

# Spring Constellations

Antlia	Corvus	Lynx
Boötes	Crater	Musca
Cancer	Crux	Pyxis
Canes Venatici	Hydra	Sextans
Centaurus	Leo	Ursa Major
Chamaeleon	Leo Minor	Ursa Minor
Coma Berenices	Lupus	Virgo

# Antlia

“The Air Pump”

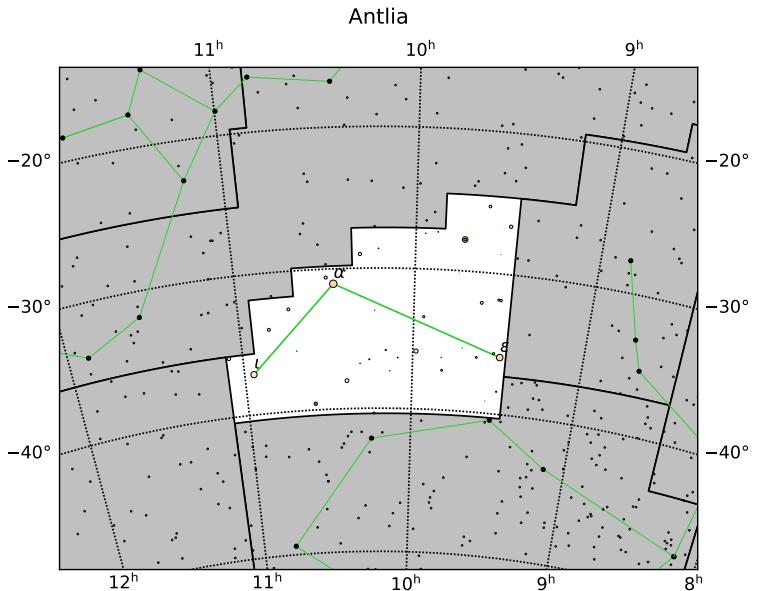
Pronunciation: /æntliə/

Genitive: Antliae (/æntlii/)

Abbreviation: Ant

## History

It was the French astronomer Nicolas-Louis de Lacaille during his stay at the Cape of Good Hope in South Africa who invented this constellation in 1751–1752. It commemorates the air pump invented by the French physicist Denis Papin. English astronomer John Herschel shortened its original name from “pneumatic pump” to simply “pump” in 1844.



## Facts

Antlia is visible at latitudes between  $+45^\circ$  and  $-90^\circ$ , i.e., most of the continental United States. It is best seen around 9:00 PM local time in April. There are no meteor showers that radiate out of Antlia.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$10^{\text{h}}27^{\text{m}}9.1^{\text{s}}$	$-31^\circ4'4.0''$	4.3	Orange	$320 \pm 10$ ly	K4III
□		$\iota$	$10^{\text{h}}56^{\text{m}}43.1^{\text{s}}$	$-37^\circ8'16.0''$	4.6	Light Orange	$202 \pm 2$ ly	K1III
□		$\varepsilon$	$9^{\text{h}}29^{\text{m}}14.7^{\text{s}}$	$-35^\circ57'4.8''$	4.5	Orange	$590 \pm 30$ ly	K3III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 2997	$9^{\text{h}}45^{\text{m}}38.8^{\text{s}}$	$-31^\circ11'27.4''$	10.1	SpiGal	8.9'	39.8 Mly

## Notes

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# Boötes

“The Herdsman”

Pronunciation: /boʊ'outi:z/

Genitive: Boötis (/boʊ'ootis/)

Abbreviation: Boo

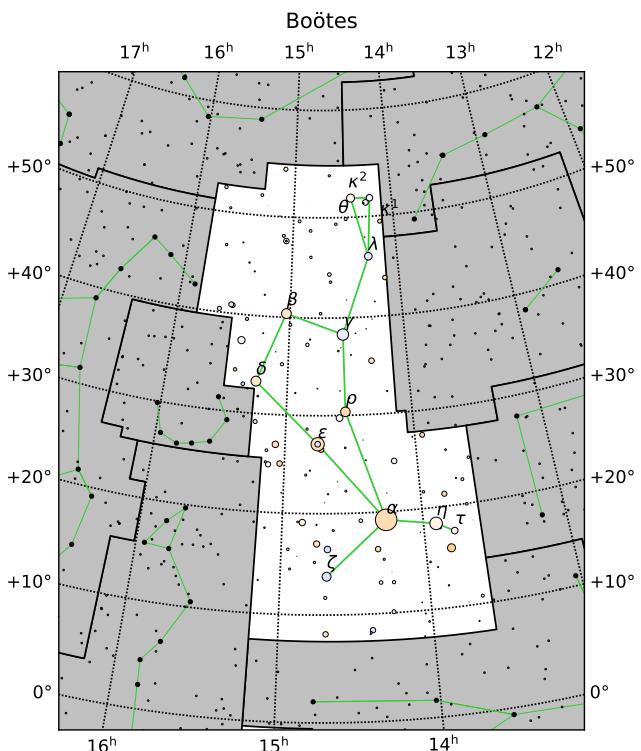
## History

Boötes is an ancient constellation, connected together by the Babylonians. The Greeks later adopted him as a farmer who invented the plough in one myth or the grape farmer Icarius in another. Boötes is also sometimes seen as a huntsman, leading the pack of dogs that forms the nearby constellation of Canes Venatici.

## Facts

Boötes is visible at latitudes between  $+90^\circ$  and  $-50^\circ$ , i.e., throughout the entire Northern Hemisphere and through most of the land in the Southern Hemisphere. It is best seen around 9:00 PM local time in June. There is one prolific meteor shower in Boötes: the Quadrantid meteor shower with a rate of around 120 meteors per hour around January 3.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Arcturus (/ɑ:rk'tju:ərəs/)	$\alpha$	14 <sup>h</sup> 15 <sup>m</sup> 39.7 <sup>s</sup>	+19°10'56"	-0.1	Light Orange	$36.7 \pm 0.2$ ly	K2III
□	Izar (/aɪzə:r/)	$\varepsilon$	14 <sup>h</sup> 44 <sup>m</sup> 59.2 <sup>s</sup>	+27°4'27.2"	2.7	Pale Yellow	$236 \pm 8$ ly	K0II
□	Muphrid (/mju:frid/)	$\eta$	13 <sup>h</sup> 54 <sup>m</sup> 41.1 <sup>s</sup>	+18°23'51.8"	2.7	Pale Yellow	$37.2 \pm 0.5$ ly	G0IV
□	Seginus (/sɪ'dʒaməs/)	$\gamma$	14 <sup>h</sup> 32 <sup>m</sup> 4.7 <sup>s</sup>	+38°18'29.7"	3.0	Pale Blue	$86.8 \pm 0.3$ ly	A7III
□	Princeps (/prɪnsɛps/)	$\delta$	15 <sup>h</sup> 15 <sup>m</sup> 30.2 <sup>s</sup>	+33°18'53.4"	3.5	Orange	$121.8 \pm 0.7$ ly	G8III
□	Nekkar (/nɛkə:r/)	$\beta$	15 <sup>h</sup> 1 <sup>m</sup> 56.8 <sup>s</sup>	+40°23'26.0"	3.5	Orange	$225 \pm 2$ ly	G8III
□		$\rho$	14 <sup>h</sup> 31 <sup>m</sup> 49.8 <sup>s</sup>	+30°22'17.1"	3.6	Orange	$160 \pm 1$ ly	K3III
□		$\zeta$	14 <sup>h</sup> 41 <sup>m</sup> 9.0 <sup>s</sup>	+13°43'41.9"	3.8	Pale Blue	$180 \pm 10$ ly	A3IV
□	Asellus Primus (/ə'sɛləs 'praməs/)	$\theta$	14 <sup>h</sup> 25 <sup>m</sup> 11.8 <sup>s</sup>	+51°51'2.7"	4.1	White	$47.4 \pm 0.1$ ly	F7V
□	Xuange (/ʃwæŋgə/)	$\lambda$	14 <sup>h</sup> 16 <sup>m</sup> 23.0 <sup>s</sup>	+46°5'17.9"	4.2	Pale Blue	$99.0 \pm 0.5$ ly	A0V
□		$\tau$	13 <sup>h</sup> 47 <sup>m</sup> 15.7 <sup>s</sup>	+17°27'24.9"	4.5	Pale Yellow	$50.9 \pm 0.2$ ly	F7V

Asellus Tertius  $\kappa$   $14^{\text{h}}13^{\text{m}}29.0^{\text{s}}$   $+51^{\circ}47'23.9''$  4.5 Pale Blue  $154 \pm 3$  ly F2V + A8IV  
(/ə'sɛləs 'tɜːrʃiəs/)

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		NGC 5466	$14^{\text{h}}5^{\text{m}}27.3^{\text{s}}$	$+28^{\circ}32'4.0''$	10.5	GbCl	$11'$	51.9 kly
<input type="checkbox"/>		NGC 5248	$13^{\text{h}}37^{\text{m}}32.0^{\text{s}}$	$+8^{\circ}53'7.0''$	11.0	SpiGal	$6.2'$	59 Mly
<input type="checkbox"/>		NGC 5676	$14^{\text{h}}32^{\text{m}}46.8^{\text{s}}$	$+49^{\circ}27'28.0''$	12.3	SpiGal	$4'$	100 Mly

## Notes

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# Cancer

## “The Crab”

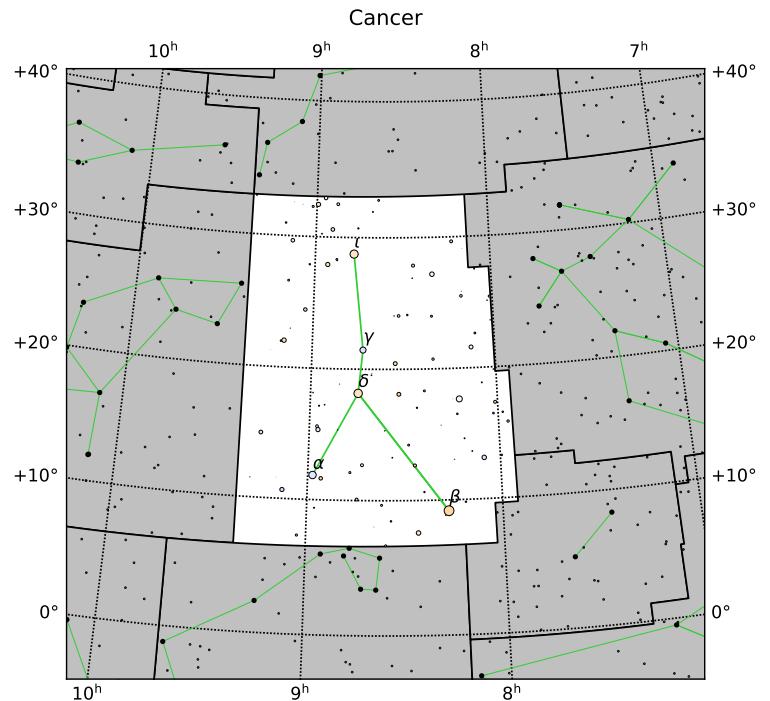
Pronunciation: /kænsər/

Genitive: Cancri (/kæn̩kraɪ/)

Abbreviation: Cnc

## History

Cancer is another ancient constellation, first recorded by Ptolemy in the 2nd century AD in his book, *Almagest*. In Greek mythology, Cancer is identified with a crab that appeared while Heracles fought the hydra. Cancer was slain by Heracles after it bit him in the foot.



## Facts

Cancer is visible at latitudes between  $+90^\circ$  and  $-60^\circ$ , i.e., throughout the entire Northern Hemisphere and covering all of the populated Southern Hemisphere. It is best seen at 9:00 PM local time in March. The Delta Cancriids is a shower that radiates out of Cancer, peaking on January 17 at about four meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Tarf (/tɑːrf/)	$\beta$	8 <sup>h</sup> 16 <sup>m</sup> 30.9 <sup>s</sup>	+9°11'8.0"	3.5	Orange	$290 \pm 30$ ly	K4III
□	Asellus Australis (/ə'sɛləs ɔ:s'treɪlɪs/)	$\delta$	8 <sup>h</sup> 44 <sup>m</sup> 41.1 <sup>s</sup>	+18°9'15.5"	3.9	Orange	$131 \pm 1$ ly	K0III
□		$\iota$	8 <sup>h</sup> 46 <sup>m</sup> 41.8 <sup>s</sup>	+28°45'35.6"	4.0	Orange	$330 \pm 20$ ly	G8I
□	Acubens (/'ækju:bənz/)	$\alpha$	8 <sup>h</sup> 58 <sup>m</sup> 29.2 <sup>s</sup>	+11°51'27.6"	4.2	Pale Blue	$178 \pm 3$ ly	A5V
□	Asellus Borealis (/ə'sɛləs bɔri'ælis/)	$\gamma$	8 <sup>h</sup> 43 <sup>m</sup> 17.1 <sup>s</sup>	+21°28'6.6"	4.7	Blue	$181 \pm 2$ ly	A1IV

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Beehive Cluster	M44	8 <sup>h</sup> 40.4 <sup>m</sup>	+19°59'	3.7	OpCl	1°35'	610 ly
□	King Cobra Cluster	M67	8 <sup>h</sup> 51.3 <sup>m</sup>	+11°49'	6.1	OpCl	30'	2.7 kly
□		NGC 2775	9 <sup>h</sup> 10 <sup>m</sup> 20.1 <sup>s</sup>	+7°2'16.5"	10.4	SpiGal	4.3'	67 Mly

## Notes

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# Canes Venatici

“The Hunting Dogs”

Pronunciation: /kəmiz vɪ'nætɪsəɪ/

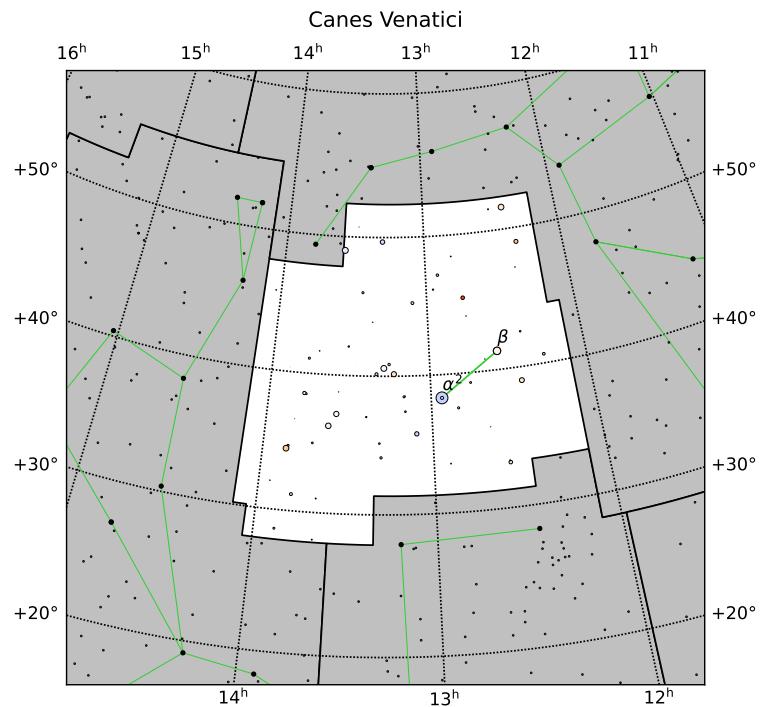
Genitive: Canum Venaticorum

(/kəməm vɪnætɪ'kɔrəm/)

Abbreviation: CVn

## History

Canes Venatici is a constellation created by mistake. In the Greek astronomer Ptolemy’s *Almagest*, the neighboring constellation Boötes was described as having a “club.” When this was translated into Arabic, the translator rendered it as a similar word, “hook.” Translating this word from Arabic into Latin rendered this word as “dogs,” and the German astronomer Johannes Hevelius formalized it into a separate constellation in 1687.



## Facts

Canes Venatici is visible at latitudes between

+90° and –40°, i.e., throughout the entire Northern Hemisphere and through much of the Southern Hemisphere, excluding the southern tip of South America. It is best seen around 9:00 PM local time in May. There are no prolific meteor showers in Canes Venatici.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Cor Caroli (/kɔr 'kærələɪ/)	α	12 <sup>h</sup> 67 <sup>m</sup> 1.7 <sup>s</sup>	+38°19'6.2"	2.9	Blue	100 ± 2 ly	A0V + F2V
□	Chara (/kɛərə/)	β	12 <sup>h</sup> 33 <sup>m</sup> 44.5 <sup>s</sup>	+41°21'26.9"	4.3	Pale Yellow	27.5 ± 0.1 ly	G0V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		M3	13 <sup>h</sup> 42 <sup>m</sup> 11.6 <sup>s</sup>	+28°22'38.2"	6.2	GbCl	18'	33.9 kly
□		M106	12 <sup>h</sup> 18 <sup>m</sup> 57.5 <sup>s</sup>	+47°18'14.0"	8.4	SpiGal	18.6'	23.7 Mly
□	Whirlpool Galaxy	M51	13 <sup>h</sup> 29 <sup>m</sup> 52.7 <sup>s</sup>	+47°11'43.0"	8.4	SpiGal	11.2'	31 Mly
□	Cat’s Eye Galaxy	M94	12 <sup>h</sup> 50 <sup>m</sup> 53.1 <sup>s</sup>	+41°7'14.0"	9.0	SpiGal	11.2'	16 Mly
□	Sunflower Galaxy	M63	13 <sup>h</sup> 15 <sup>m</sup> 49.3 <sup>s</sup>	+42°1'45.7"	9.3	SpiGal	12.6'	29.3 Mly
□	Whale Galaxy	NGC 4631	12 <sup>h</sup> 42 <sup>m</sup> 8.0 <sup>s</sup>	+32°32'29.0"	9.8	SpiGal	15.5'	30 Mly
□	Cocoon Galaxy	NGC 4490	12 <sup>h</sup> 30 <sup>m</sup> 36.2 <sup>s</sup>	+41°38'38.0"	9.8	SpiGal	6.3'	25.1 Mly
□		NGC 4244	12 <sup>h</sup> 17 <sup>m</sup> 29.9 <sup>s</sup>	+37°48'27.0"	10.2	SpiGal	17'	14.1 Mly

## Notes

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# Centaurus

## “The Centaur”

Pronunciation: /sən'tɔ:rəs/

Genitive: Centauri (/sən'tɔ:raɪ/)

Abbreviation: Cen

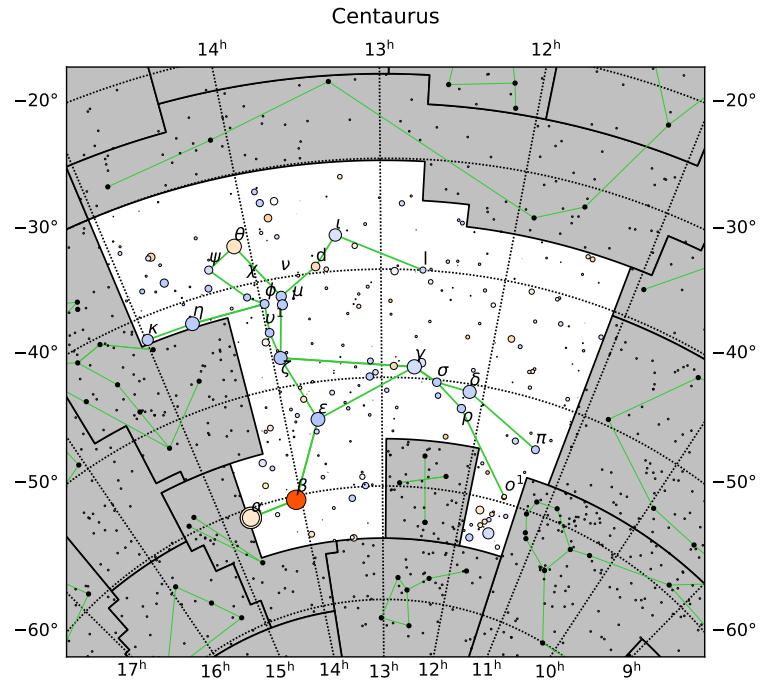
## History

Centaurus is yet another constellation known to the ancients. In this case it can be traced to the ancient Babylonians who knew it as the “bison-man,” a being depicted as a bison with a human head. The Greeks took this idea and depicted it as a centaur, a being with the upper body of a human and the lower body and legs of a horse. According to the Roman poet Ovid, this centaur is Chiron, a tutor to many Greek heroes, including Hercules, Theseus, and Jason (leader of the Argonauts).

## Facts

Centaurus is visible at latitudes between  $+25^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and much of Central America, the Sahara, India, and Southeast Asia. It is best seen around 9:00 PM local time in May. There are a few minor meteor showers that radiate outward from Centaurus.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Rigel Kentaurus (/raɪdʒəl kən'tɔ:rəs/)	$\alpha$ A	$14^{\text{h}}39^{\text{m}}36.5^{\text{s}}$	$-60^\circ50'2.4''$	0.0	Pale Yellow	4.37 ly	G2V
□	Hadar (/herda:r/)	$\beta$	$14^{\text{h}}3^{\text{m}}49.4^{\text{s}}$	$-60^\circ22'22.9''$	0.6	Blue	$390 \pm 20$ ly	B1III
□	Toliman (/tɒl'mæn/)	$\alpha$ B	$14^{\text{h}}39^{\text{m}}35.1^{\text{s}}$	$-60^\circ50'15.1''$	1.3	Pale Orange	4.37 ly	K1V
□	Menkent (/mɛŋkent/)	$\theta$	$14^{\text{h}}6^{\text{m}}40.9^{\text{s}}$	$-36^\circ22'11.8''$	2.1	Orange	$58.8 \pm 0.2$ ly	K0III
□	Muhlifain (/mju:lifem/)	$\gamma$	$12^{\text{h}}41^{\text{m}}31.0^{\text{s}}$	$-48^\circ57'35.5''$	2.2	Pale Blue	$130 \pm 1$ ly	A1IV
□		$\varepsilon$	$13^{\text{h}}39^{\text{m}}53.3^{\text{s}}$	$-53^\circ27'59.0''$	2.3	Blue	$430 \pm 30$ ly	B1III
□		$\eta$	$14^{\text{h}}35^{\text{m}}30.4^{\text{s}}$	$-42^\circ9'28.2''$	2.4	Blue	$306 \pm 6$ ly	B1V
□	Alnair (/æ'nær/)	$\zeta$	$13^{\text{h}}55^{\text{m}}32.4^{\text{s}}$	$-47^\circ17'18.1''$	2.6	Blue	$382 \pm 6$ ly	B2IV
□		$\delta$	$12^{\text{h}}8^{\text{m}}21.5^{\text{s}}$	$-50^\circ43'20.7''$	2.6	Pale Blue	$410 \pm 20$ ly	B2IV
□		$\iota$	$13^{\text{h}}20^{\text{m}}35.8^{\text{s}}$	$-36^\circ42'44.2''$	2.7	Pale Blue	$58.8 \pm 0.2$ ly	A2V
□		$\kappa$	$14^{\text{h}}59^{\text{m}}9.7^{\text{s}}$	$-42^\circ6'15.1''$	3.1	Blue	$380 \pm 20$ ly	B2IV

□		$\nu$	13 <sup>h</sup> 49 <sup>m</sup> 30.3 <sup>s</sup>	-41°41'15.8"	3.4	Blue	437 ± 10 ly	B2IV
□		$\mu$	13 <sup>h</sup> 49 <sup>m</sup> 37.0 <sup>s</sup>	-42°28'25.4"	3.4	Blue	510 ± 10 ly	B2IV
□		$\phi$	13 <sup>h</sup> 58 <sup>m</sup> 16.3 <sup>s</sup>	-42°6'2.7"	3.7	Blue	530 ± 10 ly	B2IV
□		$v^1$	13 <sup>h</sup> 58 <sup>m</sup> 40.8 <sup>s</sup>	-44°48'12.9"	3.9	Blue	427 ± 9 ly	B2IV-V
□		$\pi$	11 <sup>h</sup> 21 <sup>m</sup> 0.4 <sup>s</sup>	-54°29'27.7"	3.9	Pale Blue	360 ± 10 ly	B5V
□		$\sigma$	12 <sup>h</sup> 28 <sup>m</sup> 2.4 <sup>s</sup>	-50°13'50.3"	3.9	Blue	412 ± 9 ly	B3V
□		$\rho$	12 <sup>h</sup> 11 <sup>m</sup> 39.1 <sup>s</sup>	-52°22'6.4"	4.0	Pale Blue	276 ± 9 ly	B3V
□		$\psi$	14 <sup>h</sup> 20 <sup>m</sup> 33.4 <sup>s</sup>	-37°53'7.1"	4.1	Pale Blue	259 ± 4 ly	A0IV
□		$\chi$	14 <sup>h</sup> 6 <sup>m</sup> 2.8 <sup>s</sup>	-41°10'46.7"	4.4	Blue	510 ± 20 ly	B2V
□		$\iota$	12 <sup>h</sup> 39 <sup>m</sup> 52.5 <sup>s</sup>	-55°58'31.9"	4.6	Pale Blue	365 ± 10 ly	B8II-III
□		d	13 <sup>h</sup> 31 <sup>m</sup> 2.7 <sup>s</sup>	-39°24'26.3"	4.6	Orange	900 ly	G7III + G9III
□		$\circ^1$	11 <sup>h</sup> 31 <sup>m</sup> 46.1 <sup>s</sup>	-59°26'31.4"	5.1	Pale Orange	6000 ly	G0I

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	$\omega$ Centauri	NGC 5139	13 <sup>h</sup> 26 <sup>m</sup> 47.3 <sup>s</sup>	-47°28'46.1"	3.9	GbCl	36.3'	15.8 kly
□	Running Chicken Nebula	IC 2944	11 <sup>h</sup> 36 <sup>m</sup> 36.0 <sup>s</sup>	-63°2'0.0"	4.5	Neb	1°15'	6.5 kly
□	Pearl Cluster	NGC 3766	11 <sup>h</sup> 36.1 <sup>m</sup>	-61°37'	5.3	OpCl	12'	5.5 kly
□		NGC 5662	14 <sup>h</sup> 35 <sup>m</sup> 37 <sup>s</sup>	-56°37'6"	5.5	OpCl	12'	2.2 kly
□		NGC 5460	14 <sup>h</sup> 7 <sup>m</sup> 27 <sup>s</sup>	-48°20'36"	5.6	OpCl	23'	2.4 kly
□		NGC 5281	13 <sup>h</sup> 46 <sup>m</sup> 35 <sup>s</sup>	-62°55'0"	5.9	OpCl	7'	4.2 kly
□		NGC 5316	13 <sup>h</sup> 53 <sup>m</sup> 57 <sup>s</sup>	-61°52'6"	6.0	OpCl	15'	4.0 kly
□		NGC 5617	14 <sup>h</sup> 29 <sup>m</sup> 44 <sup>s</sup>	-60°42'42"	6.3	OpCl	10'	5.8 kly
□	Centaurus A	NGC 5128	13 <sup>h</sup> 25 <sup>m</sup> 27.6 <sup>s</sup>	-43°1'9"	6.8	EllGal	25.7'	13 Mly
□	Blue Planetary	NGC 3918	11 <sup>h</sup> 50 <sup>m</sup> 17.7 <sup>s</sup>	-57°10'56.9"	8.5	PNeb	8"	4.9 kly
□		NGC 4945	13 <sup>h</sup> 5 <sup>m</sup> 27.5 <sup>s</sup>	-49°28'6"	9.3	SpiGal	20'	11.7 Mly

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# Chamaeleon

## “The Chameleon”

Pronunciation: /kə'mi:liən/

Genitive: Chamaeleontis (/kə'mi:li'ɒntɪs/)

Abbreviation: Cha

## History

Chamaeleon is a relatively recent constellation, one of the twelve created by Dutch astronomer Petrus Plancius in 1597. This is one of the many constellations created by European explorers out of the unfamiliar southern skies.

## Facts

Chamaeleon is visible at latitudes between  $+0^{\circ}$  and  $-90^{\circ}$ , i.e., limited to just observers in the Southern Hemisphere. It is best seen around 9:00 PM local time in April. There are no meteor showers in this constellation.

