	56.8729	+ 3 37.0	3 13 19.912	+ 17 56 36.92	1.009994120
12	981.5	15 20 54.5457	53.4353	+ 3 38.3	3 17 15.184	+ 18 11 47.09	1.010226020
13	982.5	15 24 51.1011	49.9955	+ 3 39.0	3 21 11.041	+ 18 26 38.98	1.010455590
14	983.5	15 28 47.6565	46.5531	+ 3 39.1	3 25 07.484	+ 18 41 12.31	1.010682484
15	984.5	15 32 44.2118	43.1079	+ 3 38.6	3 29 04.509	+ 18 55 26.79	1.010906370
16	985.5	15 36 40.7672	39.6604	+ 3 37.5	3 33 02.116	+ 19 09 22.13	1.011126933
17	986.5	15 40 37.3226	36.2112	+ 3 35.9	3 37 00.298	+ 19 22 58.06	1.011343877
18	987.5	15 44 33.8779	32.7612	+ 3 33.7	3 40 59.053	+ 19 36 14.30	1.011556929
19	988.5	15 48 30.4333	29.3113	+ 3 30.9	3 44 58.373	+ 19 49 10.59	1.011765836
20	989.5	15 52 26.9887	25.8624	+ 3 27.6	3 48 58.252	+ 20 01 46.64	1.011970371
21	990.5	15 56 23.5440	22.4153	+ 3 23.7	3 52 58.680	+ 20 14 02.21	1.012170332
22	991.5	16 00 20.0994	18.9707	+ 3 19.3	3 56 59.648	+ 20 25 57.03	1.012365550
23	992.5	16 04 16.6548	15.5287	+ 3 14.4	4 01 01.143	+ 20 37 30.85	1.012555894
24	993.5	16 08 13.2101	12.0891	+ 3 08.9	4 05 03.153	+ 20 48 43.42	1.012741276
25	994.5	16 12 09.7655	08.6514	+ 3 03.0	4 09 05.663	+ 20 59 34.49	1.012921660
26	995.5	16 16 06.3209	05.2145	+ 2 56.6	4 13 08.656	+ 21 10 03.84	1.013097066
27	996.5	16 20 02.8763	01.7772	+ 2 49.7	4 17 12.116	+ 21 20 11.22	1.013267570
28	997.5	16 23 59.4316	58.3381	+ 2 42.3	4 21 16.025	+ 21 29 56.40	1.013433309
29	998.5	16 27 55.9870	54.8964	+ 2 34.5	4 25 20.366	+ 21 39 19.16	1.013594475
30	999.5	16 31 52.5424	51.4516	+ 2 26.3	4 29 25.122	+ 21 48 19.28	1.013751309
31	2459000.5	16 35 49.0977	48.0040	+ 2 17.7	4 33 30.278	+ 21 56 56.57	1.013904092
Jun 01	001.5	16 39 45.6531	44.5548	+ 2 08.7	4 37 35.820	+ 22 05 10.84	1.014053129
02	002.5	16 43 42.2085	41.1058	+ 1 59.4	4 41 41.733	+ 22 13 01.91	1.014198726
03	003.5	16 47 38.7638	37.6588	+ 1 49.7	4 45 48.007	+ 22 20 29.64	1.014341167
04	004.5	16 51 35.3192	34.2153	+ 1 39.6	4 49 54.629	+ 22 27 33.89	1.014480683
05	005.5	16 55 31.8746	30.7756	+ 1 29.2	4 54 01.585	+ 22 34 14.54	1.014617430
06	006.5	16 59 28.4299	27.3391	+ 1 18.5	4 58 08.861	+ 22 40 31.48	1.014751465
07	007.5	17 03 24.9853	23.9042	+ 1 07.5	5 02 16.441	+ 22 46 24.58	1.014882752
08	008.5	17 07 21.5407	20.4692	+ 0 56.2	5 06 24.308	+ 22 51 53.74	1.015011162
09	009.5	17 11 18.0961	17.0324	+ 0 44.6	5 10 32.445	+ 22 56 58.84	1.015136498
10	010.5	17 15 14.6514	13.5929	+ 0 32.8	5 14 40.832	+ 23 01 39.77	1.015258514
11	011.5	17 19 11.2068	10.1505	+ 0 20.7	5 18 49.451	+ 23 05 56.43	1.015376938
12	012.5	17 23 07.7622	06.7054	+ 0 08.4	5 22 58.282	+ 23 09 48.72	1.015491488
13	013.5	17 27 04.3175	03.2582	- 0 04.0	5 27 07.304	+ 23 13 16.55	1.015601882
14	014.5	17 30 00.8729	59.8098	- 0 16.7	5 31 16.496	+ 23 16 19.84	1.015707846
15	015.5	17 34 57.4283	56.3611	- 0 29.5	5 35 25.837	+ 23 18 58.52	1.015809114
16	016.5	17 38 53.9836	52.9132	- 0 42.4	5 39 35.303	+ 23 21 12.54	1.015905434
17	017.5	17 42 50.5390	49.4668	- 0 55.4	5 43 44.871	+ 23 23 01.84	1.015996565
18	018.5	17 46 47.0944	46.0225	- 1 08.5	5 47 54.516	+ 23 24 26.39	1.016082281
19	019.5	17 50 43.6497	42.5809	- 1 21.6	5 52 04.214	+ 23 25 26.15	1.016162379
20	020.5	17 54 40.2051	39.1418	- 1 34.8	5 56 13.936	+ 23 26 01.13	1.016236680
21	021.5	17 58 36.7605	35.7048	- 1 48.0	6 00 23.656	+ 23 26 11.30	1.016305043
22	022.5	18 02 33.3158	32.2690	- 2 01.1	6 04 33.344	+ 23 25 56.67	1.016367378
23	023.5	18 06 29.8712	28.8330	- 2 14.1	6 08 42.971	+ 23 25 17.25	1.016423650
24	024.5	18 10 26.4266	25.3955	- 2 27.1	6 12 52.506	+ 23 24 13.06	1.016473894
25	025.5	18 14 22.9820	21.9553	- 2 40.0	6 17 01.922	+ 23 22 44.13	1.016518215
26	026.5	18 18 19.5373	18.5119	- 2 52.7	6 21 11.189	+ 23 20 50.50	1.016556792
27	027.5	18 22 16.0927	15.0654	- 3 05.2	6 25 20.282	+ 23 18 32.20	1.016589867
28	028.5	18 26 12.6481	11.6169	- 3 17.6	6 29 29.176	+ 23 15 49.30	1.016617735
29	029.5	18 30 09.2034	08.1681	- 3 29.7	6 33 37.850	+ 23 12 41.88	1.016640726
30	030.5	18 34 05.7588	04.7207	- 3 41.6	6 37 46.282	+ 23 09 10.01	1.016659185

## Tiempo sidéreo y coordenadas aparentes del Sol

Fecha 0 UT	Fecha Juliana	Tiempo Sidéreo de Greenwich Medio h m s	Greenwich Aparente s	Ecuación del tiempo m s	Ascensión Recta h m s	Declinación ° ' "	Distancia Geocéntrica u.a.
Jul 01	2459031.5	18 38 02.3142	01.2762	- 3 53.2	6 41 54.455	+ 23 05 13.82	1.016673450
02	032.5	18 41 58.8695	57.8352	- 4 04.5	6 46 02.351	+ 23 00 53.41	1.016683828
03	033.5	18 45 55.4249	54.3975	- 4 15.6	6 50 09.951	+ 22 56 08.92	1.016690572
04	034.5	18 49 51.9803	50.9620	- 4 26.3	6 54 17.238	+ 22 51 00.48	1.016693865
05	035.5	18 53 48.5356	47.5270	- 4 36.7	6 58 24.194	+ 22 45 28.24	1.016693807
06	036.5	18 57 45.0910	44.0908	- 4 46.7	7 02 30.804	+ 22 39 32.32	1.016690419
07	037.5	19 01 41.6464	40.6523	- 4 56.4	7 06 37.052	+ 22 33 12.88	1.016683645
08	038.5	19 05 38.2018	37.2108	- 5 05.7	7 10 42.921	+ 22 26 30.06	1.016673368
09	039.5	19 09 34.7571	33.7663	- 5 14.6	7 14 48.399	+ 22 19 24.00	1.016659426
10	040.5	19 13 31.3125	30.3194	- 5 23.2	7 18 53.470	+ 22 11 54.87	1.016641626
11	041.5	19 17 27.8679	26.8708	- 5 31.3	7 22 58.121	+ 22 04 02.82	1.016619756
12	042.5	19 21 24.4232	23.4216	- 5 38.9	7 27 02.339	+ 21 55 48.03	1.016593596
13	043.5	19 25 20.9786	19.9727	- 5 46.1	7 31 06.110	+ 21 47 10.68	1.016562922
14	044.5	19 29 17.5340	16.5250	- 5 52.9	7 35 09.421	+ 21 38 10.96	1.016527507
15	045.5	19 33 14.0893	13.0792	- 5 59.2	7 39 12.259	+ 21 28 49.08	1.016487127
16	046.5	19 37 10.6447	09.6358	- 6 05.0	7 43 14.610	+ 21 19 05.23	1.016441558
17	047.5	19 41 07.2001	06.1950	- 6 10.3	7 47 16.460	+ 21 08 59.64	1.016390583
18	048.5	19 45 03.7554	02.7565	- 6 15.0	7 51 17.797	+ 20 58 32.53	1.016333996
19	049.5	19 48 60.3108	59.3194	- 6 19.3	7 55 18.605	+ 20 47 44.13	1.016271612
20	050.5	19 52 56.8662	55.8828	- 6 23.0	7 59 18.870	+ 20 36 34.70	1.016203282
21	051.5	19 56 53.4215	52.4450	- 6 26.1	8 03 18.576	+ 20 25 04.47	1.016128907
22	052.5	20 00 49.9769	49.0047	- 6 28.7	8 07 17.709	+ 20 13 13.70	1.016048458
23	053.5	20 04 46.5323	45.5611	- 6 30.7	8 11 16.255	+ 20 01 02.64	1.015961985
24	054.5	20 08 43.0877	42.1141	- 6 32.1	8 15 14.202	+ 19 48 31.55	1.015869628
25	055.5	20 12 39.6430	38.6645	- 6 32.9	8 19 11.542	+ 19 35 40.70	1.015771611
26	056.5	20 16 36.1984	35.2142	- 6 33.1	8 23 08.268	+ 19 22 30.35	1.015668227
27	057.5	20 20 32.7538	31.7648	- 6 32.6	8 27 04.375	+ 19 09 00.77	1.015559825
28	058.5	20 24 29.3091	28.3179	- 6 31.5	8 30 59.861	+ 18 55 12.25	1.015446778
29	059.5	20 28 25.8645	24.8743	- 6 29.8	8 34 54.724	+ 18 41 05.09	1.015329467
30	060.5	20 32 22.4199	21.4340	- 6 27.5	8 38 48.964	+ 18 26 39.56	1.015208251
31	061.5	20 36 18.9752	17.9959	- 6 24.6	8 42 42.581	+ 18 11 55.98	1.015083455
<hr/>							
Ago 01	062.5	20 40 15.5306	14.5588	- 6 21.0	8 46 35.578	+ 17 56 54.63	1.014955352
02	063.5	20 44 12.0860	11.1210	- 6 16.8	8 50 27.956	+ 17 41 35.81	1.014824153
03	064.5	20 48 08.6413	07.6813	- 6 12.0	8 54 19.719	+ 17 25 59.80	1.014690000
04	065.5	20 52 05.1967	04.2388	- 6 06.6	8 58 10.873	+ 17 10 06.88	1.014552972
05	066.5	20 56 01.7521	00.7933	- 6 00.6	9 02 01.423	+ 16 53 57.33	1.014413084
06	067.5	20 59 58.3075	57.3451	- 5 54.0	9 05 51.378	+ 16 37 31.43	1.014270298
07	068.5	21 03 54.8628	53.8949	- 5 46.8	9 09 40.745	+ 16 20 49.45	1.014124534
08	069.5	21 07 51.4182	50.4437	- 5 39.1	9 13 29.532	+ 16 03 51.69	1.013975678
09	070.5	21 11 47.9736	46.9925	- 5 30.8	9 17 17.748	+ 15 46 38.43	1.013823592
10	071.5	21 15 44.5289	43.5422	- 5 21.9	9 21 05.403	+ 15 29 09.95	1.013668118
11	072.5	21 19 41.0843	40.0936	- 5 12.4	9 24 52.503	+ 15 11 26.55	1.013509086
12	073.5	21 23 37.6397	36.6471	- 5 02.4	9 28 39.059	+ 14 53 28.53	1.013346312
13	074.5	21 27 34.1950	33.2032	- 4 51.9	9 32 25.078	+ 14 35 16.19	1.013179605
14	075.5	21 31 30.7504	29.7615	- 4 40.8	9 36 10.569	+ 14 16 49.84	1.013008761
15	076.5	21 35 27.3058	26.3217	- 4 29.2	9 39 55.539	+ 13 58 09.79	1.012833572
16	077.5	21 39 23.8611	22.8828	- 4 17.1	9 43 39.995	+ 13 39 16.37	1.012653832
17	078.5	21 43 20.4165	19.4434	- 4 04.5	9 47 23.944	+ 13 20 09.89	1.012469345
18	079.5	21 47 16.9719	16.0021	- 3 51.4	9 51 07.391	+ 13 00 50.68	1.012279951
19	080.5	21 51 13.5272	12.5576	- 3 37.8	9 54 50.341	+ 12 41 19.08	1.012085540
20	081.5	21 55 10.0826	09.1095	- 3 23.7	9 58 32.802	+ 12 21 35.42	1.011886080
21	082.5	21 59 06.6380	05.6584	- 3 09.1	10 02 14.781	+ 12 01 40.02	1.011681635
22	083.5	22 03 03.1934	02.2057	- 2 54.1	10 05 56.287	+ 11 41 33.22	1.011472372
23	084.5	22 06 59.7487	58.7537	- 2 38.6	10 09 37.331	+ 11 21 15.36	1.011258554
24	085.5	22 10 56.3041	55.3039	- 2 22.6	10 13 17.926	+ 11 00 46.75	1.011040520
25	086.5	22 14 52.8595	51.8574	- 2 06.2	10 16 58.086	+ 10 40 07.75	1.010818656
26	087.5	22 18 49.4148	48.4142	- 1 49.4	10 20 37.823	+ 10 19 18.69	1.010593371
27	088.5	22 22 45.9702	44.9736	- 1 32.2	10 24 17.153	+ 9 58 19.92	1.010365066
28	089.5	22 26 42.5256	41.5340	- 1 14.6	10 27 56.090	+ 9 37 11.75	1.010134118
29	090.5	22 30 39.0809	38.0942	- 0 56.6	10 31 34.651	+ 9 15 54.52	1.009900864
30	091.5	22 34 35.6363	34.6527	- 0 38.2	10 35 12.854	+ 8 54 28.55	1.009665597
31	092.5	22 38 32.1917	31.2086	- 0 19.5	10 38 50.716	+ 8 32 54.16	1.009428554



## Tiempo sidéreo y coordenadas aparentes del Sol

Fecha 0 UT	Fecha Juliana	Tiempo Sidéreo de Greenwich		Ecuación del tiempo m s	Ascensión Recta h m s	Declinación ° ' "	Distancia Geocéntrica u.a.
		Medio h m s	Aparente s				
Sep 01	2459093.5	22 42 28.7470	27.7617	- 0 00.5	10 42 28.258	+ 8 11 11.64	1.009189921
02	094.5	22 46 25.3024	24.3120	+ 0 18.8	10 46 05.499	+ 7 49 21.29	1.008949828
03	095.5	22 50 21.8578	20.8602	+ 0 38.4	10 49 42.462	+ 7 27 23.43	1.008708356
04	096.5	22 54 18.4132	17.4071	+ 0 58.2	10 53 19.167	+ 7 05 18.34	1.008465538
05	097.5	22 58 14.9685	13.9538	+ 1 18.3	10 56 55.636	+ 6 43 06.33	1.008221368
06	098.5	23 02 11.5239	10.5011	+ 1 38.6	11 00 31.891	+ 6 20 47.69	1.007975803
07	099.5	23 06 08.0793	07.0499	+ 1 59.1	11 04 07.953	+ 5 58 22.73	1.007728770
08	100.5	23 10 04.6346	03.6008	+ 2 19.8	11 07 43.844	+ 5 35 51.75	1.007480173
09	101.5	23 14 01.1900	00.1541	+ 2 40.6	11 11 19.584	+ 5 13 15.06	1.007229890
10	102.5	23 17 57.7454	56.7098	+ 3 01.5	11 14 55.192	+ 4 50 32.97	1.006977778
11	103.5	23 21 54.3007	53.2674	+ 3 22.6	11 18 30.689	+ 4 27 45.81	1.006723672
12	104.5	23 25 50.8561	49.8263	+ 3 43.7	11 22 06.093	+ 4 04 53.90	1.006467389
13	105.5	23 29 47.4115	46.3853	+ 4 05.0	11 25 41.421	+ 3 41 57.56	1.006208726
14	106.5	23 33 43.9668	42.9431	+ 4 26.3	11 29 16.691	+ 3 18 57.14	1.005947473
15	107.5	23 37 40.5222	39.4984	+ 4 47.6	11 32 51.920	+ 2 55 52.98	1.005683423
16	108.5	23 41 37.0776	36.0504	+ 5 08.9	11 36 27.122	+ 2 32 45.42	1.005416392
17	109.5	23 45 33.6329	32.5990	+ 5 30.3	11 40 02.314	+ 2 09 34.82	1.005146255
18	110.5	23 49 30.1883	29.1453	+ 5 51.6	11 43 37.512	+ 1 46 21.52	1.004872966
19	111.5	23 53 26.7437	25.6914	+ 6 13.0	11 47 12.733	+ 1 23 05.89	1.004596590
20	112.5	23 57 23.2991	22.2394	+ 6 34.2	11 50 47.995	+ 0 59 48.28	1.004317305
21	113.5	0 01 19.8544	18.7909	+ 6 55.5	11 54 23.316	+ 0 36 29.06	1.004035393
22	114.5	0 05 16.4098	15.3461	+ 7 16.6	11 57 58.713	+ 0 13 08.58	1.003751216
23	115.5	0 09 12.9652	11.9044	+ 7 37.7	12 01 34.203	- 0 10 12.79	1.003465180
24	116.5	0 13 09.5205	08.4642	+ 7 58.7	12 05 09.806	- 0 33 34.68	1.003177707
25	117.5	0 17 06.0759	05.0239	+ 8 19.5	12 08 45.539	- 0 56 56.74	1.002889205
26	118.5	0 21 02.6313	01.5822	+ 8 40.2	12 12 21.424	- 1 20 18.61	1.002600058
27	119.5	0 24 59.1866	58.1381	+ 9 00.7	12 15 57.481	- 1 43 39.95	1.002310612
28	120.5	0 28 55.7420	54.6911	+ 9 21.0	12 19 33.733	- 2 07 00.43	1.002021171
29	121.5	0 32 52.2974	51.2414	+ 9 41.0	12 23 10.203	- 2 30 19.70	1.001731999
30	122.5	0 36 48.8527	47.7895	+10 00.9	12 26 46.914	- 2 53 37.44	1.001443313
<hr/>							
Oct 01	123.5	0 40 45.4081	44.3362	+10 20.4	12 30 23.891	- 3 16 53.33	1.001155288
02	124.5	0 44 41.9635	40.8825	+10 39.7	12 34 01.159	- 3 40 07.02	1.000868058
03	125.5	0 48 38.5189	37.4293	+10 58.7	12 37 38.741	- 4 03 18.20	1.000581712
04	126.5	0 52 35.0742	33.9774	+11 17.3	12 41 16.661	- 4 26 26.53	1.000296303
05	127.5	0 56 31.6296	30.5276	+11 35.6	12 44 54.943	- 4 49 31.69	1.000011846
06	128.5	1 00 28.1850	27.0802	+11 53.5	12 48 33.610	- 5 12 33.33	0.999728319
07	129.5	1 04 24.7403	23.6352	+12 11.0	12 52 12.685	- 5 35 31.12	0.999445669
08	130.5	1 08 21.2957	20.1923	+12 28.0	12 55 52.187	- 5 58 24.70	0.999163811
09	131.5	1 12 17.8511	16.7508	+12 44.6	12 59 32.138	- 6 21 13.74	0.998882628
10	132.5	1 16 14.4064	13.3098	+13 00.8	13 03 12.558	- 6 43 57.85	0.998601974
11	133.5	1 20 10.9618	09.8682	+13 16.4	13 06 53.466	- 7 06 36.69	0.998321669
12	134.5	1 24 07.5172	06.4248	+13 31.5	13 10 34.878	- 7 29 09.88	0.998041511
13	135.5	1 28 04.0725	02.9786	+13 46.2	13 14 16.813	- 7 51 37.03	0.997761274
14	136.5	1 31 00.6279	59.5291	+14 00.2	13 17 59.286	- 8 13 57.76	0.997480730
15	137.5	1 35 57.1833	56.0770	+14 13.8	13 21 42.315	- 8 36 11.67	0.997199670
16	138.5	1 39 53.7386	52.6237	+14 26.7	13 25 25.914	- 8 58 18.36	0.996917938
17	139.5	1 43 50.2940	49.1715	+14 39.1	13 29 10.098	- 9 20 17.44	0.996635464
18	140.5	1 47 46.8494	45.7224	+14 50.8	13 32 54.882	- 9 42 08.49	0.996352291
19	141.5	1 51 43.4048	42.2776	+15 02.0	13 36 40.279	- 10 03 51.09	0.996068580
20	142.5	1 55 39.9601	38.8366	+15 12.5	13 40 26.300	- 10 25 24.85	0.995784603
21	143.5	1 59 36.5155	35.3980	+15 22.4	13 44 12.955	- 10 46 49.32	0.995500711
22	144.5	2 03 33.0709	31.9600	+15 31.7	13 48 00.257	- 11 08 04.10	0.995217297
23	145.5	2 07 29.6262	28.5207	+15 40.3	13 51 48.217	- 11 29 08.77	0.994934769
24	146.5	2 11 26.1816	25.0790	+15 48.2	13 55 36.849	- 11 50 02.91	0.994653524
25	147.5	2 15 22.7370	21.6344	+15 55.5	13 59 26.167	- 12 10 46.13	0.994373936
26	148.5	2 19 19.2923	18.1870	+16 02.0	14 03 16.186	- 12 31 18.03	0.994096344
27	149.5	2 23 15.8477	14.7373	+16 07.8	14 07 06.922	- 12 51 38.22	0.993821058
28	150.5	2 27 12.4031	11.2860	+16 12.9	14 10 58.389	- 13 11 46.32	0.993548350
29	151.5	2 31 08.9584	07.8340	+16 17.2	14 14 50.605	- 13 31 41.93	0.993278457
30	152.5	2 35 05.5138	04.3824	+16 20.8	14 18 43.583	- 13 51 24.69	0.993011584
31	153.5	2 39 02.0692	00.9321	+16 23.6	14 22 37.338	- 14 10 54.20	0.992747895

## Tiempo sidéreo y coordenadas aparentes del Sol

Fecha 0 UT	Fecha Juliana	Tiempo Sidéreo de Greenwich		Ecuación del tiempo m s	Ascensión Recta h m s	Declinación ° ' "	Distancia Geocéntrica u.a.
		Medio h m s	Aparente s				
Nov 01	2459154.5	2 42 58.6246	57.4837	+16 25.6	14 26 31.884	- 14 30 10.10	0.992487521
02	155.5	2 46 55.1799	54.0377	+16 26.8	14 30 27.235	- 14 49 11.99	0.992230551
03	156.5	2 50 51.7353	50.5943	+16 27.2	14 34 23.401	- 15 07 59.51	0.991977034
04	157.5	2 54 48.2907	47.1530	+16 26.8	14 38 20.393	- 15 26 32.25	0.991726981
05	158.5	2 58 44.8460	43.7134	+16 25.5	14 42 18.221	- 15 44 49.85	0.991480361
06	159.5	3 02 41.4014	40.2745	+16 23.4	14 46 16.893	- 16 02 51.90	0.991237102
07	160.5	3 06 37.9568	36.8352	+16 20.4	14 50 16.415	- 16 20 38.01	0.990997091
08	161.5	3 10 34.5121	33.3944	+16 16.6	14 54 16.794	- 16 38 07.79	0.990760177
09	162.5	3 14 31.0675	29.9512	+16 11.9	14 58 18.032	- 16 55 20.83	0.990526168
10	163.5	3 18 27.6229	26.5052	+16 06.4	15 02 20.135	- 17 12 16.73	0.990294838
11	164.5	3 22 24.1782	23.0564	+16 00.0	15 06 23.103	- 17 28 55.07	0.990065936
12	165.5	3 26 20.7336	19.6059	+15 52.7	15 10 26.938	- 17 45 15.44	0.989839202
13	166.5	3 30 17.2890	16.1554	+15 44.5	15 14 31.638	- 18 01 17.44	0.989614393
14	167.5	3 34 13.8443	12.7073	+15 35.5	15 18 37.203	- 18 17 00.67	0.989391315
15	168.5	3 38 10.3997	09.2630	+15 25.6	15 22 43.626	- 18 32 24.70	0.989169856
16	169.5	3 42 06.9551	05.8232	+15 14.9	15 26 50.898	- 18 47 29.15	0.988950016
17	170.5	3 46 03.5105	02.3869	+15 03.4	15 30 59.010	- 19 02 13.60	0.988731909
18	171.5	3 49 60.0658	58.9521	+14 51.0	15 35 07.949	- 19 16 37.64	0.988515756
19	172.5	3 53 56.6212	55.5168	+14 37.8	15 39 17.701	- 19 30 40.88	0.988301857
20	173.5	3 57 53.1766	52.0793	+14 23.8	15 43 28.254	- 19 44 22.92	0.988090556
21	174.5	4 01 49.7319	48.6388	+14 09.0	15 47 39.598	- 19 57 43.38	0.987882215
22	175.5	4 05 46.2873	45.1951	+13 53.5	15 51 51.720	- 20 10 41.87	0.987677191
23	176.5	4 09 42.8427	41.7487	+13 37.1	15 56 04.612	- 20 23 18.06	0.987475825
24	177.5	4 13 39.3980	38.3004	+13 20.0	16 00 18.262	- 20 35 31.58	0.987278433
25	178.5	4 17 35.9534	34.8512	+13 02.2	16 04 32.659	- 20 47 22.11	0.987085306
26	179.5	4 21 32.5088	31.4021	+12 43.6	16 08 47.793	- 20 58 49.33	0.986896710
27	180.5	4 25 29.0641	27.9540	+12 24.3	16 13 03.650	- 21 09 52.91	0.986712882
28	181.5	4 29 25.6195	24.5076	+12 04.3	16 17 20.218	- 21 20 32.57	0.986534032
29	182.5	4 33 22.1749	21.0636	+11 43.6	16 21 37.481	- 21 30 48.00	0.986360342
30	183.5	4 37 18.7303	17.6221	+11 22.2	16 25 55.425	- 21 40 38.93	0.986191956
<hr/>							
Dic 01	184.5	4 41 15.2856	14.1830	+11 00.2	16 30 14.033	- 21 50 05.07	0.986028982
02	185.5	4 45 11.8410	10.7456	+10 37.5	16 34 33.286	- 21 59 06.17	0.985871485
03	186.5	4 49 08.3964	07.3092	+10 14.1	16 38 53.166	- 22 07 41.95	0.985719483
04	187.5	4 53 04.9517	03.8725	+ 9 50.2	16 43 13.651	- 22 15 52.17	0.985572943
05	188.5	4 57 01.5071	00.4345	+ 9 25.7	16 47 34.720	- 22 23 36.58	0.985431783
06	189.5	5 00 58.0625	56.9942	+ 9 00.6	16 51 56.350	- 22 30 54.94	0.985295868
07	190.5	5 04 54.6178	53.5510	+ 8 35.0	16 56 18.518	- 22 37 47.01	0.985165014
08	191.5	5 08 51.1732	50.1051	+ 8 08.9	17 00 41.198	- 22 44 12.55	0.985038993
09	192.5	5 12 47.7286	46.6572	+ 7 42.3	17 05 04.365	- 22 50 11.36	0.984917537
10	193.5	5 16 44.2839	43.2087	+ 7 15.2	17 09 27.993	- 22 55 43.23	0.984800351
11	194.5	5 20 40.8393	39.7615	+ 6 47.7	17 13 52.053	- 23 00 47.97	0.984687134
12	195.5	5 24 37.3947	36.3174	+ 6 19.8	17 18 16.514	- 23 05 25.40	0.984577600
13	196.5	5 28 33.9500	32.8774	+ 5 51.5	17 22 41.344	- 23 09 35.35	0.984471514
14	197.5	5 32 30.5054	29.4415	+ 5 22.9	17 27 06.505	- 23 13 17.70	0.984368713
15	198.5	5 36 27.0608	26.0081	+ 4 54.1	17 31 31.958	- 23 16 32.30	0.984269134
16	199.5	5 40 23.6162	22.5753	+ 4 24.9	17 35 57.663	- 23 19 19.03	0.984172820
17	200.5	5 44 20.1715	19.1410	+ 3 55.6	17 40 23.578	- 23 21 37.77	0.984079908
18	201.5	5 48 16.7269	15.7037	+ 3 26.0	17 44 49.665	- 23 23 28.43	0.983990612
19	202.5	5 52 13.2823	12.2630	+ 2 56.4	17 49 15.885	- 23 24 50.93	0.983905191
20	203.5	5 56 09.8376	08.8191	+ 2 26.6	17 53 42.203	- 23 25 45.19	0.983823931
21	204.5	6 00 06.3930	05.3728	+ 1 56.8	17 58 08.584	- 23 26 11.19	0.983747121
22	205.5	6 04 02.9484	01.9251	+ 1 26.9	18 02 34.993	- 23 26 08.89	0.983675044
23	206.5	6 07 59.5037	58.4770	+ 0 57.1	18 07 01.398	- 23 25 38.30	0.983607970
24	207.5	6 11 56.0591	55.0296	+ 0 27.3	18 11 27.766	- 23 24 39.42	0.983546152
25	208.5	6 15 52.6145	51.5838	- 0 02.5	18 15 54.066	- 23 23 12.29	0.983489830
26	209.5	6 19 49.1698	48.1400	- 0 32.1	18 20 20.265	- 23 21 16.95	0.983439223
27	210.5	6 23 45.7252	44.6986	- 1 01.6	18 24 46.332	- 23 18 53.48	0.983394531
28	211.5	6 27 42.2806	41.2596	- 1 31.0	18 29 12.236	- 23 16 01.94	0.983355934
29	212.5	6 31 38.8360	37.8226	- 2 00.1	18 33 37.946	- 23 12 42.43	0.983323578
30	213.5	6 35 35.3913	34.3868	- 2 29.0	18 38 03.432	- 23 08 55.07	0.983297578
31	214.5	6 39 31.9467	30.9510	- 2 57.7	18 42 28.665	- 23 04 39.95	0.983277998

## Planetas

En este capítulo se tabulan las salidas y puestas como así también el paso por el meridiano del lugar (OFA) de los planetas para todos los meses del año (cada 5 días dentro de cada mes), con la precisión suficiente para lograr su localización en el cielo, en forma aproximada.

Además se ofrecen los datos de ascensión recta, declinación, elongación y magnitud a 0<sup>h</sup> U.T.

La información tabulada es la siguiente (entre paréntesis se indica la precisión)

- Hora de Salida, Paso por Meridiano y Puesta en Tiempo Universal (1<sup>m</sup>)
- Acimut de salida y puesta (1°)
- Altura de paso por meridiano (1°)
- Ascensión recta aparente (0.1<sup>m</sup>)
- Declinación aparente (1')
- Elongación (1°)
- Magnitud (0.1 mg)

Nota: Por resolución B5 y B6 de la Unión Astronómica Internacional del año 2006, Plutón deja de ser considerado como planeta para convertirse en un planeta enano y es reconocido como el prototipo de una nueva categoría de objetos transneptunianos.



## Mercurio

(Todas las horas son en Tiempo Universal)

Fecha	Salida		Paso Merid.		Puesta		A.R.	Decl.	Elong.	Mag.
	Hora h m	Az. °	Hora h m	h °	Hora h m	Az. °				
Ene 00	09 03	120	16 12	84N	23 22	240	18 12.4	-24 35	W 6	-0.9
5	09 19	120	16 28	84N	23 37	240	18 47.2	-24 35	W 4	-1.1
10	09 36	119	16 43	83N	23 50	241	19 22.5	-24 00	S 2	-1.2
15	09 56	117	16 59	82N			19 58.1	-22 47	E 3	-1.3
20	10 17	115	17 15	80N	00 10	245	20 33.5	-20 55	E 6	-1.3
25	10 40	112	17 30	77N	00 18	248	21 08.4	-18 26	E 10	-1.3
Feb 00	11 06	107	17 46	73N	00 24	252	21 48.3	-14 41	E 14	-1.2
5	11 25	103	17 55	70N	00 24	257	22 18.0	-11 09	E 17	-1.0
10	11 36	99	17 57	66N	00 19	261	22 41.0	- 7 42	E 18	-0.6
15	11 33	96	17 47	64N	00 04	264	22 52.6	- 5 06	E 17	0.1
20	11 11	95	17 22	63N	23 33	265	22 49.3	- 4 08	E 12	----
25	10 31	97	16 45	65N	22 59	263	22 33.3	- 5 06	N 4	----
Mar 00	09 56	99	16 14	66N	22 33	261	22 17.6	- 6 49	W 7	----
5	09 17	101	15 41	69N	22 06	259	22 03.3	- 9 04	W 15	----
10	08 51	103	15 19	70N	21 48	257	21 59.4	-10 40	W 22	0.8
15	08 36	104	15 06	71N	21 37	256	22 05.3	-11 20	W 26	0.5
20	08 31	103	15 01	70N	21 31	257	22 18.7	-11 09	W 27	0.3
25	08 32	102	15 00	69N	21 28	258	22 37.3	-10 12	W 28	0.2
Abr 00	08 41	100	15 04	67N	21 26	260	23 04.3	- 8 12	W 27	0.1
5	08 53	97	15 10	65N	21 26	263	23 29.6	- 5 53	W 25	-0.1
10	09 08	94	15 18	62N	21 27	267	23 57.1	- 3 03	W 23	-0.3
15	09 26	90	15 28	59N	21 29	271	0 26.6	+ 0 14	W 19	-0.5
20	09 48	85	15 40	55N	21 32	275	0 58.4	+ 3 55	W 16	-0.8
25	10 12	81	15 55	51N	21 37	280	1 32.7	+ 7 56	W 11	-1.2
May 00	10 41	76	16 14	46N	21 45	285	2 10.0	+12 08	W 6	-1.7
5	11 13	71	16 35	42N	21 56	290	2 50.6	+16 16	E 0	----
10	11 47	66	16 58	39N	22 09	294	3 33.5	+19 59	E 6	-1.9
15	12 19	63	17 22	36N	22 25	297	4 17.0	+22 54	E 12	-1.4
20	12 46	61	17 43	34N	22 41	299	4 58.4	+24 45	E 17	-0.9
25	13 05	60	18 00	34N	22 55	300	5 35.6	+25 35	E 20	-0.4
Jun 00	13 17	60	18 13	34N	23 08	300	6 12.9	+25 27	E 23	0.1
5	13 18	61	18 16	35N	23 14	299	6 36.8	+24 40	E 24	0.5
10	13 10	63	18 12	36N	23 13	297	6 53.4	+23 30	E 23	0.8
15	12 54	64	17 59	37N	23 05	296	7 02.2	+22 07	E 20	----
20	12 31	66	17 39	39N	22 48	294	7 02.7	+20 46	E 16	----
25	12 00	67	17 12	40N	22 23	293	6 55.7	+19 35	E 10	----
Jul 00	11 26	68	16 40	41N	21 53	292	6 43.9	+18 46	S 5	----
5	10 54	69	16 08	41N	21 23	291	6 31.7	+18 26	W 8	----
10	10 28	68	15 42	40N	20 56	292	6 24.1	+18 40	W 13	----
15	10 12	67	15 24	40N	20 36	293	6 24.5	+19 20	W 18	----
20	10 05	66	15 16	39N	20 26	294	6 34.6	+20 15	W 20	0.5
25	10 09	65	15 17	38N	20 25	295	6 54.5	+21 06	W 20	-0.1
Ago 00	10 23	65	15 31	38N	20 38	295	7 30.4	+21 29	W 17	-0.8
5	10 39	66	15 49	38N	21 00	294	8 08.2	+20 52	W 13	-1.3
10	10 56	68	16 11	40N	21 27	292	8 49.7	+19 10	W 8	-1.7
15	11 10	71	16 33	43N	21 57	288	9 31.2	+16 30	N 3	-1.9
20	11 21	75	16 52	47N	22 25	284	10 10.4	+13 08	E 3	-1.8
25	11 27	80	17 08	50N	22 50	280	10 46.4	+ 9 25	E 7	-1.3
Sep 00	11 31	85	17 23	55N	23 17	274	11 25.8	+ 4 47	E 12	-0.9
5	11 32	90	17 33	59N	23 36	270	11 55.8	+ 0 57	E 16	-0.6
10	11 31	94	17 42	62N	23 53	266	12 23.9	- 2 45	E 19	-0.4
15	11 29	98	17 48	66N	00 05	262	12 50.2	- 6 16	E 21	-0.3
20	11 26	102	17 53	69N	00 19	258	13 15.1	- 9 31	E 23	-0.2
25	11 21	105	17 56	72N	00 30	255	13 38.2	-12 28	E 25	-0.1
Oct 00	11 16	108	17 57	75N	00 37	252	13 59.1	-15 00	E 26	-0.0
5	11 08	111	17 54	76N	00 41	250	14 16.6	-17 00	E 26	0.1
10	10 56	112	17 45	78N	00 37	248	14 28.8	-18 15	E 24	0.2
15	10 39	112	17 28	78N	00 21	248	14 32.5	-18 25	E 20	0.6
20	10 14	110	16 58	76N	23 41	250	14 24.0	-17 01	E 12	----
25	09 43	106	16 18	73N	22 51	254	14 04.5	-13 53	S 2	----
Nov 00	09 09	102	15 34	69N	21 58	259	13 42.3	- 9 44	W 11	----
5	08 51	100	15 13	67N	21 36	260	13 39.4	- 8 17	W 17	0.0
10	08 42	101	15 07	68N	21 33	259	13 51.5	- 9 01	W 19	-0.5
15	08 39	104	15 10	71N	21 42	256	14 13.2	-11 05	W 18	-0.8
20	08 40	107	15 18	73N	21 57	253	14 39.9	-13 42	W 16	-0.9
25	08 42	110	15 28	76N	22 14	250	15 09.2	-16 22	W 14	-0.9
Dic 00	08 46	113	15 39	78N	22 32	247	15 40.1	-18 52	W 11	-0.9
5	08 53	115	15 51	80N	22 51	244	16 12.1	-21 02	W 8	-0.9
10	09 01	118	16 05	82N	23 09	242	16 45.0	-22 48	W 6	-1.0
15	09 11	119	16 19	83N	23 27	241	17 18.8	-24 06	W 3	-1.1
20	09 24	120	16 34	84N	23 44	240	17 53.3	-24 52	S 1	-1.2
25	09 39	120	16 49	84N	24 00	240	18 28.4	-25 05	E 3	-1.1