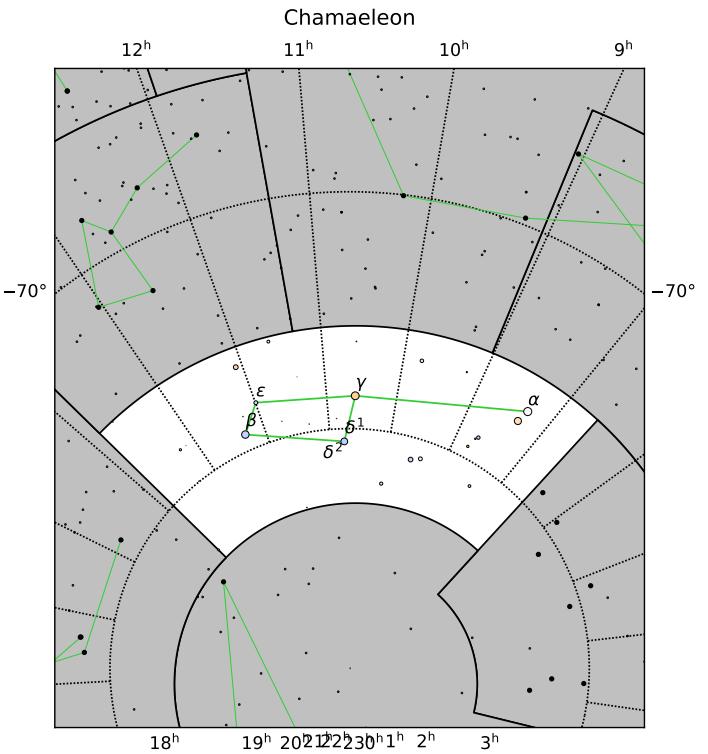
## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$8^{\text{h}}18^{\text{m}}31.6^{\text{s}}$	$-76^{\circ}55'11.0''$	4.1	Pale Yellow	$63.8 \pm 0.1$ ly	F5III
□		$\gamma$	$10^{\text{h}}35^{\text{m}}28.1^{\text{s}}$	$-78^{\circ}36'28.0''$	4.1	Orange	$418 \pm 6$ ly	M0III
□		$\beta$	$12^{\text{h}}18^{\text{m}}20.8^{\text{s}}$	$-79^{\circ}18'44.1''$	4.2	Blue	$298 \pm 4$ ly	B5V
□		$\delta^2$	$10^{\text{h}}45^{\text{m}}47.0^{\text{s}}$	$-80^{\circ}32'24.7''$	4.4	Blue	$351 \pm 5$ ly	B2IV
□		$\varepsilon$	$11^{\text{h}}59^{\text{m}}37.6^{\text{s}}$	$-78^{\circ}13'18.6''$	4.9	Pale Blue	$360 \pm 10$ ly	B9V
□		$\delta^1$	$10^{\text{h}}45^{\text{m}}16.3^{\text{s}}$	$-80^{\circ}28'10.5''$	5.5	Dark Yellow	$350 \pm 20$ ly	K0III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 3195	$10^{\text{h}}9^{\text{m}}20.9^{\text{s}}$	$-80^{\circ}51'30.7''$	11.6	PNeb	$1.33'$	6.4 kly

## Notes



# Coma Berenices

“Berenice’s Hair”

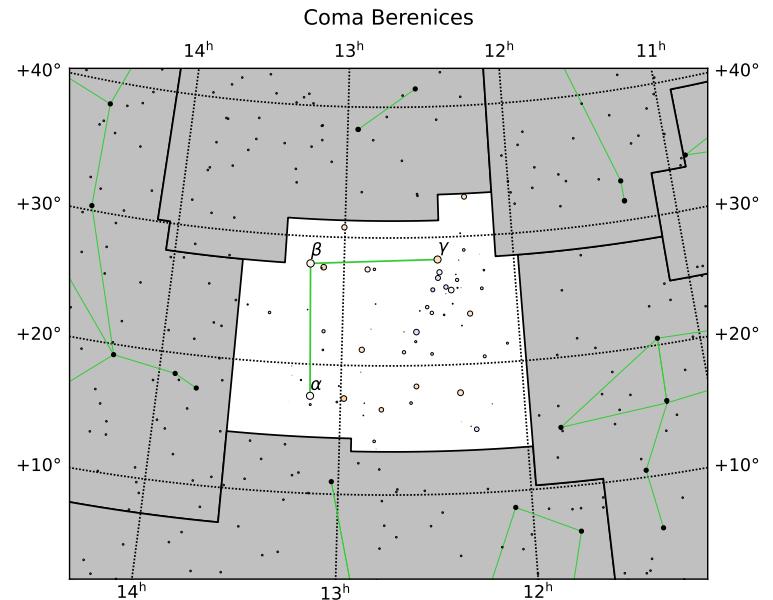
Pronunciation: /'koomə bərə'naisi:z/

Genitive: Comae Berenices (/'koomi: bərə'naisi:z/)

Abbreviation: Com

## History

Coma Berenices is the only modern constellation named for a historic figure, Berenice II of Egypt, queen to Ptolemy III Euergetes, king of Egypt. She vowed to sacrifice her hair as an offering if her husband returned home safely from what later would be known as the Third Syrian War. This story has been recorded in detail by the Greek poet Callimachus. It gained recognition as a constellation around 1536.



## Facts

Coma Berenices is visible at latitudes between  $+90^\circ$  and  $-70^\circ$ , i.e., throughout much of the world. It is best seen at 9:00 PM local time during May. There is one meteor shower, the Coma Berenicids, that peaks around December 16 at three meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\beta$	$13^{\text{h}}11^{\text{m}}52.4^{\text{s}}$	$+27^\circ52'41.5''$	4.3	Pale Yellow	$29.9 \pm 0.1 \text{ ly}$	G0V
□	Diadem (/daɪədɛm/)	$\alpha$	$13^{\text{h}}9^{\text{m}}59.3^{\text{s}}$	$+17^\circ31'46.0''$	4.3	White	$58.1 \pm 0.9 \text{ ly}$	F5V
□		$\gamma$	$12^{\text{h}}26^{\text{m}}56.3^{\text{s}}$	$+28^\circ16'6.3''$	4.4	Orange	$169 \pm 2 \text{ ly}$	K2III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Coma Star Cluster	Cr 256	12 <sup>h</sup> 22.5 <sup>m</sup>	+25°51'	1.8	OpCl	7.5°	280 ly
□		M53	13 <sup>h</sup> 12 <sup>m</sup> 55.3 <sup>s</sup>	+18°10'5.4"	8.3	GbCl	13'	58 kly
□	Black Eye Galaxy	M64	12 <sup>h</sup> 56 <sup>m</sup> 43.7 <sup>s</sup>	+21°40'57.6"	8.5	SpiGal	10.7'	17.3 Mly
□		M100	12 <sup>h</sup> 22 <sup>m</sup> 54.9 <sup>s</sup>	+15°49'21"	9.5	SpiGal	7.4'	55 Mly
□		M85	12 <sup>h</sup> 25 <sup>m</sup> 24.0 <sup>s</sup>	+18°11'28"	10.0	EllGal	7.1'	60 Mly
□		NGC 5053	13 <sup>h</sup> 16 <sup>m</sup> 27.1 <sup>s</sup>	+17°42'1.0"	10.0	GbCl	10.5'	57 kly
□		NGC 4725	12 <sup>h</sup> 50 <sup>m</sup> 26.6 <sup>s</sup>	+25°30'2.7"	10.1	SpiGal	9.8'	40.1 Mly
□		M88	12 <sup>h</sup> 31 <sup>m</sup> 59.2 <sup>s</sup>	+14°25'14"	10.4	SpiGal	6.9'	66 Mly
□	Needle Galaxy	NGC 4565	12 <sup>h</sup> 36 <sup>m</sup> 20.8 <sup>s</sup>	+25°59'16"	10.4	SpiGal	15.9'	42.7 Mly
□		M99	12 <sup>h</sup> 18 <sup>m</sup> 49.6 <sup>s</sup>	+14°24'59.4"	10.4	SpiGal	5.4'	45.2 Mly
□		M98	12 <sup>h</sup> 13 <sup>m</sup> 48.3 <sup>s</sup>	+14°54'1.7"	11.0	SpiGal	9.8'	44.4 Mly
□		M91	12 <sup>h</sup> 35 <sup>m</sup> 26.4 <sup>s</sup>	+14°29'47"	11.0	SpiGal	5.4'	63 Mly

## Notes

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# Corvus

## “The Crow”

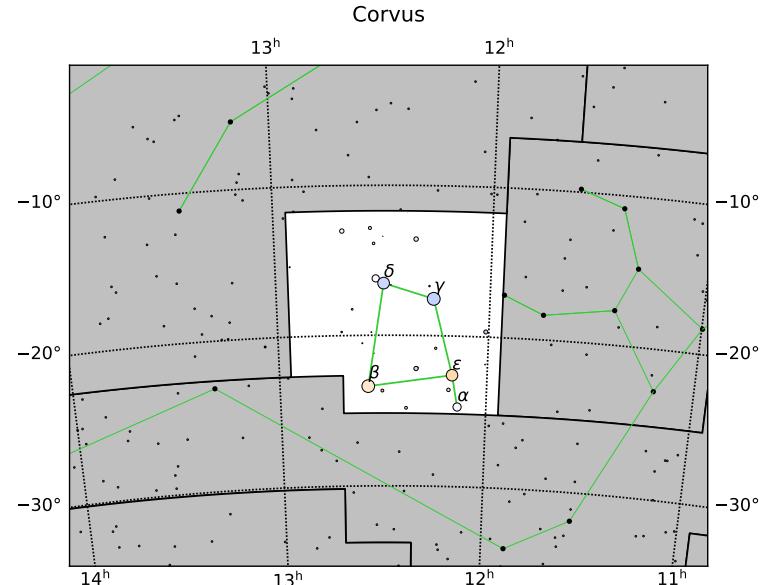
Pronunciation: /'kɔ:rəvəs/

Genitive: Corvi (/kɔ:rvaɪ/)

Abbreviation: Crv

## History

Corvus, or as the Babylonians knew it, “the raven,” is associated with the myth of Apollo and his lover Coronis. Coronis has been unfaithful to Apollo, and when he learned this information from a white crow, he turned it black in a fit of rage. Alternatively, it could be a crow that lied to Apollo, telling him that a snake kept it from fetching Apollo his water. As punishment, he would be placed in the sky forever out of reach of Crater the cup.



## Facts

Corvus is visible at latitudes between  $+60^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire Southern Hemisphere and as far north as southern Alaska and northern UK. It is best seen around 9:00 PM local time during May. There are a few minor meteor showers associated with Corvus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Gienah (/dʒi:nə/)	$\gamma$	12 <sup>h</sup> 15 <sup>m</sup> 48.4 <sup>s</sup>	$-17^{\circ}32'30.9''$	2.6	Pale Blue	$154 \pm 1$ ly	B8III
□	Kraz (/kræz/)	$\beta$	12 <sup>h</sup> 34 <sup>m</sup> 23.2 <sup>s</sup>	$-23^{\circ}23'48.3''$	2.6	Pale Orange	$146 \pm 1$ ly	G5II
□	Algorab (/ælgəræb/)	$\delta$	12 <sup>h</sup> 29 <sup>m</sup> 51.9 <sup>s</sup>	$-16^{\circ}30'55.6''$	3.0	Pale Blue	$86.9 \pm 0.4$ ly	B9V
□	Minkar (/mɪŋka:r/)	$\varepsilon$	12 <sup>h</sup> 10 <sup>m</sup> 7.5 <sup>s</sup>	$-22^{\circ}37'11.2''$	3.0	Orange	$318 \pm 5$ ly	K2III
□	Alchiba (/ælkɪbə/)	$\alpha$	12 <sup>h</sup> 8 <sup>m</sup> 24.8 <sup>s</sup>	$-24^{\circ}43'44.0''$	4.0	White	$48.7 \pm 0.1$ ly	F0IV-V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 4361	12 <sup>h</sup> 24 <sup>m</sup> 30.8 <sup>s</sup>	-18°47'5.6"	10.9	PNeb	1.3'	3.3 kly
□	Antennae Galaxies	NGC 4038/9	12 <sup>h</sup> 1 <sup>m</sup> 53.0 <sup>s</sup>	-18°52'10"	11.1	SpiGal	5.2'	50 Mly
□	Ringtail Galaxy	NGC 4027	11 <sup>h</sup> 59 <sup>m</sup> 30.2 <sup>s</sup>	-19°15'55"	11.7	SpiGal	3.2'	83 Mly

## Notes

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# Crater

## “The Cup”

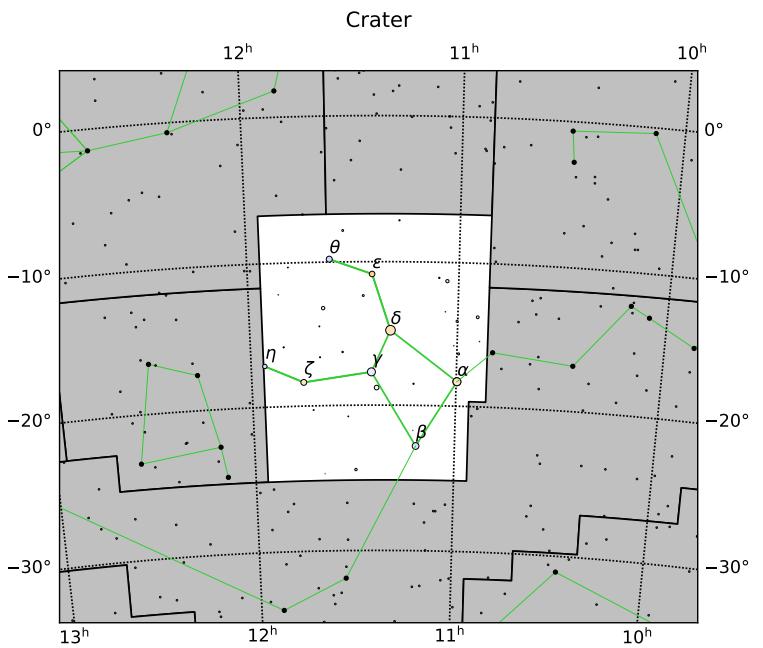
Pronunciation: /'kreitər/

Genitive: Crateris (/krə'tiəris/)

Abbreviation: Crt

## History

While this constellation was known to the Babylonians, they saw it as part of the preceding constellation, Corvus. The Greeks were the first to split them, naming Crater after the cup or chalice that Apollo gave to Corvus to fetch water with. Corvus delayed and lied about his lateness, and so Apollo put Corvus and Crater up in the night sky, with Corvus forever out of reach of the water in Crater.



## Facts

Crater is visible at latitudes between  $+65^{\circ}$  and  $-90^{\circ}$ , i.e., throughout most of the world as far north as Iceland. It is best seen at 9:00 PM local time during April. There is a minor meteor shower associated with Crater, the Eta Craterids which peak around January 16.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Labrum	$\delta$	$11^{\text{h}}19^{\text{m}}20.4^{\text{s}}$	$-14^{\circ}46'42.7''$	3.6	Orange	$163 \pm 4 \text{ ly}$	K0III
□		$\gamma$	$11^{\text{h}}24^{\text{m}}52.9^{\text{s}}$	$-17^{\circ}41'2.4''$	4.1	Pale Blue	$85.6 \pm 0.8 \text{ ly}$	A9V
□	Alkes (/ælkəs/)	$\alpha$	$10^{\text{h}}59^{\text{m}}46.5^{\text{s}}$	$-18^{\circ}17'55.6''$	4.1	Orange	$141 \pm 2 \text{ ly}$	K1III
□		$\beta$	$11^{\text{h}}11^{\text{m}}39.5^{\text{s}}$	$-22^{\circ}49'33.1''$	4.5	Blue	$296 \pm 8 \text{ ly}$	A1V
□		$\theta$	$11^{\text{h}}36^{\text{m}}40.9^{\text{s}}$	$-9^{\circ}48'8.1''$	4.7	Blue	$280 \pm 6 \text{ ly}$	B9V
□		$\zeta$	$11^{\text{h}}44^{\text{m}}45.8^{\text{s}}$	$-18^{\circ}21'2.4''$	4.7	Orange	$326 \pm 9 \text{ ly}$	G8III
□		$\varepsilon$	$11^{\text{h}}24^{\text{m}}36.6^{\text{s}}$	$-10^{\circ}51'33.6''$	4.8	Orange	$366 \pm 8 \text{ ly}$	K5III
□		$\eta$	$11^{\text{h}}56^{\text{m}}1.0^{\text{s}}$	$-17^{\circ}9'3.0''$	5.2	Blue	$251 \pm 4 \text{ ly}$	A0V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		NGC 3511	11 <sup>h</sup> 3 <sup>m</sup> 23.8 <sup>s</sup>	-23°5'12"	10.8	SpiGal	5.8'	41.5 Mly
<input type="checkbox"/>		NGC 3981	11 <sup>h</sup> 56 <sup>m</sup> 7.4 <sup>s</sup>	-19°53'46"	11.8	SpiGal	5.2'	62 Mly

## Notes

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# Crux

“The Cross”

Pronunciation: /krʌks/

Genitive: Crucis (/kruːsɪs/)

Abbreviation: Cru

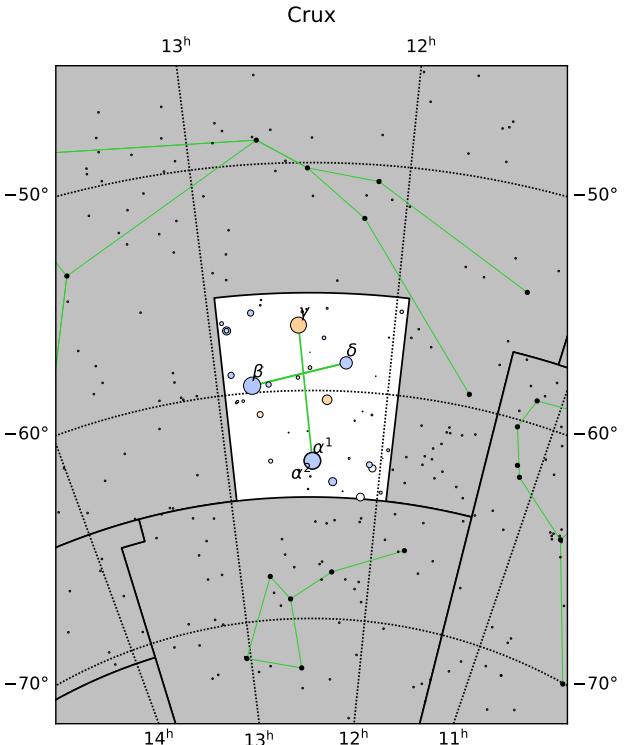
## History

Although Crux was known to the ancient Greeks, due to the precession of the equinoxes, eventually Crux fell below the horizon permanently for observers in the Northern Hemisphere. It was first rediscovered by Portuguese explorer João Faras in 1500. It was later shown in sky maps by Dutch astronomer Petrus Plancius in 1598.

## Facts

Crux is visible at latitudes between  $+20^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as Central America, sub-Saharan Africa, and Southeast Asia. It is best seen at 9:00 PM local time during May. There is one minor meteor shower in Crux.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Mimosa (/mi'mousə/)	$\beta$	12 <sup>h</sup> 47 <sup>m</sup> 43.3 <sup>s</sup>	$-59^\circ 41' 19.6''$	1.3	Blue	$280 \pm 20$ ly	B0III
□	Acrux (/eirkʌks/)	$\alpha$	12 <sup>h</sup> 26 <sup>m</sup> 35.9 <sup>s</sup>	$-63^\circ 5' 56.7''$	1.3	Blue	$320 \pm 20$ ly	B0IV
□	Gacrux (/gækraxs/)	$\gamma$	12 <sup>h</sup> 31 <sup>m</sup> 10.0 <sup>s</sup>	$-57^\circ 6' 47.6''$	1.6	Orange	$88.6 \pm 0.4$ ly	M4III
□	Imai (/i:mai/)	$\delta$	12 <sup>h</sup> 15 <sup>m</sup> 8.7 <sup>s</sup>	$-58^\circ 44' 56.1''$	2.8	Blue	$345 \pm 5$ ly	B2IV

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Jewel Box	NGC 4755	12 <sup>h</sup> 53 <sup>m</sup> 42 <sup>s</sup>	-60°22'	4.2	OpCl	10'	6.4 kly
□	Coalsack Cluster	NGC 4609	12 <sup>h</sup> 42 <sup>m</sup> 18 <sup>s</sup>	-62°59'42"	6.9	OpCl	5'	4 kly
□		NGC 4103	12 <sup>h</sup> 0 <sup>m</sup> 39 <sup>s</sup>	-61°55'0"	7.4	OpCl	12'	5.3 kly
□		NGC 4349	12 <sup>h</sup> 24 <sup>m</sup> 8 <sup>s</sup>	-61°52'18"	7.4	OpCl	12'	7 kly
□	Coalsack Nebula	C 99	12 <sup>h</sup> 50 <sup>m</sup>	-62°30'		Neb	7°	590 ly

## Notes

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# Hydra

“The Sea Serpent”

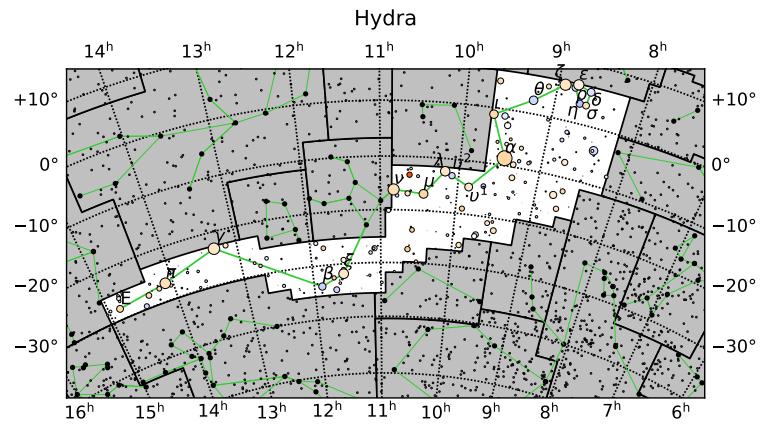
Pronunciation: /'haɪdrə/

Genitive: Hydrael (/haɪdrɪ:/)

Abbreviation: Hya

## History

Known to the Babylonians as a serpent, the ancient Greeks saw it as a long snake. Specifically, this was the snake that caused the crow to delay in fetching the god Apollo water. Alternatively, it could be the many-headed serpent that Heracles fought as part of his trials.



## Facts

Hydra is visible at latitudes between  $+54^\circ$  and  $-83^\circ$ , i.e., throughout all of the populated Southern Hemisphere and as far north as southern Alaska, central UK, and Denmark. It is best seen at 9:00 PM local time during April. There are a few minor meteor showers in Hydra, notably the Sigma Hydrids that peak around December 9 at seven meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Alphard (/ælfərd/)	$\alpha$	9 <sup>h</sup> 27 <sup>m</sup> 35.2 <sup>s</sup>	$-8^\circ39'31.0''$	2.0	Orange	$177 \pm 8$ ly	K3III
□		$\gamma$	13 <sup>h</sup> 18 <sup>m</sup> 55.3 <sup>s</sup>	$-23^\circ10'17.5''$	3.0	Pale Orange	$133.8 \pm 0.8$ ly	G8III
□		$\zeta$	8 <sup>h</sup> 55 <sup>m</sup> 23.6 <sup>s</sup>	$-5^\circ56'44.0''$	3.1	Pale Orange	$167 \pm 2$ ly	G8III-IV
□		$\nu$	10 <sup>h</sup> 49 <sup>m</sup> 37.5 <sup>s</sup>	$-16^\circ11'37.1''$	3.1	Orange	$137.1 \pm 1.0$ ly	K0-1III
□		$\pi$	14 <sup>h</sup> 6 <sup>m</sup> 22.3 <sup>s</sup>	$-26^\circ40'56.5''$	3.3	Pale Orange	$101.0 \pm 0.5$ ly	K2III
□	Ashlesha (/aʃ'leʃə/)	$\varepsilon$	8 <sup>h</sup> 46 <sup>m</sup> 46.5 <sup>s</sup>	$+6^\circ25'7.7''$	3.4	Pale Yellow	$129 \pm 5$ ly	G0III-IV
□		$\xi$	11 <sup>h</sup> 33 <sup>m</sup> 0.1 <sup>s</sup>	$-31^\circ51'27.4''$	3.5	Pale Yellow	$129.6 \pm 0.8$ ly	G8III
□		$\lambda$	10 <sup>h</sup> 10 <sup>m</sup> 35.3 <sup>s</sup>	$-12^\circ21'14.7''$	3.6	Pale Orange	$109 \pm 3$ ly	K0III
□		$\mu$	10 <sup>h</sup> 26 <sup>m</sup> 5.4 <sup>s</sup>	$-14^\circ19'56.3''$	3.8	Orange	$234 \pm 3$ ly	K4III
□		$\theta$	9 <sup>h</sup> 14 <sup>m</sup> 21.9 <sup>s</sup>	$+2^\circ18'51.6''$	3.9	Pale Blue	$115 \pm 1$ ly	B9V
□	Ukdah (/ʌkðə/)	$\iota$	9 <sup>h</sup> 39 <sup>m</sup> 51.4 <sup>s</sup>	$-1^\circ8'34.1''$	3.9	Orange	$263 \pm 3$ ly	K3III

<input type="checkbox"/>	Zhang	$v^1$	9 <sup>h</sup> 51 <sup>m</sup> 28.7 <sup>s</sup>	-14°50'47.8"	4.1	Pale Orange	264 ± 6 ly	G6III
<input type="checkbox"/>		$\delta$	8 <sup>h</sup> 37 <sup>m</sup> 39.4 <sup>s</sup>	+5°42'13.6"	4.1	Blue	160 ± 5 ly	A1V
<input type="checkbox"/>		$\beta$	11 <sup>h</sup> 52 <sup>m</sup> 54.5 <sup>s</sup>	-33°54'29.3"	4.3	Blue	310 ± 20 ly	B9III
<input type="checkbox"/>		$\eta$	8 <sup>h</sup> 43 <sup>m</sup> 13.5 <sup>s</sup>	+3°23'55.2"	4.3	Blue	590 ± 30 ly	B3V
<input type="checkbox"/>		$\rho$	8 <sup>h</sup> 48 <sup>m</sup> 26.0 <sup>s</sup>	+5°50'16.1"	4.3	Blue	354 ± 8 ly	A0V
<input type="checkbox"/>		E	14 <sup>h</sup> 50 <sup>m</sup> 17.3 <sup>s</sup>	-27°57'37.3"	4.4	Orange	290 ± 10 ly	K3III
<input type="checkbox"/>	Minchir (/'mɪŋkər/)	$\sigma$	8 <sup>h</sup> 38 <sup>m</sup> 45.3 <sup>s</sup>	+3°20'29.2"	4.5	Orange	370 ± 10 ly	K2III
<input type="checkbox"/>		$v^2$	10 <sup>h</sup> 5 <sup>m</sup> 7.5 <sup>s</sup>	-13°3'52.7"	4.6	Blue	314 ± 7 ly	B8V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		M48	8 <sup>h</sup> 13 <sup>m</sup> 43.0 <sup>s</sup>	-5°45'0"	5.8	OpCl	30'	2.5 kly
<input type="checkbox"/>	Southern Pinwheel Galaxy	M83	13 <sup>h</sup> 37 <sup>m</sup> 1.0 <sup>s</sup>	-29°51'56.7"	7.5	SpiGal	12.9'	14.7 Mly
<input type="checkbox"/>	Ghost of Jupiter	NGC 3242	10 <sup>h</sup> 24 <sup>m</sup> 46.1 <sup>s</sup>	-18°38'32.6"	8.6	PNeb	25"	4.8 kly
<input type="checkbox"/>		NGC 3923	11 <sup>h</sup> 51 <sup>m</sup> 1.7 <sup>s</sup>	-28°48'22"	9.6	EllGal	5.9'	71 Mly
<input type="checkbox"/>		M68	12 <sup>h</sup> 39 <sup>m</sup> 28.0 <sup>s</sup>	-26°44'38.6"	9.7	GbCl	11'	33.6 kly
<input type="checkbox"/>		NGC 3585	11 <sup>h</sup> 13 <sup>m</sup> 17.1 <sup>s</sup>	-26°45'17"	9.9	EllGal	4.7'	56 Mly
<input type="checkbox"/>		NGC 3621	11 <sup>h</sup> 18 <sup>m</sup> 16.5 <sup>s</sup>	-32°48'50.7"	10.0	SpiGal	34'	21.7 Mly

## Notes

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# Leo

“The Lion”

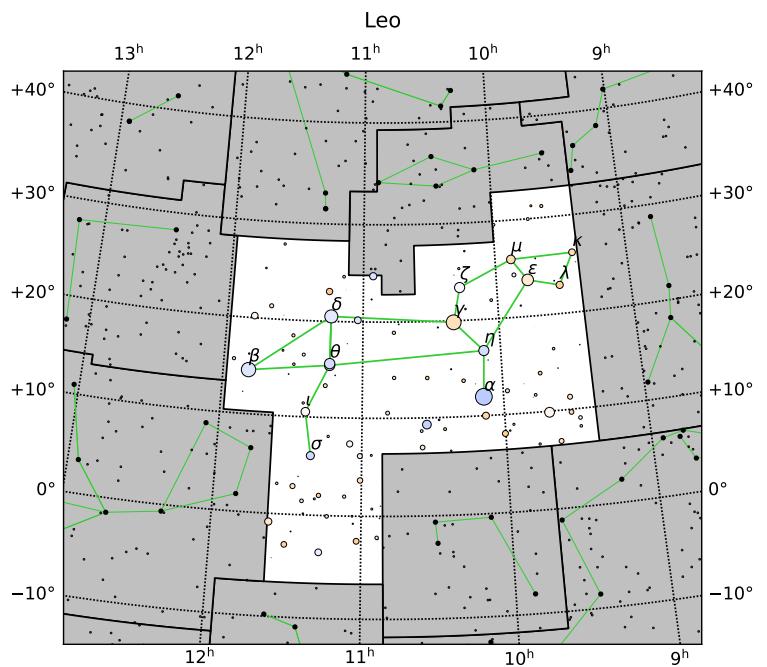
Pronunciation: /li:ou/

Genitive: Leonis (/li:oonis/)

Abbreviation: Leo

## History

Leo was one of the earliest recognized constellations, with numerous cultures in and near Mesopotamia using these stars to mark out a lion. The Greeks identified Leo with the Nemean Lion which was killed by Heracles during his twelve labors. This lion was impervious to weapons, so Heracles used his bare hands to kill it.