Venus											
(Todas las horas son en Tiempo Universal)											
Fecha	Salida		Paso Merid.		Puesta		A.R.	Decl.	Elong.	Mag.	
	Hora	Az.	Hora	h	Hora	Az.					
	h m	°	h m	°	h m	°	h m	'	°		
Ene	00	12 13	112	19 04	78N	01 53	248	21 04.8	-18 38	E 34	-3.8
	5	12 23	110	19 08	76N	01 53	250	21 29.2	-16 44	E 35	-3.8
	10	12 33	107	19 12	74N	01 51	252	21 53.1	-14 39	E 36	-3.8
	15	12 42	105	19 16	71N	01 49	255	22 16.3	-12 25	E 37	-3.9
	20	12 51	102	19 19	69N	01 46	258	22 39.0	-10 03	E 38	-3.9
	25	13 00	99	19 21	66N	01 42	261	23 01.2	- 7 35	E 39	-3.9
Feb	00	13 10	95	19 23	63N	01 37	264	23 27.4	- 4 32	E 40	-3.9
	5	13 18	92	19 25	61N	01 32	267	23 48.8	- 1 56	E 41	-4.0
	10	13 26	89	19 26	58N	01 27	270	0 09.9	+ 0 41	E 42	-4.0
	15	13 34	86	19 28	55N	01 22	274	0 30.8	+ 3 18	E 43	-4.0
	20	13 41	83	19 29	53N	01 16	277	0 51.5	+ 5 53	E 43	-4.0
	25	13 48	80	19 29	50N	01 11	280	1 12.1	+ 8 25	E 44	-4.1
Mar	00	13 54	78	19 30	48N	01 07	282	1 28.5	+10 23	E 44	-4.1
	5	14 01	75	19 31	46N	01 01	285	1 49.0	+12 46	E 45	-4.1
	10	14 07	72	19 32	44N	00 56	287	2 09.4	+15 02	E 45	-4.2
	15	14 14	70	19 32	42N	00 51	290	2 29.8	+17 09	E 46	-4.2
	20	14 19	68	19 33	40N	00 46	292	2 50.0	+19 07	E 46	-4.2
	25	14 25	65	19 33	38N	00 42	294	3 10.0	+20 55	E 46	-4.3
Abr	00	14 30	63	19 33	36N	00 36	297	3 33.6	+22 49	E 46	-4.3
	5	14 33	62	19 32	35N	00 31	298	3 52.6	+24 10	E 46	-4.4
	10	14 35	60	19 30	34N	00 26	300	4 10.8	+25 19	E 45	-4.4
	15	14 35	59	19 27	33N	00 21	301	4 28.0	+26 15	E 44	-4.4
	20	14 33	58	19 23	32N	00 14	302	4 43.7	+26 58	E 43	-4.5
	25	14 29	58	19 17	32N	00 07	302	4 57.5	+27 28	E 41	-4.5
May	00	14 21	57	19 08	31N	23 56	303	5 08.9	+27 45	E 39	-4.5
	5	14 09	57	18 57	31N	23 44	303	5 17.4	+27 49	E 36	-4.5
	10	13 53	57	18 41	32N	23 29	302	5 22.3	+27 39	E 32	-4.4
	15	13 33	58	18 22	32N	23 11	302	5 23.1	+27 15	E 27	-4.3
	20	13 07	59	17 58	33N	22 49	301	5 19.5	+26 35	E 22	-4.2
	25	12 36	60	17 30	34N	22 24	300	5 11.7	+25 36	E 15	-3.9
Jun	00	11 54	62	16 52	35N	21 51	298	4 58.2	+24 03	E 6	----
	5	11 17	64	16 20	37N	21 23	296	4 45.3	+22 31	W 2	----
	10	10 41	66	15 49	38N	20 57	294	4 33.3	+20 58	W 10	-3.7
	15	10 08	67	15 20	40N	20 32	292	4 23.8	+19 33	W 17	-4.0
	20	09 40	69	14 55	41N	20 10	291	4 18.1	+18 26	W 23	-4.2
	25	09 17	70	14 34	42N	19 51	290	4 16.3	+17 41	W 29	-4.3
Jul	00	08 59	70	14 17	42N	19 35	290	4 18.3	+17 18	W 33	-4.4
	5	08 45	70	14 03	42N	19 22	290	4 23.8	+17 13	W 37	-4.4
	10	08 34	70	13 52	42N	19 10	290	4 32.3	+17 23	W 39	-4.4
	15	08 27	69	13 44	41N	19 01	291	4 43.4	+17 43	W 41	-4.4
	20	08 21	69	13 38	41N	18 54	291	4 56.6	+18 09	W 43	-4.4
	25	08 18	68	13 33	41N	18 48	292	5 11.6	+18 38	W 44	-4.4
Ago	00	08 16	68	13 30	40N	18 43	292	5 31.7	+19 12	W 45	-4.3
	5	08 16	67	13 28	40N	18 41	293	5 49.9	+19 36	W 46	-4.3
	10	08 16	67	13 28	39N	18 40	293	6 09.2	+19 55	W 46	-4.2
	15	08 18	67	13 29	39N	18 40	293	6 29.5	+20 05	W 46	-4.2
	20	08 19	67	13 30	39N	18 41	293	6 50.6	+20 06	W 46	-4.2
	25	08 20	67	13 32	39N	18 44	293	7 12.2	+19 56	W 45	-4.1
Sep	00	08 22	67	13 35	40N	18 48	293	7 38.9	+19 29	W 45	-4.1
	5	08 23	68	13 38	40N	18 53	292	8 01.4	+18 52	W 44	-4.1
	10	08 24	69	13 41	41N	18 58	291	8 24.2	+18 04	W 44	-4.0
	15	08 24	70	13 44	42N	19 04	290	8 47.2	+17 02	W 43	-4.0
	20	08 24	72	13 48	44N	19 11	288	9 10.1	+15 49	W 42	-4.0
	25	08 24	74	13 51	45N	19 18	286	9 33.0	+14 24	W 41	-3.9
Oct	00	08 23	75	13 54	47N	19 25	284	9 55.8	+12 49	W 41	-3.9
	5	08 21	78	13 57	48N	19 33	282	10 18.6	+11 03	W 40	-3.9
	10	08 19	80	14 00	50N	19 41	280	10 41.2	+ 9 09	W 39	-3.9
	15	08 17	82	14 03	52N	19 49	278	11 03.7	+ 7 07	W 38	-3.9
	20	08 14	85	14 05	54N	19 57	275	11 26.2	+ 4 59	W 37	-3.9
	25	08 12	87	14 08	57N	20 05	272	11 48.6	+ 2 46	W 36	-3.8
Nov	00	08 08	90	14 11	59N	20 15	269	12 15.6	+ 0 02	W 34	-3.8
	5	08 05	93	14 14	62N	20 24	267	12 38.1	- 2 16	W 33	-3.8
	10	08 03	96	14 17	64N	20 32	264	13 00.8	- 4 35	W 32	-3.8
	15	08 00	99	14 20	66N	20 41	261	13 23.7	- 6 53	W 31	-3.8
	20	07 58	101	14 24	69N	20 50	258	13 46.9	- 9 08	W 30	-3.8
	25	07 56	104	14 28	71N	21 00	256	14 10.4	-11 18	W 29	-3.8
Dic	00	07 55	106	14 32	73N	21 10	253	14 34.3	-13 23	W 28	-3.8
	5	07 55	109	14 37	75N	21 19	251	14 58.7	-15 19	W 27	-3.8
	10	07 55	111	14 42	77N	21 29	249	15 23.6	-17 06	W 26	-3.8
	15	07 56	113	14 48	78N	21 40	247	15 48.9	-18 42	W 24	-3.7
	20	07 59	114	14 54	79N	21 50	246	16 14.8	-20 06	W 23	-3.7
	25	08 02	116	15 01	81N	22 00	244	16 41.0	-21 15	W 22	-3.7

MARTE											
(Todas las horas son en Tiempo Universal)											
Fecha	Salida		Paso Merid.		Puesta		A.R.	Decl.	Elong.	Mag.	
	Hora	Az.	Hora	h	Hora	Az.					
	h m	°	h m	°	h m	°	h m	°	°		
Ene	00	06 47	113	13 39	79N	20 32	247	15 42.1	-19 17	W 41	1.6
	5	06 39	114	13 34	79N	20 28	246	15 56.0	-20 03	W 43	1.6
	10	06 32	115	13 28	80N	20 25	245	16 10.1	-20 46	W 45	1.5
	15	06 24	116	13 23	81N	20 21	244	16 24.4	-21 24	W 46	1.5
	20	06 17	116	13 17	81N	20 17	243	16 38.8	-21 58	W 48	1.5
	25	06 11	117	13 12	82N	20 14	243	16 53.3	-22 27	W 50	1.4
Feb	00	06 03	118	13 06	82N	20 09	242	17 10.9	-22 56	W 52	1.4
	5	05 57	118	13 01	82N	20 05	242	17 25.7	-23 15	W 54	1.3
	10	05 52	118	12 56	83N	20 01	242	17 40.6	-23 28	W 55	1.3
	15	05 47	118	12 52	83N	19 57	242	17 55.6	-23 37	W 57	1.3
	20	05 42	118	12 47	83N	19 52	242	18 10.6	-23 40	W 58	1.2
	25	05 37	118	12 42	83N	19 47	242	18 25.6	-23 38	W 60	1.2
Mar	00	05 34	118	12 39	83N	19 43	242	18 37.7	-23 33	W 61	1.1
	5	05 30	118	12 34	83N	19 38	242	18 52.7	-23 22	W 63	1.1
	10	05 26	118	12 29	82N	19 32	242	19 07.7	-23 05	W 64	1.0
	15	05 22	117	12 24	82N	19 27	243	19 22.7	-22 44	W 66	1.0
	20	05 19	117	12 20	81N	19 20	243	19 37.6	-22 17	W 67	0.9
	25	05 15	116	12 15	81N	19 14	244	19 52.5	-21 46	W 69	0.9
Abr	00	05 12	115	12 09	80N	19 06	245	20 10.1	-21 03	W 71	0.8
	5	05 08	114	12 04	79N	18 59	246	20 24.7	-20 22	W 72	0.7
	10	05 05	114	11 58	79N	18 51	247	20 39.1	-19 37	W 74	0.7
	15	05 02	113	11 53	78N	18 43	248	20 53.4	-18 48	W 75	0.6
	20	04 59	111	11 47	77N	18 35	249	21 07.6	-17 56	W 76	0.6
	25	04 56	110	11 42	76N	18 27	250	21 21.6	-17 00	W 78	0.5
May	00	04 53	109	11 36	75N	18 18	251	21 35.5	-16 02	W 79	0.4
	5	04 50	108	11 30	74N	18 10	252	21 49.1	-15 00	W 81	0.4
	10	04 46	107	11 24	73N	18 01	253	22 02.6	-13 57	W 82	0.3
	15	04 43	105	11 17	72N	17 51	255	22 16.0	-12 51	W 83	0.2
	20	04 39	104	11 11	71N	17 42	256	22 29.1	-11 44	W 85	0.2
	25	04 35	103	11 04	70N	17 32	257	22 42.1	-10 36	W 86	0.1
Jun	00	04 30	101	10 55	68N	17 20	259	22 57.4	- 9 13	W 88	0.0
	5	04 26	100	10 48	67N	17 10	260	23 09.9	- 8 04	W 89	-0.1
	10	04 22	98	10 41	66N	17 00	262	23 22.2	- 6 54	W 91	-0.2
	15	04 17	97	10 33	65N	16 49	263	23 34.3	- 5 45	W 93	-0.2
	20	04 12	96	10 25	64N	16 39	264	23 46.2	- 4 36	W 94	-0.3
	25	04 07	94	10 17	63N	16 28	266	23 57.9	- 3 29	W 96	-0.4
Jul	00	04 01	93	10 09	61N	16 17	267	0 09.2	- 2 23	W 97	-0.5
	5	03 55	92	10 00	60N	16 05	268	0 20.3	- 1 19	W 99	-0.6
	10	03 48	91	09 51	59N	15 54	269	0 31.0	- 0 18	W101	-0.7
	15	03 41	90	09 42	58N	15 42	271	0 41.4	+ 0 41	W103	-0.7
	20	03 34	88	09 32	58N	15 30	272	0 51.3	+ 1 37	W105	-0.8
	25	03 26	87	09 22	57N	15 18	273	1 00.8	+ 2 29	W108	-0.9
Ago	00	03 15	86	09 09	56N	15 02	274	1 11.4	+ 3 26	W110	-1.1
	5	03 05	85	08 57	55N	14 49	275	1 19.6	+ 4 10	W113	-1.2
	10	02 55	85	08 45	54N	14 35	275	1 27.0	+ 4 49	W116	-1.3
	15	02 43	84	08 32	54N	14 20	276	1 33.6	+ 5 23	W119	-1.4
	20	02 30	83	08 18	53N	14 05	277	1 39.3	+ 5 51	W122	-1.5
	25	02 16	83	08 03	53N	13 49	277	1 44.0	+ 6 15	W126	-1.6
Sep	00	01 57	83	07 43	53N	13 28	277	1 48.0	+ 6 35	W130	-1.8
	5	01 40	82	07 25	52N	13 10	278	1 50.0	+ 6 46	W135	-1.9
	10	01 21	82	07 06	52N	12 51	278	1 50.7	+ 6 51	W139	-2.0
	15	01 01	82	06 45	52N	12 30	278	1 49.9	+ 6 51	W144	-2.1
	20	00 39	82	06 24	52N	12 09	278	1 47.6	+ 6 44	W150	-2.3
	25	00 15	83	06 00	53N	11 46	277	1 44.1	+ 6 33	W156	-2.4
Oct	00	23 45	83	05 36	53N	11 22	277	1 39.4	+ 6 18	W162	-2.5
	5	23 19	83	05 11	53N	10 57	277	1 33.7	+ 6 00	W168	-2.5
	10	22 52	84	04 45	54N	10 32	276	1 27.5	+ 5 41	W174	-2.6
	15	22 25	84	04 19	54N	10 07	276	1 21.1	+ 5 23	E177	-2.6
	20	21 59	84	03 53	54N	09 42	276	1 14.9	+ 5 08	E172	-2.5
	25	21 33	85	03 28	54N	09 17	275	1 09.3	+ 4 56	E166	-2.4
Nov	00	21 04	85	02 59	54N	08 48	275	1 03.8	+ 4 50	E158	-2.2
	5	20 42	85	02 36	54N	08 25	275	1 00.4	+ 4 51	E153	-2.0
	10	20 20	84	02 14	54N	08 03	276	0 58.3	+ 4 59	E147	-1.8
	15	20 01	84	01 53	54N	07 42	276	0 57.5	+ 5 13	E142	-1.7
	20	19 43	84	01 34	54N	07 22	276	0 57.9	+ 5 34	E137	-1.5
	25	19 26	83	01 16	53N	07 03	277	0 59.5	+ 6 01	E133	-1.3
Dic	00	19 11	83	00 59	53N	06 45	277	1 02.3	+ 6 32	E129	-1.2
	5	18 56	82	00 43	52N	06 28	278	1 06.0	+ 7 09	E125	-1.0
	10	18 43	81	00 28	51N	06 11	279	1 10.7	+ 7 49	E121	-0.9
	15	18 31	80	00 14	51N	05 55	280	1 16.3	+ 8 33	E117	-0.7
	20	18 20	79	00 01	50N	05 40	281	1 22.6	+ 9 20	E114	-0.6
	25	18 09	78	23 46	49N	05 25	282	1 29.5	+10 09	E111	-0.4

Júpiter

(Todas las horas son en Tiempo Universal)

Fecha	Salida		Paso Merid.		Puesta		A.R. h m	Decl. ° ' "	Elong. °	Mag.
	Hora	Az.	Hora	h	Hora	Az.				
	h m	°	h m	°	h m	°				
Ene 00	09 21	118	16 24	82N	23 27	242	18 28.0	-23 11	W 3	-1.8
5	09 06	118	16 09	82N	23 12	242	18 33.0	-23 08	W 6	-1.8
10	08 52	118	15 55	82N	22 57	242	18 38.0	-23 04	W 10	-1.8
15	08 37	118	15 40	82N	22 42	242	18 43.0	-23 00	W 14	-1.8
20	08 23	118	15 25	82N	22 27	242	18 47.9	-22 55	W 18	-1.9
25	08 08	117	15 10	82N	22 12	243	18 52.7	-22 50	W 22	-1.9
Feb 00	07 51	117	14 52	82N	21 54	243	18 58.4	-22 43	W 27	-1.9
5	07 36	117	14 37	82N	21 39	243	19 03.1	-22 37	W 31	-1.9
10	07 21	117	14 22	82N	21 23	243	19 07.6	-22 30	W 35	-1.9
15	07 06	117	14 07	82N	21 07	243	19 12.1	-22 23	W 39	-1.9
20	06 51	117	13 52	81N	20 52	243	19 16.4	-22 16	W 43	-1.9
25	06 36	117	13 36	81N	20 36	243	19 20.6	-22 09	W 47	-1.9
Mar 00	06 24	117	13 23	81N	20 23	244	19 23.8	-22 03	W 51	-2.0
5	06 08	116	13 08	81N	20 07	244	19 27.7	-21 55	W 55	-2.0
10	05 53	116	12 52	81N	19 50	244	19 31.4	-21 48	W 59	-2.0
15	05 37	116	12 35	81N	19 34	244	19 34.9	-21 41	W 63	-2.0
20	05 21	116	12 19	81N	19 17	244	19 38.2	-21 34	W 67	-2.1
25	05 05	116	12 02	81N	19 00	244	19 41.3	-21 27	W 71	-2.1
Abr 00	04 45	116	11 42	81N	18 40	244	19 44.7	-21 19	W 76	-2.1
5	04 28	116	11 25	80N	18 22	245	19 47.3	-21 13	W 81	-2.2
10	04 11	115	11 08	80N	18 04	245	19 49.6	-21 08	W 85	-2.2
15	03 54	115	10 50	80N	17 47	245	19 51.6	-21 03	W 90	-2.2
20	03 36	115	10 32	80N	17 28	245	19 53.3	-20 59	W 94	-2.3
25	03 18	115	10 14	80N	17 10	245	19 54.8	-20 56	W 99	-2.3
May 00	02 59	115	09 55	80N	16 51	245	19 55.9	-20 54	W103	-2.3
5	02 40	115	09 36	80N	16 32	245	19 56.7	-20 53	W108	-2.4
10	02 21	115	09 17	80N	16 13	245	19 57.2	-20 52	W113	-2.4
15	02 02	115	08 58	80N	15 54	245	19 57.3	-20 52	W117	-2.4
20	01 42	115	08 38	80N	15 34	245	19 57.1	-20 54	W122	-2.5
25	01 22	115	08 18	80N	15 14	245	19 56.6	-20 56	W127	-2.5
Jun 00	00 57	115	07 53	80N	14 49	245	19 55.6	-21 00	W133	-2.6
5	00 36	115	07 32	80N	14 28	245	19 54.4	-21 04	W138	-2.6
10	00 14	115	07 11	80N	14 07	245	19 52.9	-21 09	W143	-2.6
15	23 48	116	06 49	80N	13 46	244	19 51.1	-21 14	W149	-2.6
20	23 26	116	06 28	81N	13 25	244	19 49.0	-21 21	W154	-2.7
25	23 04	116	06 06	81N	13 03	244	19 46.8	-21 27	W159	-2.7
Jul 00	22 41	116	05 44	81N	12 42	244	19 44.3	-21 34	W165	-2.7
5	22 19	116	05 21	81N	12 20	244	19 41.8	-21 41	W170	-2.7
10	21 56	116	04 59	81N	11 58	244	19 39.1	-21 48	W175	-2.7
15	21 33	116	04 37	81N	11 36	244	19 36.4	-21 55	E179	-2.8
20	21 11	117	04 14	81N	11 14	243	19 33.6	-22 02	E174	-2.7
25	20 48	117	03 52	81N	10 52	243	19 31.0	-22 09	E168	-2.7
Ago 00	20 21	117	03 25	81N	10 25	243	19 27.9	-22 16	E162	-2.7
5	19 59	117	03 03	82N	10 04	243	19 25.5	-22 22	E157	-2.7
10	19 37	117	02 42	82N	09 42	243	19 23.3	-22 27	E151	-2.7
15	19 15	117	02 20	82N	09 21	243	19 21.3	-22 31	E146	-2.7
20	18 53	117	01 59	82N	08 59	243	19 19.6	-22 35	E141	-2.6
25	18 32	117	01 37	82N	08 39	243	19 18.1	-22 38	E136	-2.6
Sep 00	18 07	117	01 13	82N	08 14	243	19 16.9	-22 40	E130	-2.6
5	17 47	117	00 52	82N	07 54	243	19 16.1	-22 42	E125	-2.5
10	17 27	117	00 32	82N	07 34	243	19 15.8	-22 43	E120	-2.5
15	17 07	117	00 13	82N	07 14	243	19 15.7	-22 43	E115	-2.5
20	16 48	117	23 49	82N	06 55	243	19 16.0	-22 43	E110	-2.4
25	16 29	117	23 30	82N	06 36	243	19 16.7	-22 42	E105	-2.4
Oct 00	16 11	117	23 12	82N	06 17	243	19 17.7	-22 40	E101	-2.4
5	15 52	117	22 54	82N	05 58	243	19 19.0	-22 38	E 96	-2.3
10	15 35	117	22 36	82N	05 40	243	19 20.6	-22 35	E 91	-2.3
15	15 17	117	22 18	82N	05 22	243	19 22.6	-22 31	E 87	-2.3
20	15 00	117	22 00	82N	05 05	243	19 24.8	-22 27	E 82	-2.2
25	14 43	117	21 43	82N	04 47	243	19 27.3	-22 22	E 78	-2.2
Nov 00	14 23	117	21 23	81N	04 27	243	19 30.7	-22 15	E 73	-2.2
5	14 07	117	21 07	81N	04 10	243	19 33.8	-22 09	E 69	-2.1
10	13 51	116	20 50	81N	03 53	244	19 37.1	-22 01	E 64	-2.1
15	13 35	116	20 34	81N	03 36	244	19 40.5	-21 53	E 60	-2.1
20	13 20	116	20 18	81N	03 20	244	19 44.2	-21 45	E 56	-2.1
25	13 04	116	20 02	81N	03 04	244	19 48.1	-21 35	E 52	-2.1
Dic 00	12 49	116	19 47	81N	02 48	244	19 52.1	-21 25	E 48	-2.0
5	12 34	115	19 31	80N	02 32	244	19 56.3	-21 14	E 44	-2.0
10	12 19	115	19 16	80N	02 16	245	20 00.6	-21 02	E 40	-2.0
15	12 05	115	19 01	80N	02 00	245	20 05.0	-20 49	E 36	-2.0
20	11 50	115	18 46	80N	01 44	245	20 09.6	-20 36	E 32	-2.0
25	11 36	114	18 30	80N	01 28	246	20 14.2	-20 22	E 28	-2.0



Saturno

(Todas las horas son en Tiempo Universal)

Fecha	Salida		Paso Merid.		Puesta		A.R.	Decl.	Elong.	Mag.
	Hora	Az.	Hora	h	Hora	Az.				
	h m	°	h m	°	h m	°				
Ene 00	10 29	116	17 27	81N	00 29	244	19 32.0	-21 42	E 12	0.5
5	10 12	116	17 10	81N	00 12	244	19 34.5	-21 37	E 8	0.5
10	09 55	116	16 53	81N	23 51	244	19 37.0	-21 32	E 3	0.5
15	09 38	116	16 36	81N	23 34	244	19 39.5	-21 26	W 1	0.5
20	09 21	116	16 19	81N	23 16	244	19 42.0	-21 20	W 6	0.5
25	09 04	116	16 02	80N	22 59	244	19 44.5	-21 15	W 10	0.6
Feb 00	08 44	115	15 41	80N	22 38	245	19 47.4	-21 08	W 16	0.6
5	08 27	115	15 24	80N	22 20	245	19 49.9	-21 02	W 20	0.6
10	08 10	115	15 06	80N	22 02	245	19 52.2	-20 56	W 25	0.6
15	07 53	115	14 49	80N	21 45	245	19 54.6	-20 50	W 29	0.6
20	07 36	115	14 32	80N	21 27	245	19 56.8	-20 44	W 34	0.6
25	07 19	115	14 14	80N	21 09	245	19 59.0	-20 38	W 38	0.7
Mar 00	07 05	115	14 00	80N	20 55	245	20 00.7	-20 34	W 42	0.7
5	06 48	115	13 42	80N	20 37	245	20 02.7	-20 28	W 46	0.7
10	06 30	114	13 25	80N	20 19	246	20 04.6	-20 23	W 51	0.7
15	06 12	114	13 07	79N	20 01	246	20 06.4	-20 18	W 55	0.7
20	05 55	114	12 49	79N	19 43	246	20 08.1	-20 14	W 60	0.7
25	05 37	114	12 31	79N	19 24	246	20 09.6	-20 09	W 65	0.7
Abr 00	05 15	114	12 09	79N	19 02	246	20 11.3	-20 05	W 70	0.7
5	04 57	114	11 50	79N	18 44	246	20 12.6	-20 01	W 75	0.7
10	04 38	114	11 32	79N	18 25	246	20 13.7	-19 58	W 79	0.6
15	04 20	114	11 13	79N	18 06	246	20 14.6	-19 55	W 84	0.6
20	04 01	114	10 54	79N	17 47	246	20 15.4	-19 53	W 89	0.6
25	03 42	114	10 35	79N	17 28	246	20 16.1	-19 52	W 94	0.6
May 00	03 23	114	10 16	79N	17 09	246	20 16.5	-19 51	W 98	0.6
5	03 04	114	09 56	79N	16 49	246	20 16.8	-19 50	W103	0.6
10	02 44	114	09 37	79N	16 30	246	20 17.0	-19 50	W108	0.5
15	02 24	114	09 17	79N	16 10	246	20 16.9	-19 51	W113	0.5
20	02 04	114	08 57	79N	15 50	246	20 16.7	-19 52	W118	0.5
25	01 44	114	08 37	79N	15 30	246	20 16.3	-19 54	W122	0.5
Jun 00	01 20	114	08 13	79N	15 06	246	20 15.7	-19 56	W128	0.4
5	00 59	114	07 53	79N	14 46	246	20 15.0	-19 59	W133	0.4
10	00 39	114	07 32	79N	14 26	246	20 14.1	-20 02	W138	0.4
15	00 18	114	07 11	79N	14 05	246	20 13.1	-20 06	W143	0.3
20	23 53	114	06 51	79N	13 44	246	20 12.0	-20 10	W148	0.3
25	23 32	114	06 30	79N	13 24	246	20 10.8	-20 14	W153	0.3
Jul 00	23 10	114	06 09	80N	13 03	246	20 09.5	-20 19	W159	0.2
5	22 49	115	05 48	80N	12 42	245	20 08.1	-20 24	W164	0.2
10	22 28	115	05 27	80N	12 21	245	20 06.6	-20 29	W169	0.2
15	22 06	115	05 05	80N	12 00	245	20 05.1	-20 34	W174	0.1
20	21 45	115	04 44	80N	11 39	245	20 03.5	-20 39	W179	0.1
25	21 23	115	04 23	80N	11 18	245	20 02.0	-20 43	E176	0.1
Ago 00	20 58	115	03 58	80N	10 53	245	20 00.2	-20 49	E170	0.1
5	20 36	115	03 37	80N	10 32	245	19 58.7	-20 54	E165	0.2
10	20 15	115	03 15	80N	10 12	245	19 57.3	-20 58	E159	0.2
15	19 54	115	02 54	80N	09 51	245	19 55.9	-21 02	E154	0.2
20	19 33	115	02 34	80N	09 30	245	19 54.6	-21 06	E149	0.2
25	19 12	115	02 13	80N	09 09	245	19 53.5	-21 10	E144	0.3
Sep 00	18 47	116	01 48	80N	08 45	244	19 52.3	-21 13	E138	0.3
5	18 26	116	01 27	80N	08 24	244	19 51.4	-21 16	E133	0.3
10	18 06	116	01 07	81N	08 04	244	19 50.7	-21 18	E128	0.3
15	17 46	116	00 47	81N	07 44	244	19 50.1	-21 20	E123	0.4
20	17 25	116	00 27	81N	07 24	244	19 49.7	-21 21	E118	0.4
25	17 06	116	00 07	81N	07 04	244	19 49.5	-21 22	E113	0.4
Oct 00	16 46	116	23 43	81N	06 45	244	19 49.4	-21 23	E108	0.4
5	16 26	116	23 24	81N	06 25	244	19 49.6	-21 23	E103	0.5
10	16 07	116	23 04	81N	06 06	244	19 49.8	-21 22	E 98	0.5
15	15 48	116	22 45	81N	05 46	244	19 50.3	-21 21	E 93	0.5
20	15 29	116	22 26	81N	05 27	244	19 51.0	-21 20	E 89	0.5
25	15 10	116	22 07	80N	05 08	244	19 51.8	-21 18	E 84	0.5
Nov 00	14 48	116	21 45	80N	04 46	244	19 52.9	-21 15	E 78	0.6
5	14 30	115	21 27	80N	04 27	245	19 54.1	-21 12	E 73	0.6
10	14 12	115	21 08	80N	04 09	245	19 55.4	-21 09	E 69	0.6
15	13 54	115	20 50	80N	03 50	245	19 56.9	-21 05	E 64	0.6
20	13 36	115	20 32	80N	03 32	245	19 58.5	-21 01	E 59	0.6
25	13 18	115	20 14	80N	03 14	245	20 00.2	-20 56	E 55	0.6
Dic 00	13 00	115	19 56	80N	02 56	245	20 02.0	-20 51	E 50	0.6
5	12 43	115	19 39	80N	02 38	245	20 03.9	-20 46	E 45	0.6
10	12 26	115	19 21	80N	02 20	245	20 06.0	-20 40	E 41	0.6
15	12 08	115	19 03	80N	02 02	245	20 08.1	-20 34	E 36	0.6
20	11 51	115	18 46	80N	01 44	245	20 10.3	-20 27	E 32	0.6
25	11 34	114	18 29	80N	01 26	246	20 12.6	-20 20	E 27	0.6

Urano  
(Todas las horas son en Tiempo Universal)

Fecha	Salida		Paso Merid.		Puesta		A.R. h m	Decl. ° ' "	Elong. °	Mag.	
	h	m	h	m	h	m					
	Az. °	h	m	h	m	Az. °					
Ene	00	18 25	76	00 01	47N	05 33	284	2 02.7	+11 57	E114	5.7
	5	18 05	76	23 37	47N	05 13	284	2 02.6	+11 56	E109	5.7
	10	17 45	76	23 17	47N	04 53	284	2 02.5	+11 56	E103	5.8
	15	17 26	76	22 58	47N	04 34	284	2 02.5	+11 56	E 98	5.8
	20	17 06	76	22 38	47N	04 14	284	2 02.6	+11 57	E 93	5.8
	25	16 47	76	22 19	47N	03 54	284	2 02.8	+11 58	E 88	5.8
Feb	00	16 23	76	21 55	47N	03 31	284	2 03.1	+12 00	E 82	5.8
	5	16 04	76	21 36	47N	03 12	284	2 03.5	+12 02	E 77	5.8
	10	15 45	76	21 17	47N	02 52	284	2 03.9	+12 05	E 72	5.8
	15	15 26	76	20 58	47N	02 33	284	2 04.5	+12 08	E 67	5.8
	20	15 07	76	20 39	47N	02 14	284	2 05.1	+12 11	E 63	5.8
	25	14 48	76	20 20	47N	01 55	284	2 05.7	+12 15	E 58	5.8
Mar	00	14 33	76	20 05	47N	01 39	284	2 06.3	+12 18	E 54	5.8
	5	14 15	76	19 46	47N	01 20	284	2 07.1	+12 22	E 49	5.9
	10	13 56	76	19 27	47N	01 01	284	2 07.9	+12 27	E 44	5.9
	15	13 38	76	19 08	47N	00 42	284	2 08.8	+12 31	E 39	5.9
	20	13 19	76	18 49	47N	00 23	284	2 09.7	+12 36	E 35	5.9
	25	13 01	75	18 31	46N	00 05	285	2 10.7	+12 41	E 30	5.9
Abr	00	12 38	75	18 08	46N	23 38	285	2 11.9	+12 48	E 24	5.9
	5	12 20	75	17 50	46N	23 19	285	2 13.0	+12 53	E 20	5.9
	10	12 02	75	17 31	46N	23 00	285	2 14.0	+12 59	E 15	5.9
	15	11 43	75	17 13	46N	22 42	285	2 15.1	+13 05	E 10	5.9
	20	11 25	75	16 54	46N	22 23	285	2 16.2	+13 10	E 6	5.9
	25	11 07	75	16 35	46N	22 04	285	2 17.3	+13 16	E 1	5.9
May	00	10 48	75	16 17	46N	21 45	285	2 18.5	+13 22	W 3	5.9
	5	10 30	75	15 58	46N	21 26	285	2 19.6	+13 27	W 8	5.9
	10	10 12	74	15 40	46N	21 08	286	2 20.7	+13 33	W 12	5.9
	15	09 53	74	15 21	46N	20 49	286	2 21.8	+13 38	W 17	5.9
	20	09 35	74	15 03	45N	20 30	286	2 22.8	+13 44	W 22	5.9
	25	09 17	74	14 44	45N	20 11	286	2 23.9	+13 49	W 26	5.9
Jun	00	08 55	74	14 22	45N	19 49	286	2 25.1	+13 55	W 32	5.9
	5	08 36	74	14 03	45N	19 30	286	2 26.1	+14 00	W 36	5.9
	10	08 18	74	13 44	45N	19 11	286	2 27.0	+14 04	W 41	5.9
	15	07 59	74	13 25	45N	18 52	286	2 27.9	+14 09	W 45	5.9
	20	07 40	74	13 07	45N	18 33	286	2 28.8	+14 13	W 50	5.9
	25	07 22	74	12 48	45N	18 14	286	2 29.6	+14 16	W 54	5.8
Jul	00	07 03	73	12 29	45N	17 55	287	2 30.3	+14 20	W 59	5.8
	5	06 44	73	12 10	45N	17 35	287	2 30.9	+14 23	W 63	5.8
	10	06 25	73	11 51	45N	17 16	287	2 31.5	+14 26	W 68	5.8
	15	06 06	73	11 32	45N	16 57	287	2 32.1	+14 28	W 73	5.8
	20	05 47	73	11 12	45N	16 38	287	2 32.5	+14 30	W 77	5.8
	25	05 28	73	10 53	45N	16 18	287	2 32.9	+14 32	W 82	5.8
Ago	00	05 05	73	10 30	45N	15 55	287	2 33.3	+14 34	W 88	5.8
	5	04 45	73	10 10	45N	15 36	287	2 33.5	+14 35	W 92	5.8
	10	04 26	73	09 51	45N	15 16	287	2 33.6	+14 35	W 97	5.8
	15	04 06	73	09 31	45N	14 56	287	2 33.7	+14 35	W102	5.8
	20	03 46	73	09 11	45N	14 37	287	2 33.7	+14 35	W107	5.7
	25	03 27	73	08 52	45N	14 17	287	2 33.5	+14 35	W112	5.7
Sep	00	03 03	73	08 28	45N	13 53	287	2 33.3	+14 33	W117	5.7
	5	02 43	73	08 08	45N	13 33	287	2 33.0	+14 32	W122	5.7
	10	02 23	73	07 48	45N	13 13	287	2 32.7	+14 30	W127	5.7
	15	02 02	73	07 28	45N	12 53	287	2 32.2	+14 28	W132	5.7
	20	01 42	73	07 08	45N	12 33	287	2 31.7	+14 26	W137	5.7
	25	01 22	73	06 47	45N	12 13	287	2 31.2	+14 23	W142	5.7
Oct	00	01 01	73	06 27	45N	11 53	287	2 30.6	+14 20	W147	5.7
	5	00 41	74	06 07	45N	11 33	286	2 29.9	+14 17	W152	5.7
	10	00 20	74	05 46	45N	11 13	286	2 29.2	+14 13	W158	5.7
	15	23 56	74	05 26	45N	10 52	286	2 28.5	+14 10	W163	5.7
	20	23 35	74	05 06	45N	10 32	286	2 27.7	+14 06	W168	5.7
	25	23 14	74	04 45	45N	10 12	286	2 26.9	+14 02	W173	5.7
Nov	00	22 50	74	04 21	45N	09 47	286	2 25.9	+13 57	W179	5.7
	5	22 29	74	04 00	45N	09 27	286	2 25.1	+13 53	E175	5.7
	10	22 09	74	03 40	45N	09 07	286	2 24.3	+13 50	E170	5.7
	15	21 48	74	03 19	45N	08 47	286	2 23.6	+13 46	E165	5.7
	20	21 27	74	02 59	45N	08 26	286	2 22.8	+13 42	E160	5.7
	25	21 07	74	02 39	46N	08 06	286	2 22.1	+13 39	E155	5.7
Dic	00	20 46	74	02 18	46N	07 46	286	2 21.4	+13 35	E149	5.7
	5	20 26	74	01 58	46N	07 26	286	2 20.8	+13 32	E144	5.7
	10	20 06	74	01 38	46N	07 06	286	2 20.2	+13 30	E139	5.7
	15	19 45	75	01 18	46N	06 46	285	2 19.7	+13 27	E134	5.7
	20	19 25	75	00 57	46N	06 26	285	2 19.2	+13 25	E128	5.7
	25	19 05	75	00 37	46N	06 06	285	2 18.9	+13 23	E123	5.7

Neptuno  
(Todas las horas son en Tiempo Universal)

Fecha	Salida		Paso Merid.		Puesta		A.R. h m	Decl. ° '	Elong. °	Mag.
	Hora	Az.	Hora	h	Hora	Az.				
	h m	°	h m	°	h m	°				
Ene 00	14 48	98	21 06	66N	03 27	262	23 11.0	- 6 22	E 67	7.9
5	14 29	98	20 46	66N	03 07	262	23 11.3	- 6 20	E 62	7.9
10	14 10	98	20 27	65N	02 48	262	23 11.8	- 6 17	E 57	7.9
15	13 51	98	20 08	65N	02 29	262	23 12.2	- 6 14	E 52	7.9
20	13 32	98	19 49	65N	02 09	262	23 12.7	- 6 11	E 47	7.9
25	13 13	98	19 30	65N	01 50	262	23 13.2	- 6 08	E 42	7.9
Feb 00	12 50	97	19 07	65N	01 27	263	23 13.9	- 6 03	E 37	7.9
5	12 31	97	18 48	65N	01 08	263	23 14.5	- 5 59	E 32	8.0
10	12 12	97	18 29	65N	00 49	263	23 15.2	- 5 55	E 27	8.0
15	11 53	97	18 10	65N	00 29	263	23 15.8	- 5 51	E 22	8.0
20	11 35	97	17 51	65N	00 10	263	23 16.5	- 5 47	E 17	8.0
25	11 16	97	17 32	65N	23 47	263	23 17.2	- 5 42	E 12	8.0
Mar 00	11 01	97	17 16	65N	23 32	263	23 17.7	- 5 39	E 8	8.0
5	10 42	97	16 57	65N	23 13	263	23 18.4	- 5 35	E 4	8.0
10	10 23	97	16 38	65N	22 54	263	23 19.1	- 5 30	S 2	8.0
15	10 04	97	16 20	65N	22 35	263	23 19.8	- 5 26	W 6	8.0
20	09 46	97	16 01	65N	22 15	263	23 20.5	- 5 21	W 11	8.0
25	09 27	97	15 42	64N	21 56	263	23 21.2	- 5 17	W 16	8.0
Abr 00	09 04	96	15 19	64N	21 33	264	23 22.0	- 5 12	W 22	8.0
5	08 45	96	15 00	64N	21 14	264	23 22.7	- 5 08	W 26	8.0
10	08 27	96	14 41	64N	20 55	264	23 23.3	- 5 04	W 31	8.0
15	08 08	96	14 22	64N	20 36	264	23 23.9	- 5 00	W 36	7.9
20	07 49	96	14 03	64N	20 16	264	23 24.5	- 4 57	W 40	7.9
25	07 30	96	13 43	64N	19 57	264	23 25.1	- 4 53	W 45	7.9
May 00	07 11	96	13 24	64N	19 38	264	23 25.6	- 4 50	W 50	7.9
5	06 52	96	13 05	64N	19 19	264	23 26.1	- 4 47	W 55	7.9
10	06 33	96	12 46	64N	18 59	264	23 26.5	- 4 45	W 59	7.9
15	06 13	96	12 27	64N	18 40	264	23 26.9	- 4 42	W 64	7.9
20	05 54	96	12 07	64N	18 21	264	23 27.3	- 4 40	W 69	7.9
25	05 35	96	11 48	64N	18 01	264	23 27.6	- 4 38	W 74	7.9
Jun 00	05 12	96	11 25	64N	17 38	264	23 27.9	- 4 37	W 79	7.9
5	04 52	96	11 05	64N	17 18	264	23 28.1	- 4 36	W 84	7.9
10	04 33	96	10 46	64N	16 59	264	23 28.3	- 4 35	W 89	7.9
15	04 13	96	10 26	64N	16 39	264	23 28.4	- 4 34	W 93	7.9
20	03 54	96	10 07	64N	16 20	264	23 28.5	- 4 34	W 98	7.9
25	03 34	96	09 47	64N	16 00	264	23 28.5	- 4 34	W103	7.9
Jul 00	03 14	96	09 27	64N	15 40	264	23 28.4	- 4 35	W108	7.9
5	02 55	96	09 08	64N	15 20	264	23 28.3	- 4 36	W113	7.9
10	02 35	96	08 48	64N	15 01	264	23 28.2	- 4 37	W117	7.9
15	02 15	96	08 28	64N	14 41	264	23 28.0	- 4 38	W122	7.9
20	01 55	96	08 08	64N	14 21	264	23 27.8	- 4 40	W127	7.8
25	01 35	96	07 48	64N	14 01	264	23 27.5	- 4 42	W132	7.8
Ago 00	01 11	96	07 24	64N	13 37	264	23 27.2	- 4 44	W138	7.8
5	00 51	96	07 04	64N	13 17	264	23 26.8	- 4 47	W143	7.8
10	00 31	96	06 44	64N	12 58	264	23 26.4	- 4 49	W147	7.8
15	00 10	96	06 24	64N	12 38	264	23 26.0	- 4 52	W152	7.8
20	23 46	96	06 04	64N	12 18	264	23 25.6	- 4 55	W157	7.8
25	23 26	96	05 44	64N	11 58	264	23 25.1	- 4 58	W162	7.8
Sep 00	23 02	96	05 20	64N	11 34	264	23 24.5	- 5 02	W168	7.8
5	22 41	96	04 59	64N	11 14	264	23 24.0	- 5 05	W173	7.8
10	22 21	96	04 39	64N	10 54	264	23 23.5	- 5 09	W178	7.8
15	22 01	96	04 19	64N	10 34	264	23 23.0	- 5 12	E177	7.8
20	21 40	97	03 59	64N	10 13	263	23 22.5	- 5 15	E172	7.8
25	21 20	97	03 39	65N	09 53	263	23 22.0	- 5 18	E167	7.8
Oct 00	21 00	97	03 19	65N	09 33	263	23 21.5	- 5 21	E162	7.8
5	20 40	97	02 59	65N	09 13	263	23 21.0	- 5 24	E157	7.8
10	20 19	97	02 38	65N	08 53	263	23 20.6	- 5 27	E152	7.8
15	19 59	97	02 18	65N	08 34	263	23 20.2	- 5 30	E147	7.8
20	19 39	97	01 58	65N	08 14	263	23 19.8	- 5 32	E142	7.8
25	19 19	97	01 38	65N	07 54	263	23 19.4	- 5 34	E136	7.8
Nov 00	18 55	97	01 14	65N	07 30	263	23 19.1	- 5 37	E130	7.8
5	18 35	97	00 54	65N	07 10	263	23 18.8	- 5 38	E125	7.8
10	18 15	97	00 35	65N	06 50	263	23 18.6	- 5 39	E120	7.9
15	17 55	97	00 15	65N	06 30	263	23 18.4	- 5 40	E115	7.9
20	17 35	97	23 51	65N	06 11	263	23 18.3	- 5 41	E110	7.9
25	17 16	97	23 31	65N	05 51	263	23 18.2	- 5 41	E105	7.9
Dic 00	16 56	97	23 12	65N	05 31	263	23 18.2	- 5 41	E100	7.9
5	16 36	97	22 52	65N	05 12	263	23 18.2	- 5 41	E 95	7.9
10	16 17	97	22 32	65N	04 52	263	23 18.3	- 5 40	E 90	7.9
15	15 57	97	22 13	65N	04 32	263	23 18.4	- 5 39	E 85	7.9
20	15 38	97	21 53	65N	04 13	263	23 18.6	- 5 38	E 80	7.9
25	15 19	97	21 34	65N	03 53	263	23 18.9	- 5 36	E 75	7.9

## Plutón

(Todas las horas son en Tiempo Universal)

Fecha	Salida		Paso Merid.		Puesta		A.R. h m	Decl. ° ' "	Elong. °	Mag.
	Hora	Az.	Hora	h	Hora	Az.				
	h m	°	h m	°	h m	°				
Ene 00	10 32	117	17 32	81N	00 36	243	19 37.0	-22 14	E 13	14.4
5	10 13	117	17 13	81N	00 17	243	19 37.7	-22 12	E 8	14.4
10	09 55	117	16 54	81N	23 54	243	19 38.4	-22 11	E 4	14.4
15	09 36	117	16 35	81N	23 35	243	19 39.2	-22 10	W 2	14.4
20	09 17	117	16 16	81N	23 16	243	19 39.9	-22 09	W 6	14.4
25	08 58	117	15 57	81N	22 57	243	19 40.6	-22 07	W 11	14.4
Feb 00	08 35	117	15 35	81N	22 34	243	19 41.4	-22 06	W 17	14.4
5	08 16	117	15 16	81N	22 15	243	19 42.1	-22 05	W 22	14.4
10	07 57	117	14 57	81N	21 56	243	19 42.8	-22 04	W 27	14.4
15	07 38	117	14 38	81N	21 37	243	19 43.4	-22 03	W 32	14.4
20	07 19	116	14 19	81N	21 18	244	19 44.1	-22 02	W 37	14.4
25	07 00	116	14 00	81N	20 59	244	19 44.6	-22 01	W 42	14.4
Mar 00	06 45	116	13 44	81N	20 44	244	19 45.1	-22 00	W 46	14.4
5	06 26	116	13 25	81N	20 24	244	19 45.6	-21 59	W 51	14.4
10	06 07	116	13 06	81N	20 05	244	19 46.1	-21 59	W 55	14.3
15	05 48	116	12 47	81N	19 46	244	19 46.5	-21 58	W 60	14.3
20	05 28	116	12 27	81N	19 27	244	19 47.0	-21 58	W 65	14.3
25	05 09	116	12 08	81N	19 07	244	19 47.3	-21 57	W 70	14.3
Abr 00	04 46	116	11 45	81N	18 44	244	19 47.7	-21 57	W 76	14.3
5	04 26	116	11 26	81N	18 25	244	19 47.9	-21 57	W 81	14.3
10	04 07	116	11 06	81N	18 05	244	19 48.1	-21 57	W 86	14.3
15	03 48	116	10 47	81N	17 46	244	19 48.3	-21 57	W 91	14.3
20	03 28	116	10 27	81N	17 26	244	19 48.4	-21 58	W 95	14.3
25	03 08	116	10 07	81N	17 06	244	19 48.4	-21 58	W100	14.3
May 00	02 49	116	09 48	81N	16 47	244	19 48.4	-21 59	W105	14.3
5	02 29	116	09 28	81N	16 27	244	19 48.3	-21 59	W110	14.3
10	02 09	116	09 08	81N	16 07	244	19 48.2	-22 00	W115	14.3
15	01 49	116	08 48	81N	15 48	244	19 48.1	-22 01	W120	14.3
20	01 29	117	08 28	81N	15 28	243	19 47.8	-22 02	W125	14.3
25	01 09	117	08 09	81N	15 08	243	19 47.6	-22 04	W129	14.3
Jun 00	00 45	117	07 45	81N	14 44	243	19 47.2	-22 05	W135	14.3
5	00 25	117	07 25	81N	14 24	243	19 46.9	-22 07	W140	14.3
10	00 05	117	07 05	81N	14 04	243	19 46.5	-22 08	W145	14.3
15	23 41	117	06 45	81N	13 44	243	19 46.1	-22 10	W150	14.3
20	23 21	117	06 24	81N	13 24	243	19 45.7	-22 11	W155	14.3
25	23 00	117	06 04	81N	13 04	243	19 45.2	-22 13	W160	14.3
Jul 00	22 40	117	05 44	81N	12 44	243	19 44.8	-22 15	W165	14.3
5	22 20	117	05 24	81N	12 24	243	19 44.3	-22 17	W169	14.3
10	22 00	117	05 04	82N	12 04	243	19 43.8	-22 18	W174	14.3
15	21 40	117	04 44	82N	11 44	243	19 43.3	-22 20	W179	14.3
20	21 19	117	04 24	82N	11 24	243	19 42.8	-22 22	E176	14.3
25	20 59	117	04 03	82N	11 04	243	19 42.3	-22 23	E171	14.3
Ago 00	20 35	117	03 39	82N	10 40	243	19 41.7	-22 25	E165	14.3
5	20 15	117	03 19	82N	10 20	243	19 41.2	-22 27	E160	14.3
10	19 54	117	02 59	82N	10 00	243	19 40.7	-22 28	E155	14.3
15	19 34	117	02 39	82N	09 40	243	19 40.3	-22 30	E150	14.3
20	19 14	117	02 19	82N	09 20	243	19 39.9	-22 31	E145	14.3
25	18 54	117	01 59	82N	09 00	243	19 39.5	-22 33	E141	14.3
Sep 00	18 30	117	01 35	82N	08 36	243	19 39.1	-22 34	E135	14.3
5	18 10	117	01 15	82N	08 16	243	19 38.8	-22 35	E130	14.3
10	17 50	117	00 55	82N	07 56	243	19 38.5	-22 36	E125	14.3
15	17 30	117	00 35	82N	07 36	243	19 38.3	-22 37	E120	14.3
20	17 10	117	00 15	82N	07 16	243	19 38.1	-22 38	E115	14.3
25	16 50	117	23 51	82N	06 56	243	19 38.0	-22 38	E110	14.3
Oct 00	16 31	117	23 32	82N	06 37	243	19 37.9	-22 39	E105	14.3
5	16 11	117	23 12	82N	06 17	243	19 37.9	-22 39	E100	14.3
10	15 51	117	22 52	82N	05 58	243	19 37.9	-22 39	E 95	14.3
15	15 32	117	22 33	82N	05 38	243	19 38.0	-22 39	E 90	14.3
20	15 12	117	22 13	82N	05 18	243	19 38.2	-22 39	E 85	14.3
25	14 53	117	21 54	82N	04 59	243	19 38.4	-22 39	E 81	14.3
Nov 00	14 30	117	21 31	82N	04 36	243	19 38.7	-22 39	E 75	14.3
5	14 10	117	21 11	82N	04 16	243	19 39.0	-22 38	E 70	14.4
10	13 51	117	20 52	82N	03 57	243	19 39.3	-22 38	E 65	14.4
15	13 32	117	20 33	82N	03 38	243	19 39.7	-22 37	E 60	14.4
20	13 13	117	20 14	82N	03 18	243	19 40.2	-22 36	E 55	14.4
25	12 53	117	19 54	82N	02 59	243	19 40.7	-22 35	E 50	14.4
Dic 00	12 34	117	19 35	82N	02 40	243	19 41.2	-22 35	E 45	14.4
5	12 15	117	19 16	82N	02 21	243	19 41.7	-22 34	E 40	14.4
10	11 56	117	18 57	82N	02 02	243	19 42.3	-22 32	E 35	14.4
15	11 37	117	18 38	82N	01 43	243	19 43.0	-22 31	E 30	14.4
20	11 18	117	18 19	82N	01 24	243	19 43.6	-22 30	E 25	14.4
25	10 59	117	18 00	82N	01 04	243	19 44.3	-22 29	E 20	14.4

## Posiciones Aparentes de Estrellas

Esta sección contiene los lugares aparentes, de 711 estrellas del Quinto Catálogo Fundamental (FK5) (\*), entre  $-90^\circ$  y  $+40^\circ$  de declinación y más brillantes que magnitud +5.00. Las posiciones están calculadas para las 0 hs. de U.T. y tabuladas cada 30 días con una precisión de  $0^s.01$  y  $0".1$  en ascensión recta y declinación respectivamente.