## Facts

Leo is visible at latitudes between  $+90^\circ$  and  $-65^\circ$ , i.e., throughout the entire populated world. It is best seen at 9:00 PM local time during April. The Leonids are a prolific meteor shower that radiate out of Leo, peaking around November 17 at a rate of fifteen meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Regulus (/regju-lus/)	α	10 <sup>h</sup> 8 <sup>m</sup> 22.3 <sup>s</sup>	+11°58'2.0"	1.4	Blue	$79.3 \pm 0.7$ ly	B8IV + K2V + M4V
□	Denebola (/də'nəbələ/)	β	11 <sup>h</sup> 49 <sup>m</sup> 3.6 <sup>s</sup>	+14°34'19.4"	2.1	Pale Blue	$35.9 \pm 0.2$ ly	A3V
□	Algieba (/æ'dʒi:bə/)	γ	10 <sup>h</sup> 19 <sup>m</sup> 53.4 <sup>s</sup>	+19°50'29.3"	2.1	Orange	$130 \pm 3$ ly	K1III + G7IIIb
□	Zosma (/zɒzmə/)	δ	11 <sup>h</sup> 14 <sup>m</sup> 6.5 <sup>s</sup>	+20°31'25.4"	2.6	Pale Blue	$58.4 \pm 0.3$ ly	A4V
□	Algernon (/ældʒənubɪ:/)	ε	9 <sup>h</sup> 45 <sup>m</sup> 51.1 <sup>s</sup>	+23°46'27.3"	3.0	Pale Yellow	$247 \pm 3$ ly	G1II
□	Chertan (/tʃərtæn/)	θ	11 <sup>h</sup> 14 <sup>m</sup> 14.4 <sup>s</sup>	+15°25'46.5"	3.3	Blue	$165 \pm 1$ ly	A2V
□	Adhafera (/ædə'fi:rə/)	ζ	10 <sup>h</sup> 16 <sup>m</sup> 41.4 <sup>s</sup>	+23°25'2.3"	3.3	White	$274 \pm 4$ ly	F0III
□		η	10 <sup>h</sup> 7 <sup>m</sup> 20.0 <sup>s</sup>	+16°45'45.6"	3.5	Blue	$1270 \pm 80$ ly	A0Ib
□	Rasalas (/ræsolæs/)	μ	9 <sup>h</sup> 52 <sup>m</sup> 45.8 <sup>s</sup>	+26°0'25.0"	3.9	Orange	$124.1 \pm 0.8$ ly	K2IIIb
□		ι	11 <sup>h</sup> 23 <sup>m</sup> 55.5 <sup>s</sup>	+10°31'46.2"	4.0	White	$79 \pm 2$ ly	F4IV
□		σ	11 <sup>h</sup> 21 <sup>m</sup> 8.2 <sup>s</sup>	+6°1'45.6"	4.0	Blue	$210 \pm 10$ ly	B9.5V
□	Alterf (/æl'tərf/)	λ	9 <sup>h</sup> 31 <sup>m</sup> 43.2 <sup>s</sup>	+22°58'4.7"	4.3	Orange	$329 \pm 6$ ly	K4.5III

□  $\kappa$   $9^{\text{h}}24^{\text{m}}39.3^{\text{s}}$   $+26^{\circ}10'56.4''$  4.5 Orange  $201 \pm 3$  ly K2III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		M66	$11^{\text{h}}20^{\text{m}}15.0^{\text{s}}$	$+12^{\circ}59'28.6''$	8.9	SpiGal	$9.1'$	31 Mly
□		NGC 2903	$9^{\text{h}}32^{\text{m}}10.1^{\text{s}}$	$+21^{\circ}30'3.0''$	9.0	SpiGal	$11.5'$	30.4 Mly
□		M96	$10^{\text{h}}46^{\text{m}}45.7^{\text{s}}$	$+11^{\circ}49'12''$	10.1	SpiGal	$7.6'$	31 Mly
□		M105	$10^{\text{h}}47^{\text{m}}49.6^{\text{s}}$	$+12^{\circ}34'53.9''$	10.2	EllGal	$5.4'$	36.6 Mly
□	Hamburger Galaxy	NGC 3628	$11^{\text{h}}20^{\text{m}}17.0^{\text{s}}$	$+13^{\circ}35'23''$	10.2	SpiGal	$15'$	35 Mly
□		M65	$11^{\text{h}}18^{\text{m}}55.9^{\text{s}}$	$+13^{\circ}5'32''$	10.3	SpiGal	$8.7'$	43 Mly
□		M95	$10^{\text{h}}43^{\text{m}}57.7^{\text{s}}$	$+11^{\circ}42'14''$	11.4	SpiGal	$3.1'$	32.6 Mly

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# Leo Minor

“The Small Lion”

Pronunciation: /li:ou̯ 'mainerə/

Genitive: Leonis Minoris (/li:oonis mi'noris/)

Abbreviation: LMi

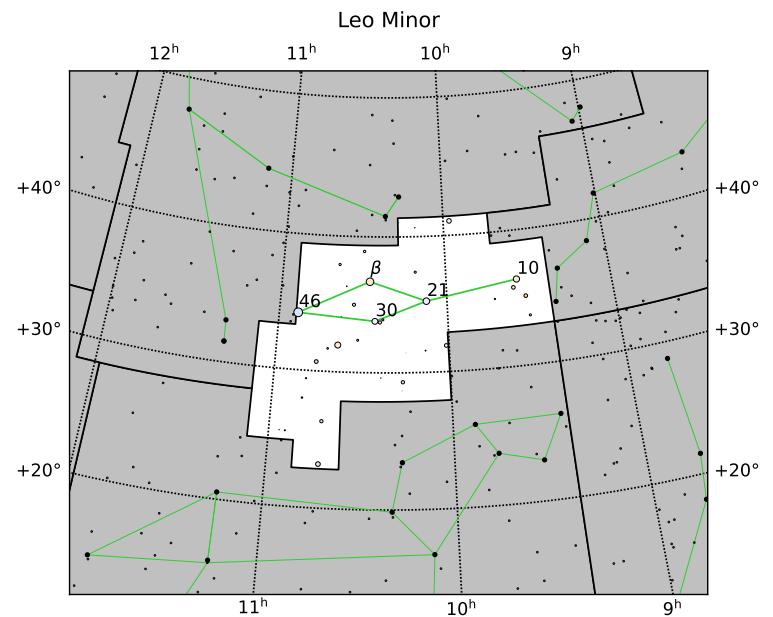
## History

Leo Minor is a relatively faint constellation, and this was noted by the Greek astronomer Ptolemy. It wasn't until the Polish astronomer Johannes Hevelius depicted it in his star atlas in 1687 that Leo Minor was considered a true constellation.

## Facts

Leo Minor is visible at latitudes between  $+90^\circ$  and  $-45^\circ$ , i.e., throughout the entire Northern Hemisphere and most of the Southern Hemisphere excluding the southern tip of South America. It is best seen at 9:00 PM local time during April. There is a minor meteor shower in Leo Minor, the Leonis Minorids, that peaks around October 24 at a rate of two meteors per hour.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Praecipua (/pri'sipjʊə/)	46	10 <sup>h</sup> 53 <sup>m</sup> 18.7 <sup>s</sup>	+34°12'53.5"	3.8	Pale Blue	$94.9 \pm 0.6$ ly	K0III-IV
□		β	10 <sup>h</sup> 27 <sup>m</sup> 53.0 <sup>s</sup>	+36°42'26.0"	4.2	Pale Orange	$154 \pm 4$ ly	G9III
□		21	10 <sup>h</sup> 7 <sup>m</sup> 25.8 <sup>s</sup>	+35°14'40.9"	4.5	Pale Blue	$92.1 \pm 0.5$ ly	A7V
□		10	9 <sup>h</sup> 34 <sup>m</sup> 13.4 <sup>s</sup>	+36°23'51.2"	4.5	Pale Orange	$180 \pm 2$ ly	G8.5III
□		30	10 <sup>h</sup> 25 <sup>m</sup> 54.8 <sup>s</sup>	+33°47'46.0"	4.7	White	$233 \pm 4$ ly	A9IIIa

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance	
<input type="checkbox"/>		NGC 3344	10 <sup>h</sup> 43 <sup>m</sup> 31.2 <sup>s</sup>	+24°55'20.0"	10.5	SpiGal	7.1'	22.5 Mly	
<input type="checkbox"/>		NGC 3486	11 <sup>h</sup> 0 <sup>m</sup> 23.9 <sup>s</sup>	+28°58'29.4"	10.5	SpiGal	7.1'	27.4 Mly	
<input type="checkbox"/>	Knitting Galaxy	Needle	NGC 3432	10 <sup>h</sup> 52 <sup>m</sup> 31.1 <sup>s</sup>	+36°37'8"	11.7	SpiGal	6.8'	45 Mly

## Notes

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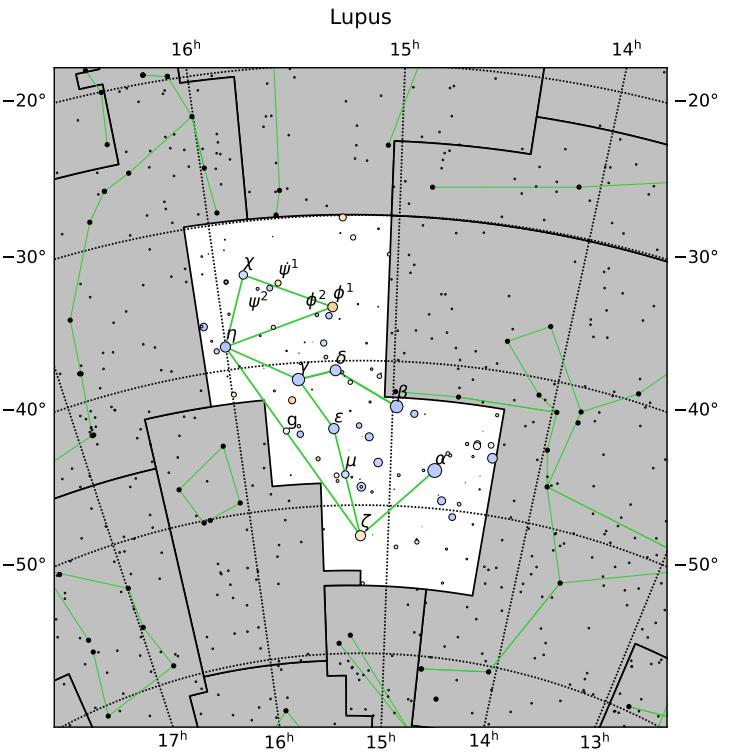
# Lupus

“The Wolf”

Pronunciation: /ljʊ:pəs/  
Genitive: Lupi (/lju:pai/)  
Abbreviation: Lup

## History

In ancient times, Lupus was not a separate constellation, but instead an arbitrary animal slain by Centaurus. It was not until the 2nd century BC that the Greek astronomer Hipparchus separated it and called it “beast.” It was not associated with a wolf until the Latin translation of Ptolemy’s *Almagest* called it a wolf.



## Facts

Lupus is visible at latitudes between  $+35^{\circ}$  and  $-90^{\circ}$ , i.e., the entire Southern Hemisphere and as far north as the southeast US, Tunisia, and just south of South Korea. It is best seen at 9:00 PM local time during June. There are no meteor showers that radiate out of Lupus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$14^{\text{h}}41^{\text{m}}55.8^{\text{s}}$	$-47^{\circ}23'17.5''$	2.3	Blue	$460 \pm 10$ ly	B1.5III
□	Kekouan (/'kɛkwɑ:n/)	$\beta$	$14^{\text{h}}58^{\text{m}}31.9^{\text{s}}$	$-43^{\circ}8'2.3''$	2.7	Blue	$383 \pm 8$ ly	B2III
□		$\gamma$	$15^{\text{h}}35^{\text{m}}8.4^{\text{s}}$	$-41^{\circ}10'0.3''$	2.8	Blue	$420 \pm 30$ ly	B2IV
□		$\delta$	$15^{\text{h}}21^{\text{m}}22.3^{\text{s}}$	$-40^{\circ}38'51.1''$	3.2	Blue	900 ly	B1.5IV
□		$\epsilon$	$15^{\text{h}}22^{\text{m}}40.9^{\text{s}}$	$-44^{\circ}41'22.6''$	3.4	Blue	510 ly	B2IV-V
□		$\zeta$	$15^{\text{h}}12^{\text{m}}17.1^{\text{s}}$	$-52^{\circ}5'57.3''$	3.4	Orange	$117.3 \pm 0.6$ ly	G7III
□		$\eta$	$16^{\text{h}}0^{\text{m}}7.3^{\text{s}}$	$-38^{\circ}23'48.2''$	3.4	Blue	$440 \pm 10$ ly	B2IV + A5V + F5V
□		$\phi^1$	$15^{\text{h}}21^{\text{m}}48.4^{\text{s}}$	$-36^{\circ}15'41.0''$	3.6	Orange	$275 \pm 4$ ly	K5III
□		$\chi$	$15^{\text{h}}50^{\text{m}}57.5^{\text{s}}$	$-33^{\circ}37'37.8''$	4.0	Blue	$210 \pm 10$ ly	B9.5V + A2V
□		$\mu$	$15^{\text{h}}18^{\text{m}}32.0^{\text{s}}$	$-47^{\circ}52'31.0''$	4.3	Blue	$340 \pm 20$ ly	B8V
□		$\phi^2$	$15^{\text{h}}23^{\text{m}}9.4^{\text{s}}$	$-36^{\circ}51'30.6''$	4.5	Blue	$520 \pm 20$ ly	B4V
□		$g$	$15^{\text{h}}41^{\text{m}}11.4^{\text{s}}$	$-44^{\circ}39'40.3''$	4.6	White	$51.7 \pm 0.7$ ly	F3/5V
□		$\psi^1$	$15^{\text{h}}39^{\text{m}}46.0^{\text{s}}$	$-34^{\circ}24'42.9''$	4.7	Pale Orange	$207 \pm 4$ ly	G8/K0III
□		$\psi^2$	$15^{\text{h}}42^{\text{m}}41.0^{\text{s}}$	$-34^{\circ}42'37.5''$	4.7	Blue	$360 \pm 10$ ly	B5V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 5822	15 <sup>h</sup> 4 <sup>m</sup> 21.2 <sup>s</sup>	-54°23'58"	6.5	OpCl	35'	2.7 kly
□		NGC 5986	15 <sup>h</sup> 46 <sup>m</sup> 3.0 <sup>s</sup>	-37°47'11.1"	8.0	GbCl	5'	33.9 kly
□		NGC 5927	15 <sup>h</sup> 28 <sup>m</sup> 0.7 <sup>s</sup>	-50°40'22.9"	8.9	GbCl	6'	25.1 kly
□		NGC 5824	15 <sup>h</sup> 3 <sup>m</sup> 58.6 <sup>s</sup>	-33°4'7"	9.1	GbCl	6.2'	104.4 kly
□		NGC 5882	15 <sup>h</sup> 16 <sup>m</sup> 50.0 <sup>s</sup>	-45°38'58.6"	10.9	PNeb	13"	7.7 kly
□	Retina Nebula	IC 4406	14 <sup>h</sup> 22 <sup>m</sup> 26.3 <sup>s</sup>	-44°9'4.4"	10.9	PNeb	20"	2 kly
□		NGC 5749	14 <sup>h</sup> 48 <sup>m</sup> 49.0 <sup>s</sup>	-54°30'7"	11.2	OpCl	16.7'	3.5 kly

## Notes

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# Lynx

## “The Lynx”

Pronunciation: /lɪŋks/

Genitive: Lyncis (/lɪnsɪs/)

Abbreviation: Lyn

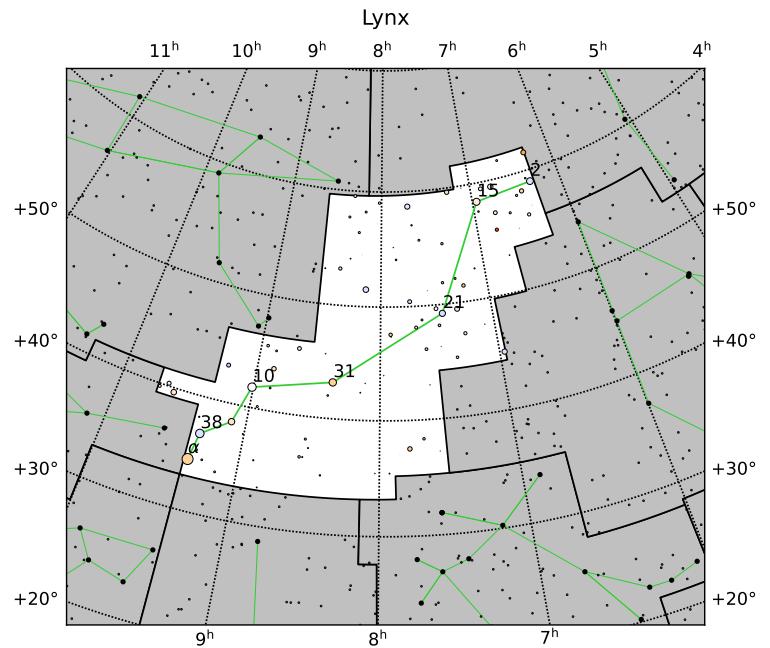
## History

Lynx was created by Polish astronomer Johannes Hevelius in 1687 by combining stars that had originally been part of a now-obsolete constellation. He named it Lynx since these stars were faint, so only the “lynx-eyed” would be able to see it.

## Facts

Lynx is visible at latitudes between  $+90^\circ$  and  $-55^\circ$ , i.e., throughout the entire Northern Hemisphere and all of the populated Southern Hemisphere. It is best seen at 9:00 PM local time during March. There are a few minor meteor showers that radiate out of Lynx.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$9^{\text{h}}21^{\text{m}}3.3^{\text{s}}$	$+34^\circ23'33.2''$	3.1	Orange	$203 \pm 2$ ly	K7III
□		38	$9^{\text{h}}18^{\text{m}}50.6^{\text{s}}$	$+36^\circ48'9.3''$	3.8	Blue	$117 \pm 3$ ly	A3V
□		10 UMa	$9^{\text{h}}0^{\text{m}}38.4^{\text{s}}$	$+41^\circ46'58.6''$	4.0	White	$52.4 \pm 0.6$ ly	F3V + K0V
□		31	$8^{\text{h}}22^{\text{m}}50.1^{\text{s}}$	$+43^\circ11'17.3''$	4.3	Orange	$380 \pm 10$ ly	K4III
□		15	$6^{\text{h}}57^{\text{m}}16.6^{\text{s}}$	$+58^\circ25'21.9''$	4.4	Pale Orange	$178 \pm 2$ ly	G8III + F8V
□		2	$6^{\text{h}}19^{\text{m}}37.4^{\text{s}}$	$+59^\circ0'39.5''$	4.4	Blue	$157 \pm 3$ ly	A2V
□		21	$7^{\text{h}}26^{\text{m}}42.9^{\text{s}}$	$+49^\circ12'41.5''$	4.6	Blue	$274 \pm 6$ ly	A0.5V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>	Intergalactic Wanderer	NGC 2419	7 <sup>h</sup> 38 <sup>m</sup> 8.5 <sup>s</sup>	+38°52'54.9"	9.1	GbCl	6'	275 kly
<input type="checkbox"/>	UFO Galaxy	NGC 2683	8 <sup>h</sup> 52 <sup>m</sup> 41.3 <sup>s</sup>	+33°25'19"	10.6	SpiGal	9.3'	30.5 Mly

## Notes

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# Musca

“The Fly”

Pronunciation: /mʌskə/

Genitive: Muscae (/mʌski:/)

Abbreviation: Mus

## History

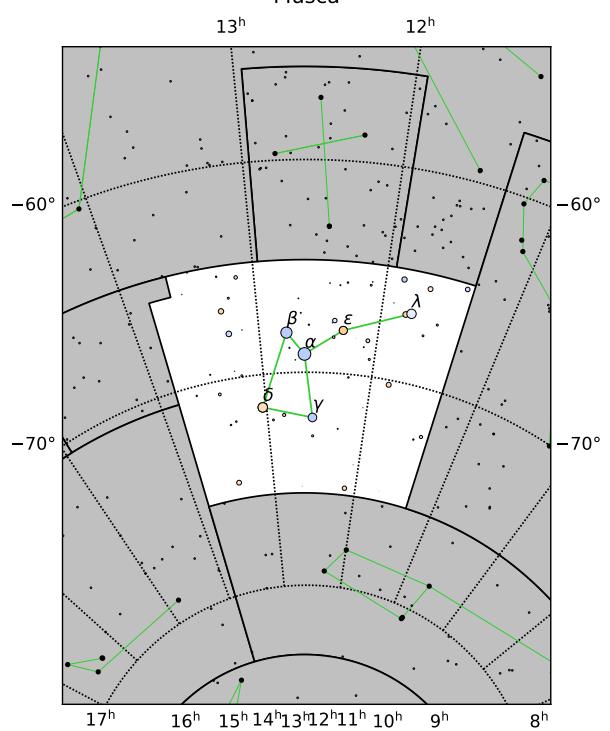
Musca is another relatively recent addition to the night sky. It was created by the Dutch astronomer Petrus Plancius in 1598. Although Plancius described Musca as a fly, for about a century and a half it was known as a bee. It was the French astronomer Nicolas Louis de Lacaille who reinforced the idea of Musca being a fly in 1756.

## Facts

Musca is visible at latitudes between  $+10^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and only as far north as Venezuela, sub-Saharan Africa, and Malaysia. It is best seen at 9:00 PM local time during May. There are no meteor showers that radiate out of Musca.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$12^{\text{h}}37^{\text{m}}11.0^{\text{s}}$	$-69^\circ8'8.0''$	2.7	Blue	$315 \pm 3$ ly	B2IV-V
□		$\beta$	$12^{\text{h}}46^{\text{m}}16.8^{\text{s}}$	$-68^\circ6'29.2''$	3.1	Blue	$340 \pm 10$ ly	B2V + B3V
□		$\delta$	$13^{\text{h}}2^{\text{m}}16.3^{\text{s}}$	$-71^\circ32'55.9''$	3.6	Orange	$91 \pm 1$ ly	K2III
□		$\lambda$	$11^{\text{h}}45^{\text{m}}36.4^{\text{s}}$	$-66^\circ43'43.5''$	3.6	Pale Blue	$127 \pm 2$ ly	A7V
□		$\gamma$	$12^{\text{h}}32^{\text{m}}28.0^{\text{s}}$	$-72^\circ7'58.8''$	3.9	Blue	$325 \pm 4$ ly	B5V
□		$\varepsilon$	$12^{\text{h}}17^{\text{m}}34.3^{\text{s}}$	$-67^\circ57'38.6''$	4.1	Orange	$301 \pm 5$ ly	M5III



# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 4463	12 <sup>h</sup> 30 <sup>m</sup>	-64°47'	7.2	OpCl	6'	6.2 kly
□		NGC 4833	12 <sup>h</sup> 59 <sup>m</sup> 33.9 <sup>s</sup>	-70°52'35.4"	7.8	GbCl	13.5'	21.5 kly
□	Spiral Nebula	Planetary NGC 5189	13 <sup>h</sup> 33 <sup>m</sup> 33.0 <sup>s</sup>	-65°58'26.7"	8.2	PNeb	1'30"	3 kly
□		NGC 4815	12 <sup>h</sup> 58 <sup>m</sup> 1 <sup>s</sup>	-64°57'36"	8.6	OpCl	7'	10 kly
□		NGC 4372	12 <sup>h</sup> 25 <sup>m</sup> 45.4 <sup>s</sup>	-72°39'32.7"	9.9	GbCl	18'	18.9 kly
□	Engraved Hour-glass Nebula	MyCn 18	13 <sup>h</sup> 39 <sup>m</sup> 35.1 <sup>s</sup>	-67°22'51.5"	13.0	PNeb	13"	8 kly
□	Dark Doodad Nebula		12 <sup>h</sup> 25 <sup>m</sup> 0 <sup>s</sup>	-71°42'0"		Neb	3°	

## Notes

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# Pyxis

“The Mariner’s Compass”

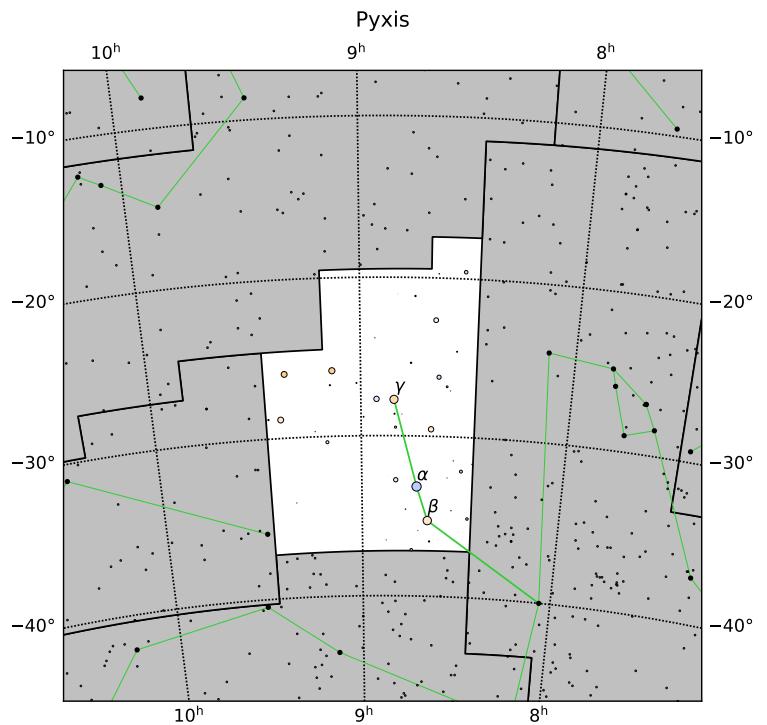
Pronunciation: /piksɪs/

Genitive: Pyxidis (/piksɪdɪs/)

Abbreviation: Pyx

## History

As the name suggests, this was another recent addition. The French astronomer Nicolas-Louis de Lacaille first defined Pyxis in 1752 while he was observing the souther skies at the Cape of Good Hope. Originally, Pyxis had a longer name, *Pyxis Nautica*, but it was shortened by American astronomer Benjamin Gould in 1874. Notably, the ancient Greeks saw Pyxis as the mast of the larger constellation depicting Jason’s ship, *Argo Navis*.



## Facts

Pyxis is visible at latitudes between  $+50^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as the US-Canadian border. It is best seen at 9:00 PM local time during March. There are no meteor showers in Pyxis.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$8^{\text{h}}43^{\text{m}}35.5^{\text{s}}$	$-33^\circ11'11.0''$	3.7	Blue	$880 \pm 30$ ly	B1.5III
□		$\beta$	$8^{\text{h}}40^{\text{m}}6.1^{\text{s}}$	$-35^\circ18'30.0''$	4.0	Pale Orange	$420 \pm 10$ ly	G7II-III
□		$\gamma$	$8^{\text{h}}50^{\text{m}}31.9^{\text{s}}$	$-27^\circ42'35.4''$	4.0	Orange	$207 \pm 2$ ly	K3III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 2627	$8^{\text{h}}37^{\text{m}}15^{\text{s}}$	$-29^\circ57'18''$	8.4	OpCl	$9'$	6.6 kly
□		NGC 2613	$8^{\text{h}}33^{\text{m}}22.8^{\text{s}}$	$-22^\circ58'25.2''$	11.6	SpiGal	$7.6'$	78 Mly
□		NGC 2818	$9^{\text{h}}16^{\text{m}}1.7^{\text{s}}$	$-36^\circ37'38.8''$	12.5	PNeb	$2'$	10.4 kly

## Notes

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# Sextans

“The Sextant”

Pronunciation: /sɛkstənz/

Genitive: Sextantis (/sɛks'tæntɪs/)

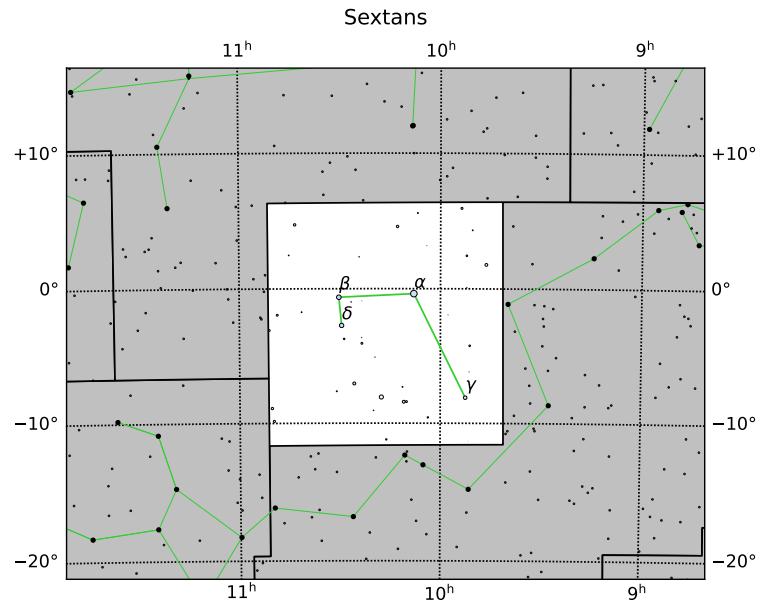
Abbreviation: Sex

## History

Sextans is a relatively small constellation made by Polish astronomer Johannes Hevelius in 1687 to honor the sextant, an instrument that he made frequent use of during his observations.

## Facts

Sextans is visible at latitudes between  $+80^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire populated world. It is best seen at 9:00 PM local time during April. There is one minor meteor shower that radiates outwards from Sextans.



## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		α	10 <sup>h</sup> 7 <sup>m</sup> 56.3 <sup>s</sup>	-0°22'17.9"	4.5	Blue	280 ± 20 ly	A0III
□		γ	9 <sup>h</sup> 52 <sup>m</sup> 30.4 <sup>s</sup>	-8°6'18.1"	5.1	Blue	280 ± 10 ly	A0/1V
□		β	10 <sup>h</sup> 30 <sup>m</sup> 17.5 <sup>s</sup>	-0°38'13.3"	5.1	Blue	364 ± 10 ly	B6V
□		δ	10 <sup>h</sup> 29 <sup>m</sup> 28.7 <sup>s</sup>	-2°44'20.7"	5.3	Blue	322 ± 7 ly	B9.5V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Spindle Galaxy	NGC 3115	10 <sup>h</sup> 5 <sup>m</sup> 14.0 <sup>s</sup>	-7°43'7"	9.9	SpiGal	7.2'	31.6 Mly

## Notes

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# Ursa Major

## “The Great Bear”

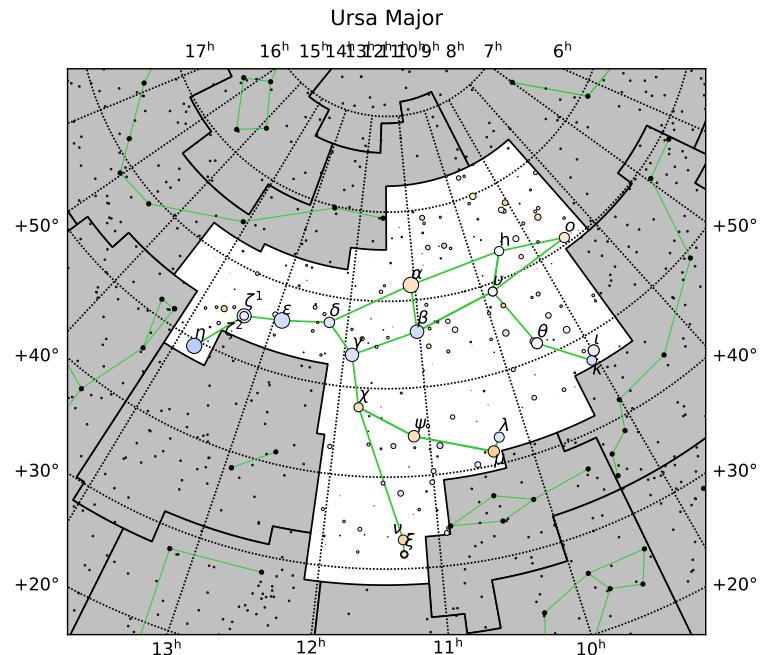
Pronunciation: /'ɜːrsə 'meɪdʒər/

Genitive: Ursae Majoris (/ɜːrsi: mə'dʒɔrɪs/)

Abbreviation: UMa

## History

One of the most well-known constellations, Ursa Major has been seen as a bear for millennia. In the ancient Roman mythos, Ursa Major is Callisto, a lover of Jupiter. Jupiter’s wife, Juno, gets jealous and turns Callisto into a bear so that Jupiter is no longer attracted to Callisto. Similar oral traditions exist in various cultures all over the world.



## Facts

Ursa Major is visible at latitudes between  $+90^\circ$  and  $-30^\circ$ , i.e., the entire Northern Hemisphere and as far south as southern Brazil, South Africa, and central Australia. It is best seen at 9:00 local time during April. There are a few minor meteor showers in Ursa Major.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Alioth (/æliθ/)	$\varepsilon$	12 <sup>h</sup> 54 <sup>m</sup> 1.7 <sup>s</sup>	+55°57'35.4"	1.8	Blue	$82.6 \pm 0.4$ ly	A1III-IV
□	Dubhe (/dʌbi:/)	$\alpha$	11 <sup>h</sup> 3 <sup>m</sup> 43.7 <sup>s</sup>	+61°45'3.7"	1.8	Pale Orange	$123 \pm 2$ ly	K0III + F0V
□	Alkaid (/æl'keɪd/)	$\eta$	13 <sup>h</sup> 47 <sup>m</sup> 32.4 <sup>s</sup>	+49°18'47.8"	1.9	Blue	$103.9 \pm 0.8$ ly	B3V
□	Mizar (/maɪzɑ:r/)	$\zeta$	13 <sup>h</sup> 23 <sup>m</sup> 55.5 <sup>s</sup>	+54°55'31.3"	2.0	Blue	$82.9 \pm 0.6$ ly	A2V + A7IV-V
□	Merak (/mɪəræk/)	$\beta$	11 <sup>h</sup> 1 <sup>m</sup> 50.5 <sup>s</sup>	+56°22'56.7"	2.4	Blue	$79.7 \pm 0.3$ ly	A1IV
□	Phecda (/fekdə/)	$\gamma$	11 <sup>h</sup> 53 <sup>m</sup> 49.8 <sup>s</sup>	+53°41'41.1"	2.4	Blue	$83.2 \pm 0.8$ ly	A0V + K2V
□		$\psi$	11 <sup>h</sup> 9 <sup>m</sup> 39.8 <sup>s</sup>	+44°29'54.6"	3.0	Pale Orange	$144.5 \pm 0.9$ ly	K1III
□	Tania Australis (/temiə ɔ:st'reilɪs/)	$\mu$	10 <sup>h</sup> 22 <sup>m</sup> 19.7 <sup>s</sup>	+41°29'58.3"	3.1	Orange	$183 \pm 4$ ly	M0IIIab
□	Talitha (/tælɪθə/)	$\iota$	8 <sup>h</sup> 59 <sup>m</sup> 12.5 <sup>s</sup>	+48°2'30.6"	3.1	Pale Blue	$47.3 \pm 0.1$ ly	F0IV-V + M3V + M4V
□		$\theta$	9 <sup>h</sup> 32 <sup>m</sup> 51.4 <sup>s</sup>	+51°40'38.3"	3.2	White	$43.96 \pm 0.08$ ly	F6IV
□	Megrez (/mi:grez/)	$\delta$	12 <sup>h</sup> 15 <sup>m</sup> 25.6 <sup>s</sup>	+57°1'57.4"	3.3	Pale Blue	$80.5 \pm 0.3$ ly	A3V

<input type="checkbox"/>	Muscida	<i>o</i>	8 <sup>h</sup> 30 <sup>m</sup> 15.9 <sup>s</sup>	+60°43'5.4"	3.4	Pale Yellow	182 ± 1 ly	G4II-III
<input type="checkbox"/>	Tania Borealis	$\lambda$	10 <sup>h</sup> 17 <sup>m</sup> 5.9 <sup>s</sup>	+42°54'51.7"	3.5	Blue	138 ± 5 ly	A2IV
<input type="checkbox"/>	Alula Borealis	$\nu$	11 <sup>h</sup> 18 <sup>m</sup> 28.7 <sup>s</sup>	+33°5'39.5"	3.5	Orange	399 ± 8 ly	K3III
<input type="checkbox"/>	Alkaphrah	$\kappa$	9 <sup>h</sup> 3 <sup>m</sup> 37.5 <sup>s</sup>	+47°9'23.5"	3.6	Blue	360 ± 20 ly	A0IV-V + A0V
<input type="checkbox"/>		$h$	9 <sup>h</sup> 31 <sup>m</sup> 31.7 <sup>s</sup>	+63°3'42.7"	3.7	White	77.7 ± 0.3 ly	F0IV
<input type="checkbox"/>	Taiyangshou	$\chi$	11 <sup>h</sup> 46 <sup>m</sup> 3.0 <sup>s</sup>	+47°46'45.9"	3.7	Pale Orange	184 ± 2 ly	K0.5IIIb
<input type="checkbox"/>		$v$	9 <sup>h</sup> 50 <sup>m</sup> 59.4 <sup>s</sup>	+59°2'19.4"	3.7	White	116.2 ± 0.8 ly	F2IV
<input type="checkbox"/>	Alula Australis	$\xi$	11 <sup>h</sup> 18 <sup>m</sup> 10.9 <sup>s</sup>	+31°31'45.0"	4.3	Pale Yellow	29 ± 1 ly	F8.5V + G2V
<input type="checkbox"/>	or:streilis/)							

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>	Bode's Galaxy	M81	9 <sup>h</sup> 55 <sup>m</sup> 33.2 <sup>s</sup>	+69°3'55"	6.9	SpiGal	26.9'	12 Mly
<input type="checkbox"/>	Pinwheel Galaxy	M101	14 <sup>h</sup> 3 <sup>m</sup> 12.6 <sup>s</sup>	+54°20'57"	7.9	SpiGal	28.8'	21 Mly
<input type="checkbox"/>	Cigar Galaxy	M82	9 <sup>h</sup> 55 <sup>m</sup> 52.2 <sup>s</sup>	+69°40'47"	8.4	IrrGal	11.2'	12 Mly
<input type="checkbox"/>	Owl Nebula	M97	11 <sup>h</sup> 14 <sup>m</sup> 47.7 <sup>s</sup>	+55°1'8.5"	9.9	PNeb	3.4'	2 kly
<input type="checkbox"/>		M109	11 <sup>h</sup> 57 <sup>m</sup> 36.0 <sup>s</sup>	+53°22'28"	10.6	SpiGal	7.6'	83.5 Mly
<input type="checkbox"/>		M108	11 <sup>h</sup> 11 <sup>m</sup> 31.0 <sup>s</sup>	+55°40'27"	10.7	SpiGal	8.7'	30.3 Mly

## Notes

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# Ursa Minor

“The Lesser Bear”

Pronunciation: /'ɜːrsə 'mamər/

Genitive: Ursae Minoris (/ɜːrsi: mi'nɔris/)

Abbreviation: UMi

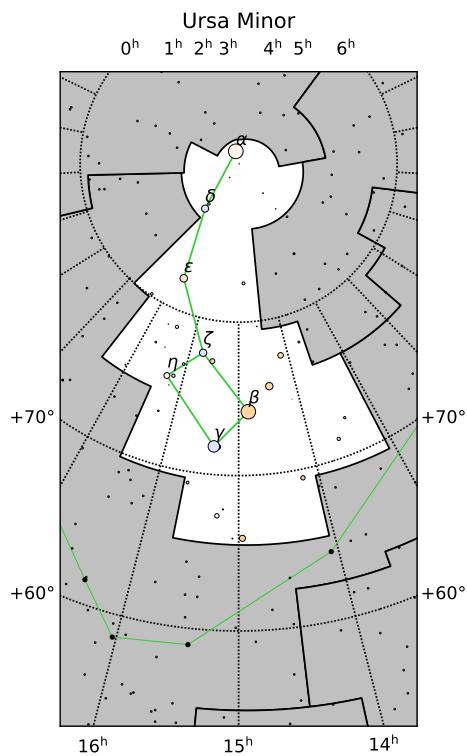
## History

Another very well-known constellation, Ursa Minor (also known as the Little Dipper) has the distinction of containing the North Star since the medieval period. Following from the myth about Ursa Major, Ursa Minor is Callisto’s son, Arcas, whom Jupiter turned into a bear to be with his mother.

## Facts

Ursa Minor is visible at latitudes between  $+90^\circ$  and  $-10^\circ$ , i.e., throughout the entire Northern Hemisphere and as far south as Ecuador, Kenya, and Indonesia. It is best seen at 9:00 PM local time during June. There is one meteor shower, the Ursids, that peaks around December 22 at a rate of ten meteors per hour.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Polaris (/pə'lɛəris/)	$\alpha$	$2^{\text{h}}31^{\text{m}}49.1^{\text{s}}$	$+89^\circ15'50.8''$	2.0	Pale Yellow	350 ly	F7Ib + F6V + F3V
□	Kochab (/koukæb/)	$\beta$	$14^{\text{h}}50^{\text{m}}42.3^{\text{s}}$	$+74^\circ9'19.8''$	2.1	Orange	$130.9 \pm 0.6$ ly	K4III
□	Pherkad (/fɜːrkæd/)	$\gamma$	$15^{\text{h}}20^{\text{m}}43.7^{\text{s}}$	$+71^\circ50'2.5''$	3.1	Blue	$487 \pm 8$ ly	A2III
□		$\varepsilon$	$16^{\text{h}}45^{\text{m}}58.2^{\text{s}}$	$+82^\circ2'14.1''$	4.2	Pale Orange	$300 \pm 10$ ly	G5III + A8/F0V
□		$\zeta$	$15^{\text{h}}44^{\text{m}}3.5^{\text{s}}$	$+77^\circ47'40.2''$	4.3	Blue	$369 \pm 5$ ly	A3V
□	Yildun (/jil'dʌn/)	$\delta$	$17^{\text{h}}32^{\text{m}}13.0^{\text{s}}$	$+86^\circ35'11.3''$	4.4	Blue	$172 \pm 1$ ly	A1V
□		$\eta$	$16^{\text{h}}17^{\text{m}}30.3^{\text{s}}$	$+75^\circ45'19.2''$	5.0	White	$97.0 \pm 0.5$ ly	F5V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	NGC 6217		16 <sup>h</sup> 32 <sup>m</sup> 39.2 <sup>s</sup>	+78°11'53.6"	11.2	SpiGal		67.2 Mly

Notes

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# Virgo

## “The Maiden”

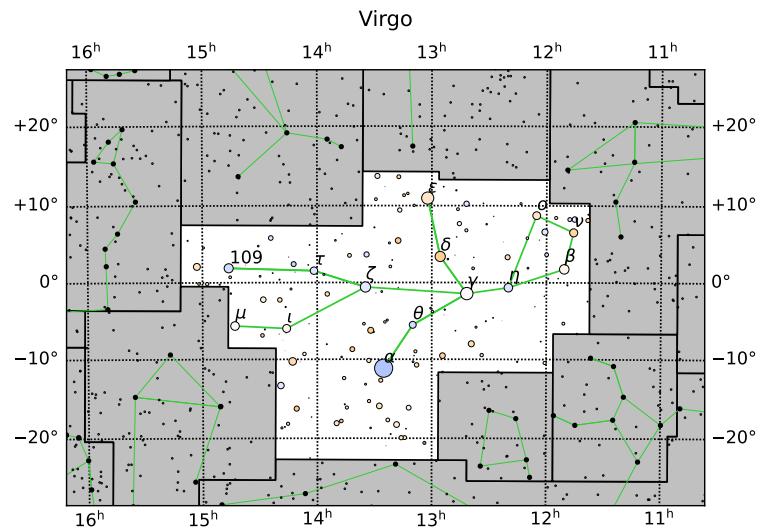
Pronunciation: /vɜːrgoʊ/

Genitive: Virginis (/vɜːrdʒɪnɪs/)

Abbreviation: Vir

## History

Virgo is an ancient constellation coming to us from the ancient Babylonians who saw Virgo representing their goddess of fertility holding an ear of grain. The Greeks and Romans then associated Virgo with their fertility goddesses, Demeter and Ceres, respectively. Alternatively, it could be Zeus' daughter, Dike, the goddess of justice, holding the nearby scales of justice, Libra.



## Facts

Virgo is visible at latitudes between  $+80^\circ$  and  $-80^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during May. There is a complex of meteor showers in Virgo, collectively referred to as the Virginids that peak around March and April at around two meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Spica (/spɪkə/)	α	13 <sup>h</sup> 25 <sup>m</sup> 11.6 <sup>s</sup>	-11°9'40.8"	1.0	Blue	$250 \pm 10$ ly	B1V
□	Porrima (/pɔːrɪmə/)	γ	12 <sup>h</sup> 41 <sup>m</sup> 39.6 <sup>s</sup>	-1°26'57.7"	2.7	White	$38.1 \pm 0.3$ ly	F0V + F0V
□	Vindemiatrix (/vɪndiːmɪ'trɪks/)	ε	13 <sup>h</sup> 2 <sup>m</sup> 10.6 <sup>s</sup>	+10°57'32.9"	2.8	Pale Orange	$109.6 \pm 0.5$ ly	G8III
□	Heze (/hi:zɪ:/)	ζ	13 <sup>h</sup> 34 <sup>m</sup> 41.6 <sup>s</sup>	-0°35'45.0"	3.4	Pale Blue	$74.1 \pm 0.3$ ly	A3V
□	Minelauva (/mɪnə'lɔːvə/)	δ	12 <sup>h</sup> 55 <sup>m</sup> 36.2 <sup>s</sup>	+3°23'50.9"	3.4	Orange	$198 \pm 3$ ly	M3III
□	Zavijava (/zævɪ'dʒævə/)	β	11 <sup>h</sup> 50 <sup>m</sup> 41.7 <sup>s</sup>	+1°45'53.0"	3.6	Pale Yellow	$35.65 \pm 0.09$ ly	F9V
□		109	14 <sup>h</sup> 46 <sup>m</sup> 14.9 <sup>s</sup>	+1°53'34.4"	3.7	Pale Blue	$134.5 \pm 1.0$ ly	A0V
□		μ	14 <sup>h</sup> 43 <sup>m</sup> 3.6 <sup>s</sup>	-5°39'29.5"	3.9	White	$59.6 \pm 0.2$ ly	F2V
□	Zaniah (/zəniə/)	η	12 <sup>h</sup> 19 <sup>m</sup> 54.4 <sup>s</sup>	-0°40'0.5"	3.9	Blue	$265 \pm 10$ ly	A2V
□		ν	11 <sup>h</sup> 45 <sup>m</sup> 51.6 <sup>s</sup>	+6°31'45.7"	4.0	Orange	$294 \pm 5$ ly	M1III
□	Syrma (/sɜːrmə/)	υ	14 <sup>h</sup> 16 <sup>m</sup> 0.9 <sup>s</sup>	-6°0'2.0"	4.1	White	$72.5 \pm 0.3$ ly	F7IV-V
□		ο	12 <sup>h</sup> 5 <sup>m</sup> 12.5 <sup>s</sup>	+8°43'58.7"	4.1	Orange	$163 \pm 2$ ly	G8III

□	$\tau$	14 <sup>h</sup> 1 <sup>m</sup> 38.8 <sup>s</sup>	+1°32'40.3"	4.3	Pale Blue	225 ± 3 ly	A2IV-V
□	$\theta$	13 <sup>h</sup> 9 <sup>m</sup> 57.0 <sup>s</sup>	-5°32'20.4"	4.4	Blue	320 ly	A1V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Sombrero Galaxy	M104	12 <sup>h</sup> 39 <sup>m</sup> 59.4 <sup>s</sup>	-11°37'23"	8.0	SpiGal	9'	31.1 Mly
□	Virgo A	M87	12 <sup>h</sup> 30 <sup>m</sup> 49.4 <sup>s</sup>	+12°23'28.0"	8.8	EllGal	7.2'	53.5 Mly
□		M49	12 <sup>h</sup> 29 <sup>m</sup> 46.7 <sup>s</sup>	+8°0'2"	9.4	EllGal	10.2'	55.9 Mly
□		M60	12 <sup>h</sup> 43 <sup>m</sup> 40.0 <sup>s</sup>	+11°33'9.4"	9.8	EllGal	7.4'	56.7 Mly
□		M86	12 <sup>h</sup> 26 <sup>m</sup> 11.7 <sup>s</sup>	+12°56'46"	9.8	EllGal	8.9'	52 Mly
□		M89	12 <sup>h</sup> 35 <sup>m</sup> 39.8 <sup>s</sup>	+12°33'23"	9.8	EllGal	5.1'	50 Mly
□		NGC 5634	14 <sup>h</sup> 29 <sup>m</sup> 37.3 <sup>s</sup>	-5°58'35.1"	10.1	GbCl	2.45'	82.8 kly
□		M84	12 <sup>h</sup> 25 <sup>m</sup> 3.7 <sup>s</sup>	+12°53'13.1"	10.1	EllGal	6.5'	54.9 Mly
□		M61	12 <sup>h</sup> 21 <sup>m</sup> 54.9 <sup>s</sup>	+4°28'25"	10.2	SpiGal	6.5'	52.5 Mly
□		M90	12 <sup>h</sup> 36 <sup>m</sup> 49.8 <sup>s</sup>	+13°9'46"	10.3	SpiGal	9.5'	58.7 Mly
□		M58	12 <sup>h</sup> 37 <sup>m</sup> 43.5 <sup>s</sup>	+11°49'5"	10.5	SpiGal	5.9'	62 Mly
□		M59	12 <sup>h</sup> 42 <sup>m</sup> 2.3 <sup>s</sup>	+11°38'49.0"	10.6	EllGal	5.4'	50.1 Mly

## Notes

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# Summer Constellations

Apus	Draco	Pavo
Aquila	Equuleus	Sagitta
Ara	Hercules	Sagittarius
Capricornus	Indus	Scorpius
Circinus	Libra	Scutum
Corona Australis	Lyra	Serpens
Corona Borealis	Microscopium	Telescopium
Cygnus	Norma	Triangulum Australe
Delphinus	Ophiuchus	Vulpecula

# Apus

“The Bird-of-Paradise”

Pronunciation: /eɪpəs/

Genitive: Apodis (/eɪpədəs/)

Abbreviation: Aps

## History

Apus was one of the twelve constellations published by Dutch astronomer Petrus Plancius in 1598. Since its inception, it has been known as a bird-of-paradise, but drawn with no feet. This was a misconception about the species, since the only specimens to make it back to Europe had their feet and wings removed.

## Facts

Apus is visible at latitudes between  $+5^{\circ}$  and  $-90^{\circ}$ , i.e., throughout all of the Southern Hemisphere and as far north as Guyana and sub-Saharan Africa. It is best seen around 9:00 PM local time during July. There are no meteor showers in Apus.

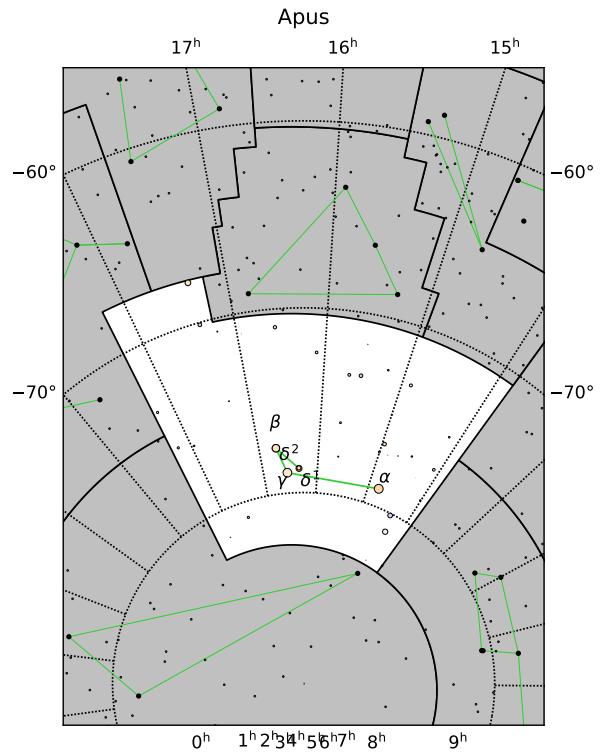
## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$14^{\text{h}}47^{\text{m}}51.7^{\text{s}}$	$-79^{\circ}2'41.1''$	3.8	Orange	$430 \pm 20 \text{ ly}$	K2.5III
□		$\gamma$	$16^{\text{h}}33^{\text{m}}27.1^{\text{s}}$	$-78^{\circ}53'49.7''$	3.9	Orange	$150 \pm 4 \text{ ly}$	G9III
□		$\beta$	$16^{\text{h}}43^{\text{m}}4.7^{\text{s}}$	$-77^{\circ}31'2.8''$	4.2	Orange	$149 \pm 2 \text{ ly}$	K0III
□		$\delta^1$	$16^{\text{h}}20^{\text{m}}20.8^{\text{s}}$	$-78^{\circ}41'44.7''$	4.8	Orange	$630 \pm 30 \text{ ly}$	M5IIIb
□		$\delta^2$	$16^{\text{h}}20^{\text{m}}26.9^{\text{s}}$	$-78^{\circ}40'3.0''$	5.3	Orange	$550 \pm 10 \text{ ly}$	K3III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6101	$16^{\text{h}}25^{\text{m}}48.1^{\text{s}}$	$-72^{\circ}12'7.9''$	9.0	GbCl	$10.7'$	47.6 kly
□		IC 4499	$15^{\text{h}}0^{\text{m}}18.6^{\text{s}}$	$-82^{\circ}12'49.6''$	9.8	GbCl	$7.6'$	50 kly

## Notes



# Aquila

## “The Eagle”

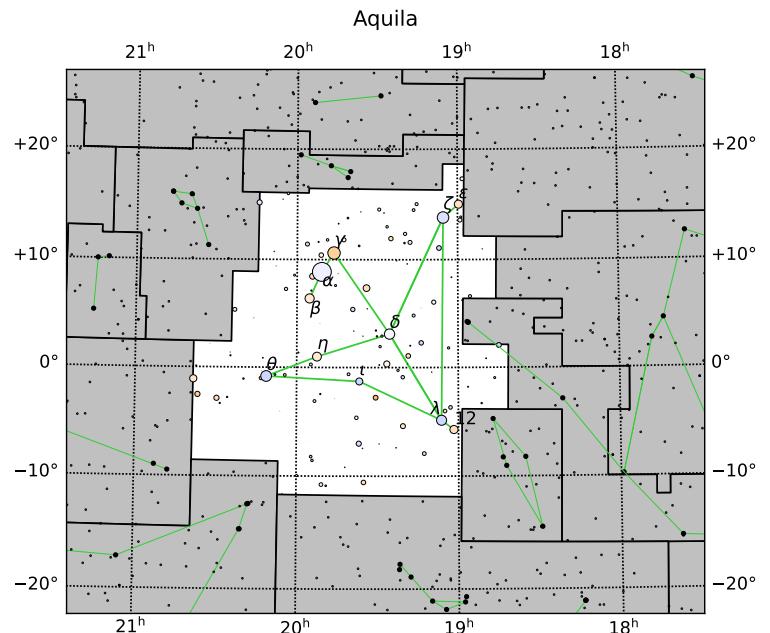
Pronunciation: /ækwilə/

Genitive: Aquilae (/ækwili:/)

Abbreviation: Aql

## History

Aquila was one of the ancient Greek constellations written down by the Greek astronomer Ptolemy in the 2nd century AD. This eagle is thought to be same eagle that carried Zeus's thunderbolts, or perhaps the eagle that kidnapped Ganymede to Mount Olympus to serve as cup-bearer to the gods.



## Facts

Aquila is visible at latitudes between  $+90^\circ$  and  $-75^\circ$ , i.e., throughout the entire populated world. It is best seen around 9:00 PM local time during August. There are a few minor meteor showers that radiate outwards from Aquila.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Altair (/æl'teər/)	α	19 <sup>h</sup> 50 <sup>m</sup> 47.0 <sup>s</sup>	+8°52'6.0"	0.8	Pale Blue	$16.73 \pm 0.05$ ly	A7V
□	Tarazed (/tærəzəd/)	γ	19 <sup>h</sup> 46 <sup>m</sup> 15.6 <sup>s</sup>	+10°36'47.7"	2.7	Orange	$395 \pm 8$ ly	K3II
□	Okab (/oukæb/)	ζ	19 <sup>h</sup> 5 <sup>m</sup> 24.6 <sup>s</sup>	+13°51'48.5"	3.0	Blue	$83.0 \pm 0.3$ ly	A0V
□		θ	20 <sup>h</sup> 11 <sup>m</sup> 18.3 <sup>s</sup>	-0°49'17.3"	3.3	Blue	$286 \pm 6$ ly	B9.5III + B9.5III
□		δ	19 <sup>h</sup> 25 <sup>m</sup> 29.9 <sup>s</sup>	+3°6'53.2"	3.4	White	$50.6 \pm 0.8$ ly	F0IV
□		λ	19 <sup>h</sup> 6 <sup>m</sup> 14.9 <sup>s</sup>	-4°52'57.2"	3.4	Blue	$125 \pm 4$ ly	B9V
□	Alshain (/ælʃem/)	β	19 <sup>h</sup> 55 <sup>m</sup> 18.8 <sup>s</sup>	+6°24'24.3"	3.9	Pale Orange	$44.7 \pm 0.1$ ly	G9.5IV + M2.5V
□		η	19 <sup>h</sup> 52 <sup>m</sup> 28.4 <sup>s</sup>	+1°0'20.4"	3.9	Pale Orange	1400 ly	F6Iab + B9.8V + F1-5V
□		ε	18 <sup>h</sup> 59 <sup>m</sup> 37.4 <sup>s</sup>	+15°4'5.9"	4.0	Pale Orange	$136 \pm 2$ ly	K1III
□		12	19 <sup>h</sup> 1 <sup>m</sup> 40.8 <sup>s</sup>	-5°44'20.8"	4.0	Pale Orange	$144 \pm 1$ ly	K1III
□		ι	19 <sup>h</sup> 36 <sup>m</sup> 43.3 <sup>s</sup>	-1°17'11.8"	4.4	Blue	$390 \pm 40$ ly	B5III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6709	18 <sup>h</sup> 51 <sup>m</sup> 20.6 <sup>s</sup>	+10°20'2"	6.7	OpCl	13"	3.5 kly
□		NGC 6755	19 <sup>h</sup> 7 <sup>m</sup> 46.1 <sup>s</sup>	+4°13'26"	7.5	OpCl	15'	8 kly
□		NGC 6760	19 <sup>h</sup> 11 <sup>m</sup> 12.1 <sup>s</sup>	+1°1'49.7"	9.0	GbCl	9.6'	24.1 kly
□		NGC 6790	19 <sup>h</sup> 22 <sup>m</sup> 57.0 <sup>s</sup>	+1°30'46.5"	10.5	PNeb	4"	19 kly
□		NGC 6756	19 <sup>h</sup> 8 <sup>m</sup> 44.9 <sup>s</sup>	+4°43'1"	10.6	OpCl	4'	6.3 kly
□	Phantom Streak Nebula	NGC 6741	19 <sup>h</sup> 0 <sup>m</sup> 2.3 <sup>s</sup>	-0°31'23"	11.0	PNeb	6"	7 kly
□		NGc 6781	19 <sup>h</sup> 18 <sup>m</sup> 28.1 <sup>s</sup>	+6°32'19.3"	11.4	PNeb	1.9'	1.5 kly
□	Glowing Eye Nebula	NGC 6751	19 <sup>h</sup> 5 <sup>m</sup> 55.6 <sup>s</sup>	-5°59'32.9"	11.9	PNeb	26"	6.5 kly
□		NGC 6814	19 <sup>h</sup> 42 <sup>m</sup> 40.6 <sup>s</sup>	-10°19'25"	12.1	SpiGal	3'	70.6 Mly

## Notes

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# Ara

“The Altar”

Pronunciation: /ərə/  
Genitive: Arae (/ərī:/)  
Abbreviation: Ara

## History

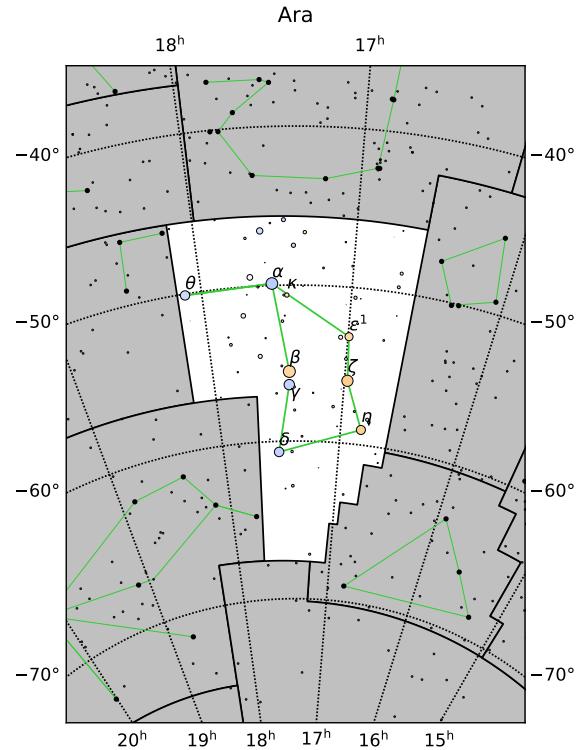
Despite its placement in the southern skies, Ara was one of the ancient Greek constellations written down by Greek astronomer Ptolemy. This altar was a special one, for it was the same altar that the gods made offerings on before defeating their uncles and aunts, the Titans.