El momento de paso, por un meridiano cualquiera, puede estimarse aproximadamente por la fórmula

$$UT = \alpha - \lambda - \theta_0$$

donde

UT = tiempo universal

$\alpha$  = ascensión recta de la estrella

$\lambda$  = longitud geográfica (+ al este)

$\theta_0$  = tiempo sidéreo a 0h de UT (pág. 35 a 42)

(\*) Veröffentlichungen des Astronomischen Rechen - Institut,  
Heidelberg N° 32, 1988

Nota Los asteriscos (\*) que figuran junto a algunas coordenadas, indican que éstas corresponden al minuto anterior.



**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	904		1630		905		1002		1		3	
Nombre	♁ Octantis		♃ Piscium		♃ Ceti		♃ Piscium		♁ Andromedae		♁ Phoenicis	
Mag. SP	4.78	K0	4.41	M3	4.55	A0	4.61	K0	2.06	A0p	3.88	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	0h02m	-76°57'	0h02m	-5°54'	0h04m	-17°13'	0h06m	-5°35'	0h09m	+29°12'	0h10m	-45°38'
Dic 31	33s40	46'3	57s95	20'8	44s54	43'0	20s37	54'9	24s42	5'1	23s89	36'4
Ene 30	31.22	41.0	57.65	22.3	44.22	43.6	20.06	56.5	23.99	1.6	23.36	34.3
Feb 29	29.94	31.8	57.48	22.5	44.03	42.0	19.88	56.7	23.72	56.7*	23.04	28.5
Mar 30	29.88	20.5	57.58	20.7	44.14	38.1	19.98	54.9	23.79	52.4*	23.10	20.2
Abr 29	31.17	9.4	58.06	16.5	44.61	32.2	20.44	50.8	24.28	50.6*	23.64	10.7
May 29	33.62	.9	58.84	10.8	45.41	25.4	21.22	45.1	25.14	52.2*	24.60	2.0
Jun 28	36.71	56.5*	59.77	4.6	46.37	19.1	22.15	38.9	26.15	56.9*	25.80	55.9*
Jul 28	39.72	57.3*	60.65	59.4*	47.28	14.6	23.03	33.6	27.09	3.7	26.96	53.7*
Ago 27	41.96	2.6	61.32	55.9*	47.97	12.8	23.70	30.1	27.80	11.3	27.86	55.7*
Sep 26	42.87	11.0	61.65	54.9*	48.32	13.7	24.04	28.9	28.16	18.2	28.30	1.0
Oct 26	42.21	19.7	61.65	55.9*	48.33	16.6	24.06	29.9	28.16	23.2	28.25	7.8
Nov 25	40.26	25.8	61.42	58.2*	48.08	20.1	23.83	32.1	27.89	25.7	27.82	13.7
Dic 25	37.71	26.9	61.10	.5	47.73	22.7	23.51	34.4	27.49	25.4	27.22	16.4
Ene 24	35.40	22.3	60.80	2.0	47.41	23.5	23.21	36.0	27.08	22.4	26.67	14.9

N°	7		1004		1005		9		10		11	
Nombre	γ Pegasi		χ Pegasi		♁ Andromedae		ι Ceti		ζ Tucanae		β Hydri	
Mag. SP	2.83	B2	4.80	M0	4.52	A2	3.56	K0	4.23	F8	2.80	G0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	0h14m	+15°17'	0h15m	+20°19'	0h19m	+36°53'	0h20m	-8°42'	0h21m	-64°45'	0h26m	-77°08'
Dic 31	14s98	38'2	37s35	3'3	21s64	50'3	25s69	58'7	4s63	52'9	44s91	58'1
Ene 30	14.62	35.3	36.97	.2	21.13	46.9	25.36	60.1	3.56	49.2	42.58	53.6
Feb 29	14.39	32.2	36.72	56.5*	20.77	41.4	25.14	59.8	2.87	41.2	41.03	44.8
Mar 30	14.46	30.2	36.78	53.7*	20.79	36.0	25.19	57.5	2.81	30.7	40.69	33.5
Abr 29	14.91	30.7	37.24	53.3*	21.28	32.9	25.61	52.9	3.49	19.6	41.72	22.2
May 29	15.70	34.0	38.04	55.9*	22.17	33.3	26.37	46.8	4.85	10.3	44.00	12.9
Jun 28	16.64	39.4	39.00	1.0	23.24	37.3	27.29	40.5	6.61	4.5	47.06	7.7
Jul 28	17.54	45.7	39.91	7.5	24.26	44.0	28.19	35.3	8.37	3.5	50.21	7.5
Ago 27	18.22	51.9	40.61	14.2	25.03	52.1	28.90	32.1	9.76	7.2	52.70	12.1
Sep 26	18.59	56.6	40.98	19.7	25.44	60.0	29.29	31.5	10.45	14.4	53.93	20.2
Oct 26	18.62	59.3	41.01	23.3	25.46	66.4	29.34	33.1	10.33	22.8	53.58	29.1
Nov 25	18.41	59.9	40.80	24.6	25.18	70.1	29.14	35.7	9.51	29.4	51.82	35.9
Dic 25	18.08	58.7	40.45	23.8	24.72	70.6	28.83	38.2	8.34	31.7	49.31	37.8
Ene 24	17.74	56.1	40.09	21.1	24.23	67.9	28.51	39.7	7.23	28.7	46.86	34.1

N°	12		15		18		19		20		1015	
Nombre	♁ Phoenicis		λ <sup>1</sup> Phoenicis		π Andromedae		ε Andromedae		δ Andromedae		μ Phoenicis	
Mag. SP	2.39	K0	4.77	A2	4.36	B3	4.37	G5	3.27	K2	4.59	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	0h27m	-42°12'	0h32m	-48°41'	0h37m	+33°49'	0h39m	+29°25'	0h40m	+30°58'	0h42m	-45°58'
Dic 31	14s94	13'4	21s46	58'7	56s33	48'7	36s10	14'5	23s23	15'1	15s05	54'5
Ene 30	14.41	12.0	20.83	56.9	55.83	45.9	35.64	11.7	22.76	12.4	14.44	53.3
Feb 29	14.06	7.1	20.39	51.1	55.46	41.0	35.29	7.3	22.40	7.8	14.00	48.1
Mar 30	14.05	59.2*	20.34	42.5	55.42	36.2	35.26	3.0	22.36	3.4	13.91	39.9
Abr 29	14.50	50.0*	20.78	32.5	55.84	33.4	35.66	1.0	22.77	1.0	14.30	30.1
May 29	15.38	41.1*	21.71	23.2	56.67	33.9	36.45	2.0	23.57	1.9	15.15	20.7
Jun 28	16.50	34.5*	22.92	16.6	57.70	37.7	37.45	6.1	24.58	5.8	16.30	13.8
Jul 28	17.63	31.6*	24.15	13.9	58.72	44.0	38.43	12.4	25.58	12.1	17.49	10.6
Ago 27	18.52	32.7*	25.15	15.7	59.53	51.6	39.22	19.6	26.38	19.4	18.47	11.8
Sep 26	19.02	37.4*	25.70	21.1	59.99	59.0	39.68	26.4	26.85	26.5	19.03	16.8
Oct 26	19.04	44.0*	25.72	28.5	60.09	64.9	39.79	31.5	26.96	31.9	19.11	23.9
Nov 25	18.70	50.1*	25.32	35.0	59.89	68.5	39.60	34.4	26.78	35.0	18.76	30.5
Dic 25	18.16	53.4*	24.68	38.3	59.49	69.1	39.24	34.7	26.41	35.5	18.18	34.1
Ene 24	17.63	52.6*	24.04	37.2	59.03	66.9	38.81	32.4	25.96	33.2	17.57	33.5

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	23		22		27		28		1022		33	
Nombre	η Phoenicis		β Ceti		ζ Andromedae		δ Piscium		20 Ceti		μ Andromedae	
Mag. SP	4.36	A0	2.04	K0	4.06	K0	4.43	K5	4.77	K0	3.87	A2
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	0h44m	-57°21'	0h44m	-17°52'	0h49m	+24°22'	0h49m	+7°41'	0h54m	-1°02'	0h57m	+38°36'
Dic 31	13s82	38'3	34s59	52'2	23s28	32'8	42s41	31'4	1s00	18'4	51s42	31'7
Ene 30	12.95	36.2	34.21	53.1	22.85	30.2	42.05	29.2	.64	20.2	50.86	29.4
Feb 29	12.32	29.7	33.93	51.6	22.51	26.4	41.76	27.3	.35	21.0	50.40	24.6
Mar 30	12.14	20.2	33.90	47.7	22.46	23.1	41.73	26.8	.30	20.1	50.28	19.2
Abr 29	12.57	9.4	34.25	41.6	22.82	21.8	42.06	28.4	.62	16.9	50.65	15.5
May 29	13.57	59.7*	34.97	34.4	23.57	23.4	42.76	32.4	1.30	11.7	51.46	15.0
Jun 28	14.95	52.9*	35.89	27.6	24.53	27.8	43.67	37.9	2.19	5.6	52.53	17.9
Jul 28	16.40	50.5*	36.84	22.7	25.50	33.9	44.58	43.9	3.10	59.9*	53.61	23.7
Ago 27	17.60	52.9*	37.61	20.5	26.28	40.6	45.33	49.0	3.86	55.7*	54.51	31.2
Sep 26	18.29	59.1*	38.08	21.3	26.76	46.6	45.80	52.5	4.34	53.7*	55.07	39.1
Oct 26	18.33	7.3	38.20	24.5	26.90	51.0	45.94	53.8	4.50	53.9*	55.25	45.8
Nov 25	17.81	14.5	38.04	28.5	26.76	53.2	45.83	53.4	4.39	55.6*	55.09	50.3
Dic 25	16.96	18.0	37.72	31.6	26.44	53.1	45.56	51.8	4.12	57.9*	54.69	51.9
Ene 24	16.08	16.6	37.36	32.8	26.04	51.0	45.22	49.8	3.79	59.7*	54.17	50.2
N°	35		36		40		42		1032		43	
Nombre	α Sculptoris		ε Piscium		η Ceti		β Andromedae		χ Piscium		τ Piscium	
Mag. SP	4.31	B5	4.28	K0	3.45	K0	2.06	M0	4.66	K0	4.51	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	0h59m	-29°15'	1h03m	+7°59'	1h09m	-10°04'	1h10m	+35°43'	1h12m	+21°08'	1h12m	+30°11'
Dic 31	33s24	17'3	58s19	45'0	34s98	47'9	50s76	37'9	31s18	25'1	45s29	45'4
Ene 30	32.79	17.7	57.82	43.0	34.60	49.5	50.23	35.9	30.76	23.0	44.81	43.4
Feb 29	32.42	14.9	57.50	41.1	34.28	49.2	49.77	31.6	30.38	19.8	44.39	39.5
Mar 30	32.32	9.3	57.42	40.6	34.18	46.7	49.62	26.7	30.27	17.2	44.25	35.5
Abr 29	32.62	1.5	57.72	42.1	34.46	42.0	49.94	23.4	30.55	16.3	44.55	33.1
May 29	33.32	53.1*	58.39	46.0	35.10	35.6	50.70	23.0	31.24	18.2	45.27	33.5
Jun 28	34.28	45.7*	59.28	51.5	35.98	29.0	51.72	25.9	32.16	22.4	46.25	36.9
Jul 28	35.28	41.1*	60.20	57.3	36.91	23.4	52.79	31.4	33.12	28.2	47.27	42.5
Ago 27	36.14	40.0*	60.98	62.4	37.70	20.1	53.69	38.5	33.95	34.3	48.14	49.3
Sep 26	36.68	42.5*	61.48	65.9	38.23	19.6	54.29	45.9	34.50	39.7	48.71	55.9
Oct 26	36.84	47.5*	61.67	67.3	38.43	21.5	54.51	52.1	34.72	43.5	48.94	61.2
Nov 25	36.67	53.0*	61.59	66.9	38.35	24.6	54.41	56.3	34.66	45.3	48.87	64.5
Dic 25	36.30	56.8*	61.34	65.5	38.08	27.7	54.07	57.8	34.39	45.2	48.56	65.4
Ene 24	35.87	57.7*	60.99	63.5	37.73	29.4	53.58	56.4	34.01	43.4	48.12	63.9
N°	45		47		49		1044		50		54	
Nombre	υ Piscium		θ Ceti		γ Phoenicis		δ Phoenicis		η Piscium		α Eridani (Achernar)	
Mag. SP	4.76	A2	3.60	K0	3.41	K5	3.95	K0	3.62	G5	0.46	B5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	1h20m	+27°22'	1h25m	-8°05'	1h29m	-43°13'	1h32m	-48°58'	1h32m	+15°26'	1h38m	-57°08'
Dic 31	33s53	8'3	s73	1'7	13s41	20'3	4s52	32'4	32s76	51'0	27s20	32'4
Ene 30	33.07	6.4	.34	3.5	12.78	20.6	3.79	32.5	32.36	49.1	26.25	32.3
Feb 29	32.65	2.9	59.99*	3.5	12.22	16.8	3.14	28.1	31.97	46.8	25.39	27.3
Mar 30	32.50	59.3*	59.85*	1.4	11.94	9.5	2.80	20.1	31.81	45.1	24.91	18.7
Abr 29	32.77	57.3*	.07	57.0*	12.12	.0	2.95	10.0	32.03	45.2	25.00	7.9
May 29	33.46	58.1*	.68	51.0*	12.78	50.2*	3.64	59.8	32.65	47.7	25.73	57.3*
Jun 28	34.41	1.6	1.53	44.4*	13.79	42.1*	4.72	51.5	33.52	52.2	26.94	48.9*
Jul 28	35.41	7.1	2.46	38.8*	14.93	37.5*	5.95	47.1	34.47	57.8	28.36	44.7*
Ago 27	36.28	13.6	3.27	35.1*	15.96	37.2*	7.07	47.2	35.31	63.3	29.67	45.4*
Sep 26	36.87	19.8	3.83	34.2*	16.66	41.2*	7.84	51.8	35.91	67.8	30.58	50.6*
Oct 26	37.13	24.6	4.08	35.8*	16.92	48.0*	8.11	59.3	36.19	70.5	30.90	58.8*
Nov 25	37.08	27.5	4.04	38.8*	16.75	55.3*	7.90	67.0	36.19	71.4	30.61	7.1
Dic 25	36.81	28.2	3.80	41.8*	16.28	.3	7.34	72.1	35.98	70.8	29.87	12.5
Ene 24	36.39	26.7	3.45	43.7*	15.67	1.4	6.63	73.0	35.62	69.1	28.93	13.2



**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	56		1049		59		60		1051		62	
Nombre	V Piscium		175 G. Ceti		τ Ceti		O Piscium		χ Ceti		ζ Ceti	
Mag. SP	4.44	K0	4.99	G5	3.50	K0	4.26	K0	4.67	F0	3.73	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	1h42m	+ 5°35'	1h43m	- 3°35'	1h44m	-15°50'	1h46m	+ 9°15'	1h50m	-10°35'	1h52m	-10°14'
Dic 31	27s87	11°0	43s68	33°8	59s30	11°4	26s57	22°7	33s56	29°1	26s40	24°5
Ene 30	27.49	9.2	43.30	35.6	58.88	13.0	26.18	20.9	33.16	30.9	26.01	26.3
Feb 29	27.11	7.8	42.91	36.2	58.47	12.2	25.79	19.2	32.76	30.8	25.60	26.3
Mar 30	26.93	7.7	42.73	34.9	58.26	8.8	25.60	18.5	32.55	28.4	25.38	24.0
Abr 29	27.11	9.5	42.90	31.3	58.41	3.1	25.77	19.7	32.69	23.7	25.52	19.3
May 29	27.68	13.6	43.46	25.9	58.96	55.8*	26.34	23.1	33.23	17.3	26.06	13.0
Jun 28	28.52	19.0	44.28	19.7	59.79	48.6*	27.18	28.2	34.04	10.5	26.87	6.1
Jul 28	29.44	24.6	45.20	13.9	60.71	42.8*	28.11	33.7	34.96	4.7	27.79	.3
Ago 27	30.28	29.4	46.04	9.9	61.56	39.8*	28.96	38.7	35.82	1.2	28.64	56.8*
Sep 26	30.89	32.4	46.64	8.2	62.16	39.9*	29.58	42.2	36.44	.5	29.27	56.1*
Oct 26	31.19	33.2	46.95	9.0	62.45	42.8*	29.90	43.7	36.76	2.5	29.60	58.0*
Nov 25	31.22	32.4	46.97	11.4	62.43	47.0*	29.94	43.5	36.79	6.1	29.64	1.5
Dic 25	31.02	30.7	46.77	14.1	62.19	50.7*	29.76	42.3	36.58	9.5	29.44	5.0
Ene 24	30.69	28.9	46.43	16.0	61.81	52.7*	29.42	40.6	36.23	11.6	29.09	7.1

N°	64		65		67		66		69		68	
Nombre	α Trianguli		ξ Piscium		ψ Phoenicis		β Arietis		η <sup>2</sup> Hydri		χ Eridani	
Mag. SP	3.41	F5	4.62	K0	4.41	M3	2.64	A5	4.69	K0	3.70	G5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	1h54m	+29°40'	1h54m	+ 3°17'	1h54m	-46°12'	1h55m	+20°54'	1h55m	-67°33'	1h56m	-51°30'
Dic 31	13s12	33°5	35s06	"8	26s56	40°6	44s40	16°9	27s17	22°6	44s00	58°6
Ene 30	12.66	32.4	34.68	59.0*	25.86	41.6	43.99	15.5	25.67	22.5	43.20	59.3
Feb 29	12.16	29.3	34.28	57.8*	25.19	38.1	43.54	13.0	24.27	17.3	42.43	55.4
Mar 30	11.91	25.7	34.07	58.0*	24.78	30.9	43.31	10.6	23.37	8.2	41.95	47.7
Abr 29	12.08	23.3	34.21	.3	24.83	21.2	43.47	9.7	23.26	57.0*	41.97	37.5
May 29	12.69	23.2	34.75	4.6	25.41	11.0	44.04	11.1	24.02	45.9*	42.57	26.8
Jun 28	13.60	25.8	35.56	10.2	26.38	2.3	44.91	14.7	25.51	37.2*	43.62	18.0
Jul 28	14.63	30.5	36.48	15.8	27.55	57.1*	45.88	19.8	27.36	33.0*	44.88	12.9
Ago 27	15.58	36.5	37.33	20.4	28.65	56.4*	46.78	25.4	29.16	33.8*	46.09	12.6
Sep 26	16.28	42.5	37.97	23.0	29.46	.2	47.45	30.3	30.46	39.5*	46.97	16.9
Oct 26	16.66	47.5	38.31	23.4	29.82	7.4	47.81	33.8	30.94	48.3*	47.36	24.5
Nov 25	16.72	50.9	38.37	22.2	29.71	15.2	47.89	35.7	30.52	57.2*	47.22	32.8
Dic 25	16.51	52.3	38.20	20.2	29.24	21.0	47.71	35.9	29.38	3.0	46.67	38.7
Ene 24	16.10	51.6	37.87	18.3	28.58	22.7	47.34	34.7	27.88	3.8	45.89	40.3

N°	72		71		1055		74		75		1058	
Nombre	α Hydri		υ Ceti		ν Formacis		α Arietis		β Trianguli		ξ <sup>1</sup> Ceti	
Mag. SP	2.86	F0	4.00	M0	4.69	A0p	2.00	K2	3.00	A5	4.37	G5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	1h59m	-61°28'	2h00m	-20°59'	2h05m	-29°12'	2h08m	+23°33'	2h10m	+35°04'	2h14m	+ 8°56'
Dic 31	24s24	47°2	56s43	8°7	22s88	22°7	17s86	21°7	44s03	54°7	3s33	17°9
Ene 30	23.10	47.6	56.00	10.6	22.39	24.6	17.44	20.6	43.53	54.1	2.95	16.2
Feb 29	22.01	43.0	55.55	9.6	21.88	23.0	16.97	18.1	42.97	51.2	2.52	14.7
Mar 30	21.31	34.4	55.28	5.8	21.57	18.0	16.69	15.5	42.64	47.2	2.26	14.1
Abr 29	21.25	23.5	55.38	59.4*	21.63	10.5	16.81	14.1	42.76	43.8	2.35	15.2
May 29	21.90	12.5	55.88	51.6*	22.12	1.7	17.36	14.9	43.35	42.7	2.85	18.5
Jun 28	23.14	3.7	56.70	43.9*	22.95	53.4*	18.22	18.0	44.28	44.3	3.64	23.4
Jul 28	24.68	59.0*	57.64	38.1*	23.94	47.5*	19.21	22.7	45.35	48.3	4.56	28.7
Ago 27	26.18	59.3*	58.54	35.2*	24.88	45.2*	20.14	28.2	46.37	54.1	5.44	33.5
Sep 26	27.27	4.5	59.21	35.9*	25.59	46.9*	20.85	33.3	47.16	60.4	6.13	36.8
Oct 26	27.72	12.9	59.56	39.6*	25.96	51.9*	21.27	37.2	47.62	66.2	6.53	38.1
Nov 25	27.46	21.7	59.60	44.8*	25.98	58.2*	21.38	39.5	47.74	70.6	6.66	37.8
Dic 25	26.63	27.7	59.38	49.3*	25.72	3.4	21.22	40.2	47.55	72.9	6.53	36.5
Ene 24	25.51	29.0	58.98	51.6*	25.27	5.8	20.86	39.3	47.12	72.9	6.21	34.9

**Lugares aparentes de estrellas, 2020  
para las 0<sup>h</sup> de Tiempo Universal**

N°	82		79		1065		1066		86		85	
Nombre	φ Eridani		γ Trianguli		δ Hydri		ρ Ceti		κ Eridani		ξ <sup>2</sup> Ceti	
Mag. SP	3.56	B8	4.01	A0	4.09	A2	4.89	A0	4.25	B5	4.28	A0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	2h17m	-51°25'	2h18m	+33°56'	2h22m	-68°34'	2h26m	-12°12'	2h27m	-47°37'	2h29m	+8°32'
Dic 31	13s59	35°0	30s23	22°3	7s78	31°6	54s73	15°7	43s26	14°1	13s15	50°5
Ene 30	12.78	36.6	29.74	21.9	6.18	32.5	54.34	17.9	42.53	16.2	12.78	48.9
Feb 29	11.95	33.4	29.19	19.2	4.58	28.3	53.88	18.0	41.76	13.6	12.33	47.5
Mar 30	11.38	26.2	28.84	15.4	3.43	19.8	53.57	15.6	41.20	7.0	12.04	47.0
Abr 29	11.29	16.2	28.93	12.2	3.07	8.8	53.60	10.8	41.10	57.5*	12.09	48.1
May 29	11.78	5.4	29.49	11.2	3.63	57.5*	54.03	4.2	41.53	47.0*	12.54	51.4
Jun 28	12.75	56.2*	30.40	12.7	5.00	48.3*	54.78	57.2*	42.41	37.6*	13.30	56.1
Jul 28	13.97	50.5*	31.46	16.7	6.86	43.1*	55.69	51.2*	43.56	31.6*	14.22	61.4
Ago 27	15.19	49.5*	32.48	22.2	8.76	43.1*	56.57	47.5*	44.71	30.0*	15.11	66.0
Sep 26	16.14	53.4*	33.28	28.3	10.24	48.2*	57.28	46.9*	45.63	33.3*	15.83	69.2
Oct 26	16.61	1.0	33.76	33.8	10.92	56.8*	57.71	49.2*	46.13	40.4*	16.28	70.3
Nov 25	16.56	9.5	33.91	38.0	10.64	6.1	57.84	53.2*	46.14	48.8*	16.45	69.9
Dic 25	16.06	16.0	33.75	40.3	9.54	12.8	57.70	57.2*	45.73	55.5*	16.35	68.5
Ene 24	15.28	18.4	33.33	40.3	7.97	14.6	57.36	59.8*	45.05	58.3*	16.04	66.9

N°	1071		1072		91		95		1075		94	
Nombre	σ Ceti		ν Ceti*		δ Ceti		ε Hydri		ι Eridani		35 Arietis	
Mag. SP	4.75	F5	4.86	G5	4.07	B2	4.11	B9	4.11	K0	4.66	B3
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	2h33m	-15°09'	2h36m	+5°40'	2h40m	+0°24'	2h39m	-68°11'	2h41m	-39°46'	2h44m	+27°47'
Dic 31	1s91	40°0	55s28	40°4	30s30	42°2	55s66	16°8	27s48	32°8	37s58	28°8
Ene 30	1.51	42.4	54.92	38.7	29.94	40.2	54.09	18.6	26.89	35.4	37.16	28.5
Feb 29	1.03	42.4	54.47	37.5	29.49	39.3	52.46	15.1	26.22	33.9	36.63	26.5
Mar 30	.70	39.7	54.15	37.4	29.16	39.9	51.21	7.2	25.72	28.4	36.25	23.7
Abr 29	.71	34.5	54.18	39.0	29.17	42.4	50.70	56.6*	25.61	19.9	36.26	21.7
May 29	1.12	27.5	54.61	42.7	29.58	47.0	51.11	45.2*	25.98	9.9	36.72	21.4
Jun 28	1.86	20.1	55.35	47.7	30.31	52.6	52.35	35.6*	26.76	.7	37.53	23.3
Jul 28	2.76	14.0	56.25	53.0	31.20	58.2	54.12	29.8*	27.79	54.2*	38.52	27.0
Ago 27	3.66	10.4	57.14	57.5	32.09	62.5	56.01	29.1*	28.84	51.8*	39.52	31.9
Sep 26	4.38	10.2	57.87	60.3	32.82	64.6	57.55	33.6*	29.71	54.1*	40.34	36.9
Oct 26	4.83	12.9	58.34	60.9	33.29	64.4	58.35	41.9*	30.22	.2	40.89	41.1
Nov 25	4.97	17.5	58.53	59.9	33.48	62.4	58.22	51.4*	30.32	8.0	41.13	44.1
Dic 25	4.84	21.9	58.45	58.1	33.41	59.9	57.23	58.7*	30.05	14.7	41.07	45.7
Ene 24	4.49	24.7	58.15	56.4	33.11	57.8	55.70	1.3	29.51	18.1	40.72	45.7

N°	97		98		101		100		102		104	
Nombre	π Ceti		μ Ceti		β Fornacis		41 Arietis		τ <sup>2</sup> Eridani		η Eridani	
Mag. SP	4.25	B5	4.27	F0	4.46	K0	3.63	B8	4.75	K0	3.89	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	2h45m	-13°46'	2h46m	+10°11'	2h49m	-32°19'	2h51m	+27°20'	2h51m	-20°55'	2h57m	-8°49'
Dic 31	4s33	41°4	1s30	46°5	55s70	38°6	9s73	31°0	56s70	34°5	24s20	20°4
Ene 30	3.94	43.9	.95	45.0	55.20	41.5	9.32	30.7	56.29	37.3	23.84	22.9
Feb 29	3.46	44.1	.48	43.7	54.60	40.6	8.79	28.9	55.77	37.2	23.36	23.5
Mar 30	3.10	41.7	.15	43.0	54.13	36.1	8.40	26.2	55.37	34.0	22.99	21.8
Abr 29	3.07	36.8	.16	43.9	54.03	28.5	8.39	24.3	55.30	28.1	22.94	17.8
May 29	3.45	30.1	.57	46.7	54.37	19.4	8.83	24.0	55.65	20.3	23.29	11.9
Jun 28	4.16	22.8	1.31	51.1	55.10	10.5	9.63	25.8	56.35	12.4	23.97	5.2
Jul 28	5.05	16.7	2.22	56.0	56.06	3.8	10.61	29.5	57.25	5.9	24.84	59.2*
Ago 27	5.95	12.9	3.13	60.6	57.05	.9	11.61	34.2	58.17	2.4	25.74	55.3*
Sep 26	6.70	12.4	3.88	63.8	57.87	2.2	12.45	39.0	58.95	2.6	26.50	54.2*
Oct 26	7.18	14.9	4.38	65.1	58.39	7.4	13.02	43.1	59.45	6.2	27.01	56.0*
Nov 25	7.36	19.3	4.61	64.9	58.54	14.4	13.28	46.0	59.64	11.8	27.24	59.6*
Dic 25	7.26	23.7	4.55	63.7	58.36	20.8	13.23	47.5	59.52	17.1	27.18	3.6
Ene 24	6.93	26.6	4.26	62.3	57.91	24.3	12.90	47.5	59.16	20.3	26.88	6.4

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	106		1082		1083		107		1085		109	
Nombre	ϩ Eridani* p Acamar		24 Persei		λ Ceti		α Ceti		τ <sup>3</sup> Eridani		ρ Persei	
Mag. SP	3.25	A2	4.93	K0	4.70	B5	2.53	M0	4.09	A3	3.3-4.0	M3
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	2h59m	-40°13'	3h00m	+35°15'	3h00m	+ 8°59'	3h03m	+ 4°09'	3h03m	-23°33'	3h06m	+38°55'
Dic 31	1s46	49°2	18s26	45°8	47s17	4°8	19s45	55°3	16s45	2°9	27s83	2°5
Ene 30	.88	52.4	17.82	46.4	46.83	3.3	19.12	53.6	16.03	5.9	27.36	3.5
Feb 29	.17	51.3	17.21	44.6	46.36	2.0	18.65	52.4	15.48	5.8	26.72	1.9
Mar 30	59.61*	46.2	16.76	41.4	46.00	1.6	18.28	52.5	15.04	2.5	26.22	58.4*
Abr 29	59.43*	37.9	16.71	38.2	45.96	2.6	18.23	54.4	14.93	56.4*	26.15	54.6*
May 29	59.73*	28.0	17.14	36.5	46.32	5.5	18.58	58.1	15.24	48.3*	26.57	52.3*
Jun 28	.46	18.5	17.97	37.0	47.03	9.9	19.27	63.1	15.92	40.1*	27.42	52.1*
Jul 28	1.46	11.6	19.02	39.7	47.92	14.8	20.14	68.3	16.81	33.4*	28.51	54.4*
Ago 27	2.52	8.8	20.10	44.2	48.83	19.2	21.05	72.6	17.75	29.9*	29.63	58.6*
Sep 26	3.42	10.8	21.02	49.5	49.61	22.1	21.82	75.1	18.55	30.2*	30.61	4.0
Oct 26	3.99	16.8	21.66	54.6	50.15	23.2	22.36	75.3	19.08	34.2*	31.29	9.5
Nov 25	4.16	24.8	21.97	58.9	50.41	22.6	22.63	73.9	19.30	40.2*	31.64	14.4
Dic 25	3.93	31.9	21.93	61.8	50.40	21.3	22.61	71.8	19.20	45.9*	31.61	17.9
Ene 24	3.39	35.8	21.57	62.8	50.12	19.8	22.34	69.9	18.83	49.5*	31.24	19.3

  

N°	114		1089		1091		1093		119		121	
Nombre	δ Arietis		ζ Arietis		ζ Eridani		κ Ceti		82 G. Eridani		O Tauri	
Mag. SP	4.35	K0	4.89	A0	4.80	A3	4.83	G5	4.27	G5	3.60	G5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	3h12m	+19°48'	3h16m	+21°07'	3h16m	- 8°44'	3h20m	+ 3°26'	3h20m	-42°59'	3h25m	+ 9°05'
Dic 31	46s45	2°3	3s16	1°1	48s34	56°9	24s67	26°2	44s07	56°9	53s44	48°3
Ene 30	46.10	1.7	2.82	.6	48.00	59.5	24.35	24.4	43.48	60.6	53.13	46.9
Feb 29	45.60	.3	2.31	59.3*	47.51	60.3	23.87	23.3	42.74	60.0	52.65	45.8
Mar 30	45.19	58.7*	1.89	57.6*	47.10	58.8	23.48	23.5	42.11	55.1	52.24	45.4
Abr 29	45.13	58.0*	1.81	56.7*	47.00	54.9	23.39	25.5	41.84	46.8	52.13	46.3
May 29	45.48	58.9*	2.16	57.3*	47.29	49.1	23.69	29.2	42.08	36.6	52.43	49.0
Jun 28	46.20	1.6	2.87	59.7*	47.92	42.5	24.34	34.2	42.78	26.8	53.07	53.2
Jul 28	47.12	5.4	3.79	3.4	48.77	36.4	25.20	39.4	43.79	19.4	53.94	57.8
Ago 27	48.08	9.7	4.76	7.6	49.68	32.4	26.11	43.6	44.90	16.2	54.86	61.9
Sep 26	48.92	13.5	5.61	11.4	50.47	31.2	26.91	45.9	45.90	17.9	55.68	64.7
Oct 26	49.52	16.1	6.23	14.2	51.03	33.0	27.49	45.9	46.57	23.9	56.28	65.5
Nov 25	49.84	17.5	6.56	15.8	51.31	36.7	27.80	44.2	46.83	32.2	56.62	64.8
Dic 25	49.86	17.9	6.59	16.4	51.30	40.8	27.83	41.9	46.65	39.9	56.67	63.4
Ene 24	49.59	17.4	6.32	16.1	51.03	43.8	27.58	39.9	46.12	44.4	56.43	61.9

  

N°	123		126		1097		125		127		1099	
Nombre	ξ Tauri		κ Reticuli		17 Eridani		5 Tauri		ε Eridani		τ <sup>5</sup> Eridani	
Mag. SP	3.74	B8	4.72	F5	4.73	B9	4.11	K0	3.73	K0	4.26	B8
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	3h28m	+ 9°47'	3h29m	-62°52'	3h31m	- 5°00'	3h31m	+13°00'	3h33m	- 9°23'	3h34m	-21°34'
Dic 31	15s27	60°0	45s57	22°4	36s68	35°9	58s73	10°7	52s49	39°2	40s50	12°7
Ene 30	14.96	58.6	44.41	26.3	36.37	38.4	58.43	9.7	52.15	42.0	40.12	16.4
Feb 29	14.48	57.5	43.02	25.2	35.88	39.4	57.94	8.5	51.65	42.9	39.57	17.0
Mar 30	14.06	57.0	41.80	19.4	35.45	38.4	57.52	7.8	51.21	41.4	39.08	14.5
Abr 29	13.96	57.8	41.12	9.9	35.31	35.2	57.40	8.1	51.06	37.5	38.88	9.0
May 29	14.24	60.4	41.18	58.7*	35.57	30.1	57.68	10.1	51.30	31.7	39.09	1.4
Jun 28	14.89	64.4	41.98	48.3*	36.17	24.0	58.32	13.6	51.90	25.0	39.68	53.3*
Jul 28	15.75	69.0	43.32	40.8*	37.00	18.3	59.19	17.8	52.73	19.0	40.52	46.4*
Ago 27	16.67	73.1	44.90	38.0*	37.91	14.2	60.13	21.8	53.62	14.9	41.45	42.4*
Sep 26	17.50	75.8	46.34	40.7*	38.72	12.6	60.97	24.8	54.43	13.8	42.30	42.2*
Oct 26	18.11	76.8	47.30	48.0*	39.32	13.8	61.60	26.2	55.02	15.7	42.91	45.7*
Nov 25	18.46	76.2	47.54	57.6*	39.65	17.1	61.97	26.2	55.34	19.8	43.23	51.5*
Dic 25	18.52	74.9	47.03	6.2	39.69	20.8	62.04	25.4	55.36	24.1	43.22	57.6*
Ene 24	18.29	73.5	45.94	11.0	39.44	23.6	61.81	24.3	55.09	27.3	42.91	1.7

## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	1101		130		133		135		141		136	
Nombre	10 Tauri		110 G. Eridani		δ Formacis		δ Eridani		β Reticuli		17 Tauri	
Mag. SP	4.28	G5	4.58	K0	5.00	B5	3.54	K0	3.85	K0	3.70	B5p
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	3h37m	+0°27'	3h37m	-40°12'	3h43m	-31°52'	3h44m	-9°41'	3h44m	-64°44'	3h46m	+24°10'
Dic 31	53s71	43°4	49s33	51°5	3s06	45°5	12s56	57°7	29s42	58°3	4s01	28°5
Ene 30	53.41	41.2	48.78	55.8	2.62	49.7	12.24	60.6	28.18	62.8	3.71	28.7
Feb 29	52.93	40.1	48.05	56.0	1.98	50.3	11.74	61.5	26.66	62.3	3.18	27.8
Mar 30	52.49	40.5	47.38	51.9	1.40	47.0	11.28	60.1	25.29	56.9	2.70	26.2
Abr 29	52.35	42.8	47.06	44.3	1.12	40.4	11.10	56.3	24.45	47.8	2.54	24.8
May 29	52.60	46.9	47.20	34.6	1.28	31.6	11.32	50.4	24.38	36.8	2.80	24.8
Jun 28	53.20	52.2	47.80	24.9	1.85	22.5	11.89	43.7	25.11	26.1	3.46	26.2
Jul 28	54.02	57.4	48.73	17.2	2.71	15.0	12.70	37.5	26.45	18.3	4.36	29.1
Ago 27	54.93	61.4	49.78	13.5	3.69	11.0	13.60	33.4	28.11	15.2	5.35	32.6
Sep 26	55.75	63.4	50.75	14.6	4.59	11.4	14.43	32.1	29.67	17.5	6.27	36.1
Oct 26	56.36	62.8	51.44	20.2	5.26	16.1	15.05	34.0	30.75	24.6	6.98	38.9
Nov 25	56.72	60.5	51.75	28.3	5.59	23.3	15.41	38.0	31.08	34.3	7.43	40.8
Dic 25	56.79	57.5	51.64	36.2	5.56	30.6	15.47	42.5	30.59	43.2	7.54	41.9
Ene 24	56.56	55.1	51.16	41.3	5.18	35.5	15.23	45.8	29.44	48.6	7.32	42.2