## Facts

Ara is visible at latitudes between  $+25^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as Central America, the Sahara, India, and Southeast Asia. It is best seen at around 9:00 PM local time during July. There are no meteor showers in the direction of Ara.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\beta$	$17^{\text{h}}25^{\text{m}}18.0^{\text{s}}$	$-55^{\circ}31'47.6''$	2.8	Orange	$720 \pm 30$ ly	K3Ib-II
□		$\alpha$	$17^{\text{h}}31^{\text{m}}50.5^{\text{s}}$	$-49^{\circ}52'34.1''$	2.9	Blue	$270 \pm 20$ ly	B2V
□		$\zeta$	$16^{\text{h}}58^{\text{m}}37.2^{\text{s}}$	$-55^{\circ}59'24.5''$	3.1	Orange	$570 \pm 20$ ly	K3III
□		$\gamma$	$17^{\text{h}}25^{\text{m}}23.7^{\text{s}}$	$-56^{\circ}22'39.8''$	3.3	Blue	$1110 \pm 60$ ly	B1Ib
□		$\delta$	$17^{\text{h}}31^{\text{m}}5.9^{\text{s}}$	$-60^{\circ}41'1.9''$	3.6	Blue	$198 \pm 4$ ly	B8V + G8V
□		$\theta$	$18^{\text{h}}6^{\text{m}}37.9^{\text{s}}$	$-50^{\circ}5'29.3''$	3.7	Blue	$810 \pm 30$ ly	B2Ib
□		$\eta$	$16^{\text{h}}49^{\text{m}}47.2^{\text{s}}$	$-59^{\circ}2'29.0''$	3.8	Orange	$299 \pm 5$ ly	K5III
□		$\varepsilon^1$	$16^{\text{h}}59^{\text{m}}35.0^{\text{s}}$	$-53^{\circ}9'37.6''$	4.1	Orange	$60 \pm 10$ ly	K3III
□		$\kappa$	$17^{\text{h}}26^{\text{m}}0.0^{\text{s}}$	$-50^{\circ}38'0.6''$	5.2	Pale Orange	$460 \pm 30$ ly	G8III



# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6193	16 <sup>h</sup> 41 <sup>m</sup> 20 <sup>s</sup>	-48°45'48"	5.2	OpCl	15'	3.8 kly
□		NGC 6250	16 <sup>h</sup> 57 <sup>m</sup> 58 <sup>s</sup>	-45°56'36"	5.9	OpCl	18'	2.8 kly
□		NGC 6124	17 <sup>h</sup> 40 <sup>m</sup> 42.1 <sup>s</sup>	-53°40'27.6"	6.7	GbCl	32'	7.8 kly
□		NGC 6208	16 <sup>h</sup> 49 <sup>m</sup> 28 <sup>s</sup>	-53°43'42"	7.2	OpCl	18'	3.1 kly
□		NGC 6200	16 <sup>h</sup> 44 <sup>m</sup> 6 <sup>s</sup>	-47°28'0"	7.4	OpCl	12'	6.7 kly
□		NGC 6352	17 <sup>h</sup> 25 <sup>m</sup> 29.1 <sup>s</sup>	-48°25'19.8"	7.8	GbCl	7.1'	18.3 kly
□		NGC 6204	16 <sup>h</sup> 46 <sup>m</sup> 8.4 <sup>s</sup>	-47°1'12"	8.2	OpCl	6'	3.5 kly
□		NGC 6362	17 <sup>h</sup> 31 <sup>m</sup> 55.0 <sup>s</sup>	-67°2'54"	8.3	GbCl	9'	24.8 kly
□		NGC 6215	16 <sup>h</sup> 51 <sup>m</sup> 6.8 <sup>s</sup>	-58°59'36.5"	11.2	SpiGal	2.1'	78 Mly

## Notes

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# Capricornus

“The Sea Goat”

Pronunciation: /kæpri'kɔrnəs/  
Genitive: Capricorni (/kæpri'kɔrnai/)  
Abbreviation: Cap

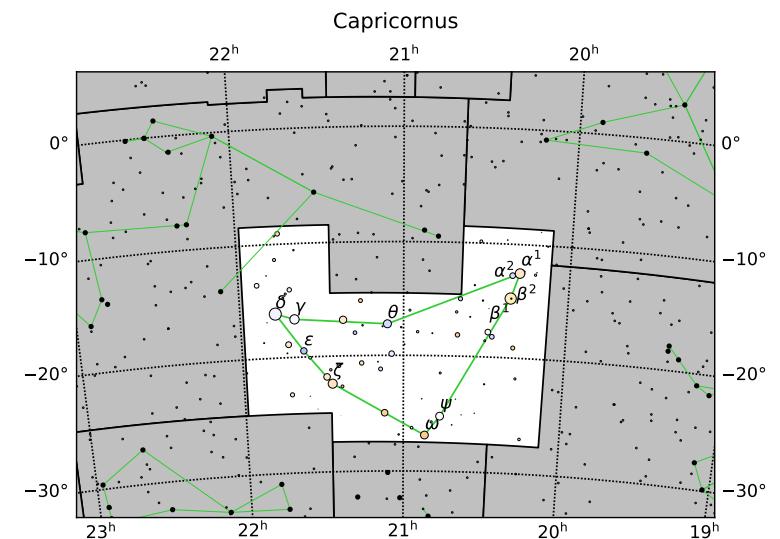
## History

Capricornus is probably one of the oldest constellations in the sky, being first recorded by the ancient Babylonians as early as the 21st century BC. It has consistently been represented as a hybrid of a goat and fish, with the ancient Greeks identifying it as Amalthea, the goat that helped raise Zeus.

## Facts

Capricornus is visible at latitudes between  $+60^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as southern Alaska and northern Scotland. It is best seen at around 9:00 PM local time during September. There are a few minor meteor showers that radiate outwards from Capricornus.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Deneb Algiedi (/deneb æl'dʒi:di:/)	$\delta$	21 <sup>h</sup> 47 <sup>m</sup> 2.4 <sup>s</sup>	$-16^\circ 7' 38.2''$	2.8	White	$38.7 \pm 0.1$ ly	A7III
□	Dabih (/de:bɪ:/)	$\beta^1$	20 <sup>h</sup> 21 <sup>m</sup> 0.7 <sup>s</sup>	$-14^\circ 46' 53''$	3.1	Pale Orange	$390 \pm 30$ ly	K0II
□	Algedi (/æl'dʒi:di/)	$\alpha^2$	20 <sup>h</sup> 18 <sup>m</sup> 3.3 <sup>s</sup>	$-12^\circ 32' 41.5''$	3.6	Pale Orange	$102 \pm 1$ ly	G8.5III-IV
□	Nashira (/næʃɪrə/)	$\gamma$	21 <sup>h</sup> 40 <sup>m</sup> 5.5 <sup>s</sup>	$-16^\circ 39' 44.3''$	3.7	White	$157 \pm 5$ ly	F1V
□		$\zeta$	21 <sup>h</sup> 26 <sup>m</sup> 40.0 <sup>s</sup>	$-22^\circ 24' 40.8''$	3.8	Pale Orange	$386 \pm 10$ ly	G4Ib + DA2.2
□		$\theta$	21 <sup>h</sup> 5 <sup>m</sup> 56.8 <sup>s</sup>	$-17^\circ 13' 58.3''$	4.1	Blue	$162 \pm 2$ ly	A1V
□		$\omega$	20 <sup>h</sup> 51 <sup>m</sup> 49.3 <sup>s</sup>	$-26^\circ 55' 8.9''$	4.1	Orange	1000 ly	K4III
□		$\psi$	20 <sup>h</sup> 46 <sup>m</sup> 5.7 <sup>s</sup>	$-25^\circ 16' 15.2''$	4.1	White	$47.9 \pm 0.2$ ly	F5V
□	Prima Giedi (/prɪmə 'dʒi:di/)	$\alpha^1$	20 <sup>h</sup> 17 <sup>m</sup> 38.9 <sup>s</sup>	$-12^\circ 30' 29.6''$	4.3	Pale Orange	$870 \pm 50$ ly	G3Ib
□		$\varepsilon$	21 <sup>h</sup> 37 <sup>m</sup> 4.3 <sup>s</sup>	$-19^\circ 27' 57.6''$	4.6	Blue	$1060 \pm 60$ ly	B2.5V
□		$\beta^2$	20 <sup>h</sup> 21 <sup>m</sup> 0.7 <sup>s</sup>	$-14^\circ 46' 53''$	6.1	Blue	$390 \pm 30$ ly	A0III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		M30	21 <sup>h</sup> 40 <sup>m</sup> 22.1 <sup>s</sup>	-23°10'47.5"	7.7	GbCl	12'	27.1 kly
<input type="checkbox"/>		NGC 6907	20 <sup>h</sup> 25 <sup>m</sup> 6.6 <sup>s</sup>	-24°48'33"	11.1	SpiGal	3.3'	118 Mly

## Notes

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# Circinus

“The Compass”

Pronunciation: /sɜːrsməs/

Genitive: Circini (/sɜːrsmaɪ/)

Abbreviation: Cir

## History

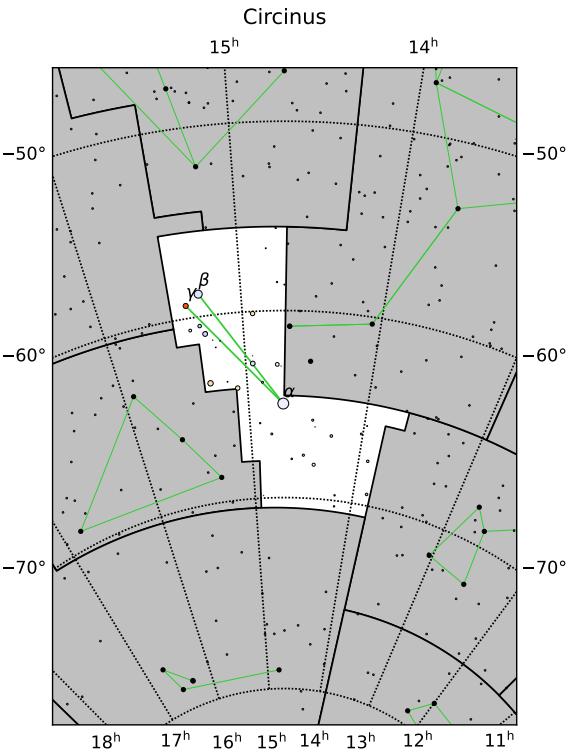
Circinus was another addition by the French astronomer Nicolas-Louis de Lacaille in 1756. This time he drew Circinus as a drafting compass, the kind used to draw perfect circles rather than a compass that would lead one north.

## Facts

Circinus is visible at latitudes between  $+30^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as Central America, the Sahara, India, and Southeast Asia. It is best seen at around 9:00 PM local time during July. There is one minor meteor shower that radiates outwards from Circinus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$14^{\text{h}}42^{\text{m}}30.4^{\text{s}}$	$-64^\circ58'30.5''$	3.2	Pale Blue	$54.0 \pm 0.1 \text{ ly}$	A7V
□		$\beta$	$15^{\text{h}}17^{\text{m}}30.8^{\text{s}}$	$-58^\circ48'4.3''$	4.1	Blue	$93 \pm 1 \text{ ly}$	A3V
□		$\gamma$	$15^{\text{h}}23^{\text{m}}22.6^{\text{s}}$	$-59^\circ19'14.8''$	4.5	Red	$450 \text{ ly}$	B5IV + F8V



## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 5823	$15^{\text{h}}5^{\text{m}}44.8^{\text{s}}$	$-55^\circ37'30''$	7.9	OpCl	$12'$	3.9 kly
□		NGC 5315	$13^{\text{h}}53^{\text{m}}57.0^{\text{s}}$	$-66^\circ30'50.9''$	9.8	PNeb	$14''$	6.5 kly
□		NGC 5715	$14^{\text{h}}43^{\text{m}}29^{\text{s}}$	$-57^\circ34'36''$	9.8	OpCl	$3.6'$	7.5 kly
□	Circinus Galaxy	ESO 97-G13	$14^{\text{h}}13^{\text{m}}9.9^{\text{s}}$	$-65^\circ20'21''$	12.1	SpiGal	$6.9'$	13 Mly

## Notes

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# Corona Australis

“The Southern Crown”

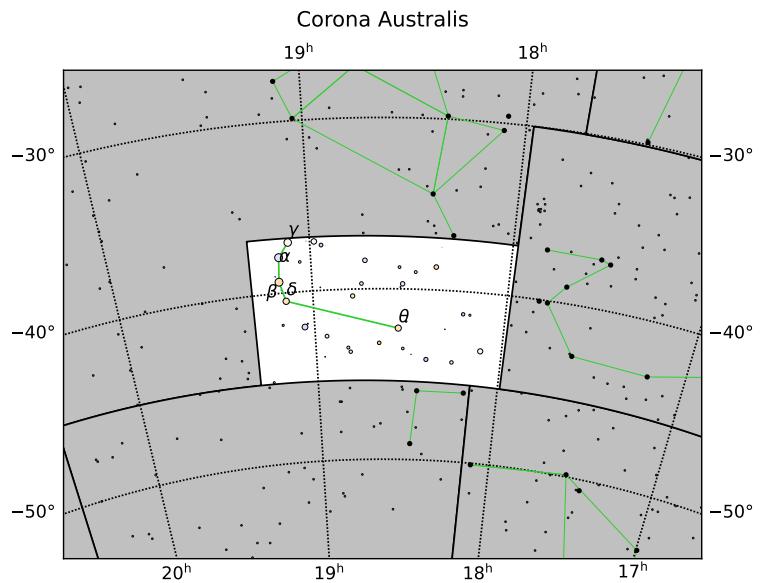
Pronunciation: /kə'roʊnə ɔ:'streɪlɪs/

Genitive: Coronae Australis (/kə'rooni ɔ:'streɪlɪs/)

Abbreviation: CrA

## History

Despite its placement in the southern skies, Corona Australis was visible to the ancient Greeks. This crown has been associated with many people throughout history and mythology. Either it was a crown (or wreath) worn by Sagittarius or Centaurus, or worn by King Solomon. Another legend says that it was a wreath placed in the sky in honor of the god Dionysius’ mother, Semele.



## Facts

Corona Australis is visible at latitudes between  $+40^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire Southern Hemisphere and as far north as northern California, central Ohio, Greece, and Japan. It is best seen at around 9:00 PM local time during August.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\beta$	19 <sup>h</sup> 10 <sup>m</sup> 1.8 <sup>s</sup>	$-39^{\circ}20'26.9''$	4.1	Orange	$470 \pm 20$ ly	K0II-III
□	Meridiana (/mə,ri'di'ænə/)	$\alpha$	19 <sup>h</sup> 9 <sup>m</sup> 28.3 <sup>s</sup>	$-37^{\circ}54'16.1''$	4.1	Blue	$125 \pm 1$ ly	A2V
□		$\gamma$	19 <sup>h</sup> 6 <sup>m</sup> 25.1 <sup>s</sup>	$-37^{\circ}3'48.4''$	4.2	Blue	$56.4 \pm 0.7$ ly	F8V + F8V
□		$\delta$	19 <sup>h</sup> 8 <sup>m</sup> 21.0 <sup>s</sup>	$-40^{\circ}29'48.1''$	4.6	Orange	$174 \pm 3$ ly	K1III
□		$\theta$	18 <sup>h</sup> 33 <sup>m</sup> 30.2 <sup>s</sup>	$-42^{\circ}18'45.0''$	4.6	Orange	$560 \pm 30$ ly	G5III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6541	18 <sup>h</sup> 8 <sup>m</sup> 2.4 <sup>s</sup>	-43°42'53.6"	6.3	GbCl	15'	22.8 kly
□		NGC 6496	17 <sup>h</sup> 59 <sup>m</sup> 3.7 <sup>s</sup>	-44°15'57.4"	8.5	GbCl	4.6'	36.9 kly
□		NGC 6729	19 <sup>h</sup> 1 <sup>m</sup> 54.1 <sup>s</sup>	-36°57'12"	9.5	Neb	2.5'	420 ly
□		IC 1297	19 <sup>h</sup> 17 <sup>m</sup> 22 <sup>s</sup>	-39°36'47"	10.7	PNeb	7"	9.4 kly

## Notes

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# Corona Borealis

“The Northern Crown”

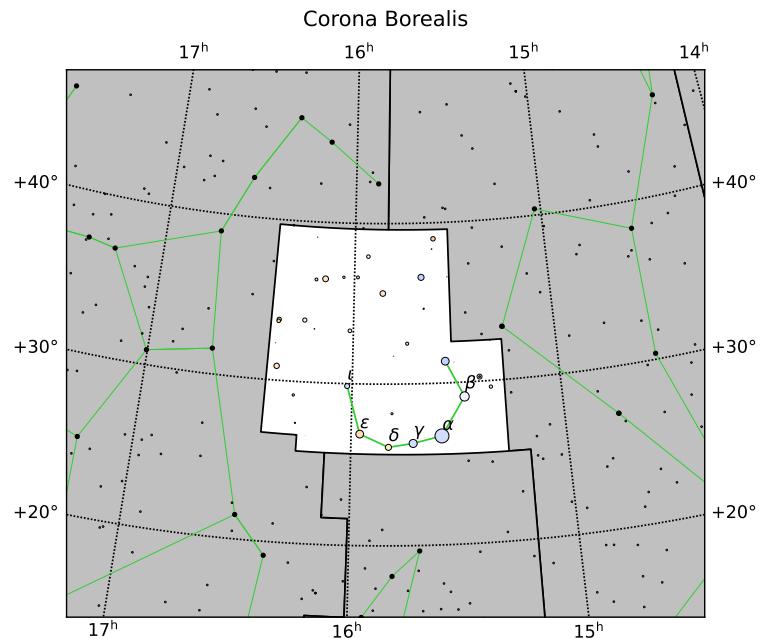
Pronunciation: /kə'roʊnə bɔːrɪ'ælis/

Genitive: Coronae Borealis (/kə'roʊni bɔːrɪ'ælis/)

Abbreviation: CrB

## History

Corona Borealis, the Northern Crown, has a particular association unlike its southern cousin. This crown is linked to the legend of Theseus and the minotaur. Given to him by Ariadne, Theseus uses the crown's light to escape the labyrinth after killing the minotaur. It was the god Dionysius who then set it in the heavens to commemorate the event.



## Facts

Corona Borealis is visible at latitudes between  $+90^\circ$  and  $-50^\circ$ , i.e., throughout the entire Northern Hemisphere and throughout most of the populated Southern Hemisphere. It is best seen at around 9:00 PM local time during July. There are no meteor showers in Corona Borealis.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Alphecca (/æl'fɛkə/)	$\alpha$	$15^{\text{h}}34^{\text{m}}41.3^{\text{s}}$	$+26^\circ42'52.9''$	2.2	Blue	$75.0 \pm 0.5 \text{ ly}$	A0V + G5V
□	Nusakan (/nju:səkæn/)	$\beta$	$15^{\text{h}}27^{\text{m}}49.7^{\text{s}}$	$+29^\circ6'20.5''$	3.7	White	$122 \pm 3 \text{ ly}$	A9V + F2V
□		$\gamma$	$15^{\text{h}}42^{\text{m}}44.6^{\text{s}}$	$+26^\circ17'44.3''$	3.8	Blue	$146 \pm 3 \text{ ly}$	B9V + A3V
□		$\theta$	$15^{\text{h}}32^{\text{m}}55.8^{\text{s}}$	$+31^\circ21'32.9''$	4.1	Blue	$380 \pm 20 \text{ ly}$	B6V
□		$\varepsilon$	$15^{\text{h}}57^{\text{m}}35.3^{\text{s}}$	$+26^\circ52'40.4''$	4.1	Orange	$242 \pm 2 \text{ ly}$	K2III
□		$\delta$	$15^{\text{h}}49^{\text{m}}35.6^{\text{s}}$	$+26^\circ4'6.2''$	4.6	Pale Orange	$165 \pm 2 \text{ ly}$	G5III-IV
□		$\iota$	$16^{\text{h}}1^{\text{m}}26.6^{\text{s}}$	$+29^\circ51'3.8''$	5.0	Blue	$312 \pm 7 \text{ ly}$	A0III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6137	16 <sup>h</sup> 23 <sup>m</sup> 3 <sup>s</sup>	+37°55'20"	12.5	EllGal	1.8'	444 Mly
□		NGC 6085	16 <sup>h</sup> 12 <sup>m</sup> 35.2 <sup>s</sup>	+29°21'53.7"	12.7	SpiGal	1.5'	455 Mly
□		NGC 6086	16 <sup>h</sup> 12 <sup>m</sup> 35.4 <sup>s</sup>	+29°29'2"	12.7	EllGal	1.5'	462 Mly

## Notes

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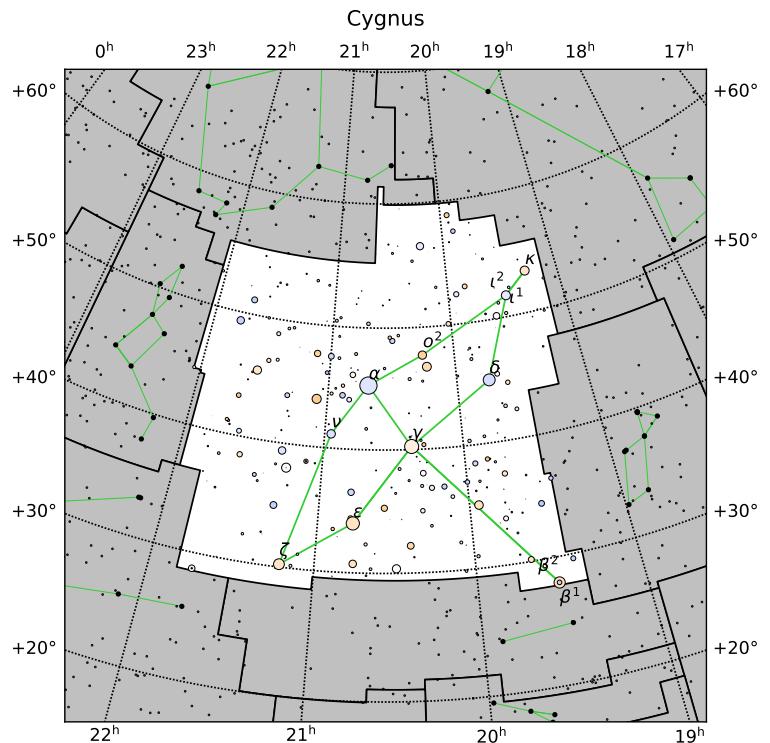
# Cygnus

## “The Swan”

Pronunciation: /sɪgnəs/  
Genitive: Cygni (/sɪgnai/)   
Abbreviation: Cyg

## History

Cygnus is a constellation brought to us by the ancient Greeks who identified it with several different legendary swans. Zeus disguised himself as a swan to seduce Leda, the queen of Sparta, who gave birth to Helen of Troy. The swan could also be Phaethon’s lover, Cygnus, who collected Phaethon’s bones for a proper burial after Phaethon crashed his father Helios’ chariot.



## Facts

Cygnus is visible at latitudes between  $+90^\circ$  and  $-40^\circ$ , i.e., throughout the entire Northern Hemisphere and throughout much of the Southern Hemisphere, excluding the southern tip of South America and parts of New Zealand. It is best seen at 9:00 PM local time during September. There are a few minor meteor showers in Cygnus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Deneb (/dənəb/)	$\alpha$	20 <sup>h</sup> 41 <sup>m</sup> 25.9 <sup>s</sup>	+45°16'49"	1.3	Pale Blue	$2615 \pm 215$ ly	A2Ia
□	Sadr (/sædər/)	$\gamma$	20 <sup>h</sup> 22 <sup>m</sup> 13.7 <sup>s</sup>	+40°15'24.0"	2.2	Pale Yellow	1800 ly	F8Iab
□	Aljanah (/ældʒənə/)	$\varepsilon$	20 <sup>h</sup> 46 <sup>m</sup> 12.7 <sup>s</sup>	+33°58'12.9"	2.5	Orange	$72.7 \pm 0.2$ ly	K0III
□	Fawaris (/fə'wɛəris/)	$\delta$	19 <sup>h</sup> 44 <sup>m</sup> 58.5 <sup>s</sup>	+45°7'50.9"	2.9	Blue	$165 \pm 4$ ly	B9III + F1V
□	Albireo (/æl'bɪriou/)	$\beta^1$	19 <sup>h</sup> 30 <sup>m</sup> 43.3 <sup>s</sup>	+27°57'34.8"	3.2	Orange	$430 \pm 20$ ly	K2II
□		$\zeta$	21 <sup>h</sup> 12 <sup>m</sup> 56.2 <sup>s</sup>	+30°13'36.9"	3.3	Orange	$149.5 \pm 0.9$ ly	G8IIIa + DA4.2
□		$\iota^2$	19 <sup>h</sup> 29 <sup>m</sup> 42.4 <sup>s</sup>	+51°43'47.2"	3.8	Pale Blue	$121.3 \pm 0.5$ ly	A5V
□		$\kappa$	19 <sup>h</sup> 17 <sup>m</sup> 6.2 <sup>s</sup>	+53°22'6.5"	3.8	Orange	$124.2 \pm 0.5$ ly	G9III
□		$\nu$	20 <sup>h</sup> 57 <sup>m</sup> 10.4 <sup>s</sup>	+41°10'1.7"	3.9	Blue	$370 \pm 10$ ly	A0III
□		$o^2$	20 <sup>h</sup> 15 <sup>m</sup> 28.3 <sup>s</sup>	+47°42'51.2"	4.0	Orange	1500 ly	K5Iab + B7V
□		$\beta^2$	19 <sup>h</sup> 30 <sup>m</sup> 45.4 <sup>s</sup>	+27°57'55.0"	5.1	Blue	$400 \pm 10$ ly	B8V

□  $\nu^1$   $19^{\text{h}}27^{\text{m}}26.0^{\text{s}}$   $+52^{\circ}19'13.6''$  5.7 Blue  $387 \pm 4$  ly A1V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	North America Nebula	NGC 7000	$20^{\text{h}}59^{\text{m}}17.1^{\text{s}}$	$+44^{\circ}31'44''$	4.0	Neb	$2^{\circ}$	2.6 kly
□		NGC 6871	$20^{\text{h}}5^{\text{m}}59^{\text{s}}$	$+35^{\circ}46.6'$	5.2	OpCl	$30'$	5.1 kly
□		M39	$21^{\text{h}}31^{\text{m}}48.0^{\text{s}}$	$+48^{\circ}26'0''$	6.6	OpCl	$29'$	1 kly
□	Cooling Tower	M29	$20^{\text{h}}23^{\text{m}}56^{\text{s}}$	$+38^{\circ}31'24''$	6.6	OpCl	$7'$	3.7 kly
□	Hole in the Cluster	NGC 6811	$19^{\text{h}}37^{\text{m}}17^{\text{s}}$	$+46^{\circ}23'18''$	6.8	OpCl	$13'$	3.6 kly
□	Veil Nebula		$20^{\text{h}}45^{\text{m}}38.0^{\text{s}}$	$+30^{\circ}42'30''$	7.0	Neb	$3^{\circ}$	2.4 kly
□	Cocoon Nebula	IC 5146	$21^{\text{h}}53^{\text{m}}28.7^{\text{s}}$	$+47^{\circ}16'1''$	7.2	Neb	$12'$	2.5 kly
□	Foxhead Cluster	NGC 6819	$19^{\text{h}}41^{\text{m}}18.0^{\text{s}}$	$+40^{\circ}11'12''$	7.3	OpCl	$5'$	7.2 kly
□	Crescent Nebula	NGC 6888	$20^{\text{h}}12^{\text{m}}7^{\text{s}}$	$+38^{\circ}21.3'$	7.4	Neb	$18'$	5 kly
□	Rocking Horse Cluster	NGC 6910	$20^{\text{h}}23^{\text{m}}8^{\text{s}}$	$+40^{\circ}46'30''$	7.4	OpCl	$10'$	3.7 kly
□		NGC 6866	$20^{\text{h}}3.7^{\text{m}}$	$+44^{\circ}0'$	7.6	OpCl	$7'$	3.9 kly
□	Blinking Planetary	NGC 6826	$19^{\text{h}}44^{\text{m}}48.2^{\text{s}}$	$+50^{\circ}31'30.3''$	8.8	PNeb	$27''$	2 kly
□	Jewel Bug Nebula	NGC 7027	$21^{\text{h}}7^{\text{m}}1.7^{\text{s}}$	$+42^{\circ}14'11''$	10.0	PNeb	$16''$	3 kly
□	Fetus Nebula	NGC 7008	$21^{\text{h}}0^{\text{m}}32.5^{\text{s}}$	$+54^{\circ}32'36.2''$	12.0	PNeb	$1.4'$	2.8 kly
□		NGC 7048	$21^{\text{h}}14^{\text{m}}15.3^{\text{s}}$	$+46^{\circ}17'16.1''$	12.1	PNeb	$1'$	5.3 kly

## Notes

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# Delphinus

“The Dolphin”

Pronunciation: /dəl'fəməs/

Genitive: Delphini (/dəl'fəmən/)

Abbreviation: Del

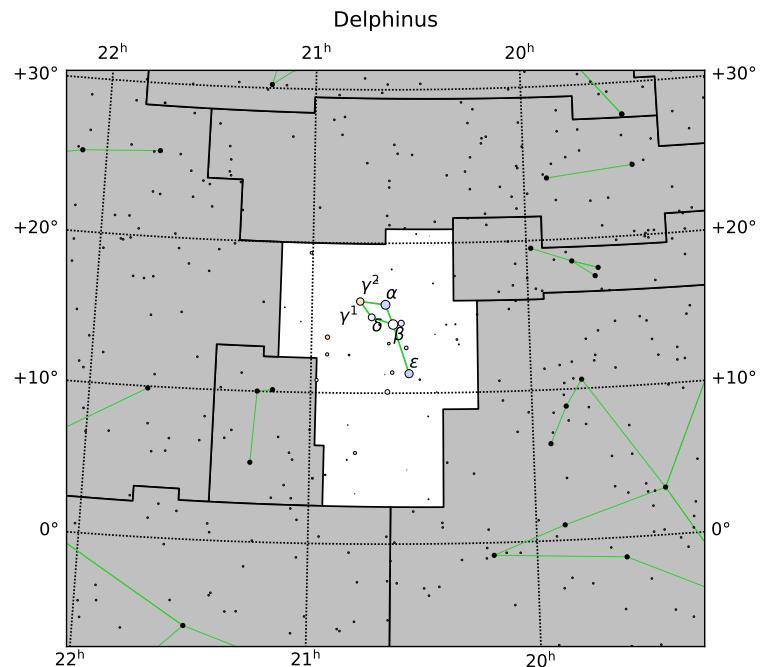
## History

Delphinus is another ancient constellation from the Greeks. Delphinus represents the dolphin that the god Poseidon sent after the beauty Amphitrite to convince her to accept his wooing. Out of gratitude, Poseidon set the dolphin in the sky.