N°	140		139		146		142		143		144	
Nombre	τ <sup>6</sup> Eridani		η Tauri		γ Hydri		27 Tauri		138 G. Eridani		ζ Persei	
Mag. SP	4.23	F8	2.87	B5p	3.24	M0	3.63	B8	4.17	K0	2.85	B1
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	3h47m	-23°11'	3h48m	+24°09'	3h47m	-74°10'	3h50m	+24°06'	3h50m	-36°08'	3h55m	+31°56'
Dic 31	42s81	41°9	40s63	55°0	s88	57°1	21s33	46°4	12s72	40°3	23s70	30°1
Ene 30	42.44	45.9	40.33	55.2	58.77*	61.4	21.03	46.6	12.25	44.9	23.38	31.3
Feb 29	41.87	46.8	39.81	54.4	56.26*	60.6	20.50	45.8	11.56	45.6	22.80	30.7
Mar 30	41.35	44.4	39.32	52.8	53.97*	55.0	20.02	44.2	10.92	42.2	22.27	28.7
Abr 29	41.11	38.9	39.15	51.5	52.48*	45.8	19.84	42.9	10.59	35.2	22.06	26.3
May 29	41.28	31.3	39.41	51.4	52.15*	34.7	20.09	42.8	10.70	26.0	22.31	24.9
Jun 28	41.83	23.0	40.06	52.8	53.06*	24.2	20.74	44.3	11.25	16.5	22.98	24.9
Jul 28	42.65	16.0	40.96	55.6	54.96*	16.6	21.63	47.0	12.12	8.8	23.93	26.6
Ago 27	43.58	11.9	41.95	59.1	57.38*	13.7	22.63	50.4	13.13	4.8	24.99	29.7
Sep 26	44.44	11.7	42.87	62.5	59.70*	16.2	23.55	53.8	14.08	5.3	25.98	33.4
Oct 26	45.09	15.4	43.59	65.3	1.28	23.5	24.27	56.6	14.78	10.3	26.77	37.0
Nov 25	45.44	21.6	44.04	67.2	1.65	33.3	24.73	58.4	15.13	18.1	27.27	40.2
Dic 25	45.46	28.0	44.17	68.3	.70	42.2	24.86	59.5	15.09	25.9	27.42	42.7
Ene 24	45.16	32.5	43.95	68.6	58.70*	47.4	24.65	59.8	14.68	31.1	27.20	44.1

N°	149		1110		148		150		151		1112	
Nombre	γ Eridani		δ Reticuli		ξ Persei		λ Tauri		ν Tauri		37 Tauri	
Mag. SP	2.95	K5	4.56	M0	4.04	Oe5	3.47	var B3	3.91	A0	4.36	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	3h58m	-13°27'	3h59m	-61°20'	4h00m	+35°50'	4h01m	+12°32'	4h04m	+6°02'	4h05m	+22°08'
Dic 31	58s00	19°4	5s83	56°0	16s18	50°3	47s50	40°3	13s40	31°5	52s91	4°9
Ene 30	57.69	22.9	4.80	61.2	15.85	52.0	47.24	39.3	13.15	29.8	52.65	5.0
Feb 29	57.18	24.1	3.47	61.4	15.25	51.6	46.75	38.3	12.67	28.8	52.14	4.3
Mar 30	56.69	22.6	2.21	56.8	14.68	49.5	46.29	37.8	12.21	28.7	51.64	3.1
Abr 29	56.46	18.5	1.40	48.3	14.44	46.6	46.09	38.2	12.01	30.0	51.43	2.2
May 29	56.62	12.3	1.28	37.5	14.68	44.5	46.29	40.0	12.19	33.0	51.63	2.4
Jun 28	57.14	5.2	1.88	26.8	15.36	43.8	46.86	43.3	12.74	37.3	52.23	3.9
Jul 28	57.93	58.8*	3.05	18.6	16.33	45.0	47.69	47.1	13.54	41.8	53.09	6.6
Ago 27	58.83	54.6*	4.53	14.8	17.43	47.7	48.61	50.8	14.44	45.6	54.06	9.8
Sep 26	59.68	53.6*	5.96	16.5	18.48	51.4	49.49	53.3	15.30	47.8	54.99	12.8
Oct 26	60.34	55.9*	7.01	23.1	19.31	55.5	50.20	54.3	15.99	47.9	55.75	15.0
Nov 25	60.75	.7	7.42	32.7	19.85	59.3	50.65	54.0	16.44	46.4	56.25	16.3
Dic 25	60.83	6.0	7.10	41.9	20.02	62.4	50.81	53.0	16.59	44.2	56.42	17.0
Ene 24	60.60	9.9	6.16	47.9	19.79	64.4	50.63	51.9	16.42	42.4	56.25	17.1

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	154		155		156		1118		157		159	
Nombre	O <sup>1</sup> Eridani		α Horologii		α Reticuli		μ Tauri		γ Doradus		γ Tauri	
Mag. SP	4.04	F2	3.86	K0	3.35	G5	4.29	B3	4.25	F5	3.63	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	4h12m	-6°47'	4h14m	-42°14'	4h14m	-62°25'	4h16m	+8°56'	4h16m	-51°26'	4h20m	+15°40'
Dic 31	50s77	19°5	40s79	59°3	43s33	42°6	37s45	23°6	34s41	27°5	56s14	25°2
Ene 30	50.51	22.6	40.28	64.8	42.30	48.3	37.22	22.2	33.74	33.2	55.92	24.6
Feb 29	50.02	23.9	39.51	66.2	40.90	49.2	36.74	21.2	32.77	34.5	55.44	23.9
Mar 30	49.53	23.0	38.74	63.1	39.54	45.2	36.26	21.0	31.81	31.0	54.94	23.2
Abr 29	49.29	19.9	38.27	56.2	38.62	37.1	36.04	21.9	31.19	23.4	54.71	23.3
May 29	49.42	14.9	38.26	46.8	38.38	26.5	36.19	24.3	31.10	13.3	54.86	24.4
Jun 28	49.92	8.7	38.73	36.8	38.89	15.7	36.71	28.0	31.58	2.8	55.39	27.0
Jul 28	50.69	2.9	39.58	28.5	40.02	7.2	37.50	32.1	32.50	54.2*	56.19	30.2
Ago 27	51.57	58.8*	40.63	24.0	41.52	2.9	38.41	35.6	33.69	49.7*	57.13	33.4
Sep 26	52.43	57.3*	41.66	24.3	43.02	4.1	39.29	37.9	34.87	50.4*	58.04	35.8
Oct 26	53.12	58.9*	42.47	29.5	44.16	10.4	40.01	38.2	35.78	56.2*	58.79	37.0
Nov 25	53.57	2.6	42.91	37.9	44.67	19.9	40.50	37.1	36.25	5.2	59.32	37.0
Dic 25	53.71	7.0	42.91	46.5	44.41	29.5	40.69	35.4	36.17	14.4	59.53	36.4
Ene 24	53.53	10.4	42.47	52.8	43.47	36.0	40.55	33.8	35.58	20.9	59.40	35.8

N°	158		162		1121		164		1125		171	
Nombre	54 Persei		δ Tauri		43 Eridani		ε Tauri		ρ Tauri		α Doradus	
Mag. SP	4.93	G5	3.76	K0	3.95	K5	3.54	K0	4.65	A5	3.27	A0p
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	4h21m	+34°36'	4h24m	+17°35'	4h24m	-33°58'	4h29m	+19°13'	4h34m	+14°53'	4h34m	-55°00'
Dic 31	42s99	48°9	5s56	14°0	47s99	28°9	47s35	21°5	59s29	2°9	27s46	29°0
Ene 30	42.72	50.8	5.34	13.7	47.60	34.3	47.15	21.4	59.10	2.2	26.74	35.4
Feb 29	42.14	50.9	4.86	13.1	46.94	36.0	46.66	20.9	58.63	1.6	25.67	37.3
Mar 30	41.55	49.2	4.35	12.4	46.27	33.8	46.14	20.2	58.12	1.1	24.58	34.4
Abr 29	41.27	46.7	4.11	12.1	45.86	27.8	45.88	19.7	57.85	1.2	23.80	27.3
May 29	41.44	44.7	4.25	12.9	45.86	19.2	46.02	20.2	57.97	2.5	23.58	17.3
Jun 28	42.04	44.0	4.78	15.1	46.29	9.9	46.53	22.1	58.46	5.0	23.97	6.6
Jul 28	42.96	44.7	5.59	18.1	47.07	1.9	47.34	24.7	59.23	8.1	24.88	57.7*
Ago 27	44.04	46.9	6.53	21.1	48.03	57.1*	48.28	27.6	60.15	11.1	26.10	52.7*
Sep 26	45.10	50.0	7.45	23.6	48.99	56.8*	49.22	30.0	61.07	13.3	27.38	53.0*
Oct 26	45.98	53.3	8.22	24.9	49.77	1.1	50.01	31.4	61.85	14.2	28.41	58.5*
Nov 25	46.59	56.6	8.76	25.2	50.24	8.6	50.57	32.0	62.41	13.9	28.97	7.6
Dic 25	46.83	59.5	8.99	25.0	50.32	16.7	50.82	32.0	62.67	13.1	28.93	17.3
Ene 24	46.67	61.6	8.86	24.6	50.01	22.8	50.71	31.8	62.57	12.3	28.31	24.5

N°	170		168		169		172		1129		174	
Nombre	U <sup>2</sup> Eridani		α Tauri (Aldebaran)		ν Eridani		53 Eridani*		α Caeli		τ Tauri	
Mag. SP	3.82	K0	0.85	K5	3.93	B2	3.87	K0	4.45	F2	4.28	B5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	4h36m	-30°31'	4h37m	+16°32'	4h37m	-3°18'	4h39m	-14°16'	4h41m	-41°49'	4h43m	+22°59'
Dic 31	20s36	31°2	4s37	50°1	19s41	52°6	6s16	5°6	13s40	47°0	27s05	35°7
Ene 30	20.02	36.7	4.18	49.6	19.20	55.5	5.93	9.7	12.95	53.3	26.87	36.2
Feb 29	19.41	38.7	3.71	49.1	18.73	56.9	5.42	11.5	12.19	55.5	26.38	36.0
Mar 30	18.76	36.9	3.19	48.5	18.22	56.5	4.88	10.6	11.39	53.4	25.84	35.3
Abr 29	18.34	31.6	2.92	48.4	17.93	54.1	4.55	6.9	10.85	47.2	25.54	34.5
May 29	18.33	23.5	3.03	49.4	18.01	49.8	4.59	1.0	10.74	38.2	25.65	34.4
Jun 28	18.73	14.5	3.52	51.6	18.45	44.3	5.01	54.0*	11.11	28.2	26.13	35.3
Jul 28	19.46	6.6	4.30	54.4	19.17	39.0	5.72	47.4*	11.88	19.6	26.93	37.2
Ago 27	20.39	1.7	5.23	57.3	20.04	35.0	6.59	43.0*	12.88	14.5	27.89	39.5
Sep 26	21.33	1.1	6.15	59.5	20.91	33.4	7.47	41.8*	13.93	14.2	28.86	41.8
Oct 26	22.11	5.0	6.95	60.5	21.66	34.6	8.21	44.2*	14.80	18.8	29.70	43.4
Nov 25	22.62	12.1	7.52	60.5	22.18	37.9	8.73	49.2*	15.33	27.0	30.31	44.4
Dic 25	22.75	20.0	7.78	59.9	22.40	42.0	8.92	55.0*	15.42	36.0	30.61	45.0
Ene 24	22.50	26.0	7.68	59.4	22.28	45.2	8.77	59.6*	15.06	43.0	30.53	45.5

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	176		1134		1133		179		1136		180	
Nombre	μ Eridani		π <sup>3</sup> Orionis		Bradley 658 (Persei)		π <sup>4</sup> Orionis		O <sup>1</sup> Orionis		π <sup>5</sup> Orionis	
Mag. SP	4.02	B5	3.19	F8	4.88	K2	3.69	B3	4.74	M0	3.72	B3
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	4h46m	- 3°13'	4h50m	+ 6°59'	4h51m	+37°31'	4h52m	+ 5°38'	4h53m	+14°16'	4h55m	+ 2°28'
Dic 31	30s48	15°4	55s85	36°8	15s91	19°0	16s58	11°9	40s16	53°7	17s92	14°4
Ene 30	30.30	18.4	55.70	35.1	15.71	21.6	16.42	10.0	40.01	53.0	17.77	12.1
Feb 29	29.83	19.9	55.24	34.1	15.13	22.5	15.97	9.0	39.55	52.4	17.31	10.9
Mar 30	29.32	19.5	54.74	34.0	14.49	21.4	15.46	8.9	39.03	52.1	16.80	10.9
Abr 29	29.01	17.2	54.44	35.2	14.12	19.0	15.16	10.2	38.72	52.4	16.49	12.6
May 29	29.06	13.0	54.51	37.7	14.19	16.5	15.21	13.0	38.79	53.7	16.53	15.8
Jun 28	29.47	7.6	54.94	41.4	14.72	14.8	15.63	16.8	39.22	56.1	16.93	20.2
Jul 28	30.18	2.3	55.66	45.4	15.61	14.5	16.34	21.0	39.95	59.0	17.62	24.7
Ago 27	31.04	58.4*	56.54	48.6	16.70	15.6	17.21	24.3	40.86	61.8	18.48	28.3
Sep 26	31.91	56.8*	57.44	50.4	17.82	17.8	18.10	26.1	41.78	63.6	19.37	29.9
Oct 26	32.67	58.0*	58.22	50.2	18.80	20.8	18.88	25.8	42.59	64.2	20.15	29.2
Nov 25	33.22	1.4	58.80	48.4	19.53	24.0	19.47	23.7	43.20	63.5	20.74	26.7
Dic 25	33.47	5.5	59.09	46.0	19.89	27.3	19.75	21.1	43.51	62.5	21.02	23.5
Ene 24	33.37	8.9	59.02	44.1	19.80	30.0	19.68	19.0	43.46	61.6	20.96	20.8

N°	181		184		1140		186		189		188	
Nombre	ι Aurigae		ι Tauri		ι1 Orionis		ε Leporis		ζ Doradus		β Eridani	
Mag. SP	2.69	K2	4.64	A5	4.68	B9	3.19	K5	4.72	F8	2.79	A3
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	4h58m	+33°11'	5h04m	+21°36'	5h05m	+15°25'	5h06m	-22°20'	5h05m	-57°26'	5h08m	- 5°03'
Dic 31	18s20	45°3	17s80	58°8	43s03	46°5	19s05	50°9	53s37	56°1	50s35	48°4
Ene 30	18.03	47.4	17.68	59.2	42.91	46.0	18.84	56.3	52.69	63.5	50.21	51.9
Feb 29	17.50	48.2	17.21	59.2	42.46	45.6	18.31	58.9	51.55	66.7	49.76	53.6
Mar 30	16.89	47.3	16.66	58.8	41.94	45.3	17.70	58.1	50.33	65.0	49.22	53.3
Abr 29	16.52	45.5	16.33	58.3	41.61	45.5	17.28	54.1	49.37	58.7	48.87	51.0
May 29	16.58	43.7	16.37	58.3	41.64	46.6	17.22	47.5	48.95	49.3	48.86	46.7
Jun 28	17.07	42.7	16.80	59.3	42.04	48.6	17.54	39.6	49.18	38.6	49.21	41.3
Jul 28	17.90	42.8	17.54	61.1	42.76	51.3	18.18	32.2	49.98	29.2	49.86	35.9
Ago 27	18.93	44.0	18.47	63.0	43.65	53.7	19.04	27.2	51.20	23.4	50.70	31.9
Sep 26	20.00	46.0	19.44	64.8	44.58	55.4	19.95	26.0	52.55	22.7	51.58	30.4
Oct 26	20.95	48.3	20.31	65.9	45.42	55.9	20.76	28.8	53.73	27.6	52.37	31.9
Nov 25	21.67	50.7	20.98	66.3	46.07	55.3	21.35	35.0	54.45	36.5	52.97	35.7
Dic 25	22.05	53.2	21.34	66.5	46.42	54.3	21.60	42.2	54.53	46.6	53.28	40.3
Ene 24	21.99	55.3	21.32	66.8	46.40	53.6	21.47	48.1	53.96	54.8	53.23	44.1

N°	190		1144		192		196		194		197	
Nombre	λ Eridani		μ Leporis		μ Aurigae		δ Doradus		β Orionis (Rigel)		O Columbae	
Mag. SP	4.27	B2	3.31	var. A0p	4.86	A3	4.83	K0	0.12	B8p	4.83	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	5h10m	- 8°43'	5h13m	-16°11'	5h14m	+38°30'	5h13m	-67°09'	5h15m	- 8°10'	5h18m	-34°52'
Dic 31	6s63	53°0	50s31	5°8	48s34	22°7	48s12	56°2	30s36	53°1	13s28	44°1
Ene 30	6.49	56.9	50.14	10.7	48.20	25.7	47.08	63.9	30.23	57.0	13.00	50.9
Feb 29	6.03	58.9	49.65	13.1	47.65	27.1	45.44	67.3	29.77	59.0	12.38	54.3
Mar 30	5.48	58.6	49.08	12.6	46.99	26.6	43.64	65.9	29.23	58.8	11.65	53.5
Abr 29	5.12	55.9	48.68	9.3	46.55	24.4	42.17	59.8	28.86	56.2	11.10	48.9
May 29	5.09	51.1	48.62	3.5	46.55	21.8	41.40	50.4	28.82	51.5	10.92	41.2
Jun 28	5.43	45.1	48.93	56.5*	47.01	19.7	41.50	39.6	29.15	45.6	11.18	32.0
Jul 28	6.07	39.2	49.56	49.8*	47.85	18.7	42.43	30.1	29.78	39.9	11.81	23.6
Ago 27	6.91	35.0	50.39	45.1*	48.92	19.0	43.97	24.0	30.60	35.7	12.70	17.9
Sep 26	7.79	33.5	51.28	43.6*	50.06	20.5	45.75	23.2	31.49	34.2	13.68	16.6
Oct 26	8.59	35.3	52.09	46.0*	51.11	22.8	47.32	28.0	32.29	35.9	14.57	20.2
Nov 25	9.19	39.6	52.70	51.3*	51.93	25.7	48.25	37.0	32.90	40.2	15.21	27.6
Dic 25	9.49	44.8	52.99	57.8*	52.38	28.9	48.28	47.4	33.22	45.4	15.46	36.4
Ene 24	9.43	49.2	52.91	3.1	52.36	32.0	47.38	55.9	33.18	49.7	15.28	43.8

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	195		1146		1147		201		202		204	
Nombre	τ Orionis		λ Leporis		22 Orionis		γ Orionis (Bellatrix)		β Tauri		β Leporis	
Mag. SP	3.60	B5	4.29	B1	4.73	B3	1.64	B2	1.65	B8	2.84	G0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	5h18m	- 6°49'	5h20m	-13°09'	5h22m	- 0°21'	5h26m	+ 6°21'	5h27m	+28°37'	5h29m	-20°44'
Dic 31	35s08	32°1	30s29	32°6	47s38	55°6	12s56	54°9	33s74	19°8	6s75	47°1
Ene 30	34.95	35.9	30.15	37.2	47.28	58.5	12.49	53.0	33.67	21.4	6.60	52.8
Feb 29	34.51	37.9	29.69	39.6	46.86	60.0	12.07	52.0	33.21	22.2	6.11	55.7
Mar 30	33.97	37.7	29.13	39.3	46.33	60.0	11.54	51.9	32.62	22.0	5.50	55.5
Abr 29	33.59	35.2	28.73	36.3	45.96	58.2	11.18	53.1	32.22	21.0	5.05	52.1
May 29	33.55	30.8	28.66	31.0	45.93	54.7	11.15	55.5	32.20	19.9	4.93	46.0
Jun 28	33.87	25.1	28.96	24.5	46.25	50.1	11.48	58.9	32.58	19.5	5.19	38.5
Jul 28	34.50	19.6	29.57	18.1	46.88	45.4	12.11	62.6	33.30	19.7	5.77	31.3
Ago 27	35.32	15.5	30.39	13.6	47.70	41.9	12.95	65.6	34.26	20.5	6.59	26.2
Sep 26	36.20	14.0	31.28	12.1	48.59	40.4	13.85	67.0	35.28	21.7	7.49	24.7
Oct 26	37.01	15.6	32.09	14.2	49.41	41.5	14.69	66.4	36.24	22.8	8.33	27.2
Nov 25	37.63	19.7	32.72	19.1	50.05	44.7	15.35	64.2	37.02	24.0	8.98	33.1
Dic 25	37.97	24.7	33.04	25.2	50.41	48.6	15.74	61.4	37.47	25.3	9.31	40.3
Ene 24	37.93	28.9	32.99	30.2	50.41	51.9	15.76	59.1	37.51	26.7	9.25	46.4

  

N°	206		1151		207		212		208		209	
Nombre	δ Orionis		χ Aurigae		α Leporis		β Doradus		φ <sup>1</sup> Orionis		ι Orionis*	
Mag. SP	2.23	B0	4.76	B1	2.58	F0	3.40	var F5p	4.41	B0	2.76	Oe5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	5h33m	- 0°17'	5h34m	+32°12'	5h33m	-17°48'	5h33m	-62°28'	5h35m	+ 9°30'	5h36m	- 5°53'
Dic 31	2s09	12°8	2s19	16°9	37s30	38°8	50s76	45°3	55s46	2°4	25s11	57°8
Ene 30	2.02	15.8	2.13	19.1	37.18	44.1	50.04	53.6	55.41	.9	25.03	61.6
Feb 29	1.61	17.4	1.66	20.4	36.71	47.0	48.73	58.0	55.01	.1	24.61	63.7
Mar 30	1.07	17.4	1.04	20.3	36.12	46.9	47.24	57.5	54.48	.1	24.07	63.7
Abr 29	.70	15.7	.62	19.0	35.68	43.8	45.99	52.3	54.11	.9	23.67	61.5
May 29	.64	12.3	.57	17.5	35.56	38.1	45.29	43.4	54.06	2.8	23.59	57.4
Jun 28	.93	7.8	.94	16.3	35.81	31.0	45.31	32.9	54.36	5.6	23.86	52.0
Jul 28	1.53	3.2	1.67	15.9	36.39	24.1	46.03	23.1	54.99	8.8	24.44	46.7
Ago 27	2.34	59.7*	2.65	16.2	37.19	19.2	47.30	16.5	55.82	11.3	25.24	42.7
Sep 26	3.23	58.3*	3.71	17.2	38.08	17.6	48.82	14.9	56.72	12.6	26.12	41.3
Oct 26	4.06	59.5*	4.71	18.4	38.92	20.0	50.23	19.0	57.58	12.1	26.95	42.8
Nov 25	4.73	2.7	5.53	20.0	39.58	25.5	51.17	27.7	58.28	10.2	27.62	46.9
Dic 25	5.12	6.8	6.03	21.9	39.93	32.3	51.38	38.2	58.71	7.9	28.01	51.9
Ene 24	5.14	10.1	6.08	23.9	39.89	38.1	50.78	47.2	58.76	6.1	28.02	56.1

  

N°	210		211		215		217		1154		219	
Nombre	ε Orionis		ζ Tauri		α Columbae		γ Leporis		δ Doradus		ζ Leporis	
Mag. SP	1.70	B0	3.00	B3p	2.64	B5p	3.60	F8	4.35	A5	3.55	A2
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	5h37m	- 1°11'	5h38m	+21°09'	5h40m	-34°03'	5h45m	-22°26'	5h44m	-65°43'	5h47m	-14°49'
Dic 31	14s09	30°2	50s74	8°8	23s36	58°7	18s47	40°4	51s87	47°9	52s26	1°6
Ene 30	14.03	33.4	50.70	9.2	23.15	65.8	18.35	46.5	51.07	56.6	52.18	6.7
Feb 29	13.62	35.1	50.29	9.5	22.56	69.8	17.86	49.9	49.61	61.4	51.74	9.6
Mar 30	13.09	35.1	49.73	9.5	21.84	69.7	17.24	50.0	47.90	61.4	51.17	9.8
Abr 29	12.70	33.3	49.34	9.3	21.26	65.8	16.76	46.8	46.42	56.6	50.72	7.1
May 29	12.63	29.9	49.29	9.4	21.02	58.5	16.59	40.7	45.53	48.1	50.58	2.0
Jun 28	12.91	25.3	49.61	10.2	21.20	49.6	16.80	33.2	45.43	37.6	50.80	55.4*
Jul 28	13.50	20.6	50.27	11.4	21.76	41.1	17.34	25.9	46.13	27.7	51.34	48.9*
Ago 27	14.30	17.0	51.15	12.8	22.61	35.1	18.14	20.6	47.47	20.8	52.12	44.2*
Sep 26	15.19	15.6	52.12	13.8	23.57	33.4	19.04	18.9	49.14	18.9	53.01	42.6*
Oct 26	16.02	16.9	53.04	14.1	24.49	36.5	19.90	21.5	50.73	22.7	53.85	44.7*
Nov 25	16.70	20.3	53.80	13.9	25.19	43.6	20.58	27.6	51.81	31.2	54.54	49.9*
Dic 25	17.10	24.5	54.26	13.7	25.53	52.4	20.95	35.1	52.06	41.7	54.94	56.3*
Ene 24	17.13	28.0	54.33	13.9	25.41	60.2	20.92	41.7	51.41	51.1	54.95	2.0

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	220		1156		223		222		221		1158	
Nombre	K Orionis		γ Pictoris		β Columbae		δ Leporis		V Aurigae		136 Tauri	
Mag. SP	2.06	B0	4.51	K0	3.12	K0	3.81	K0	3.97	K0	4.58	A0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	5h48m	-9°39'	5h50m	-56°09'	5h51m	-35°45'	5h52m	-20°52'	5h52m	+39°09'	5h54m	+27°36'
Dic 31	42s78	54°3	13s61	50°2	40s94	48°3	11s53	48°0	53s01	7°7	35s42	52°8
Ene 30	42.72	58.8	13.14	58.9	40.75	55.8	11.44	54.0	53.00	11.1	35.43	54.3
Feb 29	42.31	61.3	12.14	63.8	40.16	60.1	10.98	57.5	52.52	13.4	35.02	55.4
Mar 30	41.76	61.4	10.94	64.1	39.41	60.3	10.38	57.8	51.85	13.7	34.44	55.6
Abr 29	41.33	59.1	9.90	59.7	38.80	56.5	9.89	54.9	51.34	12.2	34.00	55.1
May 29	41.21	54.6	9.32	51.4	38.51	49.4	9.72	49.2	51.22	9.8	33.91	54.3
Jun 28	41.44	48.8	9.32	41.2	38.65	40.4	9.91	41.9	51.55	7.3	34.20	53.8
Jul 28	41.99	43.0	9.90	31.4	39.18	31.7	10.43	34.8	52.28	5.4	34.85	53.7
Ago 27	42.76	38.7	10.96	24.5	40.01	25.5	11.21	29.6	53.30	4.5	35.75	54.1
Sep 26	43.64	37.2	12.25	22.4	40.98	23.4	12.11	27.9	54.45	4.7	36.76	54.5
Oct 26	44.48	39.0	13.50	25.9	41.93	26.3	12.98	30.3	55.56	5.8	37.75	54.9
Nov 25	45.18	43.5	14.40	34.1	42.66	33.5	13.68	36.2	56.50	7.9	38.59	55.4
Dic 25	45.59	49.3	14.72	44.5	43.04	42.5	14.08	43.6	57.10	10.8	39.13	56.2
Ene 24	45.62	54.2	14.37	53.8	42.94	50.6	14.08	50.2	57.21	14.1	39.25	57.4

N°	224		226		1160		229		227		1163	
Nombre	α Orionis (Betelgeuse)		η Leporis		γ Columbae		η Columbae		β Aurigae		1 Geminorum	
Mag. SP	0.4-1.3	M0	3.71	F0	4.36	B3	3.96	K0	1.90	A0p	4.16	G5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	5h56m	+7°24'	5h57m	-14°09'	5h58m	-35°17'	5h59m	-42°48'	6h01m	+44°56'	6h05m	+23°15'
Dic 31	15s62	30°3	19s49	59°5	15s78	7°7	46s85	59°0	27	49°8	20s47	36°1
Ene 30	15.62	28.4	19.44	64.7	15.61	8.4	46.62	67.2	.27	54.1	20.51	36.8
Feb 29	15.25	27.4	19.02	67.7	15.04	12.9	45.95	72.1	59.75*	57.2	20.14	37.6
Mar 30	14.73	27.4	18.45	68.0	14.30	13.4	45.10	72.7	59.01*	57.8	19.58	37.9
Abr 29	14.33	28.4	18.00	65.5	13.68	9.9	44.37	69.0	58.43*	56.0	19.14	37.7
May 29	14.23	30.5	17.84	60.5	13.39	2.9	43.99	61.6	58.26*	52.8	19.03	37.6
Jun 28	14.48	33.5	18.03	54.1	13.50	54.1*	44.05	52.2	58.58*	49.4	19.28	37.8
Jul 28	15.04	36.7	18.55	47.8	14.01	45.5*	44.56	43.0	59.34*	46.4	19.88	38.3
Ago 27	15.83	39.3	19.32	43.1	14.82	39.2*	45.42	36.3	.43	44.7	20.73	38.9
Sep 26	16.73	40.3	20.19	41.4	15.78	37.0*	46.46	34.0	1.67	44.4	21.70	39.2
Oct 26	17.60	39.5	21.05	43.4	16.73	39.8*	47.48	37.0	2.88	45.6	22.66	39.1
Nov 25	18.34	37.1	21.76	48.5	17.48	46.9*	48.28	44.5	3.92	48.2	23.49	38.7
Dic 25	18.82	34.2	22.18	55.0	17.88	55.9*	48.67	54.2	4.59	52.0	24.05	38.6
Ene 24	18.92	31.9	22.23	60.7	17.81	4.1	48.54	63.0	4.73	56.3	24.20	39.0

N°	232		235		1168		238		240		243	
Nombre	V Orionis		δ Pictoris		K Aurigae		K Columbae		ζ Canis Majoris		β Canis Majoris	
Mag. SP	4.42	B2	4.81	B1	4.35	K0	4.37	K0	3.02	B3	1.98	B1
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	6h08m	+14°45'	6h10m	-54°58'	6h16m	+29°29'	6h17m	-35°08'	6h21m	-30°04'	6h23m	-17°58'
Dic 31	43s16	49°5	43s33	29°4	39s47	18°1	16s86	57°0	5s74	27°2	35s43	4°4
Ene 30	43.21	48.8	42.98	38.5	39.55	19.8	16.75	65.0	5.68	34.7	35.43	10.4
Feb 29	42.86	48.6	42.07	44.2	39.18	21.4	16.22	70.0	5.21	39.5	35.05	14.2
Mar 30	42.33	48.8	40.92	45.4	38.60	22.0	15.49	71.1	4.54	40.6	34.47	15.0
Abr 29	41.91	49.3	39.88	41.8	38.12	21.6	14.85	68.1	3.95	37.9	33.96	12.8
May 29	41.78	50.3	39.24	34.2	37.97	20.6	14.50	61.6	3.64	31.9	33.73	7.9
Jun 28	42.01	52.0	39.16	24.3	38.20	19.7	14.55	53.1	3.71	23.8	33.84	1.3
Jul 28	42.57	53.9	39.64	14.4	38.80	19.0	15.00	44.4	4.14	15.7	34.28	54.6*
Ago 27	43.37	55.4	40.60	7.1	39.67	18.5	15.77	37.9	4.88	9.6	34.99	49.5*
Sep 26	44.28	56.0	41.84	4.3	40.68	18.3	16.72	35.4	5.79	7.1	35.86	47.5*
Oct 26	45.20	55.4	43.09	7.2	41.70	18.2	17.68	37.9	6.72	9.4	36.74	49.5*
Nov 25	45.99	53.8	44.05	15.0	42.60	18.4	18.48	44.7	7.51	15.9	37.51	55.0*
Dic 25	46.53	52.1	44.48	25.4	43.22	19.2	18.94	53.8	7.99	24.4	38.01	2.1
Ene 24	46.67	51.0	44.25	35.1	43.42	20.7	18.94	62.3	8.03	32.5	38.11	8.7



**Lugares aparentes de estrellas, 2020  
para las 0<sup>h</sup> de Tiempo Universal**

N°	241		244		245		1173		249		251	
Nombre	μ Geminorum		ε Monocerotis*		α Carinae (Canopus)		ν Geminorum		ξ <sup>2</sup> Canis Majoris		γ Geminorum	
Mag. SP	2.88	M0	4.44	A5	-0.72	F0	4.15	B5	4.54	A0	1.93	A0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	6h24m	+22°30'	6h24m	+4°34'	6h24m	-52°42'	6h30m	+20°11'	6h35m	-22°58'	6h38m	+16°22'
Dic 31	10s51	3°5'	50s03	49°8'	25s65	28°8'	9s32	49°7'	54s38	56°7'	52s33	47°9'
Ene 30	10.61	4.0	50.10	47.2	25.39	38.1	9.43	49.8	54.40	63.6	52.46	47.3
Feb 29	10.28	4.9	49.78	45.8	24.58	44.3	9.12	50.4	54.01	68.0	52.17	47.5
Mar 30	9.73	5.4	49.27	45.7	23.51	45.9	8.59	51.0	53.41	69.3	51.66	47.9
Abr 29	9.28	5.5	48.83	46.9	22.52	42.9	8.13	51.2	52.86	67.2	51.21	48.4
May 29	9.12	5.5	48.67	49.2	21.90	35.8	7.96	51.6	52.57	62.1	51.02	49.3
Jun 28	9.30	5.6	48.84	52.5	21.78	26.2	8.14	52.1	52.63	55.0	51.18	50.4
Jul 28	9.87	6.1	49.32	55.9	22.20	16.4	8.66	52.9	53.03	47.7	51.65	51.7
Ago 27	10.67	6.4	50.05	58.4	23.08	8.9	9.44	53.4	53.72	42.1	52.40	52.6
Sep 26	11.62	6.3	50.92	59.3	24.25	5.8	10.37	53.4	54.58	39.8	53.30	52.6
Oct 26	12.59	5.8	51.81	58.0	25.46	8.2	11.33	52.6	55.49	41.7	54.24	51.5
Nov 25	13.46	4.9	52.60	55.0	26.44	15.7	12.19	51.3	56.29	47.5	55.10	49.6
Dic 25	14.07	4.3	53.14	51.3	26.92	26.0	12.81	50.3	56.82	55.3	55.72	47.8
Ene 24	14.28	4.6	53.32	48.3	26.79	35.9	13.03	50.0	56.94	62.7	55.96	46.8

  

N°	252		254		257		256		258		262	
Nombre	ν Pupis		ε Geminorum		α Canis Majoris A (Sirius)		ξ Geminorum		18 Monocerotis		α Pictoris	
Mag. SP	3.17	B8	2.98	G5	-1.46	A0	3.36	F5	4.47	K0	3.27	A5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	6h38m	-43°12'	6h45m	+25°06'	6h46m	-16°44'	6h46m	+12°52'	6h48m	+2°23'	6h48m	-61°57'
Dic 31	23s74	53°2'	10s01	32°2'	2s29	42°9'	24s99	18°6'	54s56	17°7'	26s48	47°2'
Ene 30	23.64	62.2	10.17	33.1	2.35	49.1	25.14	17.3	54.70	14.6	26.17	57.3
Feb 29	23.06	68.3	9.88	34.4	2.00	53.1	24.87	17.0	54.42	12.8	25.14	64.5
Mar 30	22.22	70.3	9.35	35.3	1.44	54.3	24.36	17.3	53.93	12.6	23.74	67.3
Abr 29	21.44	67.9	8.86	35.6	.93	52.6	23.91	18.0	53.47	13.7	22.35	65.3
May 29	20.95	61.6	8.66	35.4	.66	48.2	23.71	19.3	53.26	16.2	21.35	58.9
Jun 28	20.87	52.7	8.81	35.1	.73	42.1	23.84	21.0	53.36	19.6	20.95	49.5
Jul 28	21.24	43.5	9.29	34.7	1.11	35.8	24.29	22.8	53.77	23.1	21.25	39.4
Ago 27	21.99	36.2	10.07	34.3	1.78	31.0	25.00	24.0	54.45	25.7	22.18	31.2
Sep 26	22.99	33.0	11.02	33.6	2.62	29.1	25.88	24.1	55.29	26.6	23.56	27.1
Oct 26	24.05	35.0	12.02	32.6	3.51	31.1	26.80	22.8	56.18	25.0	25.07	28.8
Nov 25	24.96	42.0	12.94	31.6	4.31	36.5	27.65	20.3	57.00	21.5	26.33	35.8
Dic 25	25.50	51.7	13.62	31.2	4.86	43.8	28.29	17.8	57.61	17.2	26.98	46.2
Ene 24	25.51	61.3	13.90	31.8	5.01	50.5	28.54	16.1	57.85	13.6	26.82	56.8

  

N°	1180		263		261		266		268		1183	
Nombre	κ Canis Major.		τ Pupis		σ Geminorum		σ Can. Majoris		ε Can. Majoris		σ Can. Majoris	
Mag. SP	3.96	B2p	2.93	K0	3.60	A2	4.07	K2	1.50	B1	3.46	K5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	6h50m	-32°31'	6h50m	-50°38'	6h54m	+33°56'	6h55m	-12°03'	6h59m	-29°00'	7h02m	-27°57'
Dic 31	36s23	58°2'	27s68	21°1'	6s68	4°6'	7s66	55°1'	25s55	1°5'	31s76	52°5'
Ene 30	36.25	66.4	27.57	30.8	6.89	7.1	7.78	60.7	25.62	9.5	31.85	60.4
Feb 29	35.82	72.1	26.89	37.7	6.59	9.7	7.48	64.3	25.24	15.0	31.48	65.9
Mar 30	35.15	74.1	25.91	40.4	6.01	11.2	6.95	65.4	24.61	17.1	30.87	68.0
Abr 29	34.51	72.2	24.95	38.5	5.47	11.1	6.46	63.9	24.01	15.5	30.27	66.5
May 29	34.12	66.8	24.30	32.3	5.22	10.0	6.19	60.1	23.63	10.5	29.90	61.6
Jun 28	34.08	58.9	24.10	23.2	5.34	8.2	6.23	54.6	23.59	3.1	29.85	54.4
Jul 28	34.42	50.6	24.40	13.6	5.84	6.2	6.60	48.9	23.91	55.3*	30.16	46.7
Ago 27	35.09	44.0	25.17	5.7	6.66	4.3	7.24	44.5	24.55	49.0*	30.79	40.4
Sep 26	35.98	41.0	26.26	2.0	7.68	2.8	8.06	42.7	25.40	46.0*	31.64	37.5
Oct 26	36.95	42.8	27.44	3.7	8.77	1.8	8.95	44.4	26.35	47.6*	32.58	39.1
Nov 25	37.81	49.1	28.47	10.6	9.79	1.6	9.77	49.2	27.21	53.6*	33.45	45.0
Dic 25	38.38	57.9	29.07	20.7	10.55	2.5	10.36	55.7	27.81	2.1	34.05	53.4
Ene 24	38.51	66.7	29.07	30.9	10.88	4.7	10.58	61.8	27.98	10.6	34.24	61.7

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	270		271		269		273		1189		1186	
Nombre	O <sup>2</sup> Can. Majoris		γ Can. Majoris		ζ Geminorum		γ Can. Majoris		γ <sup>2</sup> Volantis*		20 Monocerotis	
Mag. SP	3.03	B5p	4.11	B5	3.79 var. GOp		1.86	F8p	3.78	K0	4.92	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	7h03m	-23°51'	7h04m	-15°39'	7h05m	+20°32'	7h09m	-26°25'	7h08m	-70°31'	7h11m	-4°16'
Dic 31	52s28	49'4	40s33	51'1	17s91	19"3	13s04	33"4	38s70	49'7	13s68	11"9
Ene 30	52.39	56.8	40.46	57.3	18.14	19.3	13.15	41.2	38.29	60.2	13.86	16.4
Feb 29	52.05	61.9	40.17	61.5	17.90	20.1	12.81	46.7	36.87	68.3	13.62	19.1
Mar 30	51.47	63.8	39.64	63.0	17.40	21.0	12.22	48.9	34.86	72.2	13.14	19.9
Abr 29	50.91	62.3	39.13	61.6	16.92	21.6	11.63	47.5	32.80	71.3	12.67	18.7
May 29	50.56	57.7	38.83	57.6	16.68	22.0	11.26	42.9	31.15	65.7	12.40	15.7
Jun 28	50.54	51.0	38.84	51.8	16.77	22.4	11.21	36.0	30.29	56.8	12.43	11.5
Jul 28	50.85	43.8	39.17	45.7	17.19	22.7	11.50	28.5	30.39	46.8	12.77	7.1
Ago 27	51.47	38.0	39.78	40.8	17.89	22.5	12.11	22.4	31.45	38.1	13.38	3.7
Sep 26	52.30	35.3	40.60	38.7	18.78	21.7	12.94	19.5	33.21	33.3	14.18	2.5
Oct 26	53.22	36.9	41.49	40.3	19.75	20.2	13.87	21.0	35.26	34.0	15.07	4.2
Nov 25	54.08	42.5	42.33	45.4	20.67	18.3	14.75	26.7	37.02	40.4	15.91	8.4
Dic 25	54.69	50.5	42.95	52.5	21.39	16.8	15.37	34.9	37.95	50.6	16.56	13.9
Ene 24	54.89	58.3	43.18	59.2	21.72	16.3	15.59	43.1	37.74	61.5	16.85	18.8