## Facts

Delphinus is visible at latitudes between  $+90^\circ$  and  $-79^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during September. There are no meteor showers in Delphinus.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Rotanev (/routənev/)	$\beta$	$20^{\text{h}}37^{\text{m}}32.9^{\text{s}}$	$+14^\circ35'42.3''$	3.6	White	$101 \pm 1 \text{ ly}$	F5III + F5IV
□	Sualocin (swəlōosm/)	$\alpha$	$20^{\text{h}}39^{\text{m}}38.3^{\text{s}}$	$+15^\circ54'43.5''$	3.8	Blue	$254 \pm 9 \text{ ly}$	B9IV
□	Aldulfin (æl'dəlfən/)	$\epsilon$	$20^{\text{h}}33^{\text{m}}12.8^{\text{s}}$	$+11^\circ18'11.7''$	4.0	Blue	$330 \pm 7 \text{ ly}$	B6III
□		$\gamma^2$	$26^{\text{h}}46^{\text{m}}39.5^{\text{s}}$	$+16^\circ7'27.5''$	4.4	Pale Orange	$114 \pm 2 \text{ ly}$	K1IV
□		$\delta$	$20^{\text{h}}43^{\text{m}}27.5^{\text{s}}$	$+15^\circ4'28.5''$	4.4	White	$223 \pm 3 \text{ ly}$	F0IV-V
□		$\gamma^1$	$20^{\text{h}}46^{\text{m}}38.9^{\text{s}}$	$+16^\circ7'26.9''$	5.1	White	$114.8 \pm 0.6 \text{ ly}$	F7V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6934	20 <sup>h</sup> 34 <sup>m</sup> 11.4 <sup>s</sup>	+7°24'16.1"	8.8	GbCl	1.2'	52 kly
□		NGC 7006	21 <sup>h</sup> 1 <sup>m</sup> 29.4 <sup>s</sup>	+16°11'14.4"	10.6	GbCl	2.8'	137 kly
□	Blue Flash Nebula	NGC 6905	20 <sup>h</sup> 22 <sup>m</sup> 23 <sup>s</sup>	+20°6'16"	10.9	PNeb	1.2'	7.5 kly

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# Draco

## “The Dragon”

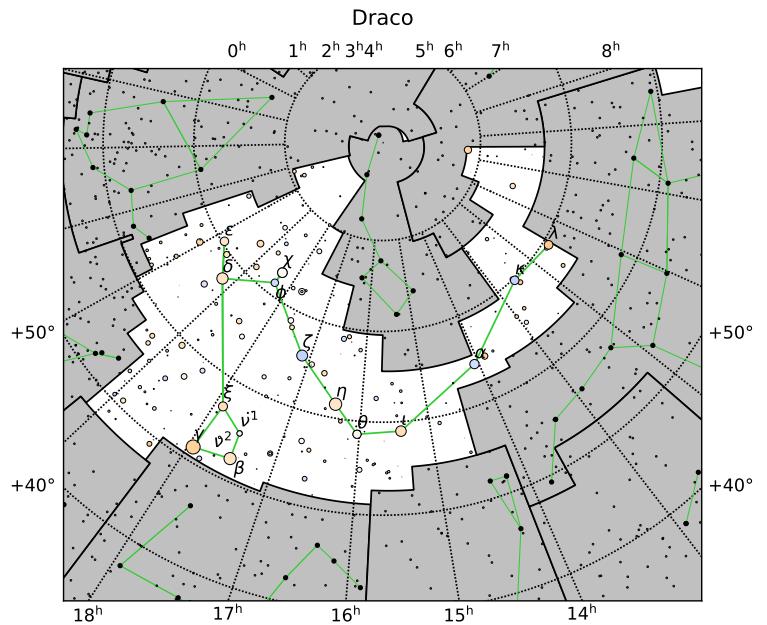
Pronunciation: /drei'kou/

Genitive: Draconis (/drə'kounɪs/)

Abbreviation: Dra

## History

Draco is one of two dragons in ancient Greek mythology. He could be one of the Gigantes, who battled the Olympian gods for ten years before the goddess Athena killed it and tossed it in the sky where it curled up on itself. Draco could also be the dragon Ladon, who guarded the golden apples of the Hesperides. Heracles was tasked with stealing the apples during his labors, so he killed Ladon and the goddess Hera turned him into a constellation.



## Facts

Draco is visible at latitudes between  $+90^\circ$  and  $-15^\circ$ , i.e., throughout the entire Northern Hemisphere and as far south as Bolivia, central Africa, and Indonesia. It is best seen at 9:00 PM local time during July. The Draconids are a meteor shower that reach their peak around October 8 in Draco at a rate of thousands of meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Eltanin (/el'temn/)	γ	17 <sup>h</sup> 56 <sup>m</sup> 36.4 <sup>s</sup>	+51°29'20.0"	2.2	Orange	$154.3 \pm 0.7$ ly	K5III
□	Athebyne (/æθərbən/)	θ	16 <sup>h</sup> 23 <sup>m</sup> 59.5 <sup>s</sup>	+61°30'51.7"	2.7	Pale Orange	$92.1 \pm 0.2$ ly	G8III
□	Rastaban (/ræstəbæn/)	β	17 <sup>h</sup> 30 <sup>m</sup> 26.0 <sup>s</sup>	+52°18'5.0"	2.8	Pale Orange	$380 \pm 4$ ly	G2Ib-IIa
□	Altair (/æl'teɪ.ɪs/)	δ	19 <sup>h</sup> 12 <sup>m</sup> 33.3 <sup>s</sup>	+67°39'41.5"	3.1	Pale Orange	$97.4 \pm 0.3$ ly	G9III
□	Aldhibah (/æl'daɪbə/)	ζ	17 <sup>h</sup> 8 <sup>m</sup> 47.2 <sup>s</sup>	+65°42'52.9"	3.2	Blue	$330 \pm 10$ ly	B6III
□	Edasich (/ɛdəsɪk/)	ι	15 <sup>h</sup> 24 <sup>m</sup> 55.8 <sup>s</sup>	+58°57'57.8"	3.3	Orange	$101.2 \pm 0.3$ ly	K2III
□		χ	18 <sup>h</sup> 21 <sup>m</sup> 3.4 <sup>s</sup>	+72°43'58.3"	3.6	White	$26.3 \pm 0.2$ ly	F7V + K0V
□	Thuban (/θju:bæn/)	α	14 <sup>h</sup> 4 <sup>m</sup> 23.4 <sup>s</sup>	+64°22'33.1"	3.7	Blue	$303 \pm 5$ ly	A0IV + A1V
□	Grumium (/gru:mɪəm/)	ξ	17 <sup>h</sup> 53 <sup>m</sup> 31.7 <sup>s</sup>	+56°52'21.5"	3.8	Orange	$112.5 \pm 0.5$ ly	K2III
□		κ	12 <sup>h</sup> 33 <sup>m</sup> 28.9 <sup>s</sup>	+69°47'17.6"	3.8	Blue	$460 \pm 20$ ly	B6III

<input type="checkbox"/>	Giausar (/dʒɔ:zɑ:r/)	$\lambda$	11 <sup>h</sup> 31 <sup>m</sup> 24.2 <sup>s</sup>	+69°19'51.9"	3.9	Orange	333 ± 5 ly	M0III
<input type="checkbox"/>		$\varepsilon$	19 <sup>h</sup> 48 <sup>m</sup> 10.3 <sup>s</sup>	+70°16'4.5"	4.0	Pale Orange	153 ± 2 ly	G7IIIb
<input type="checkbox"/>		$\theta$	16 <sup>h</sup> 1 <sup>m</sup> 53.3 <sup>s</sup>	+58°33'54.9"	4.1	White	68.6 ± 0.2 ly	F9V
<input type="checkbox"/>		$\phi$	18 <sup>h</sup> 20 <sup>m</sup> 45.4 <sup>s</sup>	+71°20'16.1"	4.2	Blue	300 ± 10 ly	B8V + A4V + B9V
<input type="checkbox"/>		$\nu^1$	17 <sup>h</sup> 32 <sup>m</sup> 10.6 <sup>s</sup>	+55°11'3.3"	4.9	Pale Blue	98.7 ± 0.4 ly	A8V
<input type="checkbox"/>		$\nu^2$	17 <sup>h</sup> 32 <sup>m</sup> 16.0 <sup>s</sup>	+55°10'22.7"	4.9	Pale Blue	99.4 ± 0.5 ly	A4IV

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>	Cat's Eye Nebula	NGC 6543	17 <sup>h</sup> 58 <sup>m</sup> 33.4 <sup>s</sup>	+66°37'59.5"	9.8	PNeb	20"	3.3 kly
<input type="checkbox"/>		NGC 6503	17 <sup>h</sup> 49 <sup>m</sup> 26.4 <sup>s</sup>	+70°8'39.6"	10.2	SpiGal	7.1'	13 Mly
<input type="checkbox"/>		NGC 4236	12 <sup>h</sup> 16 <sup>m</sup> 42.1 <sup>s</sup>	+69°27'45"	10.5	SpiGal	22'	14.5 Mly
<input type="checkbox"/>		NGC 3147	10 <sup>h</sup> 16 <sup>m</sup> 53.7 <sup>s</sup>	+73°24'3"	10.6	SpiGal	3.9'	129 Mly
<input type="checkbox"/>		NGC 4125	12 <sup>h</sup> 8 <sup>m</sup> 6.0 <sup>s</sup>	+65°10'27"	10.7	EllGal	5.8'	78 Mly
<input type="checkbox"/>	Spindle Galaxy	NGC 5866	15 <sup>h</sup> 6 <sup>m</sup> 29.5 <sup>s</sup>	+55°45'48"	10.7	SpiGal	4.7'	50 Mly
<input type="checkbox"/>		NGC 4589	12 <sup>h</sup> 37 <sup>m</sup> 25.0 <sup>s</sup>	+74°11'30"	10.8	EllGal	3.5'	73 Mly
<input type="checkbox"/>		NGC 5982	15 <sup>h</sup> 38 <sup>m</sup> 39.8 <sup>s</sup>	+59°21'21"	11.0	EllGal	3'	123 Mly
<input type="checkbox"/>	Knife Edge Galaxy	NGC 5907	15 <sup>h</sup> 15 <sup>m</sup> 53.8 <sup>s</sup>	+56°19'44"	11.1	SpiGal	12.7'	53.5 Mly
<input type="checkbox"/>		NGC 6217	16 <sup>h</sup> 32 <sup>m</sup> 39.2 <sup>s</sup>	+78°11'53.6"	11.2	SpiGal	3.5'	67.2 Mly
<input type="checkbox"/>		NGC 6340	17 <sup>h</sup> 10 <sup>m</sup> 24.9 <sup>s</sup>	+72°18'16"	11.9	SpiGal	3.2'	55.1 Mly

## Notes

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# Equuleus

## “The Pony”

Pronunciation: /i'kwu:liəs/

Genitive: Equulei (/i'kwu:liaɪ/)

Abbreviation: Equ

## History

Equuleus is a partner to the larger horse, Pegasus, and likewise in Greek mythology, Equuleus is associated with Celeris, the offspring of Pegasus. Note that unlike Pegasus, Equuleus is usually depicted as only the head of a horse.

## Facts

Equuleus is visible at latitudes between  $+90^\circ$  and  $-80^\circ$ , i.e., throughout the entire populated world. It is best seen at 9:00 PM local time during September. There are no meteor showers in this small constellation.

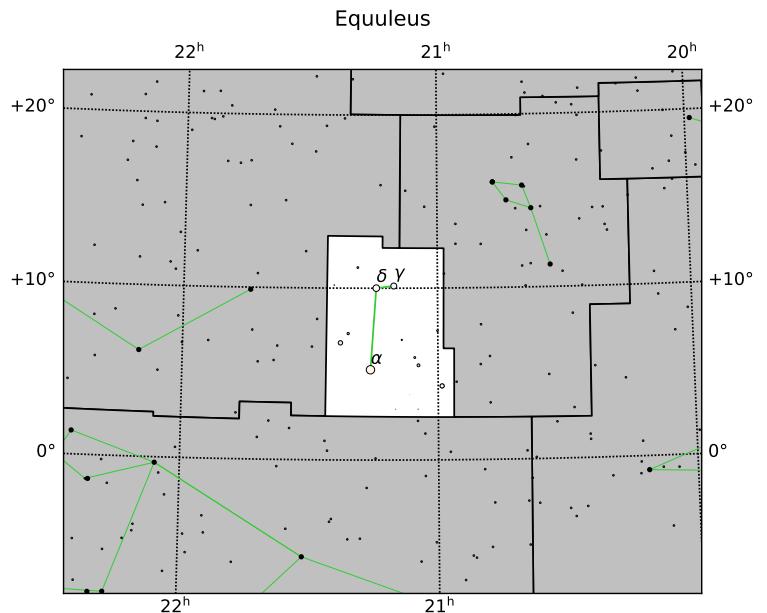
## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Kitalpha (/ki'tælfə/)	$\alpha$	21 <sup>h</sup> 15 <sup>m</sup> 49.4 <sup>s</sup>	+5°14'52.2"	3.9	Pale Yellow	$190 \pm 2$ ly	G7III + A4V
□		$\delta$	21 <sup>h</sup> 14 <sup>m</sup> 28.8 <sup>s</sup>	+10°0'25.1"	4.5	White	$59.4 \pm 0.5$ ly	F7V + F7V
□		$\gamma$	21 <sup>h</sup> 10 <sup>m</sup> 20.5 <sup>s</sup>	+10°7'53.7"	4.7	Pale Blue	$118 \pm 3$ ly	A9V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 7015	21 <sup>h</sup> 5 <sup>m</sup> 37.4 <sup>s</sup>	+11°24'51"	13.3	SpiGal	1.9'	203 Mly
□		NGC 7046	21 <sup>h</sup> 14 <sup>m</sup> 56.0 <sup>s</sup>	+2°50'5"	13.8	SpiGal	1'	193 Mly

## Notes



# Hercules

“The Hero Hercules”

Pronunciation: /hɜːrkjʊlɪz/

Genitive: Herculis (/hɜːrkjolɪs/)

Abbreviation: Her

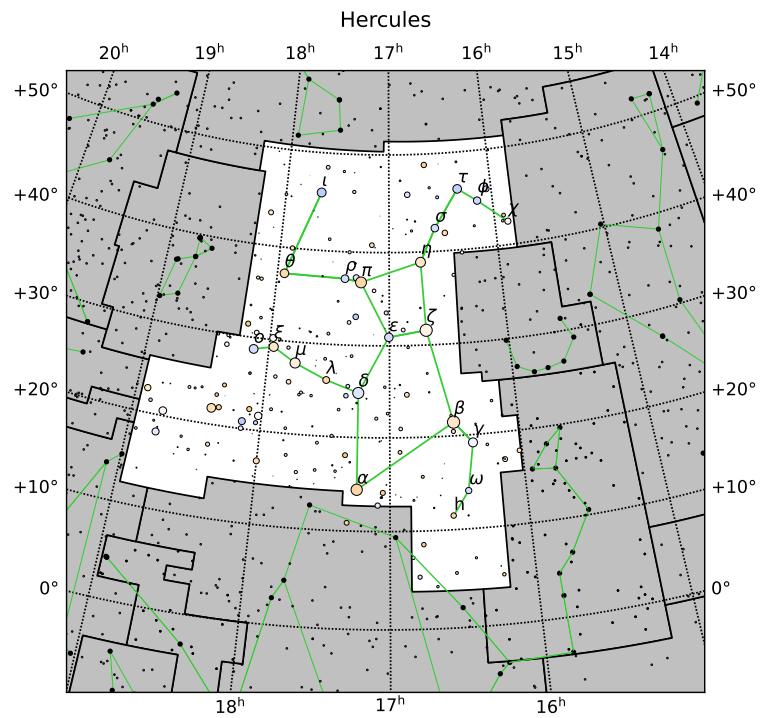
## History

Hercules represents the famous Roman hero of the same name, adapted from the Greek hero Heracles. He is seen here kneeling as he was praying to his father Zeus during his battle with the giants Albion and Bergion.

## Facts

Hercules is visible at latitudes between  $+90^\circ$  and  $-50^\circ$ , i.e., throughout the entire Northern Hemisphere and most of the Southern Hemisphere, excluding the southern tip of South America. It is best seen around 9:00 PM local time during July. There is a minor meteor shower that radiates outwards from Hercules.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Kornephoros (/kɔːr'nɛfərəs/)	$\beta$	16 <sup>h</sup> 30 <sup>m</sup> 13.2 <sup>s</sup>	+21°29'22.6"	2.8	Pale Orange	$139 \pm 3$ ly	G7IIIa
□		$\zeta$	16 <sup>h</sup> 41 <sup>m</sup> 17.2 <sup>s</sup>	+31°36'9.8"	2.8	Pale Yellow	$35.0 \pm 0.2$ ly	F9IV + G7V
□	Sarin (/sɛərm/)	$\delta$	17 <sup>h</sup> 15 <sup>m</sup> 1.9 <sup>s</sup>	+24°50'21.1"	3.1	Blue	$75.1 \pm 0.3$ ly	A3IV
□		$\pi$	17 <sup>h</sup> 15 <sup>m</sup> 2.8 <sup>s</sup>	+36°48'33.0"	3.2	Orange	$377 \pm 5$ ly	K3II
□	Rasalgethi (/ræsəl'dʒiːti/)	$\alpha$	17 <sup>h</sup> 14 <sup>m</sup> 38.9 <sup>s</sup>	+14°23'25.0"	3.4	Orange	360 ly	M5Ib-II
□		$\mu$	17 <sup>h</sup> 46 <sup>m</sup> 27.5 <sup>s</sup>	+27°43'14.4"	3.4	Pale Orange	$27.11 \pm 0.04$ ly	G5IV + M4V + M3.5V
□		$\eta$	16 <sup>h</sup> 42 <sup>m</sup> 53.8 <sup>s</sup>	+38°55'20.1"	3.5	Pale Orange	$112 \pm 2$ ly	G7.5IIIb
□		$\xi$	17 <sup>h</sup> 57 <sup>m</sup> 45.9 <sup>s</sup>	+29°14'52.4"	3.7	Pale Orange	$136.8 \pm 0.9$ ly	G8III
□		$\gamma$	16 <sup>h</sup> 21 <sup>m</sup> 55.2 <sup>s</sup>	+19°9'11.3"	3.8	White	$193 \pm 3$ ly	A9III
□		$\iota$	17 <sup>h</sup> 39 <sup>m</sup> 27.9 <sup>s</sup>	+46°0'22.8"	3.8	Blue	$455 \pm 8$ ly	B3IV
□		$\sigma$	18 <sup>h</sup> 7 <sup>m</sup> 32.6 <sup>s</sup>	+28°45'45.0"	3.8	Blue	$338 \pm 6$ ly	B9.5V
□		$\theta$	17 <sup>h</sup> 56 <sup>m</sup> 15.2 <sup>s</sup>	+37°15'1.9"	3.9	Orange	$750 \pm 20$ ly	K1IIa
□		$\tau$	16 <sup>h</sup> 19 <sup>m</sup> 44.4 <sup>s</sup>	+46°18'48.1"	3.9	Blue	$307 \pm 3$ ly	B5IV

□		$\varepsilon$	17 <sup>h</sup> 0 <sup>m</sup> 17.4 <sup>s</sup>	+30°55'35.1"	3.9	Blue	155 ± 1 ly	A0V
□		$\sigma$	16 <sup>h</sup> 34 <sup>m</sup> 6.2 <sup>s</sup>	+42°26'13.3"	4.2	Blue	310 ± 10 ly	B9V
□		$\phi$	16 <sup>h</sup> 8 <sup>m</sup> 46.2 <sup>s</sup>	+44°56'5.7"	4.2	Blue	204 ± 6 ly	B9V + A8V
□	Maasym (/meəsim/)	$\lambda$	17 <sup>h</sup> 30 <sup>m</sup> 44.3 <sup>s</sup>	+26°6'38.3"	4.4	Orange	393 ± 4 ly	K3.5III
□		$\rho$	17 <sup>h</sup> 23 <sup>m</sup> 41.0 <sup>s</sup>	+37°8'45.3"	4.5	Blue	390 ± 20 ly	A0III + B9.5IV
□	Cujam (/kju:dʒəm/)	$\omega$	16 <sup>h</sup> 25 <sup>m</sup> 25.0 <sup>s</sup>	+14°1'59.8"	4.6	Blue	250 ± 10 ly	A2V
□		$\chi$	15 <sup>h</sup> 52 <sup>m</sup> 40.5 <sup>s</sup>	+42°27'5.5"	4.6	Pale Yellow	51.6 ± 0.1 ly	G0V
□		h	16 <sup>h</sup> 32 <sup>m</sup> 36.3 <sup>s</sup>	+11°29'17.0"	4.8	Orange	351 ± 10 ly	K4.5III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Hercules Cluster	M13	16 <sup>h</sup> 41 <sup>m</sup> 41.2 <sup>s</sup>	+36°27'35.5"	5.8	GbCl	20'	22.2 kly
□		M92	17 <sup>h</sup> 17 <sup>m</sup> 7.4 <sup>s</sup>	+43°8'9.4"	6.3	GbCl	14'	26.7 kly
□		NGC 6229	16 <sup>h</sup> 46 <sup>m</sup> 58.8 <sup>s</sup>	+47°31'40"	9.4	GbCl	4.5'	100 kly
□		NGC 6181	16 <sup>h</sup> 32 <sup>m</sup> 20.9 <sup>s</sup>	+19°49'36"	10.4	SpiGal	2.5'	100 Mly
□		NGC 6239	16 <sup>h</sup> 50 <sup>m</sup> 5 <sup>s</sup>	+42°44'23"	11.3	SpiGal	2.4'	42.4 Mly
□		NGC 6207	16 <sup>h</sup> 43 <sup>m</sup> 3.7 <sup>s</sup>	+36°49'57"	11.7	SpiGal	3'	50 Mly
□		NGC 6210	16 <sup>h</sup> 44 <sup>m</sup> 29.5 <sup>s</sup>	+23°47'59.5"	11.7	PNeb	40"	5.4 kly

## Notes

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# Indus

“The Indian”

Pronunciation: /ɪndʊs/  
Genitive: Indi (/ɪndai/)  
Abbreviation: Ind

## History

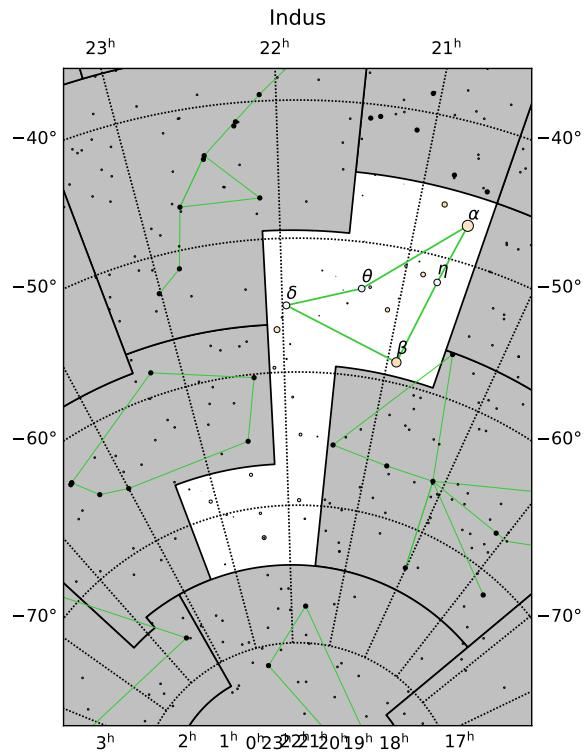
Indus was an addition to the night sky by the Dutch astronomer Petrus Plancius in 1598. He portrayed this constellation as a man with three arrows in one hand and one in the other, without a quiver and bow to fire the arrows.

## Facts

Indus is visible at latitudes between  $+15^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far as Central America, sub-Saharan Africa, and Southeast Asia. It is best seen at 9:00 PM local time during September. There are no meteor showers in Indus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$20^{\text{h}}37^{\text{m}}34.0^{\text{s}}$	$-47^\circ17'29.4''$	3.1	Pale Orange	$98.3 \pm 0.5 \text{ ly}$	K0III-IV
□		$\beta$	$20^{\text{h}}54^{\text{m}}48.6^{\text{s}}$	$-58^\circ27'15.0''$	3.7	Orange	600 ly	K1II
□		$\theta$	$21^{\text{h}}19^{\text{m}}52.0^{\text{s}}$	$-53^\circ26'57.9''$	4.4	Pale Blue	$99 \pm 1 \text{ ly}$	A5IV-V
□		$\delta$	$21^{\text{h}}57^{\text{m}}55.1^{\text{s}}$	$-54^\circ59'33.3''$	4.4	White	$188 \pm 5 \text{ ly}$	F0IV + F0IV
□		$\eta$	$20^{\text{h}}44^{\text{m}}2.3^{\text{s}}$	$-51^\circ55'15.5''$	4.5	Pale Blue	$78.8 \pm 0.5 \text{ ly}$	A9IV



# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 7090	21 <sup>h</sup> 36 <sup>m</sup> 28.9 <sup>s</sup>	-54°33'26.4"	10.5	SpiGal	7.5'	31 Mly
□		IC 5152	22 <sup>h</sup> 2 <sup>m</sup> 41.5 <sup>s</sup>	-51°17'47.2"	10.6	IrrGal	4.9'	5.9 Mly
□		NGC 7049	21 <sup>h</sup> 19 <sup>m</sup> 0.3 <sup>s</sup>	-48°33'43.2"	10.7	LenGal	4'	100 Mly
□		NGC 7196	22 <sup>h</sup> 5 <sup>m</sup> 54.8 <sup>s</sup>	-50°7'10"	11.4	EllGal	2.5'	146 Mly
□		NGC 7083	21 <sup>h</sup> 35 <sup>m</sup> 44.7 <sup>s</sup>	-63°54'10"	11.9	SpiGal	3.9'	133.4 Mly

## Notes

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# Libra

“The Scales”

Pronunciation: /li:brə/

Genitive: Librae (/libri:/)

Abbreviation: Lib

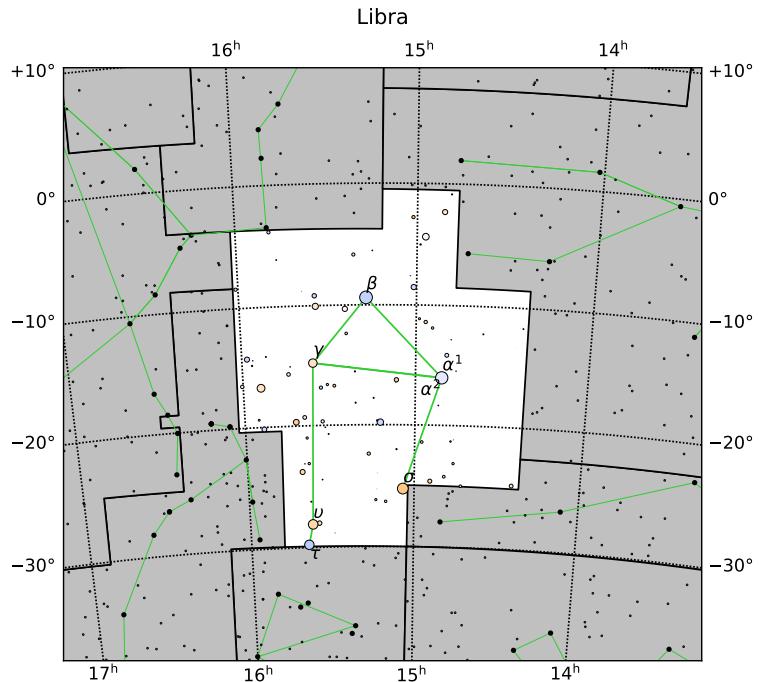
## History

Libra is an ancient constellation known to the Babylonians as a set of weighing scales or balance. However, to the ancient Greeks it was seen as the claws of Scorpius the scorpion, and the names of its two brightest stars reflect that origin. Libra was only separated as its own constellation by the ancient Romans.

## Facts

Libra is visible at latitudes between  $+65^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as Iceland. It is best seen at 9:00 PM local time during June. There is one minor meteor shower in Libra.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Zubeneshamali (/zu:beneʃə'merli/)	$\beta$	$15^{\text{h}}17^{\text{m}}0.4^{\text{s}}$	$-9^\circ22'58.5''$	2.6	Blue	$185 \pm 2$ ly	B8V
□	Zubenelgenubi (/zu:beneʃɪ'nurbi/)	$\alpha^2$	$14^{\text{h}}50^{\text{m}}52.7^{\text{s}}$	$-16^\circ2'30.4''$	2.7	Pale Blue	$75.8 \pm 0.3$ ly	A5IV-V
□	Brachium (/breɪkiəm/)	$\sigma$	$15^{\text{h}}4^{\text{m}}4.2^{\text{s}}$	$-25^\circ16'55.1''$	3.2	Bright	$288 \pm 6$ ly	M2.5III
□		$v$	$15^{\text{h}}37^{\text{m}}1.5^{\text{s}}$	$-28^\circ8'6.3''$	3.6	Orange	$244 \pm 3$ ly	K3III
□		$\tau$	$15^{\text{h}}38^{\text{m}}39.4^{\text{s}}$	$-29^\circ46'39.9''$	3.7	Blue	$367 \pm 8$ ly	B2.5V
□	Zubenelhakrabi (/zu:bene'l'hæk'rabi/)	$\gamma$	$15^{\text{h}}35^{\text{m}}31.6^{\text{s}}$	$-14^\circ47'22.3''$	3.9	Pale Orange	$163 \pm 2$ ly	G8.5III
□		$\alpha^1$	$14^{\text{h}}50^{\text{m}}41.2^{\text{s}}$	$-15^\circ59'50.0''$	5.2	White	$74.9 \pm 0.7$ ly	F3V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 5897	15 <sup>h</sup> 17 <sup>m</sup> 24.4 <sup>s</sup>	-21°0'36.4"	8.5	GbCl	6.3'	24.1 kly
□		NGC 5861	15 <sup>h</sup> 9 <sup>m</sup> 16.1 <sup>s</sup>	-11°19'18"	11.6	SpiGal	3'	84 Mly
□		NGC 5792	14 <sup>h</sup> 58 <sup>m</sup> 22.7 <sup>s</sup>	-1°7'28"	12.1	SpiGal	6.9'	70.3 Mly

Notes

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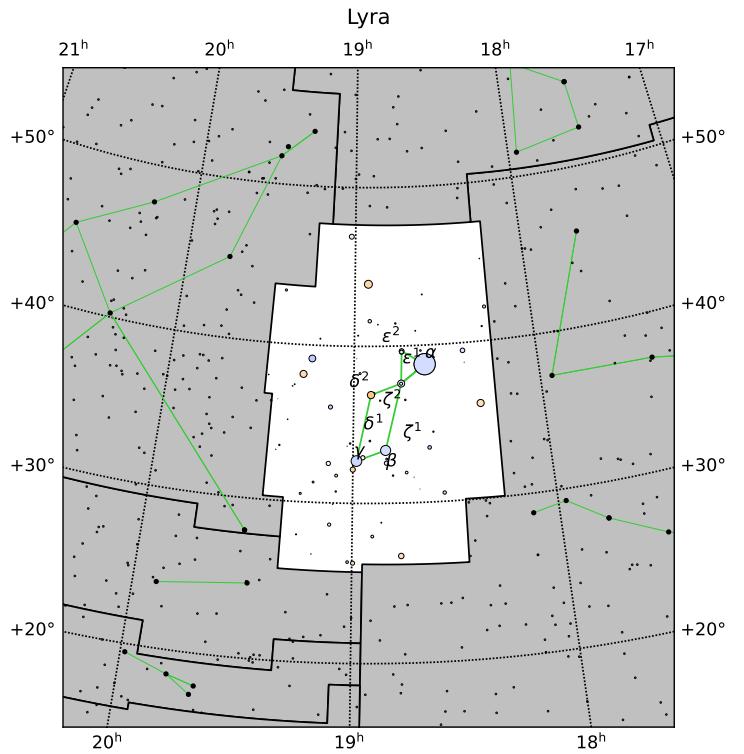
# Lyra

## “The Lyre”

Pronunciation: /lairə/  
Genitive: Lyrae (/lairi:/)  
Abbreviation: Lyr

## History

Lyra is said to be Orpheus' lyre, the first lyre ever produced according to ancient Greek mythology. Made from a tortoise shell, the music coming from this lyre was said to be so great that even inanimate objects could be charmed. Indeed, this music even charmed the god Hades, who let Orpheus bring his wife back from the underworld given that he never look back as his wife followed him out. Sadly, near the end, Orpheus faltered and looked back, causing his wife to be left in the underworld forever.