N°	274		1187		275		1188		281		278	
Nombre	63 Aurigae		δ Monocerotis		J Puppis		51 Geminorum		δ Volantis		π Puppis	
Mag. SP	4.90	K2	4.15	A0	4.49	F0	5.00 var	M3	3.98	F5	2.70	K5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	7h13m	+39°17'	7h12m	-0°31'	7h13m	-46°47'	7h14m	+16°07'	7h16m	-67°59'	7h17m	-37°08'
Dic 31	2s06	6'7	53s48	39'3	9s34	34"9	31s40	22"5	52s64	34"1	52s00	2"0
Ene 30	2.35	10.1	53.68	43.1	9.35	44.8	31.64	21.6	52.38	44.8	52.09	11.1
Feb 29	2.08	13.6	53.46	45.4	8.81	52.1	31.43	21.7	51.20	53.1	51.69	17.8
Mar 30	1.48	15.8	52.98	45.9	7.96	55.5	30.95	22.4	49.46	57.4	51.00	20.9
Abr 29	.89	16.0	52.51	44.8	7.09	54.3	30.48	23.2	47.65	56.8	50.29	19.8
May 29	.56	14.5	52.26	42.2	6.45	48.9	30.23	24.1	46.19	51.5	49.80	14.9
Jun 28	.63	11.9	52.29	38.6	6.22	40.5	30.29	25.2	45.41	42.8	49.65	7.2
Jul 28	1.09	8.8	52.63	34.8	6.45	31.2	30.67	26.1	45.48	32.8	49.89	58.6*
Ago 27	1.91	5.8	53.24	32.0	7.11	23.3	31.33	26.5	46.40	24.1	50.50	51.5*
Sep 26	2.97	3.3	54.05	31.1	8.09	19.1	32.18	25.9	47.96	19.1	51.38	47.7*
Oct 26	4.13	1.7	54.94	32.8	9.21	20.2	33.12	24.2	49.81	19.6	52.38	48.9*
Nov 25	5.24	1.5	55.79	36.8	10.24	26.6	34.04	21.6	51.44	25.7	53.32	54.9*
Dic 25	6.11	3.0	56.45	41.7	10.91	36.4	34.76	19.3	52.36	35.8	53.99	4.1
Ene 24	6.52	6.0	56.75	46.1	11.04	46.6	35.10	17.9	52.29	46.9	54.19	13.6

N°	277		279		283		282		285		286	
Nombre	λ Geminorum		δ Geminorum		η Can. Majoris		ι Geminorum		β Can. Majoris		ρ Geminorum	
Mag. SP	3.58	A2	3.53	F0	2.44	B5p	3.79	K0	2.90	B8	4.18	F0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	7h19m	+16°30'	7h21m	+21°56'	7h24m	-29°20'	7h26m	+27°45'	7h28m	+8°14'	7h30m	+31°44'
Dic 31	14s74	7"8	19s21	35"6	53s98	33"7	58s27	21"2	14s35	49"9	24s02	31"5
Ene 30	14.99	7.0	19.48	35.8	54.13	42.0	58.57	22.4	14.62	47.5	24.35	33.4
Feb 29	14.79	7.2	19.29	36.8	53.82	48.1	58.38	24.4	14.44	46.4	24.16	36.0
Mar 30	14.32	8.0	18.80	38.0	53.22	50.9	57.89	26.0	13.99	46.5	23.65	38.1
Abr 29	13.85	8.8	18.31	38.7	52.61	50.0	57.37	26.8	13.53	47.5	23.11	38.8
May 29	13.59	9.7	18.05	39.1	52.19	45.5	57.08	26.6	13.25	49.2	22.80	38.3
Jun 28	13.64	10.7	18.09	39.2	52.07	38.6	57.11	25.8	13.27	51.5	22.82	36.9
Jul 28	14.01	11.5	18.47	39.1	52.31	30.9	57.48	24.6	13.59	53.6	23.20	35.0
Ago 27	14.66	11.7	19.14	38.5	52.88	24.4	58.17	22.9	14.19	55.0	23.90	32.7
Sep 26	15.50	11.0	20.01	37.2	53.70	21.1	59.07	21.0	14.99	55.0	24.84	30.4
Oct 26	16.45	9.2	20.99	35.3	54.65	22.3	60.09	19.0	15.89	53.1	25.90	28.3
Nov 25	17.37	6.6	21.94	33.2	55.56	28.0	61.10	17.3	16.79	49.6	26.95	26.8
Dic 25	18.10	4.2	22.71	31.7	56.23	36.5	61.91	16.6	17.51	45.8	27.80	26.7
Ene 24	18.46	2.9	23.09	31.4	56.48	45.2	62.33	17.3	17.88	42.9	28.24	28.2

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	1194		1193		288		287		1198		1196	
Nombre	σ Puppis		6 Can. Minor.		108 G. Puppis		α Geminorum A* (Castor)		γ Carinae		υ Geminorum	
Mag. SP	3.25	K5	4.54	K0	4.45	F8	1.58	A0	4.94	K5	4.06	K5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	7h29m	-43°20'	7h30m	+11°57'	7h34m	-22°20'	7h35m	+31°50'	7h36m	-52°34'	7h37m	+26°50'
Dic 31	53s21	30°8	54s78	47°9	55s18	23°9	52s70	31°8	11s16	40°5	9s40	56°0
Ene 30	53.31	40.5	55.06	46.1	55.39	31.4	53.05	33.7	11.23	51.0	9.74	56.9
Feb 29	52.88	48.1	54.90	45.6	55.14	36.8	52.87	36.3	10.68	59.3	9.58	58.8
Mar 30	52.12	51.8	54.45	46.0	54.62	39.3	52.37	38.4	9.74	63.8	9.11	60.5
Abr 29	51.32	51.3	53.98	47.0	54.06	38.5	51.83	39.2	8.73	63.8	8.60	61.4
May 29	50.72	46.5	53.71	48.4	53.68	34.7	51.50	38.7	7.92	59.1	8.29	61.4
Jun 28	50.47	38.7	53.72	50.0	53.58	28.6	51.50	37.3	7.52	51.1	8.29	60.8
Jul 28	50.65	29.7	54.04	51.5	53.81	21.8	51.86	35.3	7.62	41.6	8.63	59.6
Ago 27	51.23	21.9	54.64	52.3	54.35	16.1	52.55	32.9	8.23	33.1	9.28	57.9
Sep 26	52.14	17.5	55.45	51.9	55.13	13.3	53.48	30.4	9.24	28.2	10.16	55.9
Oct 26	53.21	18.2	56.37	49.9	56.04	14.5	54.53	28.1	10.47	28.4	11.17	53.6
Nov 25	54.23	24.1	57.29	46.8	56.93	19.8	55.58	26.5	11.64	34.2	12.18	51.5
Dic 25	54.95	33.6	58.03	43.5	57.63	27.6	56.45	26.2	12.44	44.0	13.01	50.5
Ene 24	55.17	43.7	58.41	41.2	57.93	35.5	56.91	27.7	12.65	54.8	13.46	50.9

N°	290		291		293		297		294		295	
Nombre	127 G. Puppis		α Can. Minor. (Procyon)		α Monocerotis		ζ Volantis		κ Geminorum*		β Geminorum	
Mag. SP	4.53	B8	0.38	F5	3.93	K0	3.95	K0	3.57		1.14	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	7h38m	-35°00'	7h40m	+5°10'	7h42m	-9°35'	7h41m	-72°39'	7h45m	+24°20'	7h46m	+27°58'
Dic 31	7s45	48°7	21s15	19°8	12s57	55°7	38s58	6°9	39s38	51°8	32s46	31°8
Ene 30	7.63	57.8	21.43	16.6	12.83	61.4	38.41	17.8	39.74	52.2	32.82	32.9
Feb 29	7.31	64.8	21.27	15.0	12.66	65.2	37.06	26.9	39.61	53.8	32.68	35.0
Mar 30	6.68	68.3	20.83	14.8	12.20	66.8	34.95	32.4	39.15	55.4	32.21	36.9
Abr 29	6.01	67.9	20.36	15.7	11.71	65.9	32.62	33.1	38.66	56.4	31.69	38.0
May 29	5.51	63.6	20.07	17.6	11.38	62.9	30.61	29.0	38.34	56.7	31.36	38.0
Jun 28	5.32	56.5	20.05	20.1	11.32	58.4	29.36	21.1	38.33	56.5	31.34	37.2
Jul 28	5.50	48.3	20.34	22.6	11.56	53.4	29.14	11.3	38.63	55.7	31.65	35.8
Ago 27	6.04	41.2	20.90	24.2	12.09	49.5	30.01	2.2	39.25	54.3	32.28	33.8
Sep 26	6.86	37.3	21.67	24.3	12.84	47.8	31.79	56.4*	40.09	52.3	33.15	31.4
Oct 26	7.84	38.0	22.56	22.2	13.72	49.4	34.04	55.8*	41.08	49.9	34.16	28.9
Nov 25	8.80	43.7	23.46	18.3	14.60	54.0	36.13	1.1	42.08	47.4	35.18	26.6
Dic 25	9.52	52.5	24.19	13.8	15.32	60.4	37.41	10.7	42.91	45.8	36.04	25.6
Ene 24	9.81	62.0	24.57	10.2	15.68	66.6	37.47	21.9	43.38	45.7	36.52	26.2

N°	1200		1204		301		1207		303		1210	
Nombre	81 Geminorum		ξ Puppis		213 G. Puppis		φ Geminorum		χ Carinae		225 G. Puppis	
Mag. SP	4.88	K2	3.34	G0p	3.73	G5	4.97	A2	3.47	B3	4.79	A2
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	7h47m	+18°27'	7h50m	-24°54'	7h52m	-40°37'	7h54m	+26°42'	7h57m	-53°02'	7h58m	-30°23'
Dic 31	17s04	33°0	8s78	36°8	55s41	36°9	43s30	41°9	18s92	5°0	28s72	17°4
Ene 30	17.39	32.3	9.03	44.8	55.62	46.7	43.69	42.7	19.09	15.7	28.98	26.2
Feb 29	17.27	32.9	8.82	50.8	55.30	54.5	43.59	44.6	18.63	24.6	28.76	33.0
Mar 30	16.83	33.9	8.30	53.9	54.63	58.8	43.14	46.6	17.73	29.9	28.22	36.7
Abr 29	16.35	35.0	7.73	53.5	53.88	59.0	42.63	47.7	16.72	30.7	27.60	36.7
May 29	16.05	35.8	7.31	49.9	53.29	55.1	42.30	47.9	15.87	26.9	27.13	33.1
Jun 28	16.03	36.5	7.16	43.8	53.01	47.9	42.26	47.4	15.39	19.3	26.93	26.8
Jul 28	16.32	36.7	7.34	36.9	53.11	39.4	42.54	46.1	15.39	10.1	27.06	19.3
Ago 27	16.90	36.3	7.83	30.9	53.61	31.7	43.14	44.2	15.91	1.4	27.53	12.6
Sep 26	17.71	34.9	8.59	27.7	54.44	27.1	43.98	41.8	16.86	55.9*	28.29	8.8
Oct 26	18.65	32.5	9.50	28.6	55.47	27.4	44.98	39.0	18.09	55.5*	29.23	9.4
Nov 25	19.61	29.5	10.43	33.8	56.50	32.8	46.00	36.5	19.31	.8	30.19	14.6
Dic 25	20.42	27.0	11.16	41.8	57.29	41.9	46.88	35.1	20.20	10.2	30.95	23.0
Ene 24	20.87	25.8	11.51	50.2	57.61	52.0	47.38	35.3	20.52	21.2	31.32	32.1

## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	304		1212		305		306		308		309	
Nombre	27 Monocerotis		232 G. Puppis		χ Geminorum		ζ Puppis		ρ Puppis		γ Velorum*	
Mag. SP	4.93	K0	4.62	A2	4.94	K0	2.25	Od	2.81	F5	1.82	Oap
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	8h00m	-3°44'	8h00m	-18°27'	8h04m	+27°44'	8h04m	-40°03'	8h08m	-24°21'	8h10m	-47°23'
Dic 31	44s38	6°5	46s33	16°0	44s79	9°0	18s28	31°7	24s35	42°5	10s29	39°5
Ene 30	44.71	11.4	46.62	23.2	45.22	9.8	18.54	41.5	24.66	50.6	10.55	49.9
Feb 29	44.60	14.5	46.47	28.5	45.15	11.9	18.26	49.5	24.50	56.9	10.22	58.6
Mar 30	44.19	15.6	46.01	31.2	44.71	14.1	17.63	54.1	24.02	60.2	9.49	64.0
Abr 29	43.72	14.9	45.48	30.9	44.20	15.4	16.90	54.7	23.46	60.2	8.63	65.1
May 29	43.39	12.5	45.10	27.7	43.85	15.7	16.31	51.1	23.03	57.1	7.90	61.7
Jun 28	43.31	8.8	44.96	22.4	43.79	15.0	16.00	44.2	22.85	51.4	7.48	54.7
Jul 28	43.51	5.0	45.13	16.4	44.04	13.5	16.07	35.9	22.97	44.6	7.48	45.9
Ago 27	44.00	2.0	45.60	11.3	44.62	11.2	16.53	28.2	23.41	38.7	7.93	37.5
Sep 26	44.72	1.0	46.32	8.6	45.44	8.5	17.32	23.5	24.13	35.4	8.78	32.2
Oct 26	45.59	2.8	47.20	9.8	46.44	5.5	18.34	23.5	25.03	36.2	9.88	31.7
Nov 25	46.49	7.2	48.12	14.7	47.48	2.8	19.38	28.6	25.97	41.1	11.02	36.6
Dic 25	47.26	12.9	48.87	22.1	48.39	1.3	20.20	37.6	26.75	49.0	11.91	45.8
Ene 24	47.69	18.2	49.27	29.7	48.93	1.6	20.57	47.7	27.16	57.5	12.29	56.5

N°	311		312		313		318		1219		315	
Nombre	20 Puppis		β Cancri		289 G. Puppis		θ Chamaeleontis		294 G. Puppis		ε Carinae	
Mag. SP	4.99	G5	3.52	K2	4.45	A5	4.35		4.83	K0	1.86	K0 <sup>B</sup>
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	8h14m	-15°50'	8h17m	+9°07'	8h19m	-36°43'	8h20m	-77°32'	8h22m	-33°07'	8h22m	-59°34'
Dic 31	15s54	55°4	36s10	20°8	19s13	13°3	7s09	42°5	11s07	1°7	57s49	18°0
Ene 30	15.88	62.3	36.52	18.1	19.45	22.9	7.26	53.5	11.41	10.9	57.78	29.0
Feb 29	15.78	67.5	36.47	17.0	19.25	30.8	5.78	63.7	11.25	18.4	57.32	38.9
Mar 30	15.36	70.0	36.11	17.2	18.70	35.5	3.11	70.8	10.73	22.9	56.31	45.4
Abr 29	14.85	69.9	35.65	18.3	18.02	36.4	59.91*	73.5	10.11	23.7	55.10	47.5
May 29	14.47	67.1	35.33	19.9	17.46	33.3	56.88*	71.3	9.58	20.7	53.99	44.9
Jun 28	14.32	62.3	35.23	21.8	17.16	27.0	54.68*	64.8	9.31	14.7	53.25	38.0
Jul 28	14.45	56.7	35.41	23.4	17.19	19.1	53.79*	55.6	9.35	7.2	53.05	28.9
Ago 27	14.89	52.0	35.88	24.1	17.60	11.7	54.43*	46.3	9.75	.2	53.47	19.8
Sep 26	15.57	49.6	36.59	23.4	18.34	7.1	56.46*	39.3	10.47	55.9*	54.46	13.4
Oct 26	16.44	50.7	37.47	20.9	19.31	6.9	59.39*	37.1	11.40	55.9*	55.83	11.9
Nov 25	17.36	55.5	38.41	17.0	20.33	11.8	2.37	40.8	12.40	.7	57.27	16.2
Dic 25	18.15	62.6	39.25	12.7	21.18	20.4	4.43	49.5	13.24	9.1	58.38	25.2
Ene 24	18.59	69.9	39.76	9.4	21.61	30.2	4.91	60.7	13.68	18.6	58.82	36.5

N°	316		319		1223		324		1224		325	
Nombre	Bradley 1197 (Hydrae)		β Volantis		δ Hydrae		48 G. Velorum		σ Hydrae		6 Hydrae	
Mag. SP	3.90	A0	3.77	K0	4.16	A0	4.14	A5	4.44	K0	4.98	K2
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	8h26m	-3°58'	8h25m	-6°12'	8h38m	+5°37'	8h38m	-43°03'	8h39m	+3°16'	8h40m	-12°32'
Dic 31	39s80	20°3	59s89	3°4	42s96	58°6	21s89	26°4	48s25	12°9	58s60	45°8
Ene 30	40.20	25.5	60.18	14.6	43.42	55.0	22.27	36.6	48.71	8.9	59.03	52.4
Feb 29	40.17	28.8	59.55	24.7	43.44	53.2	22.10	45.5	48.72	6.7	59.02	57.3
Mar 30	39.81	30.2	58.25	31.7	43.11	53.1	21.52	51.3	48.40	6.2	58.66	59.8
Abr 29	39.35	29.6	56.67	34.3	42.68	54.0	20.78	53.2	47.96	7.0	58.20	59.9
May 29	39.00	27.4	55.19	31.9	42.33	55.8	20.12	50.7	47.62	8.9	57.81	57.6
Jun 28	38.86	24.0	54.15	25.3	42.19	58.0	19.69	44.6	47.47	11.4	57.62	53.5
Jul 28	39.00	20.4	53.80	16.1	42.31	60.1	19.63	36.5	47.59	13.8	57.69	48.7
Ago 27	39.41	17.5	54.23	6.8	42.71	61.2	19.97	28.6	47.98	15.4	58.05	44.6
Sep 26	40.08	16.6	55.40	.0	43.37	60.8	20.69	23.1	48.62	15.2	58.68	42.6
Oct 26	40.92	18.4	57.06	58.1*	44.21	58.3	21.70	22.1	49.46	12.9	59.52	43.8
Nov 25	41.84	22.9	58.79	2.1	45.15	54.0	22.81	26.4	50.40	8.5	60.45	48.3
Dic 25	42.66	28.8	60.10	11.1	46.01	49.0	23.75	35.0	51.25	3.3	61.29	55.1
Ene 24	43.17	34.4	60.57	22.4	46.57	44.9	24.25	45.4	51.81	58.8	61.81	62.1

## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	1227		1226		1228		327		326		328	
Nombre	O Velorum		53 G. Velorum		γ Cancri		α Pyxidis		δ Cancri		ι Cancri*	
Mag. SP	3.62	B3	3.84	F5p	4.67	A0	3.68	B2	3.94	K0	4.02	G5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	8h40m	-52°59'	8h41m	-46°43'	8h44m	+21°23'	8h44m	-33°15'	8h45m	+18°04'	8h47m	+28°41'
Dic 31	53s47	26°2'	18s60	4°4'	26s49	40°6'	24s47	25°7'	49s21	44°6'	54s27	4°0'
Ene 30	53.86	37.0	18.99	14.8	27.02	39.9	24.88	35.0	49.73	43.1	54.84	4.5
Feb 29	53.60	46.8	18.80	24.1	27.06	40.9	24.80	42.9	49.78	43.5	54.90	6.8
Mar 30	52.86	53.6	18.18	30.4	26.74	42.7	24.34	47.9	49.46	45.0	54.56	9.6
Abr 29	51.91	56.1	17.38	32.5	26.28	44.4	23.74	49.3	49.02	46.5	54.07	11.6
May 29	51.02	53.9	16.64	30.2	25.91	45.5	23.21	47.0	48.66	47.8	53.67	12.4
Jun 28	50.41	47.7	16.16	24.2	25.76	45.8	22.88	41.5	48.51	48.5	53.50	11.8
Jul 28	50.23	39.1	16.05	15.9	25.89	45.3	22.86	34.3	48.64	48.4	53.63	10.0
Ago 27	50.55	30.3	16.37	7.6	26.31	43.6	23.19	27.3	49.04	47.3	54.07	7.0
Sep 26	51.36	24.0	17.12	1.7	27.01	40.9	23.84	22.8	49.72	45.0	54.79	3.3
Oct 26	52.53	22.3	18.17	.4	27.91	37.3	24.75	22.3	50.60	41.6	55.74	59.2*
Nov 25	53.81	26.2	19.33	4.6	28.92	33.4	25.77	26.7	51.59	37.5	56.81	55.4*
Dic 25	54.87	34.9	20.31	13.2	29.85	30.2	26.66	34.8	52.51	33.9	57.80	53.1*
Ene 24	55.40	45.9	20.83	23.8	30.48	28.8	27.18	44.4	53.13	31.9	58.48	52.9*

  

N°	332		336		334		337		1234		343	
Nombre	γ Pyxidis		108 G. Carinae		ζ Hydrae		α Cancri		91 G. Velorum		α Volantis	
Mag. SP	4.01	K2	3.84	B8	3.11	K0	4.25	A3	4.45	F8	4.00	A5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	8h51m	-27°46'	8h55m	-60°43'	8h56m	+5°52'	8h59m	+11°46'	9h00m	-41°19'	9h02m	-66°28'
Dic 31	23s40	58°3'	31s94	4°3'	27s06	6°6'	34s78	44°5'	51s09	45°9'	48s12	20°0'
Ene 30	23.85	67.0	32.43	15.3	27.57	2.9	35.32	41.8	51.57	56.0	48.68	31.1
Feb 29	23.81	74.3	32.14	25.8	27.64	1.1	35.40	41.1	51.50	65.0	48.32	42.0
Mar 30	23.41	78.9	31.24	33.5	27.35	.9	35.13	41.7	51.01	71.3	47.22	50.2
Abr 29	22.87	80.1	30.05	37.0	26.93	1.9	34.71	43.0	50.34	73.7	45.73	54.4
May 29	22.38	77.9	28.88	35.7	26.58	3.6	34.35	44.6	49.69	72.0	44.22	53.6
Jun 28	22.09	72.8	27.99	30.0	26.41	5.8	34.18	46.1	49.25	66.6	43.03	48.3
Jul 28	22.08	66.3	27.61	21.5	26.48	7.7	34.26	47.0	49.12	59.0	42.45	39.8
Ago 27	22.39	60.0	27.86	12.3	26.83	8.6	34.61	47.0	49.38	51.2	42.65	30.5
Sep 26	23.01	56.0	28.73	5.2	27.45	8.0	35.23	45.4	50.03	45.6	43.62	23.0
Oct 26	23.88	55.9	30.08	2.6	28.27	5.3	36.06	42.3	50.98	44.2	45.20	19.8
Nov 25	24.86	60.2	31.60	5.7	29.21	.9	37.03	37.8	52.08	48.0	47.01	22.4
Dic 25	25.75	68.0	32.87	14.0	30.10	55.8*	37.94	33.3	53.07	56.2	48.51	30.5
Ene 24	26.29	77.0	33.52	25.2	30.71	51.6*	38.57	30.0	53.65	66.4	49.27	41.6

  

N°	342		1237		345		348		347		351	
Nombre	97 G. Velorum		Piazzi 8 <sup>h</sup> 245 (Lyncis)		λ Velorum		β Carinae		ρ Hydrae		ι Carinae	
Mag. SP	3.75	K0	4.56	G5	2.21	K5	1.68	A0	3.88	A0	2.25	F0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	9h04m	-47°10'	9h07m	+38°22'	9h08m	-43°30'	9h13m	-69°47'	9h15m	+2°13'	9h17m	-59°21'
Dic 31	51s76	29°2'	47s79	10°0'	44s83	39°0'	27s75	43°3'	24s27	45°8'	39s18	20°0'
Ene 30	52.26	39.6	48.48	11.9	45.34	49.2	28.44	54.4	24.82	41.3	39.79	30.9
Feb 29	52.17	49.3	48.61	15.9	45.29	58.6	28.08	65.4	24.94	38.6	39.65	41.6
Mar 30	51.62	56.2	48.28	20.1	44.81	65.3	26.85	74.2	24.70	37.9	38.91	49.9
Abr 29	50.86	59.2	47.74	22.9	44.11	68.1	25.14	78.9	24.30	38.5	37.84	54.2
May 29	50.11	57.8	47.26	23.5	43.44	66.7	23.34	78.8	23.94	40.3	36.74	53.7
Jun 28	49.56	52.4	47.01	22.0	42.95	61.5	21.88	73.9	23.74	42.7	35.85	48.8
Jul 28	49.37	44.5	47.06	18.6	42.77	53.9	21.08	65.7	23.76	45.0	35.41	40.7
Ago 27	49.60	36.3	47.47	13.9	43.00	46.0	21.18	56.3	24.05	46.4	35.54	31.7
Sep 26	50.27	30.0	48.21	8.5	43.63	40.0	22.19	48.4	24.61	46.2	36.28	24.3
Oct 26	51.29	28.1	49.22	3.3	44.60	38.3	23.94	44.7	25.40	43.7	37.53	21.1
Nov 25	52.47	31.6	50.39	59.3*	45.73	41.8	25.99	46.8	26.33	39.1	39.02	23.6
Dic 25	53.52	39.7	51.52	57.5*	46.75	49.9	27.73	54.4	27.24	33.4	40.33	31.4
Ene 24	54.14	50.3	52.32	58.7*	47.38	60.2	28.63	65.3	27.89	28.4	41.09	42.3

## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	352		1243		353		1244		354		356	
Nombre	α Lyncis		ϣ Pyxidis		K Velorum		K Leonis		α Hydrae		ε Antliae	
Mag. SP	3.13	K5	4.72	M0	2.50	B3	4.46	K0	1.98	K2	4.51	K2
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	9h22m	+34°18'	9h22m	-26°02'	9h22m	-55°05'	9h25m	+26°05'	9h28m	- 8°44'	9h30m	-36°02'
Dic 31	16s06	19°7	23s09	56°1	45s35	33°4	48s84	39°1	34s27	41°4	4s83	11°1
Ene 30	16.77	20.6	23.64	64.6	45.95	44.2	49.51	38.6	34.84	47.7	5.40	20.6
Feb 29	16.95	23.9	23.71	72.0	45.89	54.7	49.69	40.3	34.97	52.3	5.48	29.4
Mar 30	16.68	27.7	23.41	76.9	45.28	62.8	49.46	43.1	34.75	54.8	5.14	35.7
Abr 29	16.19	30.6	22.93	78.7	44.37	67.0	49.03	45.6	34.36	55.1	4.59	38.5
May 29	15.74	31.7	22.46	77.2	43.42	66.5	48.63	47.0	33.97	53.4	4.02	37.6
Jun 28	15.47	30.9	22.13	72.9	42.67	61.7	48.39	47.1	33.72	50.3	3.59	33.1
Jul 28	15.49	28.2	22.05	67.0	42.29	53.9	48.40	45.7	33.69	46.5	3.42	26.5
Ago 27	15.82	24.0	22.26	61.2	42.42	45.1	48.70	42.8	33.92	43.2	3.59	19.4
Sep 26	16.48	18.9	22.80	57.2	43.09	38.0	49.30	38.8	34.43	41.8	4.12	14.1
Oct 26	17.41	13.5	23.61	56.8	44.21	35.0	50.16	34.1	35.19	43.2	4.98	12.6
Nov 25	18.53	9.0	24.59	60.7	45.57	37.5	51.20	29.3	36.12	47.6	6.03	15.9
Dic 25	19.62	6.4	25.53	68.1	46.80	45.2	52.22	25.8	37.04	54.1	7.03	23.5

N°	361		1246		360		1249		1250		365	
Nombre	N Velorum		ξ Leonis		10 Leonis Min.		Bradley 1352 (Hydrae)		ι Hydrae		O Leonis	
Mag. SP	3.13	K5	4.97	G5	4.55	G5	4.68	K0	3.91	K0	3.52	F5,A3
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	9h31m	-57°07'	9h33m	+11°12'	9h35m	+36°18'	9h39m	+ 4°33'	9h40m	- 1°14'	9h42m	+ 9°48'
Dic 31	51s20	7°6	1s22	37°1	26s46	22°1	29s73	30°9	52s55	"9	12s86	2°1
Ene 30	51.87	18.4	1.84	33.9	27.22	23.1	30.36	26.5	53.17	6.2	13.51	58.6*
Feb 29	51.84	29.1	2.03	32.9	27.46	26.6	30.55	24.2	53.36	9.6	13.71	57.2*
Mar 30	51.23	37.6	1.83	33.5	27.22	30.9	30.37	23.8	53.18	10.9	13.54	57.6*
Abr 29	50.28	42.2	1.45	34.9	26.74	34.2	30.01	24.6	52.82	10.6	13.18	59.0*
May 29	49.27	42.2	1.09	36.6	26.27	35.5	29.65	26.4	52.45	9.0	12.82	.7
Jun 28	48.44	37.8	.87	38.1	25.97	34.6	29.41	28.5	52.21	6.4	12.58	2.4
Jul 28	47.99	30.1	.86	39.0	25.94	31.7	29.38	30.3	52.16	3.8	12.55	3.5
Ago 27	48.06	21.3	1.11	38.8	26.23	27.0	29.60	31.2	52.37	1.9	12.77	3.4
Sep 26	48.71	13.9	1.64	37.0	26.86	21.4	30.09	30.5	52.86	1.7	13.27	1.8
Oct 26	49.86	10.5	2.41	33.5	27.78	15.6	30.84	27.6	53.60	3.9	14.02	58.4*
Nov 25	51.27	12.6	3.36	28.7	28.91	10.7	31.77	22.8	54.52	8.5	14.97	53.4*
Dic 25	52.58	20.0	4.32	23.6	30.05	7.9	32.72	17.2	55.46	14.6	15.92	48.2*
Ene 24	53.39	30.7	5.04	19.9	30.91	8.2	33.43	12.4	56.16	20.3	16.66	44.1*

N°	366		1254		367		371		373		375	
Nombre	ρ Antliae		ι Carinae		ε Leonis		μ Leonis		183 G. Hydrae		φ Velorum	
Mag. SP	4.79	F5p	3.4-4.1	G0	2.98	Gop	3.88	K0	4.94	M0	3.54	B5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	9h45m	-27°51'	9h45m	-62°35'	9h46m	+23°40'	9h53m	+25°54'	9h55m	-19°06'	9h57m	-54°39'
Dic 31	5s91	32°0	49s43	44°4	58s81	49°5	53s64	39°2	48s90	8°8	34s98	31°5
Ene 30	6.52	40.7	50.25	55.2	59.52	48.2	54.39	38.2	49.54	16.6	35.75	41.9
Feb 29	6.67	48.5	50.26	66.3	59.77	49.4	54.66	39.7	49.74	23.1	35.89	52.7
Mar 30	6.43	53.9	49.59	75.5	59.60	51.9	54.50	42.7	49.57	27.4	35.46	61.5
Abr 29	5.98	56.3	48.49	81.0	59.22	54.5	54.12	45.5	49.18	29.1	34.67	66.8
May 29	5.50	55.4	47.26	81.9	58.82	56.3	53.72	47.3	48.77	28.1	33.77	67.7
Jun 28	5.13	51.6	46.18	78.1	58.56	56.8	53.43	47.7	48.45	24.7	32.98	64.1
Jul 28	4.98	45.9	45.53	70.7	58.51	55.8	53.37	46.4	48.31	20.1	32.49	57.2
Ago 27	5.12	39.9	45.49	61.7	58.74	53.3	53.58	43.5	48.45	15.4	32.46	48.7
Sep 26	5.59	35.6	46.13	53.8	59.27	49.3	54.09	39.1	48.88	12.4	32.97	41.3
Oct 26	6.37	34.8	47.40	49.6	60.07	44.4	54.88	33.8	49.61	12.4	33.99	37.4
Nov 25	7.36	38.2	49.01	50.9	61.07	39.2	55.89	28.4	50.55	16.2	35.33	38.8
Dic 25	8.34	45.4	50.53	57.8	62.10	35.0	56.95	24.2	51.51	23.0	36.64	45.5
Ene 24	9.05	54.3	51.50	68.3	62.91	33.0	57.78	22.5	52.24	31.0	37.55	55.8

**Lugares aparentes de estrellas, 2020**  
**para las 0<sup>h</sup> de Tiempo Universal**

N°	378		1261		379		380		381		385	
Nombre	π Leonis		υ <sup>2</sup> Hydrae		η Leonis		α Leonis (Regulus)		λ Hydrae		ω Carinae	
Mag. SP	4.70	M0	4.60	B8	3.52	A0p	1.35	B8	3.61	K0	3.32	B8
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	10h01m	+7°56'	10h06m	-13°09'	10h08m	+16°39'	10h09m	+11°52'	10h11m	-12°27'	10h14m	-70°07'
Dic 31	15s94	52°2	5s85	36°9	24s97	50°7	25s86	7°7	33s69	5°4	14s77	54°4
Ene 30	16.63	48.2	6.52	43.9	25.70	47.9	26.58	4.2	34.37	12.4	15.98	64.6
Feb 29	16.89	46.4	6.77	49.6	26.01	47.7	26.87	3.0	34.64	17.9	16.19	76.1
Mar 30	16.77	46.4	6.64	53.0	25.91	49.2	26.77	3.8	34.53	21.3	15.46	86.4
Abr 29	16.45	47.7	6.30	54.1	25.58	51.4	26.45	5.5	34.20	22.4	14.07	93.4
May 29	16.09	49.4	5.92	53.0	25.21	53.3	26.10	7.3	33.82	21.3	12.37	96.0
Jun 28	15.83	51.3	5.61	50.1	24.94	54.6	25.83	8.9	33.51	18.5	10.74	93.6
Jul 28	15.75	52.6	5.48	46.2	24.85	54.7	25.73	9.7	33.37	14.7	9.58	87.1
Ago 27	15.91	52.7	5.60	42.5	25.00	53.3	25.87	9.2	33.47	11.2	9.20	78.3
Sep 26	16.36	51.3	6.00	40.4	25.44	50.3	26.30	6.9	33.86	9.3	9.78	69.6
Oct 26	17.07	47.9	6.69	41.1	26.16	45.8	27.00	3.0	34.54	10.1	11.26	64.1
Nov 25	17.99	42.9	7.61	45.2	27.10	40.4	27.93	57.7*	35.45	14.1	13.33	63.8
Dic 25	18.96	37.2	8.57	51.7	28.11	35.2	28.92	52.2*	36.42	20.6	15.37	69.4
Ene 24	19.73	32.7	9.32	59.0	28.93	31.8	29.72	48.1*	37.18	27.9	16.78	79.3

N°	382		384		1264		1268		391		389	
Nombre	191 G.Velorum		ζ Leonis		187 G.Carinae		204 G.Velorum		J Carinae		μ Hydrae	
Mag. SP	3.85	A2	3.44	F0	3.40	K5	4.83	K5	4.00	F5	3.81	K5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	10h15m	-42°13'	10h17m	+23°18'	10h17m	-61°25'	10h23m	-41°44'	10h24m	-74°07'	10h27m	-16°56'
Dic 31	35s03	2°3	47s64	58°1	46s36	37°9	11s50	48°4	49s87	39°0	3s37	11°1
Ene 30	35.79	12.0	48.43	56.2	47.34	48.1	12.28	57.9	51.39	49.0	4.09	18.6
Feb 29	36.03	21.7	48.78	57.1	47.58	59.3	12.56	67.6	51.71	.5	4.39	24.9
Mar 30	35.81	29.5	48.70	59.8	47.14	69.1	12.38	75.4	50.87	11.2	4.32	29.2
Abr 29	35.31	34.1	48.37	62.7	46.24	75.6	11.90	80.2	49.18	18.9	4.01	31.0
May 29	34.70	34.8	47.99	64.8	45.12	77.7	11.31	81.1	47.03	22.1	3.63	30.4
Jun 28	34.14	31.6	47.68	65.7	44.06	75.1	10.76	78.1	44.91	20.3	3.30	27.6
Jul 28	33.80	25.5	47.56	64.9	43.32	68.6	10.40	72.2	43.34	14.2	3.11	23.6
Ago 27	33.79	18.3	47.69	62.3	43.12	60.0	10.37	65.1	42.72	5.5	3.16	19.5
Sep 26	34.18	12.0	48.12	58.1	43.58	51.9	10.73	58.9	43.29	56.7*	3.50	16.9
Oct 26	34.98	9.0	48.84	52.7	44.68	46.9	11.51	55.8	45.02	50.6*	4.15	17.0
Nov 25	36.07	10.8	49.81	46.9	46.22	47.2	12.59	57.4	47.50	49.7*	5.06	20.6
Dic 25	37.21	17.4	50.86	42.0	47.79	53.1	13.73	63.8	50.00	54.7*	6.04	27.1
Ene 24	38.07	27.0	51.73	39.4	48.91	63.1	14.62	73.3	51.75	4.3	6.85	34.7

N°	392		390		393		397		396		401	
Nombre	α Antliae		β Leonis Min.		196 G. Carinae		203 G. Carinae		ρ Leonis		γ Chamaeleontis	
Mag. SP	4.25	K5	4.21	K0	3.82	F0	3.32	B5p	3.85	B0p	4.11	M0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	10h28m	-31°09'	10h29m	+36°36'	10h28m	-58°50'	10h32m	-61°46'	10h33m	+9°12'	10h35m	-78°42'
Dic 31	4s17	59°1	1s72	8°5	37s84	11°3	45s31	58°3	51s41	12°4	45s11	18°6
Ene 30	4.92	67.9	2.63	8.4	38.82	21.3	46.38	68.3	52.18	8.2	47.27	28.1
Feb 29	5.22	76.3	3.05	11.6	39.14	32.3	46.73	79.4	52.54	6.4	47.81	39.6
Mar 30	5.11	82.8	2.99	16.3	38.81	42.1	46.38	89.5	52.52	6.7	46.76	50.6
Abr 29	4.74	86.4	2.61	20.6	38.05	48.7	45.54	96.5	52.25	8.2	44.45	58.9
May 29	4.27	86.7	2.15	23.0	37.06	51.0	44.45	99.2	51.91	10.1	41.41	63.0
Jun 28	3.84	83.8	1.76	23.0	36.10	48.7	43.36	97.2	51.62	11.9	38.31	61.9
Jul 28	3.57	78.6	1.57	20.5	35.41	42.6	42.56	91.2	51.48	13.0	35.90	56.4
Ago 27	3.57	72.7	1.66	15.7	35.19	34.3	42.27	82.8	51.56	12.8	34.78	47.9
Sep 26	3.91	67.8	2.09	9.3	35.58	26.3	42.65	74.6	51.89	11.0	35.33	38.9
Oct 26	4.60	66.0	2.87	2.3	36.57	21.3	43.70	69.2	52.53	7.2	37.54	32.2
Nov 25	5.58	68.4	3.93	55.9*	38.01	21.4	45.23	68.9	53.43	1.8	40.86	30.6
Dic 25	6.63	74.9	5.10	51.6*	39.50	27.0	46.84	74.3	54.42	55.9*	44.28	34.8
Ene 24	7.47	83.7	6.10	50.6*	40.62	36.8	48.06	83.9	55.26	51.2*	46.74	43.9

**Lugares aparentes de estrellas, 2020  
para las 0<sup>h</sup> de Tiempo Universal**

N°	1275		402		406		411		410		412	
Nombre	37 Leonis Min.		225 G. Velorum*		♁ Carinae		♁ <sup>2</sup> Chamaeleontis		V Hydrae		46 Leonis Min.	
Mag.	4.71	G0	4.28	G0	2.76	B0	4.45	B3	3.11	K0	3.83	K0
Oh UT	A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.	
m d	10h39m	+31°52'	10h40m	-55°42'	10h43m	-64°29'	10h46m	-80°38'	10h50m	-16°17'	10h54m	+34°06'
Dic 31	50s06	13°1	6s97	8°2	41s45	36°7	1s01	20°7	36s47	45°8	25s03	17°9
Ene 30	50.95	12.1	7.95	17.9	42.65	46.4	3.70	29.9	37.25	53.1	25.97	16.8
Feb 29	51.40	14.4	8.33	28.8	43.09	57.7	4.52	41.4	37.63	59.4	26.48	19.3
Mar 30	51.38	18.4	8.11	38.4	42.77	68.1	3.43	52.5	37.63	63.6	26.50	23.7
Abr 29	51.06	22.5	7.48	45.0	41.89	75.6	.77	61.3	37.39	65.6	26.21	28.2
May 29	50.64	25.1	6.62	47.6	40.70	79.0	57.14*	65.9	37.04	65.2	25.79	31.1
Jun 28	50.27	25.7	5.77	45.6	39.47	77.5	53.34*	65.4	36.69	62.8	25.39	31.8
Jul 28	50.08	23.9	5.13	39.8	38.52	71.8	50.27*	60.3	36.47	59.1	25.15	29.8
Ago 27	50.14	19.9	4.91	31.8	38.11	63.6	48.72*	52.0	36.45	55.4	25.15	25.5
Sep 26	50.51	14.1	5.22	24.1	38.43	55.1	49.17*	42.9	36.72	52.8	25.48	19.3
Oct 26	51.22	7.4	6.11	19.1	39.51	49.3	51.66*	36.0	37.32	52.8	26.15	12.0
Nov 25	52.21	.9	7.43	19.1	41.15	48.4	55.56*	33.8	38.20	56.2	27.14	5.1
Dic 25	53.34	56.0*	8.85	24.5	42.91	53.2	59.67*	37.5	39.20	62.5	28.29	59.9*
Ene 24	54.31	54.2*	9.96	34.0	44.27	62.6	2.72	46.2	40.06	70.0	29.31	58.0*

N°	414		1283		415		1284		418		419	
Nombre	ι Antliae		♁ Crateris		239 G. Velorum		58 Leonis		χ Leonis		χ <sup>1</sup> Hydrae	
Mag.	4.60	K0	4.08	K0	4.39	A2	4.84	K0	4.63	F0	4.94	F5
Oh UT	A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.	
m d	10h57m	-37°14'	11h00m	-18°24'	11h01m	-42°19'	11h01m	+3°30'	11h06m	+7°13'	11h06m	-27°23'
Dic 31	39s07	28°3	44s67	9°6	4s53	42°9	35s10	38°4	2s36	41°4	17s58	53°0
Ene 30	39.93	37.1	45.47	17.1	5.43	51.9	35.91	33.2	3.18	36.6	18.41	61.1
Feb 29	40.35	46.3	45.89	23.7	5.87	61.5	36.35	30.2	3.63	34.2	18.84	69.0
Mar 30	40.33	53.9	45.91	28.3	5.85	69.8	36.40	29.4	3.70	34.1	18.88	75.2
Abr 29	40.00	58.8	45.68	30.7	5.50	75.5	36.20	30.2	3.51	35.5	18.64	78.9
May 29	39.52	60.3	45.34	30.6	4.96	77.5	35.90	31.9	3.20	37.4	18.25	79.7
Jun 28	39.02	58.3	44.98	28.4	4.39	75.8	35.59	33.9	2.90	39.3	17.84	77.7
Jul 28	38.64	53.5	44.72	24.7	3.95	70.8	35.39	35.6	2.69	40.6	17.53	73.5
Ago 27	38.53	47.3	44.67	20.7	3.79	64.2	35.39	36.3	2.67	40.7	17.43	68.5
Sep 26	38.76	41.6	44.91	17.8	4.01	57.8	35.64	35.3	2.91	39.0	17.65	64.2
Oct 26	39.41	38.5	45.48	17.5	4.68	54.0	36.20	32.2	3.46	35.3	18.23	62.5
Nov 25	40.40	39.8	46.35	20.6	5.72	54.7	37.05	27.1	4.30	29.9	19.14	64.5
Dic 25	41.53	45.5	47.36	26.7	6.91	60.1	38.03	20.9	5.30	23.7	20.19	70.4
Ene 24	42.48	54.2	48.23	34.3	7.91	68.9	38.91	15.2	6.19	18.4	21.10	78.5