## Facts

Lyra is visible at latitudes between  $+90^\circ$  and  $-40^\circ$ , i.e., throughout the entire Northern Hemisphere and most of the populated Southern Hemisphere excluding the southern tip of South America. It is best seen at 9:00 PM local time during August. The Lyrids radiate outwards from Lyra, peaking around April 22 at 18 meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Vega (/veɪgə/)	$\alpha$	18 <sup>h</sup> 36 <sup>m</sup> 56.3 <sup>s</sup>	+38°47'1.3"	0.0	Blue	$25.04 \pm 0.07$ ly	A0V
□	Sulafat (/su:ləfæt/)	$\gamma$	18 <sup>h</sup> 58 <sup>m</sup> 56.6 <sup>s</sup>	+32°41'22.4"	3.3	Blue	$620 \pm 30$ ly	B9III
□	Sheliak (/ʃiliæk/)	$\beta$	18 <sup>h</sup> 50 <sup>m</sup> 4.8 <sup>s</sup>	+33°21'45.6"	3.5	Blue	$960 \pm 50$ ly	B6-8II
□		$\delta^2$	36 <sup>h</sup> 53 <sup>m</sup> 55.0 <sup>s</sup>	+36°53'55.0"	4.2	Orange	$740 \pm 30$ ly	M4II
□		$\zeta^1$	18 <sup>h</sup> 44 <sup>m</sup> 46.4 <sup>s</sup>	+37°36'18.4"	4.4	Pale Blue	$156 \pm 1$ ly	F0V
□		$\varepsilon^2$	18 <sup>h</sup> 44 <sup>m</sup> 22.8 <sup>s</sup>	+39°36'45.8"	4.6	Pale Blue	$156 \pm 4$ ly	A6V + A7V
□		$\varepsilon^1$	18 <sup>h</sup> 44 <sup>m</sup> 20.3 <sup>s</sup>	+39°40'12.5"	4.7	Pale Blue	$162 \pm 6$ ly	A3V + F0V
□		$\delta^1$	18 <sup>h</sup> 53 <sup>m</sup> 43.6 <sup>s</sup>	+36°58'18.2"	5.6	Blue	$1160 \pm 60$ ly	B2.5V
□		$\zeta^2$	18 <sup>h</sup> 44 <sup>m</sup> 48.2 <sup>s</sup>	+37°35'40.6"	5.7	White	$158.2 \pm 0.4$ ly	F0IV

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		M56	19 <sup>h</sup> 16 <sup>m</sup> 35.6 <sup>s</sup>	+30°11'0.5"	8.3	GbCl	8.8'	32.9 kly
<input type="checkbox"/>	Ring Nebula	M57	18 <sup>h</sup> 53 <sup>m</sup> 35.1 <sup>s</sup>	+33°1'45.0"	8.8	PNeb	3.8'	2.6 kly
<input type="checkbox"/>		NGC 6791	19 <sup>h</sup> 20 <sup>m</sup> 53 <sup>s</sup>	+37°46.3'	9.5	OpCl	16'	13.3 kly

## Notes

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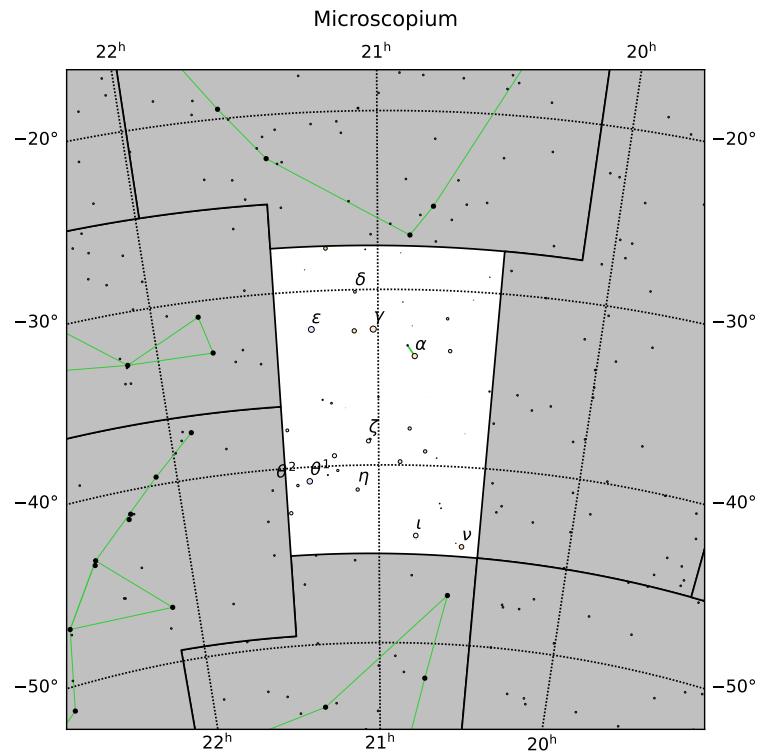
# Microscopium

“The Microscope”

Pronunciation: /maɪkrə'skɒpiəm/  
Genitive: Microscopii (/maɪkrə'skɒpiəi/)  
Abbreviation: Mic

## History

Although originally the hind feet of Sagittarius, in 1751 French astronomer Nicolas-Louis de Lacaille changed these stars' association to that of the microscope. The inventor of the microscope has been lost to time, although they were demonstrated by Dutch inventor Cornelis Drebbel around 1621 and popularized by Dutch scientist Antonie van Leeuwenhoek.



## Facts

Microscopium is visible at latitudes between  $+45^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as Michigan, Maine, southern France, and northern China. It is best seen around 9:00 PM local time in September. There is one minor meteor shower in Microscopium.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\gamma$	$21^{\text{h}} 1^{\text{m}} 17.5^{\text{s}}$	$-32^\circ 15' 28.0''$	4.7	Pale Orange	$223 \pm 8 \text{ ly}$	G6III
□		$\varepsilon$	$21^{\text{h}} 17^{\text{m}} 56.3^{\text{s}}$	$-32^\circ 10' 21.2''$	4.7	Blue	$166 \pm 5 \text{ ly}$	A1V
□		$\theta^1$	$21^{\text{h}} 20^{\text{m}} 45.6^{\text{s}}$	$-40^\circ 48' 34.4''$	4.8	Blue	$179 \pm 5 \text{ ly}$	A7V
□		$\alpha$	$20^{\text{h}} 49^{\text{m}} 58.1^{\text{s}}$	$-33^\circ 46' 47.0''$	4.9	Orange	$400 \pm 30 \text{ ly}$	G7III
□		$\nu$	$20^{\text{h}} 33^{\text{m}} 55.1^{\text{s}}$	$-44^\circ 30' 57.8''$	4.8	Orange	$252 \pm 2 \text{ ly}$	K0III
□		$\iota$	$20^{\text{h}} 48^{\text{m}} 29.4^{\text{s}}$	$-43^\circ 59' 18.6''$	5.1	White	$121.2 \pm 0.8 \text{ ly}$	F2V
□		$\zeta$	$21^{\text{h}} 2^{\text{m}} 58.0^{\text{s}}$	$-38^\circ 37' 53.2''$	5.3	White	$115 \pm 1 \text{ ly}$	F5V
□		$\eta$	$21^{\text{h}} 6^{\text{m}} 25.5^{\text{s}}$	$-41^\circ 23' 9.5''$	5.5	Orange	$910 \pm 30 \text{ ly}$	K3III
□		$\delta$	$20^{\text{h}} 6^{\text{m}} 1.1^{\text{s}}$	$-30^\circ 7' 30.4''$	5.7	Orange	$300 \pm 20 \text{ ly}$	K0/1III
□		$\theta^2$	$21^{\text{h}} 24^{\text{m}} 24.8^{\text{s}}$	$-41^\circ 0' 24.1''$	5.8	Blue	$390 \pm 30 \text{ ly}$	A0III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6925	20 <sup>h</sup> 34 <sup>m</sup> 20.6 <sup>s</sup>	-31°58'51.2"	12.1	SpiGal	3.1'	99 Mly

Notes

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# Norma

“The Carpenter’s Square”

Pronunciation: /nɔrmə/

Genitive: Normae (/nɔrmī:/)

Abbreviation: Nor

## History

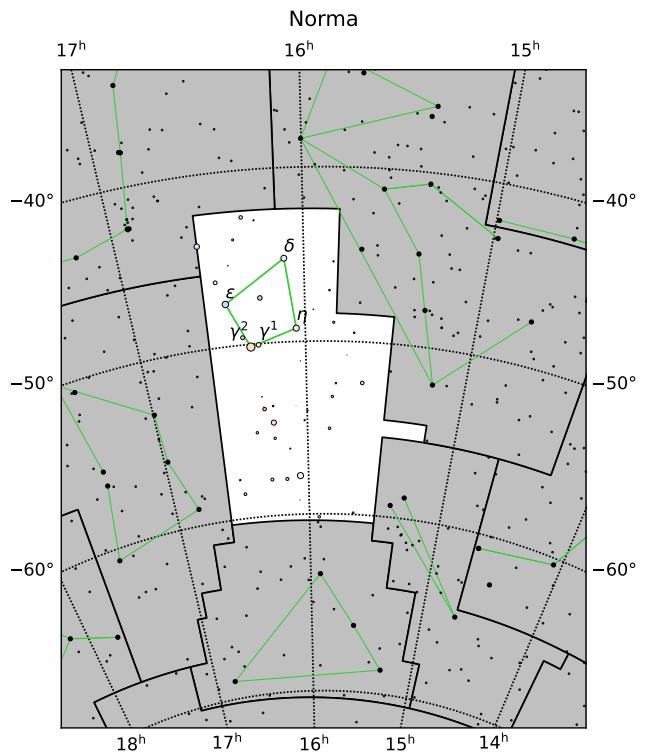
Norma was another constellation introduced to the skies by French astronomer Nicolas-Louis de Lacaille in 1751. This time, he chose to honor the carpenter’s square, a tool used in carpentry to measure out right angles.

## Facts

Norma is visible at latitudes between  $+30^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and north to Central America, the Sahara, India, and Southeast Asia. It is best seen around 9:00 PM local time during July. There is one minor meteor shower in Norma.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\gamma^2$	16 <sup>h</sup> 19 <sup>m</sup> 50.4 <sup>s</sup>	$-50^\circ 9' 19.8''$	4.0	Orange	$129 \pm 1$ ly	K0III
□		$\varepsilon$	16 <sup>h</sup> 27 <sup>m</sup> 11.0 <sup>s</sup>	$-47^\circ 33' 17.2''$	4.5	Blue	$530 \pm 20$ ly	B4V + B4V + B9V
□		$\eta$	16 <sup>h</sup> 3 <sup>m</sup> 12.9 <sup>s</sup>	$-49^\circ 13' 46.9''$	4.7	Pale Orange	$219 \pm 4$ ly	G8III
□		$\delta$	16 <sup>h</sup> 6 <sup>m</sup> 29.4 <sup>s</sup>	$-45^\circ 10' 23.5''$	4.7	White	$122 \pm 3$ ly	A7III
□		$\gamma^1$	16 <sup>h</sup> 17 <sup>m</sup> 0.9 <sup>s</sup>	$-50^\circ 4' 5.2''$	5.0	Pale Orange	1500 ly	F9Ia



# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6087	16 <sup>h</sup> 18 <sup>m</sup> 48 <sup>s</sup>	-57°56'6"	5.4	OpCl	12'	3.5 kly
□		NGC 6067	16 <sup>h</sup> 13 <sup>m</sup> 31 <sup>s</sup>	-54°11'24"	5.6	OpCl	12'	4.6 kly
□		NGC 6167	16 <sup>h</sup> 34 <sup>m</sup> 34 <sup>s</sup>	-49°46'18"	6.7	OpCl	20'	3.6 kly
□		NGC 6134	16 <sup>h</sup> 27 <sup>m</sup> 46.5 <sup>s</sup>	-49°9'4"	7.2	OpCl	2.4'	3 kly
□		NGC 6152	16 <sup>h</sup> 32 <sup>m</sup> 42 <sup>s</sup>	-52°38'38"	8.1	OpCl	6.6'	5.5 kly
□		NGC 5925	15 <sup>h</sup> 27 <sup>m</sup> 26.6 <sup>s</sup>	-54°32'4"	8.4	OpCl	20'	5.1 kly
□		NGC 6031	16 <sup>h</sup> 7 <sup>m</sup> 51.4 <sup>s</sup>	-54°3'3"	8.5	OpCl	3'	6.8 kly
□		NGC 5927	15 <sup>h</sup> 28 <sup>m</sup> 0.7 <sup>s</sup>	-50°40'22.9"	8.9	GbCl	6'	25.1 kly
□		NGC 5999	15 <sup>h</sup> 59 <sup>m</sup> 55 <sup>s</sup>	-54°1'54"	9.0	OpCl	3'	5.3 kly
□		NGC 6115	16 <sup>h</sup> 24 <sup>m</sup> 43.2 <sup>s</sup>	-51°56'24"	9.8	OpCl	3.5'	3.2 kly
□		NGC 5946	15 <sup>h</sup> 35 <sup>m</sup> 29 <sup>s</sup>	-50°39'34"	10.7	GbCl	3.6'	34.6 kly
□		NGC 6005	15 <sup>h</sup> 55 <sup>m</sup> 58 <sup>s</sup>	-57°26'24"	10.7	OpCl	5'	5.9 kly
□		Mz 1	15 <sup>h</sup> 34 <sup>m</sup> 17.0 <sup>s</sup>	-59°9'9.1"	12.0	PNeb	1.3'	3.4 kly
□	Fine Ring Nebula	Sp 1	15 <sup>h</sup> 51 <sup>m</sup> 42.8 <sup>s</sup>	-51°31'30.5"	12.6	PNeb	1.1'	4.9 kly
□	Ant Nebula	Mz 3	16 <sup>h</sup> 17 <sup>m</sup> 13.4 <sup>s</sup>	-51°59'10.3"	13.8	PNeb	50"	8 kly

## Notes

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# Ophiuchus

“The Serpent-Bearer”

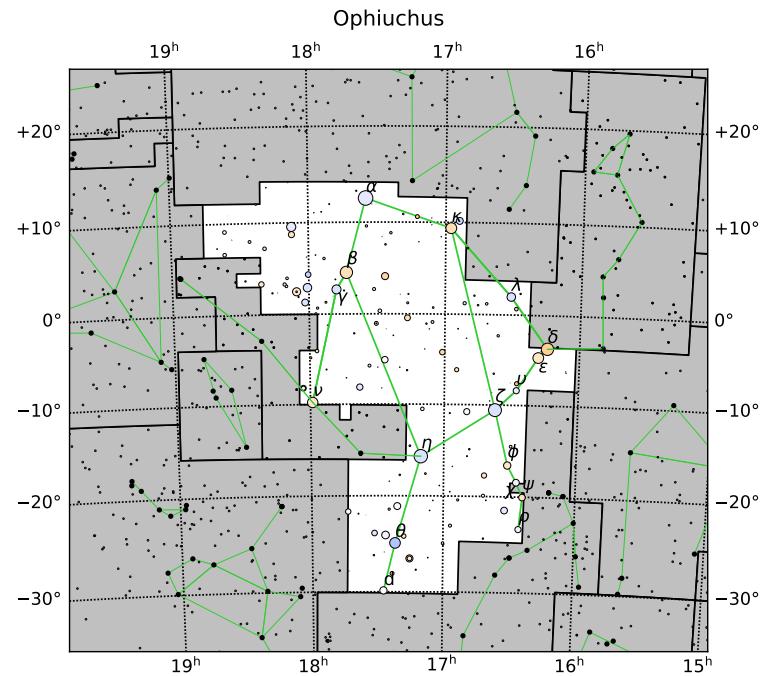
Pronunciation: /ˌɔfi'ju:kəs/

Genitive: Ophiuchi (/ˌɔfi'ju:kai/)

Abbreviation: Oph

## History

Ophiuchus is a constellation brought to us by the ancient Greeks and not the ancient Babylonians this time. The earliest mention of this constellation was in the 4th century BC by the Greek poet Aratus. Ophiuchus was said to represent the god Apollo struggling with the huge snake that guarded the Oracle of Delphi. Later, the constellation was re-associated with Laocoön who warned the Trojans about the Trojan horse and was slain by a pair of sea serpents as punishment.



## Facts

Ophiuchus is visible at latitudes between  $+80^\circ$  and  $-80^\circ$ , i.e., throughout the entire populated world. It is best seen at 9:00 PM local time during July. There are several minor meteor showers that radiate outwards from Ophiuchus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Rasalhague (/ræsəlheɪg/)	$\alpha$	$17^{\text{h}}34^{\text{m}}56.1^{\text{s}}$	$+12^\circ33'36.1''$	2.1	Pale Blue	$48.6 \pm 0.8 \text{ ly}$	A5III + K5-7V
□	Sabik (/seibik/)	$\eta$	$17^{\text{h}}10^{\text{m}}22.7^{\text{s}}$	$-15^\circ43'29.7''$	2.4	Blue	$88 \pm 2 \text{ ly}$	A1IV + A1IV
□		$\zeta$	$16^{\text{h}}37^{\text{m}}9.5^{\text{s}}$	$-10^\circ34'1.5''$	2.6	Blue	$366 \pm 8 \text{ ly}$	O9.5V
□	Yed Prior (/jɛd 'praɪər/)	$\delta$	$16^{\text{h}}14^{\text{m}}20.7^{\text{s}}$	$-3^\circ41'39.6''$	2.8	Orange	$171 \pm 1 \text{ ly}$	M0.5III
□	Cebalrai (/səbəl'reɪ.i/)	$\beta$	$17^{\text{h}}43^{\text{m}}28.4^{\text{s}}$	$+4^\circ34'2.3''$	2.8	Pale Orange	$81.8 \pm 0.3 \text{ ly}$	K2III
□		$\kappa$	$16^{\text{h}}57^{\text{m}}40.1^{\text{s}}$	$+9^\circ22'30.1''$	3.2	Pale Orange	$91.5 \pm 0.5 \text{ ly}$	K2III
□	Yed Posterior (/jɛd pə'stɪəriər/)	$\varepsilon$	$16^{\text{h}}18^{\text{m}}19.3^{\text{s}}$	$-4^\circ41'33.0''$	3.2	Pale Orange	$106.9 \pm 0.7 \text{ ly}$	G9.5IIIb
□		$\theta$	$17^{\text{h}}22^{\text{m}}0.6^{\text{s}}$	$-24^\circ59'58.4''$	3.3	Blue	$436 \pm 10 \text{ ly}$	B2IV
□		$\nu$	$17^{\text{h}}59^{\text{m}}2.0^{\text{s}}$	$-9^\circ46'25.1''$	3.3	Pale Orange	$151 \pm 2 \text{ ly}$	K0III
□		$\gamma$	$17^{\text{h}}47^{\text{m}}53.6^{\text{s}}$	$+2^\circ42'26.2''$	3.8	Blue	$102.8 \pm 0.7 \text{ ly}$	A0V

□		$\lambda$	16 <sup>h</sup> 30 <sup>m</sup> 54.8 <sup>s</sup>	+1°59'2.1"	3.8	Blue	173 ± 5 ly	A0V + A4V
□		$\chi$	16 <sup>h</sup> 27 <sup>m</sup> 1.4 <sup>s</sup>	-18°27'22.5"	4.2	White	530 ± 20 ly	B2V
□		d	17 <sup>h</sup> 27 <sup>m</sup> 21.3 <sup>s</sup>	-29°52'1.3"	4.3	White	111.6 ± 0.8 ly	F5III-IV
□		$\phi$	16 <sup>h</sup> 31 <sup>m</sup> 8.4 <sup>s</sup>	-16°36'45.8"	4.3	Pale Orange	244 ± 4 ly	G8III
□		$\psi$	16 <sup>h</sup> 24 <sup>m</sup> 6.2 <sup>s</sup>	-20°2'14.4"	4.5	Pale Orange	199 ± 3 ly	K0II-III
□		$\rho$	16 <sup>h</sup> 25 <sup>m</sup> 35.1 <sup>s</sup>	-23°26'49.8"	4.6	White	360 ± 40 ly	B2-3V + B2V
□		v	16 <sup>h</sup> 27 <sup>m</sup> 48.2 <sup>s</sup>	-8°22'18.2"	4.6	Pale Blue	134 ± 5 ly	A5V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		IC 4665	17 <sup>h</sup> 46 <sup>m</sup> 18 <sup>s</sup>	+5°43'0"	4.2	OpCl	45'	1.4 kly
□	Tweedledum Cluster	NGC 6633	18 <sup>h</sup> 27 <sup>m</sup> 15.2 <sup>s</sup>	+6°30'30"	4.6	OpCl	27'	1 kly
□		M10	16 <sup>h</sup> 57 <sup>m</sup> 8.9 <sup>s</sup>	-4°5'58.1"	6.4	GbCl	20'	14.3 kly
□	Flickering Globular	M62	17 <sup>h</sup> 1 <sup>m</sup> 12.6 <sup>s</sup>	-30°6'44.5"	6.5	GbCl	15'	21.5 kly
□		NGC 6284	17 <sup>h</sup> 4 <sup>m</sup> 28.7 <sup>s</sup>	-24°45'51.2"	7.4	GbCl	6.2'	49.9 kly
□		NGC 6401	17 <sup>h</sup> 38 <sup>m</sup> 36.9 <sup>s</sup>	-23°54'31.5"	7.4	GbCl	4.8'	24 kly
□		M19	17 <sup>h</sup> 2 <sup>m</sup> 37.7 <sup>s</sup>	-26°16'4.6"	7.5	GbCl	17'	28.7 kly
□	Gumball Cluster	M12	16 <sup>h</sup> 47 <sup>m</sup> 14.2 <sup>s</sup>	-1°56'54.7"	7.7	GbCl	16'	16.4 kly
□		M9	17 <sup>h</sup> 19 <sup>m</sup> 11.8 <sup>s</sup>	-18°30'58.5"	7.9	GbCl	9.3'	25.8 kly
□		NGC 6356	17 <sup>h</sup> 23 <sup>m</sup> 35.0 <sup>s</sup>	-17°48'47"	8.2	GbCl	10'	49.6 kly
□		M14	17 <sup>h</sup> 37 <sup>m</sup> 36.2 <sup>s</sup>	-3°14'45.3"	8.3	GbCl	11'	30.3 kly
□		NGC 6355	17 <sup>h</sup> 23 <sup>m</sup> 58.6 <sup>s</sup>	-26°21'12"	8.6	GbCl	4.2'	31 kly
□		M107	16 <sup>h</sup> 32 <sup>m</sup> 31.9 <sup>s</sup>	-13°3'13.6"	8.9	GbCl	10'	20.9 kly
□		NGC 6293	17 <sup>h</sup> 10 <sup>m</sup> 10.4 <sup>s</sup>	-26°34'54.2"	9.0	GbCl	7.9'	31 kly
□		NGC 6304	17 <sup>h</sup> 14 <sup>m</sup> 32.3 <sup>s</sup>	-29°27'43.3"	9.0	GbCl	3.8'	19.2 kly
□		NGC 6316	17 <sup>h</sup> 16 <sup>m</sup> 37.4 <sup>s</sup>	-28°8'24.0"	9.0	GbCl	4.9'	33.9 kly
□	Emerald Nebula	NGC 6572	18 <sup>h</sup> 12 <sup>m</sup> 6 <sup>s</sup>	+6°51'13"	9.0	PNeb	6"	700 ly
□		NGC 6287	17 <sup>h</sup> 5 <sup>m</sup> 19.3 <sup>s</sup>	-22°42'29"	9.3	GbCl	4.8'	30.3 kly
□		NGC 6342	17 <sup>h</sup> 21 <sup>m</sup> 10.1 <sup>s</sup>	-19°35'15"	9.7	GbCl	4.4'	28 kly
□		NGC 6426	17 <sup>h</sup> 44 <sup>m</sup> 54.7 <sup>s</sup>	+3°10'13"	11.0	GbCl	4.2'	67.2 kly
□	Little Ghost Nebula	NGC 6369	17 <sup>h</sup> 29 <sup>m</sup> 20.5 <sup>s</sup>	-23°45'34.8"	12.0	PNeb	28"	3.7 kly
□	Starfish Galaxy	NGC 6240	16 <sup>h</sup> 52 <sup>m</sup> 58.9 <sup>s</sup>	+2°24'3"	12.8	SpiGal	2.1'	400 Mly

## Notes

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# Pavo

“The Peacock”

Pronunciation: /pəvōō/

Genitive: Pavonis (/pə'vōōnɪs/)

Abbreviation: Pav

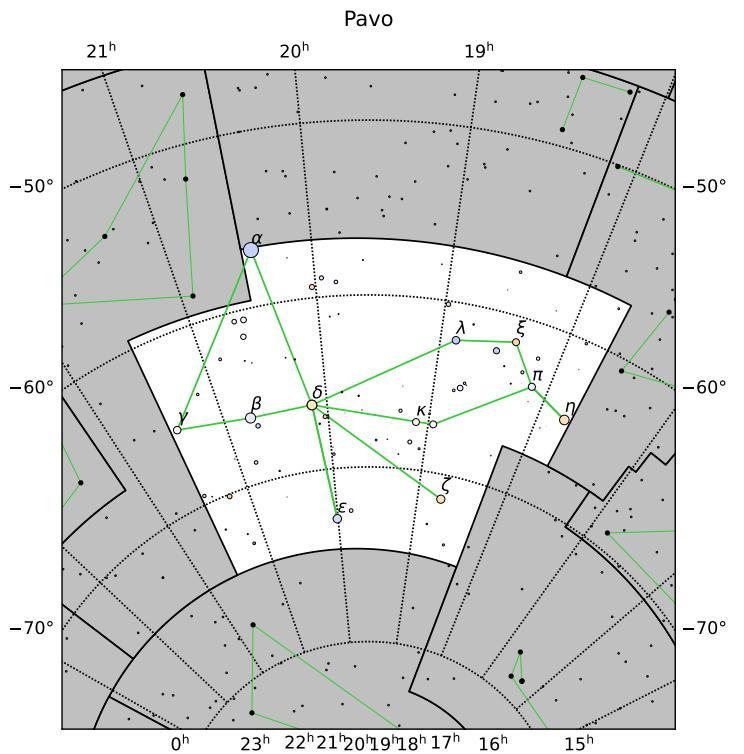
## History

Pavo is one of the twelve constellations created by Dutch astronomer Petrus Plancius in 1598 named after one of the new animals Europeans saw in the Southern Hemisphere. This peacock was probably the green peacock native to Southeast Asia rather than the blue peacock native to India.