N°	1289		421		422		423		1292		425	
Nombre	260 G. Carinae		β Crateris		δ Leonis		♁ Leonis		φ Leonis		V Ursae Major.	
Mag.	3.91	F8p	4.48	A2	2.56	A3	3.34	A0	4.47	A5	3.48	K0
Oh UT	A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.	
m d	11h09m	-59°04'	11h12m	-22°55'	11h15m	+20°24'	11h15m	+15°19'	11h17m	-3°45'	11h19m	+32°58'
Dic 31	27s33	39°1	38s25	54°7	9s57	47°8	16s67	11°4	40s19	34°3	32s67	59°9
Ene 30	28.52	48.3	39.09	62.5	10.46	44.5	17.54	7.5	41.01	40.4	33.66	58.1
Feb 29	29.09	59.1	39.54	69.8	10.97	44.4	18.03	6.5	41.49	44.7	34.23	60.1
Mar 30	29.02	69.3	39.61	75.2	11.07	46.6	18.13	7.9	41.59	46.8	34.35	64.4
Abr 29	28.45	77.1	39.40	78.4	10.88	49.8	17.95	10.3	41.42	47.1	34.12	69.1
May 29	27.58	80.9	39.05	78.9	10.56	52.5	17.64	12.8	41.13	46.0	33.74	72.6
Jun 28	26.61	80.1	38.67	76.9	10.22	54.1	17.32	14.6	40.82	43.9	33.33	73.8
Jul 28	25.80	75.3	38.38	73.1	9.98	54.1	17.09	15.1	40.58	41.6	33.04	72.4
Ago 27	25.39	67.7	38.28	68.7	9.94	52.0	17.06	13.8	40.53	39.9	32.96	68.4
Sep 26	25.56	59.6	38.48	65.2	10.17	47.9	17.28	10.7	40.72	39.6	33.19	62.2
Oct 26	26.39	53.8	39.03	64.1	10.73	42.2	17.82	5.7	41.24	41.5	33.77	54.8
Nov 25	27.76	52.5	39.91	66.6	11.59	35.6	18.66	59.5*	42.06	46.0	34.69	47.4
Dic 25	29.32	56.7	40.94	72.5	12.63	29.5	19.68	53.3*	43.05	52.3	35.82	41.5
Ene 24	30.63	65.5	41.85	80.3	13.59	25.6	20.61	48.8*	43.94	58.7	36.87	38.9



**Lugares aparentes de estrellas, 2020  
para las 0<sup>h</sup> de Tiempo Universal**

N°	1293		426		428		427		431		1297	
Nombre	55 Ursae Major.		δ Crateris		π Centauri*		σ Leonis		γ Crateris*		τ Leonis	
Mag. SP	4.78	A2	3.56	K0	3.89	B5	4.05	A0	4.08	A5	4.95	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	11h20m	+38°04'	11h20m	-14°53'	11h21m	-54°35'	11h22m	+5°55'	11h25m	-17°47'	11h28m	+2°44'
Dic 31	12s37	25°0	20s04	3°4	55s55	41°5	9s43	13°0	52s47	27°5	57s31	49°1
Ene 30	13.41	23.8	20.87	10.4	56.68	50.3	10.28	7.9	53.32	34.8	58.17	43.7
Feb 29	14.01	26.6	21.35	16.5	57.28	60.8	10.77	5.2	53.81	41.3	58.68	40.4
Mar 30	14.13	31.7	21.45	20.6	57.31	70.7	10.89	4.8	53.93	46.0	58.81	39.5
Abr 29	13.88	36.9	21.28	22.6	56.90	78.2	10.74	6.0	53.77	48.4	58.68	40.2
May 29	13.45	40.5	20.97	22.4	56.19	82.0	10.46	7.9	53.46	48.6	58.41	41.8
Jun 28	13.00	41.5	20.63	20.4	55.38	81.5	10.15	9.9	53.11	46.8	58.10	43.9
Jul 28	12.67	39.6	20.36	17.2	54.68	77.0	9.91	11.3	52.82	43.5	57.86	45.6
Ago 27	12.57	34.8	20.27	13.9	54.30	69.9	9.86	11.6	52.71	39.9	57.78	46.3
Sep 26	12.81	27.9	20.45	11.7	54.42	62.2	10.05	10.1	52.87	37.2	57.95	45.3
Oct 26	13.41	19.8	20.97	11.8	55.12	56.6	10.55	6.6	53.38	36.9	58.44	42.3
Nov 25	14.38	12.1	21.81	15.1	56.34	55.4	11.37	1.1	54.21	39.7	59.24	37.2
Dic 25	15.56	6.4	22.81	21.1	57.77	59.5	12.36	54.8*	55.22	45.6	60.23	30.8
Ene 24	16.66	4.3	23.71	28.3	59.02	67.9	13.27	49.3*	56.14	53.0	61.14	25.0

N°	434		436		1299		437		439		1301	
Nombre	ξ Hydrae		λ Centauri		δ Crateris		υ Leonis		ο Hydrae		ζ Crateris	
Mag. SP	3.54	G5	3.13	B9	4.70	B9	4.30	K0	4.70	B8	4.73	G5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	11h33m	-31°57'	11h36m	-63°07'	11h37m	-9°54'	11h37m	-0°55'	11h41m	-34°51'	11h45m	-18°27'
Dic 31	58s89	50°5	42s83	26°3	41s22	38°2	57s72	58°3	12s14	3°3	46s09	31°6
Ene 30	59.81	58.6	44.26	34.6	42.08	44.8	58.58	64.1	13.09	11.3	46.98	38.8
Feb 29	60.35	66.9	45.06	45.3	42.61	50.2	59.12	68.0	13.66	19.9	47.54	45.4
Mar 30	60.48	73.9	45.16	56.0	42.77	53.5	59.28	69.7	13.82	27.3	47.72	50.2
Abr 29	60.30	78.6	44.66	64.7	42.66	54.8	59.17	69.5	13.66	32.5	47.62	52.9
May 29	59.94	80.4	43.74	69.8	42.39	54.3	58.91	68.2	13.29	34.8	47.35	53.4
Jun 28	59.50	79.2	42.62	70.4	42.07	52.4	58.60	66.2	12.83	33.9	47.00	51.8
Jul 28	59.11	75.4	41.59	66.5	41.79	49.8	58.34	64.2	12.41	30.2	46.68	48.8
Ago 27	58.92	70.2	40.96	59.4	41.67	47.3	58.24	63.0	12.18	24.8	46.52	45.3
Sep 26	59.04	65.4	40.96	51.1	41.81	46.0	58.38	63.2	12.27	19.6	46.63	42.6
Oct 26	59.55	62.7	41.73	44.4	42.27	46.9	58.84	65.7	12.77	16.4	47.08	42.0
Nov 25	60.44	63.8	43.17	41.9	43.06	50.6	59.63	70.4	13.67	17.0	47.88	44.6
Dic 25	61.53	68.9	44.92	44.8	44.05	56.6	60.61	76.7	14.79	21.7	48.89	50.2
Ene 24	62.53	76.8	46.48	52.7	44.98	63.5	61.53	82.9	15.82	29.6	49.84	57.5

N°	442		1302		443		1304		444		445	
Nombre	γ Muscae		ν Virginis		65 G. Centauri		93 Leonis		β Leonis (Denebola)		β Virginis	
Mag. SP	3.64	A5	4.03	M0	4.11	G0	4.53 var	F8	2.14	A2	3.61	F8
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	11h46m	-66°49'	11h46m	+6°25'	11h47m	-61°16'	11h49m	+20°06'	11h50m	+14°27'	11h51m	+1°39'
Dic 31	33s79	58°1	52s47	4°7	29s28	59°0	s13	26°0	3s93	36°8	43s48	11°5
Ene 30	35.43	66.1	53.36	59.5*	30.69	67.0	1.07	22.1	4.84	32.3	44.37	5.8
Feb 29	36.39	76.7	53.92	56.7*	31.52	77.5	1.67	21.6	5.43	30.9	44.94	2.3
Mar 30	36.56	87.7	54.12	56.3*	31.70	88.1	1.88	23.7	5.63	32.0	45.15	1.1
Abr 29	36.03	96.9	54.03	57.6*	31.31	96.8	1.77	27.1	5.54	34.6	45.08	1.6
May 29	34.98	102.6	53.78	59.7*	30.50	102.0	1.50	30.3	5.28	37.3	44.85	3.2
Jun 28	33.66	103.8	53.47	1.7	29.48	102.8	1.16	32.3	4.96	39.4	44.55	5.2
Jul 28	32.42	100.4	53.20	3.1	28.52	99.3	.86	32.6	4.67	40.1	44.28	6.9
Ago 27	31.60	93.4	53.08	3.2	27.90	92.5	.73	30.7	4.54	39.0	44.15	7.7
Sep 26	31.50	85.0	53.20	1.6	27.86	84.4	.84	26.7	4.65	36.0	44.25	6.9
Oct 26	32.29	77.8	53.64	57.9*	28.53	77.7	1.29	20.8	5.09	31.0	44.68	4.0
Nov 25	33.87	74.6	54.41	52.3*	29.87	75.1	2.08	13.8	5.86	24.5	45.45	58.9*
Dic 25	35.84	76.9	55.39	45.8*	31.55	77.8	3.10	7.2	6.85	17.9	46.43	52.5*
Ene 24	37.62	84.3	56.34	40.1*	33.07	85.3	4.09	2.6	7.82	12.8	47.38	46.4*

**Lugares aparentes de estrellas, 2020**  
**para las 0<sup>h</sup> de Tiempo Universal**

N°	446		1311		450		452		453		455	
Nombre	B Centauri		π Virginis		O Virginis		δ Centauri		ε Corvi		δ Crucis	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	11h52m	-45°16'	12h01m	+ 6°30'	12h06m	+ 8°37'	12h09m	-50°49'	12h11m	-22°43'	12h16m	-58°51'
Dic 31	8s55	45°3	53s04	13°0	12s77	21°1	23s55	39°5	8s57	37°8	12s42	12°3
Ene 30	9.63	53.3	53.94	7.7	13.69	15.9	24.76	47.1	9.51	44.9	13.85	19.6
Feb 29	10.30	62.8	54.55	4.8	14.31	13.4	25.55	56.7	10.15	51.9	14.80	29.4
Mar 30	10.50	71.7	54.79	4.5	14.56	13.4	25.84	66.2	10.42	57.4	15.16	39.7
Abr 29	10.32	78.5	54.74	5.9	14.52	15.2	25.70	74.0	10.39	60.9	14.99	48.5
May 29	9.88	82.2	54.52	8.0	14.30	17.5	25.23	78.7	10.15	62.2	14.39	54.3
Jun 28	9.29	82.1	54.21	10.1	13.99	19.7	24.57	79.5	9.80	61.3	13.51	56.0
Jul 28	8.73	78.5	53.93	11.5	13.70	21.0	23.89	76.5	9.44	58.5	12.61	53.4
Ago 27	8.38	72.6	53.77	11.6	13.53	20.8	23.42	70.7	9.20	54.8	11.95	47.4
Sep 26	8.41	66.1	53.84	10.0	13.59	18.8	23.35	63.7	9.22	51.6	11.78	39.8
Oct 26	8.92	61.3	54.24	6.2	13.97	14.7	23.82	58.0	9.60	50.1	12.28	33.1
Nov 25	9.90	60.3	54.98	.6	14.70	8.8	24.84	55.9	10.37	51.8	13.45	29.8
Dic 25	11.14	64.1	55.95	54.1*	15.67	2.1	26.19	58.7	11.39	56.8	15.02	31.7
Ene 24	12.31	71.8	56.91	48.3*	16.64	56.5*	27.48	65.8	12.39	63.9	16.54	38.4

---

N°	457		459		460		1317		1318		462	
Nombre	γ Corvi		β Chamaeleontis		η Virginis		16 Virginis		12 Comae Beren.		α Crucis A*	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	12h16m	-17°38'	12h19m	-79°24'	12h20m	- 0°46'	12h21m	+ 3°12'	12h23m	+25°44'	12h27m	-63°12'
Dic 31	49s36	58°6	33s48	56°1	54s87	34°4	21s01	8°9	29s52	3°6	42s69	10°1
Ene 30	50.29	5.4	36.97	2.4	55.78	40.3	21.93	3.2	30.53	59.6*	44.32	16.8
Feb 29	50.93	11.7	39.28	12.4	56.43	44.4	22.58	59.7*	31.25	59.5*	45.45	26.5
Mar 30	51.22	16.4	40.05	23.9	56.72	46.0	22.87	58.8*	31.57	2.5	45.93	37.1
Abr 29	51.21	19.1	39.24	34.5	56.73	45.8	22.88	59.6*	31.55	7.0	45.78	46.5
May 29	51.00	19.8	37.09	42.3	56.55	44.5	22.70	1.5	31.31	11.0	45.11	53.0
Jun 28	50.68	18.6	34.08	45.7	56.26	42.5	22.40	3.5	30.95	13.6	44.09	55.5
Jul 28	50.33	16.1	30.98	44.1	55.95	40.7	22.10	5.2	30.59	13.8	43.00	53.4
Ago 27	50.11	13.0	28.61	38.2	55.75	39.6	21.89	5.7	30.35	11.4	42.16	47.7
Sep 26	50.12	10.6	27.70	29.6	55.78	40.0	21.91	4.7	30.35	6.5	41.87	39.9
Oct 26	50.47	10.0	28.71	21.1	56.10	42.5	22.24	1.4	30.69	59.6*	42.35	32.6
Nov 25	51.21	12.3	31.52	15.8	56.80	47.2	22.93	56.2*	31.42	51.7*	43.61	28.6
Dic 25	52.20	17.6	35.35	15.7	57.75	53.5	23.88	49.8*	32.43	44.5*	45.35	29.6
Ene 24	53.19	24.4	39.07	21.3	58.72	59.7	24.86	43.7*	33.48	39.8*	47.08	35.7

---

N°	464		465		468		469		471		1323	
Nombre	σ Centauri		δ Corvi		γ Crucis		γ Muscae		β Corvi		23 Comae Beren.	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	12h29m	-50°20'	12h30m	-16°37'	12h32m	-57°13'	12h33m	-72°14'	12h35m	-23°30'	12h35m	+22°31'
Dic 31	6s92	6°5	53s13	24°2	16s28	6°2	40s31	9°1	25s49	11°7	49s71	7°2
Ene 30	8.17	13.5	54.08	30.8	17.70	12.9	42.60	15.3	26.47	18.5	50.71	2.7
Feb 29	9.04	22.7	54.75	36.9	18.70	22.4	44.21	24.9	27.17	25.3	51.44	1.9
Mar 30	9.44	32.0	55.08	41.4	19.16	32.4	44.89	36.0	27.53	30.9	51.80	4.3
Abr 29	9.40	39.9	55.12	44.0	19.10	41.2	44.64	46.3	27.58	34.7	51.83	8.4
May 29	9.01	45.0	54.94	44.7	18.61	47.2	43.57	53.9	27.40	36.3	51.63	12.4
Jun 28	8.39	46.4	54.63	43.6	17.82	49.3	41.94	57.3	27.06	35.8	51.29	15.1
Jul 28	7.71	44.1	54.29	41.3	16.97	47.3	40.19	55.9	26.68	33.4	50.93	15.7
Ago 27	7.19	38.7	54.03	38.5	16.30	41.8	38.79	50.3	26.40	30.0	50.67	13.8
Sep 26	7.04	32.0	54.01	36.3	16.07	34.5	38.21	42.1	26.35	26.8	50.63	9.5
Oct 26	7.43	26.2	54.32	35.9	16.48	27.9	38.77	34.0	26.65	25.2	50.93	3.1
Nov 25	8.38	23.7	55.02	38.3	17.55	24.4	40.47	28.8	27.37	26.4	51.61	55.4*
Dic 25	9.70	25.9	56.00	43.4	19.05	25.9	42.89	28.8	28.37	30.9	52.59	48.1*
Ene 24	11.03	32.4	57.00	50.1	20.56	32.1	45.32	34.2	29.41	37.6	53.63	42.9*

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	474		475		1326		481		1331		1332	
Nombre	α Muscae		χ Virginis		ρ Virginis		β Crucis		143 G. Cent.		31 Comae Beren.	
Mag. SP	2.69	B3	4.66	K0	4.88	A0	1.25	B1	4.91	A0	4.94	G0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	12h38m	-69°14'	12h40m	- 8°06'	12h42m	+10°07'	12h48m	-59°47'	12h51m	-34°06'	12h52m	+27°25'
Dic 31	22s83	17°8	15s77	11°1	52s71	34°2	53s03	27°6	45s49	11°5	39s11	52°0
Ene 30	24.86	23.9	16.71	17.4	53.67	28.8	54.58	33.7	46.56	18.1	40.15	47.5
Feb 29	26.31	33.4	17.40	22.4	54.37	26.2	55.72	42.8	47.36	25.7	40.94	47.1
Mar 30	26.97	44.3	17.75	25.4	54.74	26.5	56.30	52.9	47.79	32.9	41.36	50.3
Abr 29	26.82	54.4	17.82	26.4	54.81	28.6	56.33	62.0	47.89	38.4	41.43	55.1
May 29	25.98	61.8	17.68	26.0	54.66	31.3	55.87	68.7	47.72	41.8	41.24	59.8
Jun 28	24.64	65.1	17.39	24.5	54.37	33.7	55.04	71.5	47.34	42.4	40.89	62.9
Jul 28	23.17	63.7	17.07	22.4	54.04	35.1	54.10	70.1	46.88	40.3	40.49	63.5
Ago 27	21.98	58.3	16.82	20.6	53.80	34.8	53.31	65.1	46.50	36.4	40.18	61.2
Sep 26	21.48	50.3	16.78	19.9	53.75	32.5	52.96	57.8	46.36	31.8	40.07	56.2
Oct 26	21.95	42.4	17.05	21.0	54.02	28.2	53.30	50.8	46.63	28.3	40.31	49.0
Nov 25	23.43	37.4	17.72	24.5	54.66	22.0	54.36	46.6	47.36	27.7	40.95	40.7
Dic 25	25.55	37.5	18.66	30.2	55.60	15.1	55.93	47.1	48.42	30.8	41.93	32.9
Ene 24	27.70	42.9	19.65	36.7	56.60	9.2	57.57	52.6	49.55	37.1	43.01	27.7

N°	482		1335		484		485		488		487	
Nombre	150 G. Centauri		ψ Virginis		δ Virginis		α Canum Venat.*f		ε Virginis		δ Muscae	
Mag. SP	4.27	A5	4.79	M3	3.38	M0	2.90	A0p	2.83	K0	3.62	K2
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	12h54m	-40°16'	12h55m	- 9°38'	12h56m	+ 3°17'	12h56m	+38°12'	13h03m	+10°51'	13h03m	-71°38'
Dic 31	31s89	55°1	22s55	41°0	35s55	25°1	56s42	31°6	9s15	9°0	38s98	56°1
Ene 30	33.03	61.6	23.51	47.2	36.50	19.3	57.57	27.8	10.11	3.5	41.34	61.1
Feb 29	33.88	69.6	24.23	52.4	37.22	15.7	58.45	28.8	10.86	.8	43.15	69.9
Mar 30	34.35	77.6	24.63	55.6	37.62	14.8	58.91	33.5	11.28	1.2	44.13	80.6
Abr 29	34.45	84.1	24.75	56.9	37.73	15.7	58.96	39.8	11.40	3.5	44.21	91.0
May 29	34.25	88.3	24.64	56.7	37.62	17.7	58.72	45.4	11.29	6.4	43.44	99.2
Jun 28	33.82	89.5	24.37	55.4	37.35	19.9	58.28	48.8	11.02	9.1	42.02	103.6
Jul 28	33.30	87.7	24.03	53.4	37.02	21.6	57.79	48.9	10.68	10.6	40.34	103.3
Ago 27	32.86	83.4	23.75	51.6	36.75	22.1	57.39	45.4	10.39	10.3	38.87	98.7
Sep 26	32.69	78.1	23.67	50.6	36.67	21.0	57.23	38.9	10.28	8.0	38.09	91.0
Oct 26	32.95	73.7	23.90	51.4	36.89	17.8	57.45	30.2	10.49	3.5	38.40	82.8
Nov 25	33.72	72.0	24.53	54.6	37.49	12.6	58.12	20.8	11.08	57.2*	39.87	77.0
Dic 25	34.85	74.5	25.46	60.0	38.41	6.1	59.17	12.7	11.99	50.1*	42.17	75.8
Ene 24	36.05	80.6	26.46	66.4	39.40	59.9*	60.33	8.0	12.99	44.1*	44.63	80.1

N°	489		490		492		493		1344		1345	
Nombre	ξ <sup>2</sup> Centauri		θ Virginis*		β Comae Beren.		η Muscae		σ Virginis		61 Virginis	
Mag. SP	4.27	B3	4.38	A0	4.26	G0	4.80	B8	4.80	M0	4.74	G5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	13h08m	-50°00'	13h10m	- 5°38'	13h12m	+27°46'	13h16m	-67°59'	13h18m	+ 5°21'	13h19m	-18°25'
Dic 31	3s95	24°5	58s00	35°6	47s05	34°1	35s91	34°4	35s65	57°5	25s99	7°2
Ene 30	5.27	30.3	58.96	41.7	48.09	29.3	37.96	39.0	36.61	51.7	26.98	13.4
Feb 29	6.28	38.6	59.71	46.3	48.92	28.7	39.60	47.5	37.38	48.3	27.77	19.4
Mar 30	6.87	47.5	60.16	48.8	49.39	31.9	40.56	57.7	37.85	47.7	28.24	24.0
Abr 29	7.03	55.5	60.32	49.4	49.51	37.0	40.77	67.8	38.02	49.1	28.43	26.9
May 29	6.80	61.3	60.25	48.6	49.36	42.0	40.26	75.9	37.96	51.4	28.36	28.2
Jun 28	6.27	63.8	60.00	47.0	49.02	45.6	39.17	80.4	37.72	53.8	28.10	27.8
Jul 28	5.59	62.6	59.67	45.2	48.60	46.6	37.81	80.4	37.38	55.6	27.73	26.2
Ago 27	4.99	58.3	59.37	43.8	48.24	44.6	36.57	76.2	37.07	55.9	27.39	23.9
Sep 26	4.70	52.2	59.25	43.5	48.07	39.8	35.87	69.0	36.93	54.5	27.22	21.8
Oct 26	4.91	46.3	59.43	45.0	48.23	32.6	36.05	61.0	37.09	51.0	27.38	21.1
Nov 25	5.73	43.0	60.01	48.8	48.81	24.2	37.25	55.3	37.64	45.5	27.97	22.7
Dic 25	7.00	43.9	60.91	54.5	49.75	16.2	39.19	54.0	38.52	38.9	28.89	27.1
Ene 24	8.38	49.2	61.91	60.7	50.82	10.7	41.33	57.9	39.51	32.7	29.92	33.3

Lugares aparentes de estrellas, 2020  
para las 0<sup>h</sup> de Tiempo Universal

N°	495		496		1347		498		1349		1351	
Nombre	γ Hydrae		ι Centauri		ι Centauri*		α Virginis (Spica)		70 Virginis		78 Virginis	
Mag. SP	3.00	G5	2.75	A2	4.53	B5	0.97	B2	4.98	G0	4.94	A2p
Oh UT	A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.	
m d	13h19m	-23°16'	13h21m	-36°48'	13h23m	-61°05'	13h26m	-11°15'	13h29m	+13°40'	13h35m	+3°33'
Dic 31	59s45	21°9	42s27	44°0	54s72	9°0	13s62	44°9	23s17	21°7	7s43	28°7
Ene 30	60.46	28.0	43.39	49.9	56.40	13.8	14.59	51.0	24.15	15.9	8.40	22.8
Feb 29	61.27	34.3	44.29	57.1	57.75	21.9	15.38	56.2	24.95	13.3	9.20	19.1
Mar 30	61.77	39.5	44.84	64.3	58.58	31.6	15.87	59.5	25.45	14.0	9.71	18.2
Abr 29	61.97	43.3	45.05	70.3	58.84	41.0	16.09	61.1	25.65	16.8	9.93	19.3
May 29	61.91	45.2	44.96	74.4	58.54	48.4	16.05	61.2	25.60	20.3	9.91	21.5
Jun 28	61.64	45.3	44.61	75.8	57.79	52.4	15.82	60.1	25.35	23.3	9.69	23.9
Jul 28	61.26	43.6	44.13	74.6	56.81	52.3	15.48	58.4	24.99	24.9	9.36	25.6
Ago 27	60.90	40.9	43.67	71.1	55.89	48.3	15.15	56.6	24.65	24.5	9.03	26.2
Sep 26	60.72	38.0	43.43	66.6	55.35	41.6	14.98	55.5	24.47	21.8	8.84	25.1
Oct 26	60.89	36.4	43.60	62.6	55.50	34.4	15.12	55.9	24.59	16.8	8.95	22.0
Nov 25	61.49	37.1	44.25	61.1	56.44	29.3	15.67	58.7	25.10	10.1	9.46	16.8
Dic 25	62.44	40.8	45.31	63.2	58.00	28.4	16.57	63.6	25.97	2.6	10.31	10.3
Ene 24	63.51	46.8	46.48	68.6	59.74	32.5	17.58	69.8	26.98	56.4*	11.30	4.1

  

N°	501		502		504		506		507		509	
Nombre	ζ Virginis		17 H.Canum Venat		ε Centauri		ι Centauri		τ Bootis		η Ursae Majoris	
Mag. SP	3.37	A2	4.98	F0	2.30	B1	4.23	F5	4.50	F5	1.86	B3
Oh UT	A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.	
m d	13h35m	-0°41'	13h35m	+37°04'	13h41m	-53°33'	13h46m	-33°08'	13h48m	+17°21'	13h48m	+49°12'
Dic 31	41s44	45°6	39s86	43°4	8s22	40°2	48s20	22°6	11s32	27°4	18s02	41°4
Ene 30	42.40	51.6	40.99	38.5	9.66	44.7	49.31	27.9	12.31	21.6	19.33	36.7
Feb 29	43.19	55.7	41.94	38.4	10.86	52.2	50.23	34.4	13.15	19.3	20.46	37.5
Mar 30	43.71	57.3	42.52	42.5	11.65	60.9	50.85	40.8	13.71	20.5	21.18	42.9
Abr 29	43.93	56.9	42.72	48.9	11.99	69.3	51.15	46.1	13.96	24.0	21.41	50.6
May 29	43.92	55.3	42.58	55.1	11.88	76.0	51.16	49.8	13.94	28.2	21.21	57.9
Jun 28	43.70	53.3	42.20	59.3	11.38	79.7	50.89	51.3	13.70	31.7	20.69	62.7
Jul 28	43.37	51.5	41.70	60.5	10.64	79.8	50.44	50.4	13.32	33.6	19.99	63.7
Ago 27	43.03	50.6	41.22	58.0	9.91	76.4	49.99	47.7	12.94	33.1	19.32	60.5
Sep 26	42.85	51.1	40.93	52.1	9.45	70.5	49.70	43.9	12.70	30.0	18.87	53.4
Oct 26	42.96	53.4	41.00	43.6	9.52	64.2	49.77	40.6	12.76	24.6	18.83	43.7
Nov 25	43.46	57.9	41.52	34.0	10.26	59.8	50.33	39.3	13.22	17.3	19.34	32.9
Dic 25	44.32	64.0	42.47	25.2	11.55	59.3	51.31	41.3	14.05	9.5	20.37	23.6
Ene 24	45.31	70.2	43.61	19.4	13.03	63.2	52.45	46.3	15.06	3.2	21.67	17.9

  

N°	508		510		513		512		514		516	
Nombre	μ Centauri		89 Virginis		η Bootis		ζ Centauri		294 G.Centauri		τ Virginis	
Mag. SP	3.04	var B2p	4.97	K0	2.68	G0	2.55	B2p	4.71	K0	4.26	A2
Oh UT	A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.		A.R. Dec.	
m d	13h50m	-42°34'	13h50m	-18°13'	13h55m	+18°17'	13h56m	-47°22'	13h59m	-63°46'	14h02m	+1°26'
Dic 31	48s05	2°3	56s18	47°5	36s73	52°5	45s98	49°3	4s57	37°7	38s43	59°4
Ene 30	49.27	7.1	57.19	53.2	37.73	46.6	47.29	53.7	6.42	40.9	39.39	53.4
Feb 29	50.31	13.9	58.03	58.7	38.58	44.2	48.41	60.5	8.04	47.9	40.23	49.5
Mar 30	51.01	21.3	58.61	63.0	39.16	45.5	49.19	68.3	9.16	57.0	40.81	48.2
Abr 29	51.36	28.1	58.91	65.7	39.43	49.2	49.58	75.8	9.69	66.5	41.12	49.1
May 29	51.36	33.3	58.94	66.9	39.43	53.6	49.58	81.7	9.57	74.6	41.17	51.1
Jun 28	51.03	36.0	58.74	66.7	39.20	57.2	49.22	85.1	8.89	79.9	41.00	53.4
Jul 28	50.50	35.7	58.38	65.3	38.82	59.1	48.63	85.2	7.83	81.2	40.67	55.3
Ago 27	49.94	32.7	58.00	63.3	38.43	58.6	47.99	82.3	6.73	78.4	40.30	56.0
Sep 26	49.58	28.0	57.76	61.4	38.17	55.4	47.57	77.3	5.97	72.3	40.05	55.3
Oct 26	49.63	23.2	57.83	60.7	38.20	49.8	47.58	71.9	5.90	64.9	40.08	52.6
Nov 25	50.23	20.4	58.33	61.9	38.65	42.4	48.20	68.2	6.72	58.8	40.51	47.9
Dic 25	51.30	21.0	59.21	65.8	39.47	34.5	49.33	68.0	8.29	56.5	41.32	41.7
Ene 24	52.56	25.2	60.24	71.4	40.48	28.0	50.67	71.7	10.19	59.0	42.30	35.5

**Lugares aparentes de estrellas, 2020  
para las 0<sup>h</sup> de Tiempo Universal**

N°	518		519		520		522		523		526	
Nombre	$\beta$ Centauri*		$\pi$ Hydrae		$\wp$ Centauri		12 Bootis		K Virginis		$\alpha$ Bootis (Arcturus)	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	14h05m	-60°27'	14h07m	-26°46'	14h07m	-36°27'	14h11m	+24°59'	14h13m	-10°21'	14h16m	+19°04'
Dic 31	12s82	43°7'	29s24	26°2'	50s18	46°2'	17s07	48°7'	56s30	48°9'	32s85	43°6'
Ene 30	14.51	46.9	30.30	31.3	51.32	50.8	18.09	42.7	57.27	54.5	33.83	37.3
Feb 29	16.01	53.6	31.22	37.1	52.32	57.1	19.00	40.7	58.14	59.2	34.71	34.6
Mar 30	17.07	62.3	31.88	42.4	53.03	63.5	19.63	42.8	58.76	62.1	35.34	35.7
Abr 29	17.60	71.4	32.24	46.5	53.42	69.3	19.95	47.5	59.11	63.3	35.66	39.4
May 29	17.56	79.2	32.32	49.2	53.49	73.6	19.97	53.0	59.21	63.2	35.71	44.0
Jun 28	17.00	84.2	32.13	50.1	53.25	75.8	19.74	57.3	59.06	62.1	35.51	47.8
Jul 28	16.09	85.5	31.75	49.4	52.80	75.6	19.33	59.5	58.74	60.7	35.13	49.9
Ago 27	15.13	82.9	31.32	47.2	52.29	73.3	18.89	58.8	58.36	59.2	34.70	49.5
Sep 26	14.44	77.2	31.01	44.5	51.93	69.5	18.56	54.9	58.08	58.4	34.38	46.3
Oct 26	14.36	70.1	31.03	42.2	51.93	65.7	18.52	48.4	58.09	58.9	34.34	40.6
Nov 25	15.08	64.4	31.50	41.9	52.44	63.7	18.91	40.1	58.49	61.5	34.71	32.9
Dic 25	16.50	62.3	32.40	44.3	53.40	64.8	19.71	31.6	59.30	66.1	35.48	24.7
Ene 24	18.24	64.7	33.48	49.1	54.57	69.0	20.74	24.9	60.30	71.8	36.47	17.9

  

N°	525		1370		1371		529		1373		1377	
Nombre	$\iota$ Virginis		$\alpha$ Bootis		$\lambda$ Virginis		$\nu$ Centauri		$\psi$ Centauri		$\tau^1$ Lupi	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	14h17m	-6°05'	14h18m	+35°24'	14h20m	-13°27'	14h21m	-56°28'	14h21m	-37°58'	14h27m	-45°18'
Dic 31	2s36	35°3'	48s85	59°3'	10s03	34°6'	41s83	18°0'	44s92	17°9'	23s69	20°4'
Ene 30	3.33	41.1	49.93	53.2	11.01	40.0	43.38	20.8	46.08	22.0	24.96	23.8
Feb 29	4.18	45.6	50.93	51.9	11.89	44.9	44.78	26.9	47.12	27.8	26.12	29.7
Mar 30	4.81	47.9	51.63	55.3	12.53	48.2	45.82	34.9	47.89	34.2	26.99	36.6
Abr 29	5.17	48.4	51.97	61.4	12.91	49.9	46.41	43.3	48.35	40.0	27.51	43.5
May 29	5.27	47.6	51.98	68.1	13.03	50.3	46.50	50.7	48.47	44.6	27.65	49.2
Jun 28	5.12	46.1	51.68	73.2	12.89	49.7	46.09	55.6	48.27	47.2	27.41	52.9
Jul 28	4.80	44.5	51.19	75.5	12.56	48.4	45.34	57.2	47.82	47.3	26.88	53.7
Ago 27	4.42	43.3	50.65	74.3	12.17	46.9	44.49	55.0	47.29	45.2	26.26	51.7
Sep 26	4.14	43.1	50.24	69.3	11.88	45.8	43.84	50.0	46.88	41.5	25.77	47.5
Oct 26	4.14	44.4	50.14	61.5	11.87	45.8	43.71	43.5	46.83	37.6	25.68	42.5
Nov 25	4.54	47.8	50.50	51.9	12.26	47.7	44.30	38.1	47.30	35.1	26.16	38.8
Dic 25	5.32	53.0	51.32	42.5	13.07	51.8	45.55	36.0	48.25	35.5	27.18	38.0
Ene 24	6.31	58.9	52.40	35.8	14.07	57.2	47.13	38.1	49.44	39.2	28.48	40.9

  

N°	532		533		534		535		1380		537	
Nombre	52 Hydrae*		$\phi$ Virginis		$\rho$ Bootis		$\gamma$ Bootis		$\sigma$ Bootis		$\eta$ Centauri	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	14h29m	-29°34'	14h29m	-2°18'	14h32m	+30°16'	14h32m	+38°13'	14h35m	+29°39'	14h36m	-42°14'
Dic 31	19s15	35°5'	12s41	54°3'	39s79	60°0'	51s22	11°5'	31s34	28°9'	44s98	23°2'
Ene 30	20.23	39.9	13.36	60.2	40.82	53.6	52.31	5.2	32.37	22.4	46.19	26.5
Feb 29	21.20	45.3	14.23	64.3	41.78	51.6	53.35	3.8	33.33	20.4	47.32	32.0
Mar 30	21.94	50.6	14.87	66.0	42.49	54.2	54.11	7.3	34.05	22.8	48.19	38.4
Abr 29	22.39	55.0	15.26	65.7	42.88	59.7	54.50	13.8	34.44	28.2	48.73	44.7
May 29	22.54	58.2	15.39	64.2	42.94	65.9	54.53	20.9	34.52	34.5	48.91	50.0
Jun 28	22.39	59.7	15.27	62.2	42.71	71.1	54.24	26.5	34.30	39.6	48.72	53.4
Jul 28	22.01	59.5	14.95	60.4	42.28	73.7	53.72	29.2	33.87	42.3	48.24	54.2
Ago 27	21.55	57.6	14.57	59.4	41.77	73.1	53.13	28.1	33.36	41.8	47.66	52.5
Sep 26	21.18	54.8	14.26	59.6	41.36	69.0	52.66	23.2	32.95	37.8	47.18	48.7
Oct 26	21.13	52.2	14.22	61.5	41.23	62.0	52.49	15.1	32.82	30.9	47.07	44.2
Nov 25	21.54	51.1	14.57	65.5	41.54	53.1	52.79	5.3	33.12	22.0	47.50	40.9
Dic 25	22.40	52.7	15.33	71.0	42.30	43.9	53.58	55.6*	33.87	12.9	48.46	40.4
Ene 24	23.50	56.8	16.30	77.0	43.32	36.9	54.66	48.5*	34.90	5.9	49.70	43.2

**Lugares aparentes de estrellas, 2020**  
para las 0<sup>h</sup> de Tiempo Universal

N°	538		541		539		545		1383		544		
Nombre	α Centauri A*		α Lupi		α Circini*		μ Virginis		34 Bootis		371 G. Centauri		
Mag. SP	-0.01	G0	2.30	B2	3.19	F0	3.88	F5	4.81	var.	M0	4.05	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	
m d	14h40m	-60°54'	14h43m	-47°28'	14h44m	-65°03'	14h44m	-5°44'	14h44m	+26°26'	14h44m	-35°15'	
Dic 31	55s48	39°1'	13s84	3°8'	5s58	17°0'	5s23	32°3'	16s36	34°3'	51s14	16°0'	
Ene 30	57.17	41.1	15.15	6.5	7.51	18.2	6.19	37.9	17.36	27.7	52.26	19.7	
Feb 29	58.74	46.6	16.37	11.8	9.36	23.5	7.07	42.2	18.31	25.2	53.31	24.9	
Mar 30	59.93	54.5	17.33	18.6	10.80	31.3	7.76	44.3	19.03	27.1	54.13	30.5	
Abr 29	60.61	63.1	17.94	25.5	11.68	40.4	8.20	44.5	19.45	32.1	54.66	35.6	
May 29	60.71	70.9	18.14	31.6	11.88	49.0	8.37	43.5	19.56	38.0	54.87	39.7	
Jun 28	60.23	76.5	17.94	35.8	11.39	55.4	8.28	42.0	19.38	43.0	54.74	42.2	
Jul 28	59.33	78.6	17.41	37.2	10.38	58.3	7.98	40.4	18.98	45.9	54.34	42.7	
Ago 27	58.28	76.9	16.74	35.7	9.18	57.1	7.59	39.2	18.49	45.7	53.83	41.1	
Sep 26	57.44	71.9	16.19	31.7	8.18	52.2	7.26	39.1	18.07	42.3	53.39	38.1	
Oct 26	57.17	65.1	16.02	26.5	7.82	45.2	7.17	40.5	17.92	35.9	53.28	34.7	
Nov 25	57.72	58.9	16.46	22.3	8.39	38.4	7.49	43.7	18.20	27.5	53.66	32.5	
Dic 25	59.03	55.8	17.47	20.8	9.85	34.5	8.22	48.7	18.91	18.6	54.53	32.9	
Ene 24	60.75	57.0	18.79	23.0	11.80	35.0	9.19	54.4	19.90	11.5	55.67	36.1	

N°	547		542		548		552		553		556	
Nombre	109 Virginis		α Apolis		α <sup>2</sup> Librae		β Lupi		κ Centauri		σ Librae	
Mag. SP	3.72	A0	3.83	K5	2.75	A3	2.68	B2p	3.13	B3	3.29	M3
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	14h47m	+1°48'	14h50m	-79°07'	14h51m	-16°07'	14h59m	-43°12'	15h00m	-42°10'	15h05m	-25°21'
Dic 31	13s94	38°5'	20s05	15°3'	57s41	16°1'	48s66	31°2'	25s90	43°4'	12s66	21°9'
Ene 30	14.87	32.6	24.01	15.2	58.39	20.9	49.88	33.7	27.10	46.0	13.68	25.9
Feb 29	15.76	28.7	27.92	19.7	59.31	25.5	51.05	38.5	28.26	50.8	14.66	30.4
Mar 30	16.44	27.6	31.05	27.8	60.03	28.9	52.00	44.5	29.19	56.6	15.46	34.6
Abr 29	16.88	28.7	32.88	37.9	60.52	30.8	52.65	50.6	29.83	62.5	16.01	37.9
May 29	17.05	31.0	33.12	47.9	60.73	31.5	52.92	56.0	30.11	67.8	16.28	40.2
Jun 28	16.96	33.5	31.77	55.9	60.66	31.3	52.80	59.8	30.00	71.4	16.23	41.4
Jul 28	16.65	35.6	29.24	60.1	60.35	30.4	52.36	61.2	29.56	72.8	15.92	41.3
Ago 27	16.25	36.5	26.26	59.6	59.94	29.1	51.75	60.1	28.97	71.6	15.46	40.1
Sep 26	15.91	35.8	23.74	54.6	59.57	27.9	51.22	56.7	28.45	68.4	15.05	38.2
Oct 26	15.81	33.2	22.64	46.6	59.47	27.5	51.02	52.3	28.25	64.1	14.90	36.4
Nov 25	16.11	28.7	23.55	38.3	59.78	28.8	51.37	48.7	28.60	60.6	15.19	35.9
Dic 25	16.82	22.7	26.38	32.6	60.53	32.1	52.27	47.5	29.49	59.6	15.94	37.5
Ene 24	17.76	16.6	30.35	31.6	61.52	36.8	53.51	49.5	30.70	61.6	16.97	41.1

N°	557		1396		1398		559		558		1399	
Nombre	ψ Bootis		45 Bootis		κ <sup>1</sup> Lupi*		ι Librae		ζ Lupi		1 Lupi	
Mag. SP	4.54	K0	4.93	F0	3.87	B9	4.54	A0p	3.41	K0	4.91	F0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	15h05m	+26°52'	15h08m	+24°47'	15h13m	-48°48'	15h13m	-19°51'	15h13m	-52°10'	15h15m	-31°35'
Dic 31	16s34	11°2'	8s95	29°7'	17s45	27°8'	19s87	48°3'	41s21	8°3'	48s94	20°1'
Ene 30	17.31	4.3	9.91	22.8	18.76	29.4	20.84	52.6	42.60	9.5	50.00	23.3
Feb 29	18.27	1.5	10.86	19.9	20.05	33.7	21.80	56.9	43.98	13.7	51.04	27.6
Mar 30	19.04	3.2	11.63	21.3	21.14	39.6	22.59	60.3	45.13	19.9	51.91	32.1
Abr 29	19.52	8.1	12.12	26.0	21.89	46.3	23.15	62.7	45.93	26.9	52.53	36.3
May 29	19.69	14.3	12.30	31.9	22.24	52.5	23.43	64.0	46.28	33.7	52.85	39.6
Jun 28	19.55	19.7	12.18	37.1	22.13	57.2	23.41	64.4	46.15	38.9	52.82	41.8
Jul 28	19.16	23.1	11.81	40.4	21.65	59.5	23.13	63.9	45.61	41.5	52.50	42.5
Ago 27	18.66	23.3	11.32	40.8	20.95	58.8	22.70	62.8	44.86	40.9	52.01	41.5
Sep 26	18.19	20.2	10.87	37.9	20.31	55.5	22.29	61.4	44.16	37.5	51.54	39.3
Oct 26	17.97	14.1	10.65	32.1	20.03	50.6	22.12	60.5	43.84	32.1	51.34	36.6
Nov 25	18.17	5.7	10.85	24.0	20.34	45.9	22.38	61.0	44.17	27.0	51.61	34.9
Dic 25	18.83	56.7*	11.50	15.2	21.28	43.5	23.08	63.3	45.15	24.1	52.37	35.3
Ene 24	19.79	49.2*	12.45	7.8	22.60	44.5	24.07	67.4	46.55	24.7	53.44	38.0

**Lugares aparentes de estrellas, 2020**  
**para las 0<sup>h</sup> de Tiempo Universal**

N°	563		564		561		560		1402		566	
Nombre	δ Bootis		β Librae		β Circini		γ Triang. Aust.		δ Lupi		φ <sup>1</sup> Lupi	
Mag. SP	3.49	K0	2.61	B8	4.07	A3	2.89	A0	3.22	B2	3.56	K5
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	15h16m	+33°14'	15h18m	-9°27'	15h19m	-58°52'	15h20m	-68°44'	15h22m	-40°42'	15h23m	-36°19'
Dic 31	16s65	23°9	3s17	12°9	2s50	8°8	4s06	45°3	3s05	52°2	2s52	43°5
Ene 30	17.64	16.6	4.10	18.0	4.09	9.2	46.21	44.7	40.21	54.3	3.62	46.0
Feb 29	18.65	13.9	5.02	22.1	5.70	13.1	48.43	48.2	41.37	58.4	4.72	50.1
Mar 30	19.48	16.1	5.78	24.4	7.06	19.5	50.31	54.9	42.35	63.5	5.65	54.9
Abr 29	20.00	21.8	6.32	25.0	8.01	27.2	51.61	63.5	43.06	68.8	6.33	59.6
May 29	20.19	28.7	6.60	24.4	8.42	34.9	52.12	72.4	43.42	73.7	6.68	63.7
Jun 28	20.04	34.9	6.59	23.2	8.25	41.1	51.77	79.9	43.39	77.3	6.66	66.7
Jul 28	19.61	38.6	6.33	21.9	7.58	44.4	50.72	84.2	43.02	79.0	6.32	67.9
Ago 27	19.04	38.9	5.92	20.8	6.64	44.3	49.29	84.5	42.44	78.4	5.79	67.2
Sep 26	18.51	35.5	5.52	20.4	5.77	40.7	47.96	80.6	41.89	75.7	5.28	64.8
Oct 26	18.22	28.7	5.35	21.1	5.34	34.7	47.27	73.9	41.64	71.9	5.05	61.6
Nov 25	18.37	19.6	5.57	23.4	5.67	28.6	47.63	66.4	41.89	68.6	5.30	59.0
Dic 25	19.00	9.9	6.23	27.4	6.77	24.6	49.07	61.0	42.71	67.3	6.07	58.4
Ene 24	19.97	2.1	7.16	32.4	8.36	24.3	51.22	59.7	43.87	68.8	7.18	60.5

---

N°	1403		568		572		576		1409		578	
Nombre	φ <sup>2</sup> Lupi		μ Bootis* p.		β Coronae Bor.		δ Coronae Bor.		37 Librae		α Coronae Bor.	
Mag. SP	4.54	B3	4.31	F0	3.68	F0p	4.14	B5	4.62	K0	2.23	A0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
Ene 24	14.31	50.5	7.01	58.1*	30.93	46.9*	36.00	3.0	5.94	71.8	23.60	25.2
m d	15h24m	-36°55'	15h25m	+37°18'	15h28m	+29°02'	15h33m	+31°17'	15h35m	-10°07'	15h35m	+26°38'
Dic 31	24s00	30°1	12s80	23°7	37s29	12°9	42s22	29°7	14s39	47°9	30s15	51°9
Ene 30	25.11	32.4	13.81	16.2	38.23	5.5	43.17	22.2	15.30	52.7	31.07	44.6
Feb 29	26.22	36.5	14.86	13.4	39.21	2.4	44.16	19.1	16.23	56.6	32.04	41.2
Mar 30	27.16	41.3	15.73	15.8	40.03	4.0	45.01	20.8	17.02	58.9	32.86	42.5
Abr 29	27.84	46.0	16.29	21.9	40.59	9.1	45.58	26.1	17.61	59.4	33.43	47.3
May 29	28.20	50.3	16.49	29.4	40.82	15.7	45.83	33.0	17.95	58.9	33.69	53.6
Jun 28	28.19	53.4	16.33	36.0	40.73	21.8	45.73	39.3	17.98	57.8	33.63	59.5
Jul 28	27.84	54.7	15.87	40.1	40.35	25.7	45.34	43.4	17.74	56.5	33.28	63.4
Ago 27	27.31	54.0	15.25	40.6	39.81	26.4	44.79	44.3	17.34	55.5	32.76	64.4
Sep 26	26.79	51.6	14.66	37.0	39.29	23.6	44.24	41.4	16.92	55.1	32.24	61.9
Oct 26	26.55	48.3	14.31	30.0	38.99	17.6	43.91	35.2	16.71	55.7	31.94	56.2
Nov 25	26.80	45.6	14.40	20.5	39.10	9.1	44.00	26.5	16.88	57.8	32.04	48.1
Dic 25	27.57	44.9	15.01	10.5	39.69	59.8*	44.57	16.9	17.50	61.6	32.60	39.1
Ene 24	28.68	46.8	15.99	2.4	40.61	52.0*	45.49	9.0	18.41	66.3	33.51	31.3

---

N°	577		574		579		1413		582		583	
Nombre	γ Librae		ε Triang. Aust.		υ Librae		κ Librae		α Serpentis		β Serpentis	
Mag. SP	3.91	K0	4.11	K0	3.58	K2	4.74	K5	2.65	K0	3.67	A2
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	15h36m	-14°51'	15h38m	-66°22'	15h38m	-28°11'	15h43m	-19°44'	15h45m	+6°21'	15h47m	+15°21'
Dic 31	36s77	10°0	30s23	37°9	12s28	48°5	3s94	23°5	13s26	52°5	4s70	37°5
Ene 30	37.70	14.3	32.17	36.8	13.28	51.4	4.88	27.3	14.14	46.3	5.57	30.7
Feb 29	38.64	18.2	34.23	39.6	14.31	55.2	5.85	31.0	15.04	42.5	6.49	27.0
Mar 30	39.45	20.8	36.03	45.6	15.20	58.9	6.69	34.0	15.83	41.9	7.30	27.1
Abr 29	40.06	22.1	37.34	53.5	15.87	62.2	7.34	35.9	16.42	44.0	7.88	30.4
May 29	40.40	22.3	37.96	62.0	16.25	64.8	7.71	37.0	16.75	47.4	8.20	35.3
Jun 28	40.44	21.9	37.80	69.4	16.29	66.5	7.77	37.4	16.78	51.0	8.21	40.1
Jul 28	40.20	21.1	36.95	73.9	16.02	67.1	7.53	37.1	16.53	53.8	7.94	43.6
Ago 27	39.79	20.2	35.70	74.8	15.56	66.5	7.11	36.4	16.11	55.0	7.49	44.9
Sep 26	39.36	19.4	34.47	71.6	15.08	64.8	6.66	35.3	15.68	54.3	7.02	43.4
Oct 26	39.14	19.3	33.76	65.3	14.83	62.9	6.42	34.6	15.42	51.3	6.74	39.3
Nov 25	39.32	20.5	33.99	58.1	15.02	61.7	6.58	34.9	15.54	46.4	6.83	33.0
Dic 25	39.95	23.5	35.22	52.6	15.70	62.2	7.21	36.9	16.09	40.0	7.37	25.3
Ene 24	40.88	27.7	37.15	50.8	16.71	64.8	8.15	40.4	16.96	33.8	8.22	18.2

## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	584		585		588		586		1414		589	
Nombre	K Serpentis		μ Serpentis		ε Lupi		χ Lupi		K Coronae Bor.		χ Triang. Aust.	
Mag. SP	4.09	K5	3.54	A0	3.71	A2	3.95	B9	4.82	K0	2.85	F0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	15h49m	+18°04'	15h50m	- 3°29'	15h51m	+ 4°25'	15h52m	-33°41'	15h51m	+35°35'	15h56m	-63°29'
Dic 31	36s44	50°8	37s88	19°9	46s83	10°3	11s60	"1	57s11	42°7	51s28	8°6
Ene 30	37.31	43.8	38.76	25.2	47.69	4.4	12.64	2.0	58.05	34.8	53.01	7.2
Feb 29	38.24	40.1	39.67	29.0	48.60	.5	13.72	5.4	59.08	31.3	54.88	9.3
Mar 30	39.05	40.4	40.47	30.5	49.40	59.7*	14.68	9.2	59.98	33.0	56.58	14.5
Abr 29	39.65	44.1	41.08	29.9	50.00	1.5	15.43	13.0	60.62	38.6	57.88	21.7
May 29	39.97	49.3	41.45	28.0	50.35	4.7	15.88	16.4	60.92	46.1	58.58	29.6
Jun 28	39.97	54.5	41.51	25.8	50.40	8.1	15.97	19.1	60.84	53.0	58.57	36.8
Jul 28	39.69	58.2	41.29	23.9	50.18	10.8	15.70	20.4	60.44	57.7	57.91	41.6
Ago 27	39.23	59.5	40.89	22.8	49.76	12.0	15.21	20.3	59.84	58.9	56.83	42.9
Sep 26	38.75	58.0	40.45	22.8	49.32	11.4	14.68	18.6	59.21	56.2	55.71	40.4
Oct 26	38.44	53.6	40.20	24.4	49.06	8.8	14.37	16.0	58.80	49.9	55.00	34.8
Nov 25	38.52	46.8	40.32	27.6	49.16	4.3	14.52	13.8	58.80	40.8	55.11	28.0
Dic 25	39.04	38.8	40.87	32.3	49.70	58.3*	15.19	13.2	59.31	30.8	56.15	22.6
Ene 24	39.90	31.5	41.74	37.6	50.55	52.2*	16.22	14.8	60.22	22.4	57.85	20.4

  

N°	591		593		1417		592		1418		594	
Nombre	γ Serpentis		ε Coronae Bor.		48 Librae		π Scorpi		144 G.Lupi		δ Scorpi	
Mag. SP	3.85	F5	4.15	K0	4.88	B3p	2.89	B2	4.99	G5	2.32	B0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	15h57m	+15°35'	15h58m	+26°49'	15h59m	-14°20'	16h00m	-26°10'	16h00m	-41°47'	16h01m	-22°40'
Dic 31	20s65	51°3	22s92	13°5	16s52	1°6	1s56	3°1	49s61	48°2	28s83	29°0
Ene 30	21.51	44.3	23.80	5.9	17.41	5.6	2.52	5.8	50.72	48.9	29.76	32.0
Feb 29	22.43	40.4	24.76	2.1	18.36	9.2	3.53	9.1	51.92	51.7	30.75	35.4
Mar 30	23.25	40.4	25.62	3.0	19.20	11.5	4.44	12.2	53.00	55.8	31.64	38.2
Abr 29	23.86	43.6	26.25	7.7	19.87	12.4	5.16	14.8	53.85	60.4	32.35	40.3
May 29	24.21	48.5	26.58	14.2	20.28	12.3	5.61	16.9	54.37	65.2	32.79	41.7
Jun 28	24.24	53.3	26.57	20.5	20.38	11.8	5.72	18.3	54.47	69.1	32.90	42.6
Jul 28	23.99	56.9	26.26	24.9	20.18	11.0	5.50	18.9	54.18	71.6	32.69	42.7
Ago 27	23.54	58.2	25.74	26.4	19.77	10.2	5.06	18.5	53.62	71.9	32.27	42.3
Sep 26	23.06	56.8	25.19	24.4	19.32	9.6	4.57	17.3	53.00	70.1	31.79	41.3
Oct 26	22.75	52.7	24.82	19.2	19.05	9.7	4.27	15.8	52.62	66.7	31.50	40.2
Nov 25	22.82	46.2	24.84	11.3	19.16	10.8	4.39	15.0	52.75	63.1	31.61	40.1
Dic 25	23.32	38.5	25.33	2.2	19.72	13.7	4.99	15.5	53.44	60.9	32.20	41.2
Ene 24	24.16	31.3	26.18	54.2*	20.61	17.5	5.95	17.9	54.55	61.2	33.12	43.9

  

N°	597		596		599		1421		1423		600	
Nombre	β Scorpi* p.		δ Normae		ϑ Lupi		K Herculis* p.		τ Coronae Bor.		K Normae	
Mag. SP	2.62	B1	4.72	A3p	4.23	B3	5.00	G5	4.76	K0	4.94	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	16h06m	-19°51'	16h07m	-45°13'	16h07m	-36°51'	16h08m	+16°59'	16h09m	+36°26'	16h15m	-54°40'
Dic 31	33s88	23°4	51s72	20°0	51s99	7°2	56s67	41°3	40s06	24°1	s50	35°3
Ene 30	34.78	26.7	52.88	20.1	53.03	8.4	57.51	34.3	40.96	15.9	1.84	34.1
Feb 29	35.75	30.1	54.13	22.5	54.15	11.1	58.42	30.4	41.99	12.0	3.34	35.8
Mar 30	36.64	32.6	55.29	26.5	55.18	14.7	59.26	30.5	42.93	13.5	4.73	39.9
Abr 29	37.34	34.2	56.21	31.4	56.00	18.6	59.90	33.9	43.62	19.1	5.85	45.7
May 29	37.79	35.1	56.77	36.6	56.52	22.4	60.28	39.1	43.97	26.7	6.54	52.2
Jun 28	37.91	35.5	56.90	41.1	56.66	25.6	60.34	44.4	43.94	34.0	6.68	58.2
Jul 28	37.72	35.3	56.60	44.1	56.41	27.5	60.10	48.4	43.56	39.3	6.29	62.4
Ago 27	37.31	34.8	56.00	44.8	55.91	27.8	59.64	50.0	42.95	41.1	5.53	63.8
Sep 26	36.83	34.0	55.34	43.0	55.34	26.3	59.14	48.8	42.29	38.9	4.68	62.0
Oct 26	36.54	33.3	54.91	39.4	54.97	23.6	58.80	44.9	41.81	32.9	4.11	57.6
Nov 25	36.65	33.1	55.00	35.2	55.07	20.8	58.82	38.4	41.75	24.1	4.15	52.0
Dic 25	37.19	35.2	55.70	32.3	55.71	19.4	59.28	30.7	42.19	14.1	4.92	47.5
Ene 24	38.09	38.3	56.85	31.9	56.74	20.1	60.10	23.4	43.06	5.5	6.25	45.6



**Lugares aparentes de estrellas, 2020**  
**para las 0<sup>h</sup> de Tiempo Universal**

N°	603		602		605		604		1424		607	
Nombre	δ Ophiuchi		δ Triang. Aust.		ε Ophiuchi		γ <sup>2</sup> Normae		δ <sup>1</sup> Apodis*		σ Scorpi	
Mag. SP	2.74	M0	3.85	G0	3.24	K0	4.02	K0	4.68	M3	2.89	B1
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	16h15m	-3°44'	16h17m	-63°43'	16h19m	-4°44'	16h21m	-50°11'	16h23m	-78°44'	16h22m	-25°38'
Dic 31	21s56	36'0	12s11	49'4	20s69	19'4	17s45	57'3	15s25	16'8	21s97	13'1
Ene 30	22.39	41.0	13.79	47.0	21.52	24.2	18.67	56.4	18.67	12.7	22.89	15.4
Feb 29	23.30	44.6	15.69	48.2	22.43	27.8	20.03	58.1	22.73	12.9	23.90	18.2
Mar 30	24.13	46.0	17.47	52.5	23.27	29.2	21.31	61.8	26.61	17.1	24.84	20.7
Abr 29	24.81	45.3	18.89	59.0	23.95	28.5	22.36	66.9	29.68	24.5	25.61	22.8
May 29	25.24	43.3	19.74	66.7	24.40	26.7	23.02	72.7	31.39	33.7	26.13	24.6
Jun 28	25.36	41.0	19.87	74.0	24.54	24.5	23.20	78.0	31.42	42.7	26.31	25.9
Jul 28	25.19	39.0	19.30	79.3	24.37	22.6	22.89	81.8	29.87	49.6	26.14	26.5
Ago 27	24.79	37.8	18.25	81.2	23.98	21.4	22.23	83.1	27.24	52.6	25.71	26.4
Sep 26	24.34	37.8	17.08	79.4	23.52	21.4	21.47	81.6	24.36	51.0	25.20	25.6
Oct 26	24.03	39.3	16.28	74.3	23.21	22.7	20.94	77.7	22.26	45.1	24.86	24.4
Nov 25	24.08	42.3	16.27	67.5	23.25	25.5	20.97	72.8	21.87	36.8	24.91	23.6
Dic 25	24.57	46.8	17.19	61.6	23.73	29.8	21.67	68.9	23.52	28.9	25.45	24.0
Ene 24	25.39	51.8	18.83	58.6	24.55	34.6	22.87	67.5	26.83	24.1	26.35	25.9

  

N°	609		1427		613		610		616		618	
Nombre	γ Herculi		σ Serpentis		ω Herculis		ζ Triang. Aust.		α Scorpi A* (Antares)		β Herculis	
Mag. SP	3.75	F0	4.82	F0	4.57	A0p	4.91	G0	0.9-1.8	M0	2.77	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	16h22m	+19°06'	16h23m	+0°59'	16h26m	+13°59'	16h30m	-70°07'	16h30m	-26°28'	16h31m	+21°26'
Dic 31	46s08	25'8	3s04	3'0	18s27	18'8	33s03	22'2	35s68	21'2	2s68	49'0
Ene 30	46.89	18.6	3.85	57.5*	19.06	12.0	35.09	18.7	36.58	23.2	3.48	41.5
Feb 29	47.81	14.5	4.75	53.8*	19.97	8.0	37.50	19.0	37.59	25.7	4.40	37.2
Mar 30	48.66	14.6	5.58	52.8*	20.81	7.8	39.83	22.8	38.55	28.2	5.27	37.4
Abr 29	49.34	18.3	6.26	54.3*	21.50	10.8	41.72	29.4	39.35	30.2	5.97	41.3
May 29	49.75	23.9	6.71	57.1*	21.93	15.7	42.86	37.5	39.90	32.0	6.40	47.2
Jun 28	49.84	29.5	6.84	.2	22.04	20.7	43.05	45.6	40.10	33.4	6.50	53.3
Jul 28	49.61	33.9	6.67	2.8	21.84	24.7	42.32	51.8	39.95	34.2	6.28	58.0
Ago 27	49.15	35.8	6.28	4.2	21.41	26.5	40.93	54.6	39.53	34.3	5.81	60.1
Sep 26	48.63	34.8	5.81	4.0	20.91	25.8	39.35	53.2	39.01	33.5	5.26	59.1
Oct 26	48.24	30.8	5.48	2.0	20.54	22.4	38.19	47.9	38.65	32.3	4.85	55.0
Nov 25	48.22	24.2	5.50	58.3*	20.52	16.6	38.01	40.5	38.67	31.4	4.79	48.3
Dic 25	48.64	16.3	5.96	53.1*	20.94	9.3	39.04	33.5	39.19	31.5	5.18	40.0
Ene 24	49.42	8.8	6.75	47.5*	21.72	2.3	41.04	29.3	40.08	33.1	5.95	32.2

  

N°	1431		611		620		622		624		626	
Nombre	N Scorpii		γ Apodis		τ Scorpii		ζ Ophiuchi		Bradley 2114 (Ophiuchi)		η Herculis	
Mag. SP	4.23	B3	3.89	K0	2.82	B0	2.56	B0	4.96	K0	3.53	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	16h32m	-34°44'	16h36m	-78°56'	16h37m	-28°15'	16h38m	-10°36'	16h42m	-17°46'	16h43m	+38°53'
Dic 31	38s87	37'1	25s58	2'7	5s26	13'4	13s41	17'4	41s50	39'9	32s68	3'6
Ene 30	39.84	37.9	28.95	58.1*	6.17	14.9	14.22	21.3	42.34	42.8	33.50	54.8*
Feb 29	40.93	39.9	33.05	57.7*	7.19	17.3	15.14	24.5	43.28	45.5	34.53	50.2*
Mar 30	41.97	42.7	37.08	1.3	8.17	19.6	16.02	26.0	44.19	47.3	35.52	50.9*
Abr 29	42.84	45.7	40.35	8.2	9.00	21.7	16.76	25.9	44.97	48.1	36.32	56.3*
May 29	43.43	48.8	42.26	17.2	9.57	23.7	17.27	24.9	45.52	48.2	36.78	4.2
Jun 28	43.65	51.7	42.48	26.2	9.79	25.4	17.47	23.5	45.74	48.0	36.84	12.1
Jul 28	43.48	53.6	41.04	33.4	9.65	26.5	17.34	22.3	45.63	47.7	36.51	18.3
Ago 27	43.02	54.2	38.44	36.9	9.23	26.8	16.97	21.5	45.25	47.4	35.89	21.1
Sep 26	42.45	53.3	35.48	35.8	8.70	26.1	16.50	21.2	44.76	47.0	35.16	19.9
Oct 26	42.04	51.2	33.22	30.3	8.32	24.7	16.15	21.8	44.39	46.8	34.57	14.5
Nov 25	42.05	48.8	32.63	22.1	8.33	23.5	16.14	23.5	44.39	47.3	34.37	6.0
Dic 25	42.60	47.4	34.13	14.0	8.83	23.2	16.58	26.6	44.83	49.0	34.68	55.9*
Ene 24	43.55	47.8	37.38	8.6	9.72	24.5	17.38	30.4	45.65	51.7	35.46	46.7*

## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	625		1435		1438		628		1439		1442	
Nombre	α Triang. Aust.		η Arae		20 Ophiuchi		ε Scorpii		μ <sup>1</sup> Scorpii		ι Ophiuchi	
Mag. SP	1.92	K2	3.76	K5	4.65	F5	2.29	K0	3.08 var.	B3p	4.38	B8
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	16h50m	-69°03'	16h51m	-59°04'	16h50m	-10°48'	16h51m	-34°19'	16h53m	-38°04'	16h54m	+10°08'
Dic 31	42s42	29°9'	27s20	18°5'	54s17	56°6'	24s95	32°4'	10s82	39°5'	55s10	2°1'
Ene 30	44.29	25.8	28.57	15.5	54.95	60.4	25.87	32.8	11.78	39.3	55.83	55.7*
Feb 29	46.56	25.1	30.20	15.5	55.86	63.4	26.94	34.4	12.90	40.6	56.71	51.6*
Mar 30	48.84	28.0	31.83	18.2	56.75	64.8	27.99	36.6	14.00	42.8	57.57	51.1*
Abr 29	50.77	33.8	33.22	23.2	57.52	64.6	28.90	39.1	14.96	45.7	58.31	53.7*
May 29	52.03	41.4	34.17	29.6	58.06	63.4	29.55	41.9	15.65	49.0	58.82	58.2*
Jun 28	52.39	49.4	34.51	36.3	58.30	62.0	29.82	44.6	15.95	52.3	59.02	3.0
Jul 28	51.84	55.9	34.20	41.6	58.20	60.8	29.70	46.7	15.82	54.9	58.89	6.9
Ago 27	50.59	59.3	33.40	44.4	57.84	60.0	29.26	47.6	15.36	56.2	58.50	9.0
Sep 26	49.08	58.7	32.40	43.7	57.36	59.8	28.68	47.1	14.75	55.7	57.99	8.7
Oct 26	47.88	54.1	31.61	39.8	56.99	60.4	28.23	45.4	14.28	53.5	57.59	6.1
Nov 25	47.57	47.0	31.45	33.9	56.95	62.1	28.19	43.1	14.22	50.7	57.50	1.2
Dic 25	48.40	39.9	32.10	28.2	57.36	65.0	28.66	41.6	14.71	48.5	57.84	54.7*
Ene 24	50.20	35.1	33.43	24.6	58.13	68.6	29.57	41.6	15.65	47.9	58.55	48.2*

  

N°	633		631		632		634		1445		635	
Nombre	κ Ophiuchi		ζ Arae		ε <sup>1</sup> Arae		ε Herculis		30 Ophiuchi		60 Herculis	
Mag. SP	3.20	K0	3.13	K5	4.06	K2	3.92	A0	4.82	K0	4.91	A3
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	16h58m	+9°20'	17h00m	-56°01'	17h01m	-53°11'	17h01m	+30°53'	17h02m	-4°15'	17h06m	+12°42'
Dic 31	34s72	43°8'	13s03	°4'	7s38	11°5'	1s07	51°1'	4s63	1°3'	16s15	53°3'
Ene 30	35.45	37.5	14.28	57.5*	8.56	8.9	1.81	42.6	5.37	5.9	16.86	46.5
Feb 29	36.32	33.4	15.79	57.3*	9.98	8.9	2.75	37.8	6.25	9.2	17.72	42.3
Mar 30	37.18	32.8	17.30	59.6*	11.40	11.1	3.69	37.9	7.13	10.2	18.60	41.8
Abr 29	37.93	35.4	18.63	4.0	12.65	15.2	4.48	42.4	7.90	9.1	19.36	44.7
May 29	38.45	39.8	19.56	9.9	13.54	20.6	5.00	49.5	8.45	6.8	19.90	49.5
Jun 28	38.66	44.5	19.92	16.1	13.90	26.4	5.15	56.9	8.71	4.2	20.12	54.8
Jul 28	38.54	48.3	19.70	21.2	13.71	31.1	4.93	63.0	8.63	2.1	20.01	59.2
Ago 27	38.15	50.4	19.00	23.9	13.07	33.7	4.42	66.1	8.28	.8	19.62	61.6
Sep 26	37.65	50.3	18.09	23.6	12.23	33.4	3.77	65.6	7.80	.8	19.10	61.5
Oct 26	37.23	47.7	17.35	20.1	11.55	30.2	3.23	61.3	7.40	2.0	18.67	58.7
Nov 25	37.14	43.0	17.18	14.7	11.39	25.1	3.03	53.9	7.33	4.7	18.54	53.6
Dic 25	37.47	36.7	17.75	9.4	11.94	20.2	3.30	44.7	7.68	8.6	18.84	46.9
Ene 24	38.17	30.3	18.96	5.9	13.08	17.1	4.00	36.0	8.40	13.1	19.52	40.1

  

N°	638		641		643		1454		644		645	
Nombre	η Scorpii		δ Herculis*		π Herculis		Piazzi 17 <sup>a</sup> 68 (Herculis)		θ Ophiuchi		β Arae	
Mag. SP	3.33	F2	3.14	A2	3.16	K5	5.00	M0	3.27	B3	2.85	K2
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	17h13m	-43°15'	17h15m	+24°48'	17h15m	+36°47'	17h21m	+18°02'	17h23m	-25°00'	17h26m	-55°32'
Dic 31	32s17	41°6'	48s98	59°5'	42s34	13°4'	9s54	15°7'	11s71	59°5'	54s01	40°3'
Ene 30	33.14	40.1	49.67	51.4	43.06	4.3	10.20	8.4	12.49	60.6	55.15	36.7
Feb 29	34.32	40.4	50.56	46.6	44.01	59.0*	11.06	3.8	13.44	62.0	56.61	35.4
Mar 30	35.52	42.0	51.47	46.3	45.01	59.0*	11.95	3.3	14.43	63.1	58.13	36.6
Abr 29	36.60	44.8	52.27	50.1	45.86	3.7	12.74	6.6	15.33	63.9	59.52	40.0
May 29	37.40	48.6	52.83	56.5	46.43	11.3	13.32	12.2	16.02	64.6	60.56	45.1
Jun 28	37.79	52.7	53.04	63.4	46.60	19.5	13.57	18.3	16.38	65.5	61.06	51.0
Jul 28	37.70	56.2	52.89	69.2	46.37	26.2	13.47	23.5	16.36	66.3	60.96	56.4
Ago 27	37.23	58.3	52.45	72.5	45.81	30.0	13.07	26.5	16.02	66.9	60.34	59.8
Sep 26	36.56	58.3	51.86	72.4	45.10	29.8	12.53	26.6	15.50	66.9	59.45	60.3
Oct 26	36.00	56.2	51.34	68.9	44.47	25.6	12.04	23.7	15.05	66.4	58.66	57.6
Nov 25	35.86	52.7	51.13	62.4	44.17	17.9	11.86	18.0	14.93	65.7	58.37	52.6
Dic 25	36.30	49.4	51.37	54.0	44.37	8.2	12.10	10.6	15.27	65.6	58.81	47.1
Ene 24	37.24	47.5	52.03	45.8	45.04	59.0*	12.74	3.2	16.02	66.5	59.90	43.0

**Lugares aparentes de estrellas, 2020  
para las 0<sup>h</sup> de Tiempo Universal**

N°	1457		1459		647		646		649		1460	
Nombre	44 Ophiuchi		σ Ophiuchi		27 H.Ophiuchi		45 Ophiuchi		υ Scorpii		λ Herculis	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	17h27m	-24°11'	17h27m	+ 4°07'	17h27m	- 5°06'	17h28m	-29°52'	17h32m	-37°18'	17h31m	+26°05'
Dic 31	32s93	27°1	28s16	28°8	39s23	8°0	35s22	55°7	4s52	30°6	30s56	47°4
Ene 30	33.70	28.3	28.82	23.3	39.91	12.1	36.02	55.9	5.37	29.6	31.20	39.2
Feb 29	34.64	29.7	29.66	19.6	40.76	15.1	37.01	56.8	6.43	29.7	32.07	34.0
Mar 30	35.62	30.7	30.54	18.8	41.65	16.0	38.04	57.8	7.55	30.7	33.00	33.5
Abr 29	36.52	31.3	31.34	20.9	42.46	14.7	38.99	58.9	8.58	32.3	33.83	37.3
May 29	37.22	31.8	31.94	24.7	43.09	12.3	39.72	60.3	9.39	34.8	34.43	43.8
Jun 28	37.59	32.5	32.24	28.9	43.41	9.7	40.12	62.0	9.82	37.7	34.69	51.1
Jul 28	37.58	33.2	32.20	32.4	43.39	7.4	40.11	63.6	9.81	40.5	34.57	57.3
Ago 27	37.25	33.7	31.87	34.5	43.07	6.2	39.76	64.7	9.43	42.3	34.14	60.9
Sep 26	36.73	33.8	31.38	34.6	42.59	6.1	39.21	64.9	8.83	42.7	33.54	61.3
Oct 26	36.28	33.4	30.94	32.8	42.16	7.2	38.73	64.1	8.29	41.3	32.99	58.1
Nov 25	36.15	32.9	30.78	29.1	42.03	9.6	38.59	62.7	8.11	38.9	32.73	51.7
Dic 25	36.47	33.0	31.05	23.9	42.31	13.1	38.93	61.7	8.46	36.5	32.92	43.4
Ene 24	37.22	33.9	31.68	18.4	42.97	17.2	39.70	61.6	9.28	35.1	33.52	35.1

  

N°	648		651		652		656		654		658	
Nombre	δ Arae		α Arae		λ Scorpii		α Ophiuchi		ϑ Scorpii		ξ Serpentis	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	17h32m	-60°41'	17h33m	-49°53'	17h34m	-37°06'	17h35m	+12°32'	17h38m	-43°00'	17h38m	-15°24'
Dic 31	49s97	45°9	19s83	17°7	55s10	54°6	49s53	48°7	42s23	25°9	41s44	31°7
Ene 30	51.23	41.4	20.84	14.7	55.94	53.6	50.16	42.0	43.11	23.8	42.13	34.1
Feb 29	52.86	39.5	22.12	13.7	56.99	53.6	50.99	37.7	44.25	23.2	43.01	36.1
Mar 30	54.61	40.4	23.47	14.6	58.11	54.4	51.87	37.0	45.46	23.9	43.93	36.8
Abr 29	56.21	43.9	24.72	17.3	59.14	56.0	52.68	39.8	46.59	25.8	44.80	36.4
May 29	57.41	49.5	25.69	21.5	59.96	58.4	53.30	44.8	47.47	28.9	45.49	35.4
Jun 28	57.99	56.2	26.18	26.5	60.40	61.2	53.60	50.3	47.95	32.8	45.87	34.4
Jul 28	57.87	62.3	26.14	31.1	60.40	64.0	53.55	54.9	47.95	36.4	45.89	33.7
Ago 27	57.15	66.3	25.64	34.2	60.02	65.8	53.21	57.8	47.54	38.9	45.59	33.4
Sep 26	56.09	67.1	24.87	34.8	59.43	66.2	52.69	58.1	46.88	39.5	45.10	33.5
Oct 26	55.14	64.3	24.18	32.7	58.89	65.0	52.21	55.7	46.28	38.0	44.65	33.9
Nov 25	54.75	58.7	23.93	28.5	58.70	62.6	52.01	51.0	46.06	34.8	44.50	34.7
Dic 25	55.18	52.4	24.31	23.9	59.04	60.2	52.23	44.5	46.40	31.3	44.77	36.3
Ene 24	56.38	47.4	25.27	20.4	59.85	58.8	52.84	37.8	47.25	28.8	45.44	38.5

  

N°	660		1463		665		661		667		1464	
Nombre	κ Scorpii		58 Ophiuchi		β Ophiuchi		η Pavonis		μ Herculis		χ Sagittarii	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	17h43m	-39°02'	17h44m	-21°41'	17h44m	+ 4°33'	17h47m	-64°43'	17h47m	+27°42'	17h48m	-27°50'
Dic 31	49s26	14°0	35s12	25°7	25s33	38°0	36s81	44°8	12s21	35°3	46s44	9°0
Ene 30	50.09	12.5	35.83	27.0	25.96	32.5	38.13	39.4	12.81	26.8	47.17	9.2
Feb 29	51.16	12.0	36.73	28.2	26.77	28.8	39.95	36.6	13.66	21.4	48.11	9.7
Mar 30	52.30	12.6	37.69	28.8	27.65	28.1	41.93	36.8	14.59	20.6	49.12	10.2
Abr 29	53.38	14.0	38.60	28.8	28.47	30.3	43.79	39.9	15.45	24.3	50.08	10.6
May 29	54.24	16.5	39.33	28.7	29.11	34.3	45.22	45.6	16.09	30.9	50.86	11.3
Jun 28	54.72	19.6	39.74	28.8	29.46	38.7	45.94	52.6	16.38	38.4	51.31	12.4
Jul 28	54.75	22.7	39.78	29.1	29.46	42.4	45.86	59.3	16.29	44.9	51.36	13.7
Ago 27	54.37	24.9	39.48	29.5	29.15	44.7	45.06	64.1	15.87	49.0	51.05	14.8
Sep 26	53.76	25.5	38.98	29.7	28.66	45.0	43.85	65.4	15.26	49.6	50.53	15.2
Oct 26	53.20	24.3	38.51	29.7	28.20	43.3	42.70	62.9	14.67	46.6	50.03	14.8
Nov 25	52.98	21.7	38.34	29.6	28.00	39.7	42.14	57.1	14.36	40.3	49.84	13.9
Dic 25	53.29	19.0	38.61	30.0	28.22	34.7	42.51	50.2	14.50	31.9	50.11	13.1
Ene 24	54.08	17.0	39.29	31.1	28.81	29.3	43.76	44.2	15.05	23.4	50.81	13.0

**Lugares aparentes de estrellas, 2020**  
**para las 0<sup>h</sup> de Tiempo Universal**

N°	666		668		669		672		674		673	
Nombre	λ Scorpii		γ Ophiuchi		G Scorpii		δ Herculis		ξ Herculis		ν Ophiuchi	
Mag. SP	3.03	F5p	3.75	A0	3.21	K2	3.86	K0	3.70	K0	3.34	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	17h48m	-40°07'	17h48m	+2°42'	17h51m	-37°02'	17h56m	+37°14'	17h58m	+29°14'	18h00m	-9°46'
Dic 31	55s92	54°4	51s42	5°0	10s18	48°5	53s97	54°9	30s22	48°0	5s21	27°2
Ene 30	56.74	52.5	52.03	59.8*	10.97	47.1	54.55	45.6	30.79	39.4	5.82	30.3
Feb 29	57.82	51.8	52.84	56.3*	12.00	46.6	55.43	39.5	31.62	33.8	6.64	32.5
Mar 30	58.97	52.2	53.72	55.6*	13.11	47.0	56.43	38.5	32.56	32.8	7.54	33.0
Abr 29	60.08	53.6	54.54	57.7*	14.17	48.0	57.37	42.5	33.44	36.5	8.42	31.8
May 29	60.96	56.1	55.20	1.4	15.03	50.0	58.06	49.9	34.12	43.2	9.13	29.7
Jun 28	61.46	59.3	55.57	5.5	15.53	52.7	58.37	58.4	34.45	51.0	9.56	27.5
Jul 28	61.51	62.5	55.58	9.0	15.58	55.5	58.25	66.0	34.39	57.9	9.62	25.8
Ago 27	61.14	64.9	55.28	11.1	15.24	57.6	57.75	71.0	33.98	62.4	9.36	25.0
Sep 26	60.52	65.7	54.80	11.4	14.65	58.3	57.04	72.2	33.36	63.5	8.89	25.0
Oct 26	59.94	64.6	54.34	9.9	14.09	57.4	56.34	69.2	32.75	60.8	8.43	25.8
Nov 25	59.70	61.9	54.14	6.5	13.86	55.1	55.92	62.5	32.40	54.7	8.22	27.4
Dic 25	59.99	58.9	54.34	1.8	14.14	52.7	55.97	53.3	32.49	46.3	8.43	29.8
Ene 24	60.78	56.7	54.93	56.7*	14.90	50.9	56.49	43.8	33.01	37.7	9.01	32.8
N°	1469		677		679		1471		680		681	
Nombre	93 Herculis		67 Ophiuchi		γ Sagittarii		δ Arae		72 Ophiuchi		O Herculis	
Mag. SP	4.67	K0	3.97	B5p	2.99	K0	3.66	B1p	3.73	A3	3.83	A0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	18h00m	+16°45'	18h01m	+2°55'	18h07m	-30°25'	18h08m	-50°05'	18h08m	+9°34'	18h08m	+28°45'
Dic 31	54s55	3°6	36s48	55°7	2s72	17°5	7s58	14°5	15s57	5°0	17s05	58°3
Ene 30	55.11	56.5*	37.06	50.6	3.41	16.9	8.45	10.6	16.12	58.9*	17.59	49.8
Feb 29	55.90	51.7*	37.85	47.1	4.34	16.8	9.66	8.3	16.89	54.8*	18.40	44.1
Mar 30	56.79	50.9*	38.72	46.4	5.37	16.7	11.02	7.8	17.76	54.0*	19.33	42.9
Abr 29	57.63	53.8*	39.57	48.5	6.38	16.9	12.34	9.2	18.61	56.6*	20.22	46.4
May 29	58.30	59.3*	40.26	52.4	7.22	17.6	13.43	12.5	19.30	1.3	20.92	53.1
Jun 28	58.67	5.6	40.65	56.7	7.74	18.9	14.08	17.1	19.70	6.6	21.29	60.9
Jul 28	58.67	11.2	40.70	60.3	7.85	20.6	14.18	22.0	19.75	11.3	21.25	67.9
Ago 27	58.35	14.8	40.43	62.6	7.57	22.2	13.77	25.7	19.46	14.3	20.86	72.6
Sep 26	57.82	15.6	39.95	63.0	7.04	23.0	13.03	27.3	18.97	15.1	20.25	73.9
Oct 26	57.29	13.5	39.47	61.5	6.51	22.8	12.29	26.1	18.47	13.4	19.64	71.6
Nov 25	57.02	8.6	39.24	58.3	6.27	21.7	11.91	22.4	18.21	9.4	19.27	65.7
Dic 25	57.15	1.9	39.41	53.7	6.48	20.4	12.14	17.7	18.34	3.8	19.33	57.5
Ene 24	57.67	54.8*	39.96	48.6	7.14	19.5	12.97	13.4	18.86	57.8*	19.82	49.0
N°	1473		682		683		1477		1476		687	
Nombre	ε Telescopii		μ Sagittarii		η Sagittarii*		κ Lyrae		74 Ophiuchi		δ Sagittarii	
Mag. SP	4.53	K0	3.86	B8p	3.11	M3	4.33	K0	4.86	G5	2.70	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	18h12m	-45°56'	18h14m	-21°03'	18h18m	-36°45'	18h20m	+36°04'	18h21m	+3°23'	18h22m	-29°49'
Dic 31	39s36	53°8	54s91	5°9	55s74	12°6	31s39	28°0	49s62	15°0	13s59	3°7
Ene 30	40.16	50.5	55.53	6.9	56.44	10.7	31.89	18.7	50.14	10.0	14.23	2.9
Feb 29	41.28	48.5	56.38	7.6	57.41	9.5	32.71	12.3	50.89	6.5	15.13	2.4
Mar 30	42.54	47.9	57.33	7.6	58.51	8.9	33.69	10.8	51.76	5.9	16.14	2.0
Abr 29	43.78	48.9	58.27	6.9	59.61	9.2	34.64	14.4	52.62	8.1	17.17	1.6
May 29	44.81	51.5	59.07	6.1	60.54	10.4	35.39	21.5	53.35	12.1	18.04	1.9
Jun 28	45.44	55.4	59.57	5.7	61.12	12.7	35.78	30.0	53.80	16.7	18.60	3.0
Jul 28	45.56	59.6	59.69	5.8	61.26	15.5	35.74	38.0	53.90	20.6	18.75	4.5
Ago 27	45.20	63.0	59.46	6.3	60.99	17.9	35.31	43.5	53.66	23.1	18.51	6.1
Sep 26	44.54	64.6	58.98	6.9	60.43	19.3	34.63	45.4	53.19	23.7	18.00	7.2
Oct 26	43.85	63.7	58.48	7.2	59.84	18.9	33.92	43.2	52.70	22.3	17.46	7.2
Nov 25	43.50	60.6	58.24	7.3	59.54	17.1	33.46	37.2	52.43	19.2	17.18	6.3
Dic 25	43.71	56.5	58.42	7.4	59.72	14.6	33.44	28.4	52.54	14.7	17.35	5.1
Ene 24	44.47	52.9	59.01	8.4	60.38	12.4	33.88	19.2	53.04	9.8	17.96	4.0

## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	688		686		690		689		691		692		
Nombre	η Serpentis		ξ Pavonis*		109 Herculis		ε Sagittarii		α Telescopii		λ Sagittarii		
Mag.	SP	3.26	K0	4.36	K2	3.84	K0	1.85	A0	3.51	B3	2.81	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	
m d	18h22m	-2°53'	18h24m	-61°28'	18h24m	+21°46'	18h25m	-34°22'	18h28m	-45°57'	18h29m	-25°24'	
Dic 31	18s29	31°8	59s28	54°8	30s73	47°9	26s94	23°6	23s84	18°8	9s51	32°2	
Ene 30	18.83	35.9	60.30	48.9	31.22	40.2	27.60	22.0	24.59	15.2	10.11	32.1	
Feb 29	19.59	38.6	61.81	44.9	31.97	34.8	28.53	20.9	25.67	12.7	10.96	32.0	
Mar 30	20.45	39.1	63.58	43.4	32.86	33.6	29.59	20.2	26.91	11.5	11.93	31.5	
Abr 29	21.33	37.3	65.34	44.8	33.75	36.6	30.66	20.0	28.17	11.9	12.92	30.8	
May 29	22.07	34.0	66.80	48.9	34.48	42.5	31.59	20.8	29.25	14.1	13.78	30.3	
Jun 28	22.53	30.6	67.69	54.9	34.90	49.6	32.18	22.6	29.94	17.7	14.34	30.5	
Jul 28	22.64	27.7	67.85	61.4	34.95	56.1	32.35	24.9	30.12	22.0	14.50	31.3	
Ago 27	22.41	26.0	67.31	66.6	34.64	60.5	32.10	27.2	29.82	25.6	14.29	32.4	
Sep 26	21.95	25.8	66.30	69.2	34.10	62.0	31.56	28.5	29.17	27.6	13.81	33.4	
Oct 26	21.46	26.9	65.22	68.0	33.53	60.1	30.99	28.4	28.47	27.1	13.29	33.7	
Nov 25	21.20	29.4	64.58	63.4	33.18	55.2	30.68	26.9	28.07	24.3	13.01	33.4	
Dic 25	21.33	32.9	64.71	56.9	33.22	48.1	30.84	24.9	28.22	20.2	13.15	32.9	
Ene 24	21.83	36.9	65.65	50.5	33.67	40.4	31.47	23.0	28.92	16.3	13.71	32.6	

---

N°	696		697		1482		699		1486		698		
Nombre	γ Scuti		δ Coronae Aust.		α Scuti		α Lyrae (Vega)		δ Scuti		ζ Pavonis		
Mag.	SP	4.70	A3	4.64	G5	3.85	K0	0.03	A0	4.72	F0	4.01	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	
m d	18h30m	-14°33'	18h34m	-42°17'	18h36m	-8°13'	18h37m	+38°48'	18h43m	-9°01'	18h45m	-71°24'	
Dic 31	17s67	5°3	52s48	46°3	15s25	43°2	34s55	11°6	19s63	55°6	14s87	28°5	
Ene 30	18.23	7.3	53.17	43.1	15.77	46.2	34.99	2.1	20.13	58.4	16.11	20.9	
Feb 29	19.01	8.5	54.17	40.8	16.51	48.2	35.79	55.3*	20.86	60.2	18.18	15.3	
Mar 30	19.91	8.4	55.34	39.5	17.39	48.3	36.78	53.4*	21.74	60.1	20.71	12.7	
Abr 29	20.84	7.0	56.54	39.5	18.29	46.5	37.78	56.7*	22.64	58.3	23.29	13.6	
May 29	21.63	5.1	57.58	41.0	19.08	43.8	38.58	3.9	23.45	55.5	25.48	17.9	
Jun 28	22.16	3.5	58.26	44.0	19.59	41.0	39.02	12.7	23.98	52.8	26.85	24.8	
Jul 28	22.31	2.4	58.46	47.6	19.75	38.9	39.02	21.2	24.17	50.7	27.14	32.5	
Ago 27	22.11	2.1	58.20	50.9	19.56	37.8	38.60	27.3	23.99	49.6	26.38	39.1	
Sep 26	21.66	2.4	57.61	52.9	19.12	37.8	37.90	29.8	23.56	49.6	24.85	42.7	
Oct 26	21.17	3.1	56.95	52.7	18.64	38.7	37.14	28.1	23.07	50.6	23.13	41.9	
Nov 25	20.90	4.1	56.57	50.4	18.36	40.5	36.62	22.4	22.78	52.2	21.94	36.9	
Dic 25	21.03	5.5	56.70	46.9	18.46	42.9	36.52	13.8	22.86	54.5	21.83	29.2	
Ene 24	21.55	7.2	57.34	43.5	18.94	45.8	36.90	4.3	23.32	57.0	22.93	21.3	

---

N°	702		1487		703		1488		1491		1489		
Nombre	ε Scuti		φ Sagittarii		110 Herculis		B.D. +26° 3349 (Lyrae)		111 Herculis		β Scuti		
Mag.	SP	4.90	G5	3.17	B8	4.19	F5	4.83	K0	4.36	A3	4.22	G0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	
m d	18h44m	-8°15'	18h46m	-26°58'	18h46m	+20°33'	18h46m	+26°41'	18h47m	+18°12'	18h48m	-4°43'	
Dic 31	34s12	15°0	51s50	7°9	29s07	59°7	50s52	4°6	51s95	17°6	11s70	30°9	
Ene 30	34.61	17.9	52.04	7.2	29.50	52.2	50.94	56.4*	52.37	10.5	12.17	34.4	
Feb 29	35.34	19.8	52.86	6.5	30.20	46.8	51.65	50.4*	53.07	5.5	12.88	36.7	
Mar 30	36.21	19.7	53.83	5.5	31.07	45.4	52.54	48.7*	53.93	4.2	13.74	36.8	
Abr 29	37.11	17.9	54.85	4.4	31.97	48.2	53.47	51.6*	54.83	6.9	14.64	34.8	
May 29	37.91	15.0	55.75	3.7	32.74	53.9	54.25	57.9*	55.60	12.5	15.43	31.4	
Jun 28	38.45	12.1	56.37	3.9	33.22	60.9	54.73	5.6	56.09	19.3	15.97	28.0	
Jul 28	38.64	9.9	56.60	4.9	33.33	67.5	54.82	12.9	56.21	25.6	16.16	25.1	
Ago 27	38.46	8.7	56.42	6.3	33.08	72.2	54.53	18.3	55.98	30.1	15.99	23.5	
Sep 26	38.03	8.7	55.96	7.5	32.56	74.1	53.97	20.6	55.48	31.9	15.56	23.2	
Oct 26	37.54	9.6	55.42	8.0	31.99	72.7	53.35	19.2	54.92	30.6	15.07	24.2	
Nov 25	37.25	11.3	55.10	7.7	31.61	68.3	52.93	14.4	54.55	26.4	14.77	26.2	
Dic 25	37.33	13.7	55.19	6.9	31.59	61.6	52.88	7.1	54.54	20.1	14.83	29.2	
Ene 24	37.78	16.4	55.70	6.1	31.98	54.3	53.25	58.9*	54.92	13.1	15.26	32.5	

## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	705		704		706		709		710		708					
Nombre	β Lyrae		λ Pavonis		σ Sagittarii		ϑ Serpentis* p.		ξ <sup>2</sup> Sagittarii		λ Telescopii					
Mag.	SP	3.3-4.3	B8p''B2p	3.4-4.3	B2	2.02	B3	4.61	A5	3.51	K0	5.03	B9			
Oh UT	A.R.		Dec.		A.R.		Dec.		A.R.		Dec.		A.R.		Dec.	
m	d	18h50m	+33°23'	18h53m	-62°09'	18h56m	-26°16'	18h57m	+ 4°13'	18h58m	-21°04'	18h59m	-52°54'			
Dic 31	46s75	13°2	58s93	45°7	27s48	14°6	10s48	50°6	52s66	45°3	59s55	39°6				
Ene 30	47.15	4.2	59.79	39.1	27.99	14.0	10.90	45.8	53.14	45.7	60.24	34.3				
Feb 29	47.87	57.6*	61.22	33.9	28.78	13.2	11.58	42.3	53.89	45.6	61.36	30.0				
Mar 30	48.80	55.5*	62.98	31.2	29.73	12.0	12.42	41.8	54.81	44.6	62.74	27.3				
Abr 29	49.77	58.5*	64.80	31.3	30.75	10.6	13.30	44.1	55.78	43.0	64.19	26.8				
May 29	50.58	5.1	66.41	34.4	31.66	9.6	14.10	48.5	56.67	41.4	65.50	28.8				
Jun 28	51.07	13.5	67.47	39.9	32.31	9.6	14.64	53.4	57.29	40.4	66.39	32.9				
Jul 28	51.14	21.6	67.79	46.5	32.56	10.4	14.83	57.8	57.54	40.3	66.72	38.1				
Ago 27	50.81	27.6	67.38	52.3	32.41	11.8	14.66	60.7	57.41	40.9	66.46	43.0				
Sep 26	50.19	30.3	66.41	55.8	31.96	13.1	14.23	61.7	56.97	41.9	65.76	46.1				
Oct 26	49.51	29.1	65.28	55.6	31.42	13.7	13.72	60.6	56.46	42.6	64.91	46.4				
Nov 25	49.01	24.0	64.50	51.7	31.09	13.6	13.39	57.7	56.13	43.0	64.34	43.4				
Dic 25	48.91	16.1	64.46	45.2	31.15	12.9	13.41	53.5	56.19	43.2	64.33	38.4				
Ene 24	49.25	7.2	65.24	38.3	31.63	12.1	13.80	48.7	56.64	43.4	64.96	32.8				

  

N°	713		712		716		717		1496		718					
Nombre	γ Lyrae		ε Aquilae		ζ Aquilae		λ Aquilae		τ Sagittarii		α Coronae Aust					
Mag.	SP	3.24	A0p	4.02	K0	2.99	A0	3.44	B9	3.32	K0	4.11	A2			
Oh UT	A.R.		Dec.		A.R.		Dec.		A.R.		Dec.		A.R.		Dec.	
m	d	18h59m	+32°43'	19h00m	+15°05'	19h06m	+13°53'	19h07m	- 4°51'	19h08m	-27°38'	19h10m	-37°52'			
Dic 31	39s17	5°2	29s52	47°5	17s45	39°4	16s16	5°6	8s43	25°0	46s70	20°9				
Ene 30	39.53	56.4*	29.91	41.0	17.83	33.0	16.58	8.8	8.92	24.0	47.23	18.0				
Feb 29	40.23	49.7*	30.57	36.2	18.48	28.4	17.25	10.9	9.69	22.8	48.08	15.3				
Mar 30	41.15	47.6*	31.41	34.9	19.31	27.2	18.09	10.9	10.64	21.3	49.14	13.0				
Abr 29	42.11	50.3*	32.31	37.5	20.21	29.7	19.00	8.7	11.67	19.6	50.29	11.6				
May 29	42.94	56.8*	33.10	42.8	21.01	34.9	19.82	5.2	12.62	18.6	51.34	11.6				
Jun 28	43.46	5.1	33.63	49.2	21.56	41.2	20.41	1.5	13.30	18.6	52.10	13.1				
Jul 28	43.56	13.3	33.80	55.2	21.75	47.1	20.65	58.6*	13.59	19.6	52.42	15.9				
Ago 27	43.26	19.5	33.60	59.6	21.57	51.3	20.52	56.8*	13.46	21.2	52.29	19.0				
Sep 26	42.66	22.4	33.14	61.4	21.12	53.1	20.12	56.5*	13.02	22.8	51.79	21.4				
Oct 26	41.98	21.4	32.59	60.3	20.58	52.2	19.63	57.5*	12.48	23.6	51.18	22.1				
Nov 25	41.48	16.6	32.21	56.6	20.20	48.6	19.29	59.5*	12.12	23.4	50.75	20.9				
Dic 25	41.35	8.9	32.18	50.8	20.16	43.1	19.30	2.3	12.15	22.5	50.76	18.3				
Ene 24	41.66	.2	32.54	44.4	20.50	36.9	19.69	5.4	12.59	21.4	51.24	15.3				

  

N°	720		724		722		727		1502		728					
Nombre	π Sagittarii		ϑ Lyrae		43 Sagittarii		υ Sagittarii		β <sup>1</sup> Sagittarii		α Sagittarii					
Mag.	SP	2.89	F2	4.36	K0	4.96	K0	4.61	B8p,F2p	4.01	B8	3.97	B8			
Oh UT	A.R.		Dec.		A.R.		Dec.		A.R.		Dec.		A.R.		Dec.	
m	d	19h10m	-20°59'	19h17m	+38°10'	19h18m	-18°54'	19h22m	-15°55'	19h24m	-44°25'	19h25m	-40°34'			
Dic 31	54s46	27°4	1s37	14°1	45s59	60°0	49s72	°5	s95	15°0	12s90	40°3				
Ene 30	54.91	27.7	1.66	4.8	46.01	60.5	50.12	1.6	1.46	10.8	13.38	36.7				
Feb 29	55.64	27.4	2.34	57.5*	46.70	60.4	50.79	1.9	2.35	6.8	14.22	33.3				
Mar 30	56.54	26.1	3.27	54.7*	47.58	59.2	51.64	.8	3.48	3.7	15.29	30.4				
Abr 29	57.52	24.2	4.29	57.0*	48.55	57.1	52.59	58.6*	4.74	2.0	16.48	28.6				
May 29	58.42	22.4	5.18	3.6	49.45	54.8	53.49	56.0*	5.91	2.2	17.59	28.4				
Jun 28	59.07	21.2	5.75	12.3	50.12	53.2	54.15	53.8*	6.78	4.6	18.42	30.1				
Jul 28	59.36	21.0	5.89	21.2	50.42	52.6	54.46	52.6*	7.17	8.3	18.81	33.2				
Ago 27	59.25	21.7	5.59	28.2	50.33	52.9	54.38	52.5*	7.06	12.4	18.71	36.8				
Sep 26	58.84	22.7	4.96	32.0	49.94	53.8	54.00	53.1*	6.53	15.5	18.22	39.6				
Oct 26	58.32	23.6	4.21	31.6	49.43	54.8	53.50	54.2*	5.84	16.6	17.57	40.7				
Nov 25	57.98	24.1	3.62	27.1	49.07	55.6	53.14	55.2*	5.32	15.0	17.10	39.6				
Dic 25	58.00	24.3	3.39	19.4	49.07	56.1	53.12	56.2*	5.26	11.4	17.05	36.6				
Ene 24	58.41	24.3	3.62	10.2	49.46	56.4	53.49	57.1*	5.72	7.0	17.49	32.9				

**Lugares aparentes de estrellas, 2020**  
**para las 0<sup>h</sup> de Tiempo Universal**

N°	730		1508		732		1510		1511		735	
Nombre	δ Aquilae		α Vulpeculae		β Cygni* p		8 Cygni		μ Aquilae		ι Telescopi	
Mag. SP	3.36	F0	4.44	M0	3.24	K0,A0	4.74	B3	4.45	K0	4.90	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	19h26m	+3°09'	19h29m	+24°42'	19h31m	+28°00'	19h32m	+34°29'	19h35m	+7°25'	19h36m	-48°03'
Dic 31	28s04	19°9	29s99	23°5	29s42	10°3	28s60	48°5	1s67	20°1	38s14	21°3
Ene 30	28.38	15.4	30.27	15.8	29.68	2.2	28.84	39.6	1.97	15.0	38.62	16.3
Feb 29	29.00	12.3	30.87	9.8	30.28	55.8*	29.45	32.5	2.56	11.3	39.51	11.5
Mar 30	29.80	11.9	31.70	7.6	31.12	53.4*	30.33	29.6	3.35	10.5	40.69	7.8
Abr 29	30.70	14.3	32.63	9.9	32.07	55.7*	31.32	31.7	4.25	12.9	42.02	5.7
May 29	31.54	18.7	33.49	15.7	32.94	1.6	32.22	37.9	5.09	17.7	43.29	5.8
Jun 28	32.15	23.7	34.09	23.3	33.55	9.5	32.84	46.3	5.72	23.3	44.24	8.4
Jul 28	32.43	28.2	34.31	30.8	33.77	17.4	33.04	55.0	6.01	28.5	44.70	12.6
Ago 27	32.33	31.2	34.14	36.8	33.59	23.8	32.82	62.0	5.92	32.2	44.62	17.3
Sep 26	31.94	32.4	33.67	39.9	33.09	27.2	32.27	66.0	5.54	33.8	44.07	21.0
Oct 26	31.44	31.5	33.06	39.5	32.46	27.0	31.57	66.0	5.03	33.1	43.33	22.3
Nov 25	31.08	29.0	32.59	35.9	31.96	23.3	31.00	62.1	4.64	30.4	42.74	20.8
Dic 25	31.02	25.2	32.44	29.5	31.78	16.6	30.77	55.0	4.56	26.1	42.62	16.8
Ene 24	31.33	20.9	32.67	21.9	32.00	8.7	30.96	46.3	4.83	21.2	43.04	11.7

N°	736		737		1513		740		741		1517	
Nombre	52 Sagittarii*		K Aquilae		β Sagittae		15 Cygni		γ Aquilae		56 Sagittarii	
Mag. SP	4.60	B9	4.95	B0	4.37	K0	4.89	K0	2.72	K2	4.86	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	19h37m	-24°50'	19h37m	-6°58'	19h41m	+17°31'	19h44m	+37°24'	19h47m	+10°39'	19h47m	-19°42'
Dic 31	52s63	21°0	55s54	56°9	54s58	24°2	57s57	14°5	10s35	46°3	29s05	46°3
Ene 30	53.00	20.2	55.87	59.4	54.84	17.6	57.76	5.5	10.61	40.7	29.38	46.5
Feb 29	53.68	18.9	56.47	60.9	55.40	12.5	58.34	58.0*	11.16	36.6	30.00	45.8
Mar 30	54.56	16.8	57.27	60.4	56.19	10.8	59.22	54.7*	11.93	35.5	30.84	44.0
Abr 29	55.57	14.3	58.19	57.9	57.10	13.1	60.24	56.5*	12.83	37.9	31.80	41.3
May 29	56.54	12.3	59.06	54.3	57.96	18.4	61.18	2.6	13.69	42.8	32.75	38.6
Jun 28	57.28	11.3	59.73	50.6	58.59	25.2	61.84	11.1	14.34	48.9	33.49	36.7
Jul 28	57.66	11.6	60.06	47.7	58.87	32.0	62.08	20.2	14.66	54.7	33.87	35.9
Ago 27	57.62	12.8	60.01	46.1	58.77	37.2	61.87	27.8	14.59	59.0	33.86	36.4
Sep 26	57.24	14.4	59.66	46.0	58.36	39.9	61.31	32.3	14.22	61.1	33.51	37.5
Oct 26	56.72	15.7	59.17	46.9	57.81	39.6	60.58	32.8	13.71	60.7	33.01	38.8
Nov 25	56.32	16.1	58.80	48.7	57.37	36.5	59.96	29.2	13.29	58.0	32.61	39.7
Dic 25	56.27	15.7	58.74	51.0	57.23	31.1	59.67	22.1	13.17	53.4	32.54	40.1
Ene 24	56.61	14.8	59.03	53.4	57.45	24.7	59.81	13.4	13.39	48.1	32.83	40.1

N°	743		745		746		1520		749		1521	
Nombre	δ Sagittae		α Aquilae (Altair)		η Aquilae		ι Sagittarii		β Aquilae		η Cygni	
Mag. SP	3.82	M0,A0	0.77	A5	3.5-4.3	G0p	4.13	K0	3.71	K0	3.89	K0
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	19h48m	+18°35'	19h51m	+8°55'	19h53m	+1°03'	19h56m	-41°48'	19h56m	+6°27'	19h57m	+35°08'
Dic 31	14s53	4°7	43s26	19°0	27s15	27°2	35s00	58°3	15s46	26°5	1s13	16°7
Ene 30	14.77	58.0*	43.52	13.8	27.42	23.3	35.37	54.2	15.70	21.7	1.28	7.9
Feb 29	15.31	52.7*	44.06	10.0	27.96	20.7	36.11	49.9	16.23	18.2	1.82	.6
Mar 30	16.09	50.9*	44.83	9.2	28.73	20.5	37.14	45.9	16.99	17.5	2.65	57.3*
Abr 29	17.00	53.1*	45.73	11.6	29.62	23.0	38.33	43.0	17.88	19.9	3.65	58.9*
May 29	17.87	58.4*	46.60	16.5	30.50	27.4	39.51	41.9	18.75	24.6	4.59	4.7
Jun 28	18.52	5.4	47.26	22.5	31.18	32.3	40.44	43.1	19.43	30.2	5.28	13.0
Jul 28	18.82	12.3	47.58	28.1	31.53	36.7	40.94	46.1	19.77	35.4	5.57	21.9
Ago 27	18.73	17.8	47.54	32.2	31.51	39.6	40.94	50.0	19.75	39.1	5.42	29.5
Sep 26	18.32	20.7	47.18	34.1	31.17	40.7	40.52	53.5	19.40	40.8	4.91	34.1
Oct 26	17.77	20.6	46.67	33.7	30.69	40.1	39.87	55.3	18.91	40.3	4.22	34.9
Nov 25	17.32	17.6	46.27	31.1	30.29	37.9	39.33	54.7	18.50	37.8	3.62	31.8
Dic 25	17.16	12.1	46.14	26.9	30.18	34.6	39.18	51.9	18.37	33.8	3.32	25.1
Ene 24	17.36	5.6	46.37	21.9	30.41	30.9	39.50	47.7	18.58	29.3	3.42	16.7

**Lugares aparentes de estrellas, 2020  
para las 0<sup>h</sup> de Tiempo Universal**

N°	752		751		748		1523		753		755	
Nombre	γ Sagittae		ϩ <sup>1</sup> Sagittarii		ε Pavonis		15 Vulpeculae		62 Sagittarii		ξ Telescopii	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	19h59m	+19°32'	20h00m	-35°13'	20h02m	-72°51'	20h01m	+27°48'	20h03m	-27°39'	20h08m	-52°49'
Dic 31	36s57	51°0	59s13	21°6	45s36	27°2	53s26	36°4	50s40	16°5	50s83	27°7
Ene 30	36.77	44.3	59.46	18.7	45.91	18.5	53.42	28.5	50.69	15.0	51.19	21.7
Feb 29	37.28	38.9	60.13	15.3	47.51	10.2	53.93	22.1	51.31	12.7	52.02	15.5
Mar 30	38.05	36.9	61.06	11.8	49.88	4.1	54.72	19.3	52.17	9.8	53.22	10.3
Abr 29	38.96	38.9	62.16	8.7	52.63	1.4	55.66	21.0	53.19	6.7	54.65	6.9
May 29	39.84	44.3	63.25	7.0	55.29	2.6	56.58	26.6	54.21	4.3	56.07	6.4
Jun 28	40.52	51.3	64.13	7.1	57.33	7.5	57.26	34.4	55.03	3.2	57.21	8.7
Jul 28	40.85	58.5	64.61	8.9	58.33	14.8	57.58	42.6	55.49	3.7	57.84	13.3
Ago 27	40.79	64.2	64.64	11.8	58.14	22.6	57.49	49.4	55.53	5.4	57.87	18.8
Sep 26	40.40	67.4	64.26	14.8	56.88	28.5	57.06	53.5	55.19	7.6	57.35	23.5
Oct 26	39.85	67.6	63.69	16.6	55.03	30.7	56.45	54.1	54.67	9.3	56.54	25.9
Nov 25	39.39	64.8	63.20	16.6	53.35	28.0	55.92	51.1	54.23	9.8	55.81	24.8
Dic 25	39.19	59.4	63.06	14.7	52.52	21.3	55.67	45.1	54.10	9.1	55.52	20.6
Ene 24	39.36	52.9	63.35	11.7	52.90	12.4	55.80	37.6	54.36	7.5	55.81	14.5

N°	754		1525		756		1526		1527		761	
Nombre	δ Pavonis		28 Cygni		ϩ Aquilae		ρ Aquilae		α <sup>1</sup> Capricorni		α <sup>2</sup> Capricorni	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	20h10m	-66°07'	20h10m	+36°54'	20h12m	- 0°45'	20h15m	+15°15'	20h18m	-12°26'	20h19m	-12°28'
Dic 31	34s97	53°5	7s95	"0	17s87	42°7	9s96	33°6	42s89	47°7	7s34	59°1
Ene 30	35.41	45.6	8.05	51.3*	18.08	46.1	10.12	27.6	43.11	48.9	7.56	60.2
Feb 29	36.60	37.9	8.54	43.7*	18.58	48.3	10.59	22.9	43.61	49.1	8.07	60.4
Mar 30	38.35	31.9	9.36	40.0*	19.31	48.2	11.32	21.2	44.36	47.6	8.82	58.9
Abr 29	40.41	28.8	10.37	41.2*	20.20	45.5	12.21	23.3	45.28	44.5	9.74	55.8
May 29	42.44	29.3	11.34	46.8*	21.10	41.1	13.11	28.4	46.22	40.7	10.68	52.0
Jun 28	44.04	33.4	12.07	55.2*	21.82	36.3	13.82	35.0	46.99	37.3	11.45	48.5
Jul 28	44.88	39.9	12.40	4.3	22.23	32.1	14.20	41.7	47.44	35.0	11.90	46.2
Ago 27	44.85	47.1	12.28	12.3	22.26	29.3	14.20	47.0	47.51	34.1	11.97	45.3
Sep 26	44.02	52.9	11.79	17.4	21.96	28.3	13.86	50.0	47.24	34.5	11.69	45.8
Oct 26	42.75	55.4	11.09	18.7	21.50	28.9	13.35	50.2	46.77	35.8	11.23	47.0
Nov 25	41.58	53.5	10.46	16.0	21.09	30.9	12.90	47.8	46.36	37.3	10.82	48.5
Dic 25	41.03	47.7	10.11	9.6	20.94	33.8	12.70	43.1	46.22	38.7	10.68	50.0
Ene 24	41.36	39.7	10.16	1.2	21.13	37.0	12.83	37.4	46.40	39.7	10.86	51.0

N°	762		764		1534		1533		768		769	
Nombre	β Capricorni		α Pavonis		41 Cygni		69 Aquilae		ε Delphini		α Indi	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	20h22m	-14°43'	20h27m	-56°40'	20h30m	+30°26'	20h30m	- 2°49'	20h34m	+11°22'	20h38m	-47°13'
Dic 31	5s56	6°9	9s15	20°7	10s63	12°0	39s41	8°5	7s95	18°5	54s73	24°5
Ene 30	5.77	7.6	9.42	14.1	10.69	4.2	39.57	11.3	8.07	13.3	54.93	19.3
Feb 29	6.28	7.4	10.22	7.0	11.11	57.3*	40.02	13.1	8.48	9.2	55.56	13.4
Mar 30	7.03	5.6	11.47	.9	11.85	53.9*	40.72	12.6	9.17	8.0	56.55	7.6
Abr 29	7.95	2.3	12.99	56.8*	12.79	55.0*	41.60	9.7	10.04	10.1	57.80	3.2
May 29	8.91	58.6*	14.55	55.8*	13.75	.3	42.52	5.3	10.95	15.0	59.11	1.1
Jun 28	9.69	55.5*	15.84	58.1*	14.51	8.1	43.29	.6	11.70	21.3	60.23	1.8
Jul 28	10.16	53.5*	16.60	3.0	14.92	16.7	43.75	56.5*	12.14	27.5	60.92	5.1
Ago 27	10.24	53.0*	16.70	9.0	14.90	24.2	43.83	53.9*	12.21	32.5	61.07	9.9
Sep 26	9.97	53.7*	16.19	14.5	14.52	29.2	43.58	53.1*	11.93	35.2	60.72	14.6
Oct 26	9.51	55.1*	15.30	17.5	13.92	30.7	43.13	53.8*	11.45	35.5	60.05	17.7
Nov 25	9.10	56.5*	14.46	16.7	13.35	28.4	42.72	55.7*	11.01	33.4	59.39	17.8
Dic 25	8.94	57.6*	14.04	12.3	13.02	22.9	42.54	58.3*	10.79	29.4	59.06	14.8
Ene 24	9.12	58.2*	14.23	5.7	13.05	15.5	42.67	.9	10.88	24.4	59.21	9.7













## Lugares aparentes de estrellas, 2020 para las 0<sup>h</sup> de Tiempo Universal

N°	889		892		1620		894		896		1629	
Nombre	11 G.Phoenicis		ι Piscium		λ Piscium		ω <sup>2</sup> Aquarii		δ Sculptoris		ψ Pegasi	
Mag.	SP											
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	23h38m	-45°23'	23h40m	+ 5°43'	23h43m	+ 1°53'	23h43m	-14°26'	23h49m	-28°01'	23h58m	+25°15'
Dic 31	53s55	15'5	57s50	59'4	2s76	17'6	44s13	16'0	56s49	28'1	45s70	10'1
Ene 30	53.10	12.7	57.21	56.8	2.47	15.4	43.84	16.7	56.15	27.4	45.31	6.6
Feb 29	52.91	6.6	57.09	54.8	2.35	13.9	43.72	15.5	55.99	24.0	45.08	2.0
Mar 30	53.12	58.2*	57.27	54.4	2.51	14.3	43.89	12.1	56.15	18.3	45.18	58.3*
Abr 29	53.78	49.1*	57.80	56.6	3.04	17.1	44.43	6.7	56.69	11.0	45.70	57.2*
May 29	54.84	41.1*	58.63	61.1	3.86	22.1	45.26	.3	57.56	3.5	46.55	59.4*
Jun 28	56.06	36.0*	59.57	67.1	4.79	28.1	46.22	54.3*	58.59	57.6*	47.54	4.5
Jul 28	57.19	34.7*	60.41	73.0	5.64	33.8	47.10	49.8*	59.54	54.3*	48.45	11.4
Ago 27	58.00	37.2*	61.02	78.0	6.24	38.2	47.74	47.8*	60.25	54.2*	49.11	18.7
Sep 26	58.32	42.7*	61.28	81.0	6.51	40.6	48.02	48.3*	60.57	57.0*	49.43	25.1
Oct 26	58.16	49.2*	61.22	81.9	6.46	40.9	47.97	50.8*	60.51	1.5	49.40	29.4
Nov 25	57.65	54.3*	60.95	81.0	6.19	39.6	47.69	53.8*	60.18	5.8	49.12	31.2
Dic 25	57.06	56.1*	60.62	79.1	5.86	37.5	47.34	56.1*	59.77	8.2	48.73	30.4
Ene 24	56.58	53.7*	60.34	76.7	5.58	35.4	47.05	56.9*	59.43	7.9	48.36	27.4

N°	900		902		903	
Nombre	27 Piscium*		ω Piscium		ε Tucanae	
Mag.	SP					
Oh UT	A.R.	Dec.	A.R.	Dec.	A.R.	Dec.
m d	23h59m	- 3°26'	0h00m	+ 6°58'	0h00m	-65°28'
Dic 31	40s60	51'4	19s20	20'9	54s78	23'3
Ene 30	40.30	53.1	18.88	18.4	53.73	19.0
Feb 29	40.14	53.6	18.71	16.3	53.13	10.7
Mar 30	40.25	52.3	18.82	15.8	53.19	.1
Abr 29	40.73	48.6	19.30	17.7	54.01	49.4*
May 29	41.52	43.1	20.10	22.1	55.48	40.6*
Jun 28	42.45	37.0	21.03	27.9	57.30	35.7*
Jul 28	43.32	31.6	21.90	34.0	59.07	35.5*
Ago 27	43.98	27.8	22.55	39.1	60.39	39.9*
Sep 26	44.30	26.3	22.87	42.4	60.96	47.4*
Oct 26	44.29	27.0	22.87	43.6	60.68	55.8*
Nov 25	44.06	28.9	22.64	43.0	59.74	1.9
Dic 25	43.74	31.1	22.31	41.2	58.50	3.6
Ene 24	43.44	32.8	22.01	38.9	57.40	60.0*

**REFRACCION ASTRONOMICA NORMAL (R<sub>0</sub>)**  
para 760 mm. del Barómetro y 0° del Termómetro centígrado

Distancia cenital aparente	Refracción	Variación por 10'	Distancia cenital aparente	Refracción	Variación por 10'	Distancia cenital aparente	Refracción	Variación por 10'	Distancia cenital aparente	Refracción	Variación por 10'
0°	"	"	45° 0'	1' 0.04	"	68° 0'	2' 27.8	"	83° 0'	7' 39.3	"
1	1.05	0.175	45 30	1 1.09	0.35	68 20	2 30.3	1.23	83 10	7 49.3	1.00
2	2.10	0.175	46 0	1 2.17	0.36	68 40	2 32.8	1.26	83 20	7 59.7	1.04
3	3.15	0.175	46 30	1 3.26	0.36	69 0	2 35.4	1.30	83 30	8 10.6	1.09
4	4.20	0.175	47 0	1 4.37	0.37	69 20	2 38.1	1.35	83 40	8 21.9	1.13
		0.175			0.38			1.40			1.18
5	5.25	0.177	47 30	1 5.51	0.39	69 40	2 40.9	1.45	83 50	8 33.8	1.23
6	6.31	0.178	48 0	1 6.67	0.39	70 0	2 43.8	1.50	84 0	8 46.1	1.29
7	7.38	0.178	48 30	1 7.84	0.40	70 20	2 46.8	1.55	84 10	8 59.0	1.35
8	8.45	0.178	49 0	1 9.04	0.41	70 40	2 49.8	1.60	84 20	9 12.5	1.42
9	9.52	0.180	49 30	1 10.27	0.42	71 0	2 53.0	1.65	84 30	9 26.7	1.49
		0.180			0.43			1.70			1.56
10	10.60	0.182	50 0	1 10.51	0.43	71 20	2 56.2	1.75	84 40	9 41.6	1.63
11	11.68	0.183	50 30	1 12.80	0.44	71 40	2 59.6	1.80	84 50	9 57.2	1.72
12	12.77	0.183	51 0	1 14.10	0.45	72 0	3 3.1	1.86	85 0	10 13.5	1.82
13	13.87	0.185	51 30	1 15.42	0.46	72 20	3 6.7	1.92	85 10	10 30.7	1.91
14	14.98	0.187	52 0	1 16.79	0.47	72 40	3 10.5	2.00	85 20	10 48.9	2.01
		0.188			0.49			2.08			2.12
15	16.10	0.190	52 30	1 18.18	0.50	73 0	3 14.3	2.18	85 30	11 8.0	2.25
16	17.23	0.192	53 0	1 19.60	0.51	73 20	3 18.4	2.27	85 40	11 28.1	2.38
17	18.37	0.195	53 30	1 21.06	0.52	73 40	3 22.6	2.36	85 50	11 49.3	2.53
18	19.53	0.200	54 0	1 22.56	0.54	74 0	3 26.9	2.45	86 0	12 11.8	2.68
19	20.69	0.202	54 30	1 24.08	0.55	74 20	3 31.4	2.55	86 10	12 35.6	2.85
		0.205			0.56			2.65			3.03
20	21.87	0.208	55 0	1 25.64	0.58	74 40	3 36.1	2.76	86 20	13 0.9	3.23
21	23.07	0.211	55 30	1 27.26	0.59	75 0	3 41.0	2.88	86 30	13 27.7	3.45
22	24.28	0.215	56 0	1 28.89	0.61	75 20	3 46.1	3.01	86 40	13 56.2	3.69
23	25.51	0.219	56 30	1 30.58	0.62	75 40	3 51.4	3.15	86 50	14 26.5	3.95
24	26.75	0.223	57 0	1 32.31	0.64	76 0	3 57.0	3.30	87 0	14 58.8	4.24
		0.227			0.66			3.46			4.55
25	28.02	0.231	57 30	1 34.09	0.68	76 20	4 2.8	3.63	87 10	15 33.3	4.90
26	29.31	0.235	58 0	1 35.92	0.70	76 40	4 8.9	3.81	87 20	16 10.2	5.28
27	30.61	0.240	58 30	1 37.79	0.72	77 0	4 15.2	4.02	87 30	16 49.7	5.70
28	31.95	0.245	59 0	1 39.73	0.75	77 20	4 21.9	4.25	87 40	17 32.1	6.18
29	33.31	0.250	59 30	1 41.72	0.77	77 40	4 28.9	4.50	87 50	18 17.6	6.69
		0.256			0.80			4.77			7.27
30	34.69	0.262	60 0	1 43.76	0.83	78 0	4 36.3	5.07	88 0	19 6.6	7.92
31	36.10	0.269	60 30	1 45.87	0.85	78 20	4 44.0	5.40	88 10	19 59.4	8.44
32	37.54	0.277	61 0	1 48.04	0.88	78 40	4 52.2	5.75	88 20	20 56.4	8.82
33	39.01	0.285	61 30	1 50.29	0.91	79 0	5 0.8	6.15	88 30	21 58.2	9.22
34	40.52	0.293	62 0	1 52.60	0.95	79 20	5 9.9	6.58	88 40	23 5.1	9.64
		0.302			0.98			7.03			10.10
35	42.06	0.311	62 30	1 54.99	1.02	79 40	5 19.6	7.53	89 0	24 17.8	10.56
36	43.64	0.320	63 0	1 57.47	1.06	80 0	5 29.8	8.10	89 10	25 37.0	11.06
37	45.26	0.330	63 30	2 0.02	1.10	80 20	5 40.6	8.70	89 20	26 19.2	11.60
38	46.92	0.340	64 0	2 2.67	1.15	80 40	5 52.2	9.42	89 30	27 3.3	12.16
39	48.64	0.352	64 30	2 5.41	1.20	81 0	6 4.5	10.20	89 40	27 49.4	12.76
		0.365			1.24			11.00			13.38
40	50.40		65 0	2 8.25		81 20	6 17.7		89 50	28 37.6	
41	52.21		65 30	2 11.19		81 40	6 31.7		89 55	29 28.1	
42	54.07		66 0	2 14.26		82 0	6 46.8			30 20.9	
43	56.00		66 30	2 17.44		82 20	7 3.0			31 16.2	
44	57.98		67 0	2 20.74		82 40	7 20.4			32 14.2	
45	60.04		67 30	2 24.19		83 0	7 39.3			33 15.0	
46	62.17		68 0	2 27.78		83 20	7 59.7			34 18.8	
47	64.37		68 30	2 31.51		83 40	8 21.9			35 25.7	

CORRECCIONES DE LAS REFRACCIONES NORMALES

FACTOR A								FACTOR B			
t	A variación por 0°.1 -0.00045	t	A variación por 0°.1 -0.00038	t	A variación por 0°.1 -0.00033	t	A variación por 0°.1 -0.00029	Baró- metro	B variación por mm. +0.0013	Baró- metro	B variación por mm. +0.0013
<b>0</b>		<b>0</b>		<b>0</b>		<b>0</b>		<b>mm.</b>		<b>mm.</b>	
-30	+0.1291	-10	+0.0398	+10	-0.0369	+30	-0.1035	630	-0.1711	710	-0.0658
29	0.1243	9	0.0357	11	0.0405	31	0.1066	634	0.1658	714	0.0605
28	0.1195	8	0.0316	12	0.0440	32	0.1097	638	0.1605	718	0.0553
27	0.1148	7	0.0275	13	0.0475	33	0.1127	642	0.1533	722	0.0500
26	0.1101	6	0.0235	14	0.0510	34	0.1158	646	0.1500	726	0.0447
-25	+0.1054	-5	+0.0195	+15	-0.0545	+35	-0.1188	650	-0.1447	730	-0.0395
24	0.1008	4	0.0155	16	0.0579	36	0.1218	654	0.1395	734	0.0342
23	0.0962	3	0.0116	17	0.0613	37	0.1248	658	0.1342	738	0.0289
22	0.0917	2	0.0077	18	0.0647	38	0.1277	662	0.1289	742	0.0237
21	0.0872	-1	+0.0038	19	0.0680	39	0.1307	666	0.1237	746	0.0184
-20	+0.0827	0	0.0000	+20	-0.0714	+40	-0.1336	670	-0.1184	750	-0.0132
19	0.0782	+1	-0.0038	21	0.0747	41	0.1365	674	0.1132	754	0.0079
18	0.0738	2	0.0076	22	0.0780	42	0.1394	678	0.1079	758	-0.0026
17	0.0694	3	0.0114	23	0.0812	43	0.1422	682	0.1026	762	+0.0026
16	0.0651	4	0.0151	24	0.0845	44	0.1451	686	0.0974	766	0.0079
-15	+0.0608	+5	-0.0188	+25	-0.0877	+45	-0.1479	690	-0.0921	770	+0.0132
14	0.0565	6	0.0225	26	0.0909	46	0.1507	694	0.0868	774	0.0184
13	0.0523	7	0.0261	27	0.0941	47	0.1535	698	0.0816	778	0.0237
12	0.0481	8	0.0298	28	0.0972	48	0.1563	702	0.0763	782	0.0289
11	0.0439	9	0.0334	29	0.1004	49	0.1591	706	0.0711	786	0.0342
10	0.0398	10	0.0369	30	0.1035	50	0.1618	710	0.0658	790	0.0395

FACTOR α											FACTOR β		
Para zenitales > 45° < 81°											Refracción corregida de temperatura	β	
z	α	z	α	z	α	z	α	z	α	z			α
45°	1.000	55°	1.002	63°	1.004	68°	1.007	72°	1.011	76°	1.020	6'	1.004
46	1.001	56	1.003	64	1.005	69	1.008	73	1.013	77	1.023	8	1.008
49	1.001	59	1.003	65	1.005	70	1.009	74	1.015	78	1.026	10	1.012
50	1.002	60	1.004	66	1.006	71	1.010	75	1.017	79	1.031	12	1.017
55	1.002	63	1.004	67	1.007	72	1.011	76	1.020	80	1.037	14	1.023
Para zenitales > 81°											16	1.029	
											18	1.035	
											20	1.041	
											22	1.048	
											24	1.055	
81°	1.046	1.046	1.045	1.045	1.045	1.044	1.044	1.044	1.044	1.043	1.043	26	1.062
82	1.057	1.056	1.056	1.055	1.054	1.054	1.053	1.053	1.053	1.052	1.052	28	1.069
83	1.071	1.071	1.070	1.069	1.068	1.067	1.067	1.067	1.066	1.065	1.065	30	1.076
84	1.091	1.090	1.088	1.087	1.086	1.085	1.084	1.084	1.083	1.082	1.082	32	1.083
85	1.120	1.118	1.116	1.114	1.112	1.111	1.109	1.108	1.108	1.107	1.107	34	1.091
86	1.162	1.158	1.155	1.152	1.149	1.147	1.144	1.144	1.142	1.140	1.140	36	1.098
87	1.226	1.220	1.215	1.210	1.206	1.202	1.198	1.194	1.194	1.191	1.191	38	1.106
88	1.327	1.317	1.307	1.299	1.291	1.284	1.278	1.271	1.271	1.266	1.266	40	1.114
89	1.499	1.479	1.460	1.444	1.429	1.416	1.403	1.392	1.392	1.381	1.381	42	1.121
												44	1.129

$$(\text{Refracción})'' = R''_0 (1 + A\alpha) (1 + B\beta)$$



<b>enero 2020</b>	<b>febrero 2020</b>	<b>marzo 2020</b>	<b>abril 2020</b>
do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

<b>mayo 2020</b>	<b>junio 2020</b>	<b>julio 2020</b>	<b>agosto 2020</b>
do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

<b>septiembre 2020</b>	<b>octubre 2020</b>	<b>noviembre 2020</b>	<b>diciembre 2020</b>
do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

<b>enero 2021</b>	<b>febrero 2021</b>	<b>marzo 2021</b>	<b>abril 2021</b>
do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

<b>mayo 2021</b>	<b>junio 2021</b>	<b>julio 2021</b>	<b>agosto 2021</b>
do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

<b>septiembre 2021</b>	<b>octubre 2021</b>	<b>noviembre 2021</b>	<b>diciembre 2021</b>
do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	do lu ma mi ju vi sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31