## Facts

Pavo is visible at latitudes between  $+30^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as Central America, the Sahara, and India. It is best visible around 9:00 PM local time during August. There are two minor meteor showers in Pavo.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Peacock (/pirkɒk/)	$\alpha$	20 <sup>h</sup> 25 <sup>m</sup> 38.9 <sup>s</sup>	-56°44'6.3"	1.9	Blue	$179 \pm 5$ ly	B3V
□		$\beta$	20 <sup>h</sup> 44 <sup>m</sup> 57.5 <sup>s</sup>	-66°12'11.6"	3.4	Pale Blue	$135.1 \pm 0.9$ ly	A5IV
□		$\delta$	20 <sup>h</sup> 8 <sup>m</sup> 43.6 <sup>s</sup>	-66°10'55.4"	3.6	Pale Yellow	$19.89 \pm 0.01$ ly	G8IV
□		$\eta$	17 <sup>h</sup> 45 <sup>m</sup> 44.0 <sup>s</sup>	-64°43'25.9"	3.6	Orange	$352 \pm 7$ ly	K2II
□		$\varepsilon$	20 <sup>h</sup> 0 <sup>m</sup> 35.6 <sup>s</sup>	-72°54'37.8"	4.0	Blue	$105.1 \pm 0.6$ ly	A0V
□		$\zeta$	18 <sup>h</sup> 43 <sup>m</sup> 2.1 <sup>s</sup>	-71°25'41.2"	4.0	Orange	$218 \pm 3$ ly	K0III
□		$\gamma$	21 <sup>h</sup> 26 <sup>m</sup> 26.6 <sup>s</sup>	-65°21'58.3"	4.2	White	$30.21 \pm 0.05$ ly	F9V
□		$\lambda$	18 <sup>h</sup> 52 <sup>m</sup> 13.0 <sup>s</sup>	-62°11'15.3"	4.2	Blue	$1400 \pm 100$ ly	B2V
□		$\pi$	18 <sup>h</sup> 8 <sup>m</sup> 34.8 <sup>s</sup>	-63°40'6.8"	4.3	Pale Blue	$130.0 \pm 0.9$ ly	F0III
□		$\xi$	18 <sup>h</sup> 23 <sup>m</sup> 13.6 <sup>s</sup>	-61°29'37.9"	4.4	Orange	$440 \pm 20$ ly	K4III
□		$\kappa$	18 <sup>h</sup> 56 <sup>m</sup> 57.0 <sup>s</sup>	-67°14'0.6"	4.4	Pale Yellow	$590 \pm 30$ ly	F5I-II

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance	
<input type="checkbox"/>	Great Peacock Globular	NGC 6752	19 <sup>h</sup> 10 <sup>m</sup> 52.1 <sup>s</sup>	-59°59'4.4"	5.4	GbCl	20.4'	13 kly	
<input type="checkbox"/>		NGC 6744	19 <sup>h</sup> 9 <sup>m</sup> 46.1 <sup>s</sup>	-63°51'27"	9.1	SpiGal	20'	31 Mly	
<input type="checkbox"/>		IC 5052	20 <sup>h</sup> 52 <sup>m</sup> 5.6 <sup>s</sup>	-69°12'6"	10.6	SpiGal	5.9'	24 Mly	
<input type="checkbox"/>		Condor Galaxy	NGC 6872	20 <sup>h</sup> 16 <sup>m</sup> 56.6 <sup>s</sup>	-70°46'4.6"	10.7	SpiGal	6'	212 Mly
<input type="checkbox"/>		IC 4662	17 <sup>h</sup> 47 <sup>m</sup> 8.9 <sup>s</sup>	-64°38'30.3"	11.3	IrrGal	3.2'	8 Mly	
<input type="checkbox"/>		NGC 6810	19 <sup>h</sup> 43 <sup>m</sup> 34.3 <sup>s</sup>	-58°39'20.1"	11.6	SpiGal	3.2'	87 Mly	
<input type="checkbox"/>		NGC 6782	19 <sup>h</sup> 23 <sup>m</sup> 57.9 <sup>s</sup>	-59°55'21.0"	11.8	SpiGal	1.2'	173 Mly	
<input type="checkbox"/>		NGC 6753	19 <sup>h</sup> 11 <sup>m</sup> 23.6 <sup>s</sup>	-57°2'58.4"	11.9	SpiGal	2.4'	142 Mly	

## Notes

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# Sagitta

“The Arrow”

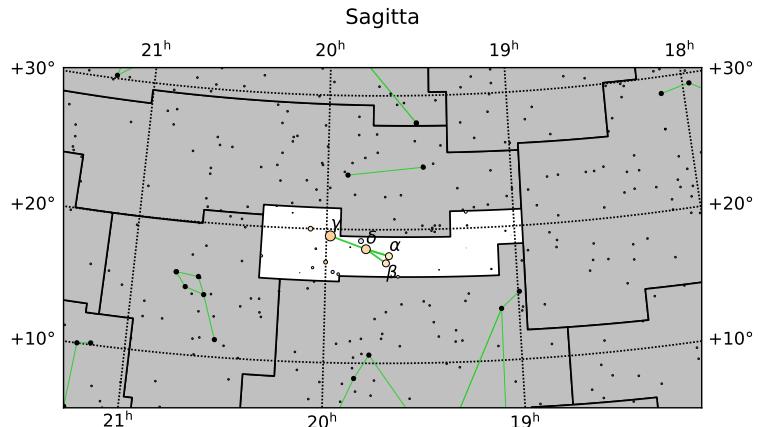
Pronunciation: /sə'dʒɪtə/

Genitive: Sagittae (/sə'dʒɪti:/)

Abbreviation: Sge

## History

Sagitta is a relatively small constellation described by the ancient Greeks as the arrow that Heracles used to kill the eagle that perpetually ate Prometheus' liver. Alternatively, it could be the arrow that Apollo used to kill the Cyclopes.



## Facts

Sagitta is visible at latitudes between  $+90^\circ$  and  $-70^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM during August. There are no meteor showers in Sagitta.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\gamma$	$19^{\text{h}}58^{\text{m}}45.4^{\text{s}}$	$+19^\circ29'31.7''$	3.5	Orange	$288 \pm 4$ ly	M0III
□		$\delta$	$19^{\text{h}}47^{\text{m}}23.3^{\text{s}}$	$+18^\circ32'3.5''$	3.8	Orange	$550 \pm 20$ ly	M2II + B9.5V
□	Sham (/ʃæm/)	$\alpha$	$19^{\text{h}}40^{\text{m}}5.8^{\text{s}}$	$+18^\circ0'50.0''$	4.4	Pale Orange	$382 \pm 8$ ly	G1III
□		$\beta$	$19^{\text{h}}41^{\text{m}}2.9^{\text{s}}$	$+17^\circ28'33.7''$	4.4	Pale Orange	$420 \pm 10$ ly	G8IIIa

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		M71	$19^{\text{h}}53^{\text{m}}46.5^{\text{s}}$	$+18^\circ46'45.1''$	6.1	GbCl	$7.2'$	13 kly
□		NGC 6886	$20^{\text{h}}12^{\text{m}}42.8^{\text{s}}$	$+19^\circ59'22.6''$	11.8	PNeb	$8''$	15 kly

## Notes

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# Sagittarius

“The Archer”

Pronunciation: /sædʒɪ'tɛəriəs/  
Genitive: Sagittarii (/sædʒɪ'tɛəriəi/)  
Abbreviation: Sgr

## History

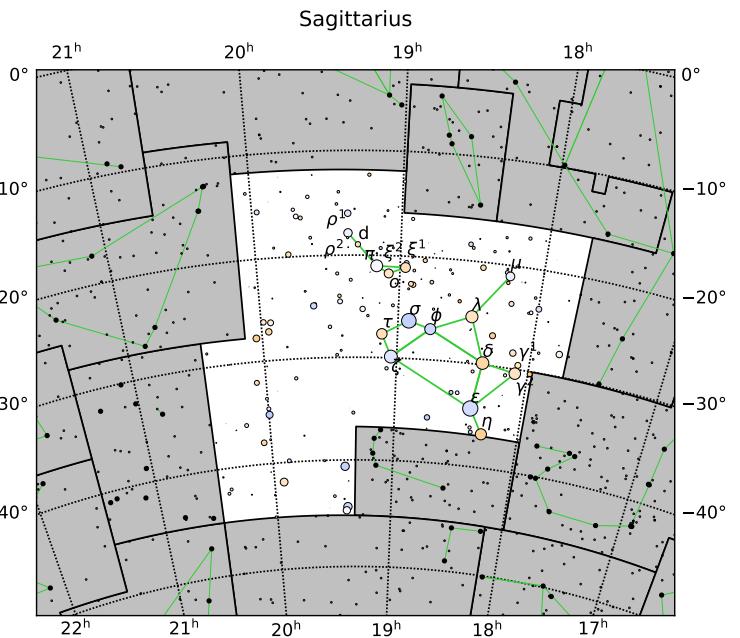
Sagittarius was first identified by the ancient Babylonians as the god Nergal, a centaur-like creature firing an arrow from a bow. The ancient Greeks took this idea and made it a true centaur, a half-human half-horse being. Some myths identify Sagittarius with the Chiron, who changed into a horse to escape his wife Rhea. Other myths describe him as Crotus who the Greeks credited with inventing archery.

## Facts

Sagittarius is visible at latitudes between  $+55^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as central Canada, central UK, and Denmark. It is best seen at around 9:00 PM local time during August. There are no meteor showers in Sagittarius.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Kaus Australis (/kɔ:s ɔ:streilis/)	$\varepsilon$	18 <sup>h</sup> 24 <sup>m</sup> 10.3 <sup>s</sup>	$-34^\circ 23' 4.6''$	1.9	Blue	$143 \pm 2$ ly	B9.5III
□	Nunki (nʌŋki/)	$\sigma$	18 <sup>h</sup> 55 <sup>m</sup> 15.9 <sup>s</sup>	$-26^\circ 17' 48.2''$	2.1	Blue	$228 \pm 5$ ly	B2.5V
□	Ascella (/ə'selə/)	$\zeta$	19 <sup>h</sup> 2 <sup>m</sup> 36.7 <sup>s</sup>	$-29^\circ 52' 48.2''$	2.6	Blue	$88 \pm 2$ ly	A2.5V
□	Kaus Media (/kɔ:s 'mri:dia/)	$\delta$	18 <sup>h</sup> 20 <sup>m</sup> 59.6 <sup>s</sup>	$-29^\circ 49' 41.2''$	2.7	Orange	$348 \pm 7$ ly	K3III
□	Kaus Borealis (/kɔ:s bɔri'ælis/)	$\lambda$	18 <sup>h</sup> 27 <sup>m</sup> 58.2 <sup>s</sup>	$-25^\circ 25' 18.1''$	2.8	Pale Orange	$78.2 \pm 0.3$ ly	K0IV
□	Albaldah (/æl'bɔ:lðə/)	$\pi$	19 <sup>h</sup> 9 <sup>m</sup> 45.8 <sup>s</sup>	$-21^\circ 1' 25.0''$	2.9	White	$520 \pm 20$ ly	F2II
□	Alnasl (/æl'næzəl/)	$\gamma^2$	18 <sup>h</sup> 5 <sup>m</sup> 48.5 <sup>s</sup>	$-30^\circ 25' 26.7''$	3.0	Pale Orange	$96.9 \pm 0.5$ ly	K1III
□		$\eta$	18 <sup>h</sup> 17 <sup>m</sup> 37.6 <sup>s</sup>	$-36^\circ 45' 42.1''$	3.1	Orange	$146 \pm 2$ ly	M2III + F7V
□		$\phi$	18 <sup>h</sup> 45 <sup>m</sup> 39.4 <sup>s</sup>	$-26^\circ 59' 26.8''$	3.2	Blue	$239 \pm 3$ ly	B8.5III
□		$\tau$	19 <sup>h</sup> 6 <sup>m</sup> 56.4 <sup>s</sup>	$-27^\circ 40' 13.5''$	3.3	Orange	$115 \pm 1$ ly	K1III
□		$\xi^2$	18 <sup>h</sup> 57 <sup>m</sup> 43.8 <sup>s</sup>	$-21^\circ 6' 24.0''$	3.5	Orange	$370 \pm 20$ ly	G8II-III
□		$\circ$	19 <sup>h</sup> 4 <sup>m</sup> 41.0 <sup>s</sup>	$-21^\circ 44' 29.4''$	3.8	Pale Orange	$142 \pm 1$ ly	G9IIIb



□	Polis (/polis/)	$\mu$	18 <sup>h</sup> 13 <sup>m</sup> 45.8 <sup>s</sup>	-21°3'32"	3.9	Pale Blue	3000 ly	B8I + B1.5V + B9III + B2IV + B2.5V
□		$\rho^1$	19 <sup>h</sup> 21 <sup>m</sup> 40.4 <sup>s</sup>	-17°50'49.9"	3.9	Pale Blue	127.0 ± 0.9 ly	A9IV
□		$\gamma^1$	18 <sup>h</sup> 5 <sup>m</sup> 1.2 <sup>s</sup>	-29°34'48.3"	4.3	Pale Orange	1400 ± 100 ly	F4Ib + A5V + A0V
□		d	19 <sup>h</sup> 17 <sup>m</sup> 38.1 <sup>s</sup>	-18°57'10.5"	4.9	Pale Orange	470 ± 10 ly	G8II-III
□		$\xi^1$	18 <sup>h</sup> 57 <sup>m</sup> 20.5 <sup>s</sup>	-20°39'22.9"	5.1	Blue	2100 ly	B9-A0Ib
□		$\rho^2$	19 <sup>h</sup> 21 <sup>m</sup> 50.9 <sup>s</sup>	-18°18'30.2"	5.9	Pale Orange	330 ± 10 ly	K0III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Small Sagittarius Star Cloud	M24	18 <sup>h</sup> 17 <sup>m</sup>	-18°29'	2.5	StrCld	2°	10 kly
□		NGC 6530	18 <sup>h</sup> 4 <sup>m</sup> 31.0 <sup>s</sup>	-24°21'30"	4.6	OpCl	14'	4.3 kly
□		M25	18 <sup>h</sup> 31 <sup>m</sup> 47.0 <sup>s</sup>	-19°7'0"	4.9	OpCl	36'	2 kly
□		M22	18 <sup>h</sup> 36 <sup>m</sup> 23.9 <sup>s</sup>	-23°54'17.1"	5.1	GbCl	32'	10.6 kly
□		M23	17 <sup>h</sup> 57 <sup>m</sup> 4 <sup>s</sup>	-18°59'6"	5.5	OpCl	35'	2.1 kly
□	Lagoon Nebula	M8	18 <sup>h</sup> 3 <sup>m</sup> 37 <sup>s</sup>	-24°23'12"	6.0	Neb	1.5'	4.1 kly
□	Omega Nebula	M17	18 <sup>h</sup> 20 <sup>m</sup> 26 <sup>s</sup>	-16°10'36"	6.0	Neb	11'	5.5 kly
□	Trifid Nebula	M20	18 <sup>h</sup> 2 <sup>m</sup> 23 <sup>s</sup>	-23°1'48"	6.3	Neb	28'	4.1 kly
□	Webb's Cross	M21	18 <sup>h</sup> 4 <sup>m</sup> 13.0 <sup>s</sup>	-22°29'24"	6.5	OpCl	14'	3.9 kly
□		NGC 6723	18 <sup>h</sup> 59 <sup>m</sup> 33.2 <sup>s</sup>	-36°37'56.1"	6.8	GbCl	11'	28.4 kly
□		M55	19 <sup>h</sup> 39 <sup>m</sup> 59.7 <sup>s</sup>	-30°57'53.1"	7.4	GbCl	19'	17.6 kly
□		M18	18 <sup>h</sup> 19 <sup>m</sup> 58.0 <sup>s</sup>	-17°6'6"	7.5	OpCl	9.8'	4.2 kly
□		NGC 6624	18 <sup>h</sup> 23 <sup>m</sup> 41 <sup>s</sup>	-30°21'39"	7.6	GbCl	8.8'	25.8 kly
□		M28	18 <sup>h</sup> 24 <sup>m</sup> 32.9 <sup>s</sup>	-24°52'11.4"	7.7	GbCl	11.2'	18.3 kly
□		NGC 6553	18 <sup>h</sup> 9 <sup>m</sup> 15.7 <sup>s</sup>	-25°54'27.9"	8.1	GbCl	4.1'	19.6 kly
□		NGC 6522	18 <sup>h</sup> 3 <sup>m</sup> 34.1 <sup>s</sup>	-30°2'2.3"	8.3	GbCl	16.4'	25.1 kly
□		M69	18 <sup>h</sup> 31 <sup>m</sup> 23.1 <sup>s</sup>	-32°20'53.1"	8.3	GbCl	10.8'	29 kly
□		M54	18 <sup>h</sup> 55 <sup>m</sup> 3.3 <sup>s</sup>	-30°28'47.5"	8.4	GbCl	12'	87.4 kly
□		NGC 6520	18 <sup>h</sup> 3 <sup>m</sup> 24 <sup>s</sup>	-27°53'18"	9.0	OpCl	5'	5.9 kly
□		NGC 6544	18 <sup>h</sup> 7 <sup>m</sup> 21 <sup>s</sup>	-24°59'50"	9.0	GbCl	1'	9.5 kly
□		M70	18 <sup>h</sup> 43 <sup>m</sup> 12.8 <sup>s</sup>	-32°17'31.6"	9.1	GbCl	8'	29.4 kly
□		M75	20 <sup>h</sup> 6 <sup>m</sup> 4.9 <sup>s</sup>	-21°55'17.9"	9.2	GbCl	6.8'	68 kly
□		NGC 6540	18 <sup>h</sup> 6 <sup>m</sup> 8.6 <sup>s</sup>	-27°45'55.0"	9.3	GbCl	4.8'	17.3 kly
□		NGC 6717	18 <sup>h</sup> 55 <sup>m</sup> 6.0 <sup>s</sup>	-22°42'5.3"	9.3	GbCl	9.9'	23.8 kly
□	Barnard's Galaxy	NGC 6822	19 <sup>h</sup> 44 <sup>m</sup> 56.6 <sup>s</sup>	-14°47'21"	9.3	IrrGal	15.5'	1.6 Mly
□		NGC 6569	18 <sup>h</sup> 13 <sup>m</sup> 38.9 <sup>s</sup>	-31°49'35.2"	9.5	GbCl	7'	35.5 kly

□		NGC 6638	18 <sup>h</sup> 30 <sup>m</sup> 56.2 <sup>s</sup>	-25°29'45"	9.5	GbCl	2'	31.3 kly
□	Little Gem Nebula	NGC 6818	19 <sup>h</sup> 43 <sup>m</sup> 57.8 <sup>s</sup>	-14°9'11.0"	10.0	PNeb	22"	6 kly
□		NGC 6440	17 <sup>h</sup> 48 <sup>m</sup> 52.7 <sup>s</sup>	-20°21'36.9"	10.1	GbCl	3.2'	27.7 kly
□		NGC 6528	18 <sup>h</sup> 4 <sup>m</sup> 49.6 <sup>s</sup>	-30°3'20.8"	10.7	GbCl	8.3'	25.8 kly
□		NGC 6603	18 <sup>h</sup> 18.4 <sup>m</sup>	-18°25'	11.1	OpCl	5'	10 kly
□	Box Nebula	NGC 6445	17 <sup>h</sup> 49 <sup>m</sup> 15 <sup>s</sup>	-20°0'35"	11.2	PNeb	32"	4.5 kly

## Notes

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# Scorpius

## “The Scorpion”

Pronunciation: /skɔ:rpiəs/

Genitive: Scorpii (/skɔ:rpiəi/)

Abbreviation: Sco

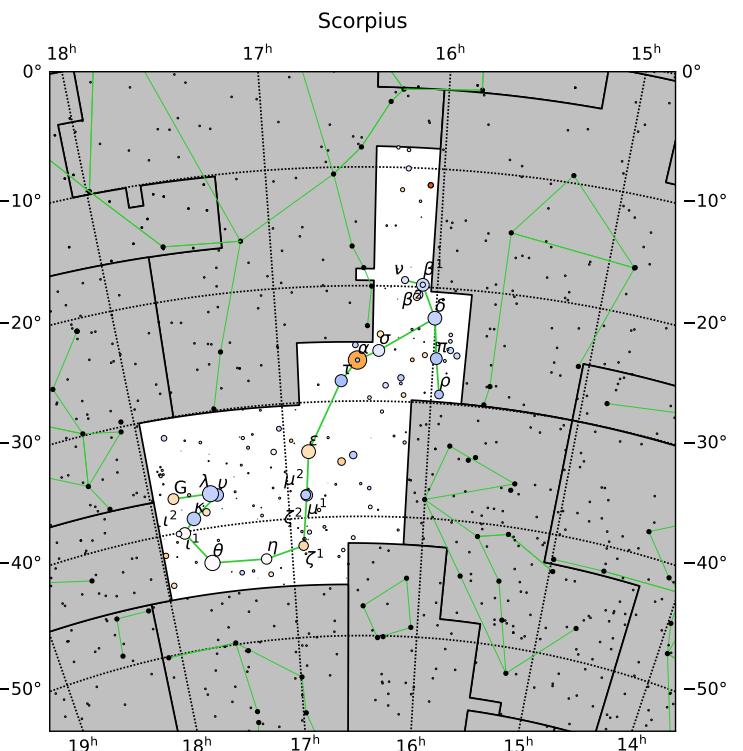
## History

Scorpius can be traced back to the ancient Babylonians, although it is from the ancient Greeks that we get the myths. Most of the myths connect Scorpio to Orion, representing the scorpion sent by Artemis to kill Orion for boasting that he would kill every animal on Earth.

## Facts

Scorpius is visible at latitudes between  $+40^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as northern California, central Ohio, Spain, Turkey, and Japan. It is best seen at around 9:00 PM local time during July. There are a few minor meteor showers in Scorpius.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Antares (/æn'teəri:z/)	$\alpha$	16 <sup>h</sup> 29 <sup>m</sup> 24.5 <sup>s</sup>	-26°25'55.2"	0.6	Dark Orange	550 ly	M1.5Iab-Ib + B2.5V
□	Shaula (/ʃɔ:lə/)	$\lambda$	17 <sup>h</sup> 33 <sup>m</sup> 36.5 <sup>s</sup>	-37°6'13.8"	1.6	Blue	570 ly	B2IV + DA7.9
□	Sargas (/sa:r:gæs/)	$\theta$	17 <sup>h</sup> 37 <sup>m</sup> 19.1 <sup>s</sup>	-42°59'52.2"	1.8	White	300 ly	F0II
□	Dschubba (/dʒʌbə/)	$\delta$	16 <sup>h</sup> 0 <sup>m</sup> 20.0 <sup>s</sup>	-22°37'18.1"	2.3	Blue	443 ly	B0.3IV + B1-3V
□	Larawag (/lærwæg/)	$\varepsilon$	16 <sup>h</sup> 50 <sup>m</sup> 9.8 <sup>s</sup>	-34°17'36"	2.3	Pale Orange	$63.7 \pm 0.3$ ly	K1III
□		$\kappa$	17 <sup>h</sup> 42 <sup>m</sup> 29.3 <sup>s</sup>	-39°1'47.9"	2.4	Blue	$480 \pm 10$ ly	B1.5III
□	Acrab (/ækra:b/)	$\beta^1$	16 <sup>h</sup> 5 <sup>m</sup> 26.2 <sup>s</sup>	-19°48'19.6"	2.6	Blue	$400 \pm 40$ ly	B0.5IV-V + B1.5V
□	Lesath (/lɪ:sæθ/)	$v$	17 <sup>h</sup> 30 <sup>m</sup> 45.8 <sup>s</sup>	-37°17'44.9"	2.7	Blue	$580 \pm 20$ ly	B2IV
□	Paikauhale (/paikau'hælei/)	$\tau$	16 <sup>h</sup> 35 <sup>m</sup> 53.0 <sup>s</sup>	-28°12'57.7"	2.8	Blue	$470 \pm 40$ ly	B0.2V
□	Fang (/fæŋ/)	$\pi$	15 <sup>h</sup> 58 <sup>m</sup> 51.1 <sup>s</sup>	-26°6'50.8"	2.9	Blue	590 ly	B1V + B2V
□	Alniyat (/æl'naijæt/)	$\sigma$	16 <sup>h</sup> 21 <sup>m</sup> 11.3 <sup>s</sup>	-25°35'34.1"	2.9	Pale Blue	$568 \pm 75$ ly	B1III + B1V
□		$\iota^1$	17 <sup>h</sup> 47 <sup>m</sup> 35.1 <sup>s</sup>	-40°7'37.2"	3.0	White	$1900 \pm 200$ ly	F2Ia

<input type="checkbox"/>	Xamidimura (/kæmidi'muərə/)	$\mu^1$	16 <sup>h</sup> 51 <sup>m</sup> 52.2 <sup>s</sup>	-38°2'50.6"	3.0	Blue	500 ly	B1.5V + B6.5V
<input type="checkbox"/>	Fuyue (/fu:juei/)	G	17 <sup>h</sup> 49 <sup>m</sup> 51.5 <sup>s</sup>	-37°2'35.9"	3.2	Pale Orange	125.8 ± 0.7 ly	K2III
<input type="checkbox"/>		$\eta$	17 <sup>h</sup> 12 <sup>m</sup> 9.2 <sup>s</sup>	-43°14'21.1"	3.3	White	73.5 ± 0.3 ly	F5IV
<input type="checkbox"/>	Pipirima (/pri'pirimə/)	$\mu^2$	16 <sup>h</sup> 52 <sup>m</sup> 20.1 <sup>s</sup>	-38°1'3.1"	3.6	Blue	474 ± 8 ly	B2IV
<input type="checkbox"/>		$\zeta^2$	16 <sup>h</sup> 54 <sup>m</sup> 35.0 <sup>s</sup>	-42°21'40.7"	3.6	Orange	132 ± 1 ly	K4III
<input type="checkbox"/>	Iklil (/iklil/)	$\rho$	15 <sup>h</sup> 56 <sup>m</sup> 53.1 <sup>s</sup>	-29°12'50.7"	3.9	Blue	470 ± 10 ly	B2IV
<input type="checkbox"/>	Jabbah (/dʒæbə/)	$\nu$	16 <sup>h</sup> 11 <sup>m</sup> 59.7 <sup>s</sup>	-19°27'38.3"	4.3	Blue	470 ly	B3V
<input type="checkbox"/>		$\zeta^1$	16 <sup>h</sup> 53 <sup>m</sup> 59.7 <sup>s</sup>	-42°21'43.3"	4.7	White	8200 ly	B1.5Ia
<input type="checkbox"/>		$\iota^2$	17 <sup>h</sup> 50 <sup>m</sup> 11.1 <sup>s</sup>	-40°5'25.6"	4.8	Pale Blue	2500 ly	A2Ib
<input type="checkbox"/>		$\beta^2$	16 <sup>h</sup> 5 <sup>m</sup> 26.6 <sup>s</sup>	-19°48'6.9"	4.9	Blue	400 ly	B2V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		NGC 6231	16 <sup>h</sup> 54 <sup>m</sup> 10.9 <sup>s</sup>	-41°49'27"	2.6	OpCl	15'	5.6 kly
<input type="checkbox"/>	Ptolemy Cluster.	M7	17 <sup>h</sup> 53 <sup>m</sup> 51.2 <sup>s</sup>	-34°47'34"	3.3	OpCl	1°20'	980 ly
<input type="checkbox"/>	Butterfly Cluster	M6	17 <sup>h</sup> 40 <sup>m</sup> 20.7 <sup>s</sup>	-32°15'15"	4.2	OpCl	25'	1.6 kly
<input type="checkbox"/>		NGC 6124	16 <sup>h</sup> 25 <sup>m</sup> 36 <sup>s</sup>	-40°40'0"	5.8	OpCl	29'	18.6 kly
<input type="checkbox"/>		M4	16 <sup>h</sup> 23 <sup>m</sup> 35.2 <sup>s</sup>	-26°31'32.7"	5.9	GbCl	26'	7.2 kly
<input type="checkbox"/>		NGC 6388	17 <sup>h</sup> 36 <sup>m</sup> 17.5 <sup>s</sup>	-44°44'8.3"	6.7	GbCl	6.2'	32.3 kly
<input type="checkbox"/>	Bug Nebula	NGC 6302	17 <sup>h</sup> 13 <sup>m</sup> 44.2 <sup>s</sup>	-37°6'15.9"	7.1	PNeb	3'	3.4 kly
<input type="checkbox"/>		NGC 6441	17 <sup>h</sup> 50 <sup>m</sup> 13.1 <sup>s</sup>	-37°3'5.2"	7.2	GbCl	9.6'	42.7 kly
<input type="checkbox"/>		M80	16 <sup>h</sup> 17 <sup>m</sup> 2.4 <sup>s</sup>	-22°58'33.9"	7.9	GbCl	10'	32.6 kly
<input type="checkbox"/>		NGC 6144	16 <sup>h</sup> 27 <sup>m</sup> 14.1 <sup>s</sup>	-26°1'29"	9.6	GbCl	1.8'	29 kly
<input type="checkbox"/>		NGC 6139	16 <sup>h</sup> 27 <sup>m</sup> 41.6 <sup>s</sup>	-38°50'18"	9.7	GbCl	1.6'	30 kly

## Notes

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# Scutum

## “The Shield”

Pronunciation: /skju:təm/  
Genitive: Scuti (/skju:tai/)  
Abbreviation: Sct

## History

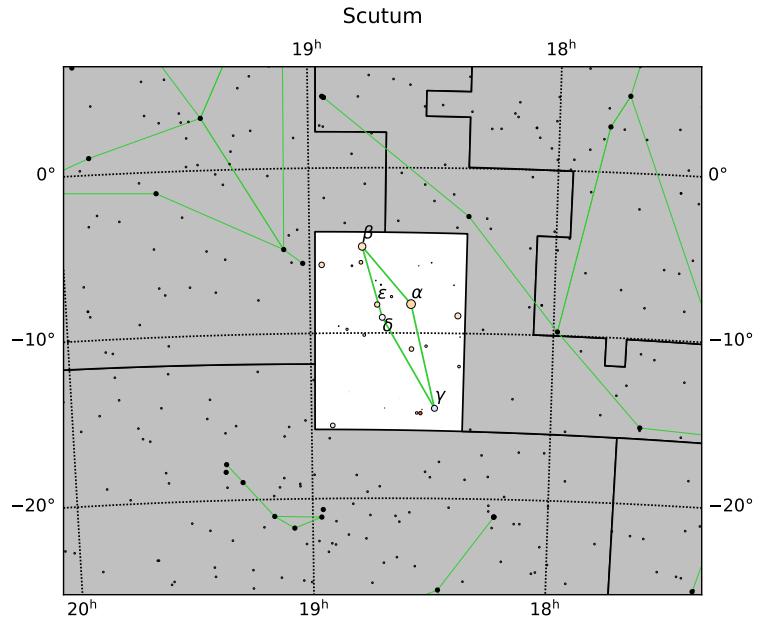
Scutum was one of the constellations created by Polish astronomer Johannes Hevelius in 1684. This shield specifically is the shield of Polish King John III Sobieski to honor the victory at the Battle of Vienna in 1683.

## Facts

Scutum is visible at latitudes between  $+80^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire populated world. It is best seen at 9:00 PM local time during August. There is a minor meteor shower in Scutum.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$18^{\text{h}}35^{\text{m}}12.4^{\text{s}}$	$-8^{\circ}14'38.7''$	3.8	Orange	$199 \pm 3$ ly	K3III
□		$\beta$	$18^{\text{h}}47^{\text{m}}10.5^{\text{s}}$	$-4^{\circ}44'52.3''$	4.2	Pale Orange	900 ly	G4IIa
□		$\gamma$	$18^{\text{h}}29^{\text{m}}11.9^{\text{s}}$	$-14^{\circ}33'56.9''$	4.7	Blue	$319 \pm 8$ ly	A2V
□		$\delta$	$18^{\text{h}}42^{\text{m}}16.4^{\text{s}}$	$-9^{\circ}3'9.2''$	4.8	White	$199 \pm 2$ ly	F2III
□		$\varepsilon$	$18^{\text{h}}43^{\text{m}}31.3^{\text{s}}$	$-8^{\circ}16'30.8''$	4.9	Orange	540 ly	G8IIb



## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Wild Duck Cluster	M11	$18^{\text{h}}51^{\text{m}}5.0^{\text{s}}$	$-6^{\circ}16'12''$	5.8	OpCl	$23'$	6.1 kly
□		M26	$18^{\text{h}}45^{\text{m}}18.0^{\text{s}}$	$-9^{\circ}23'0''$	8.0	OpCl	$14'$	5.2 kly
□		NGC 6712	$18^{\text{h}}53^{\text{m}}4.3^{\text{s}}$	$-8^{\circ}42'21.5''$	8.7		$7.2'$	26.4 kly

## Notes

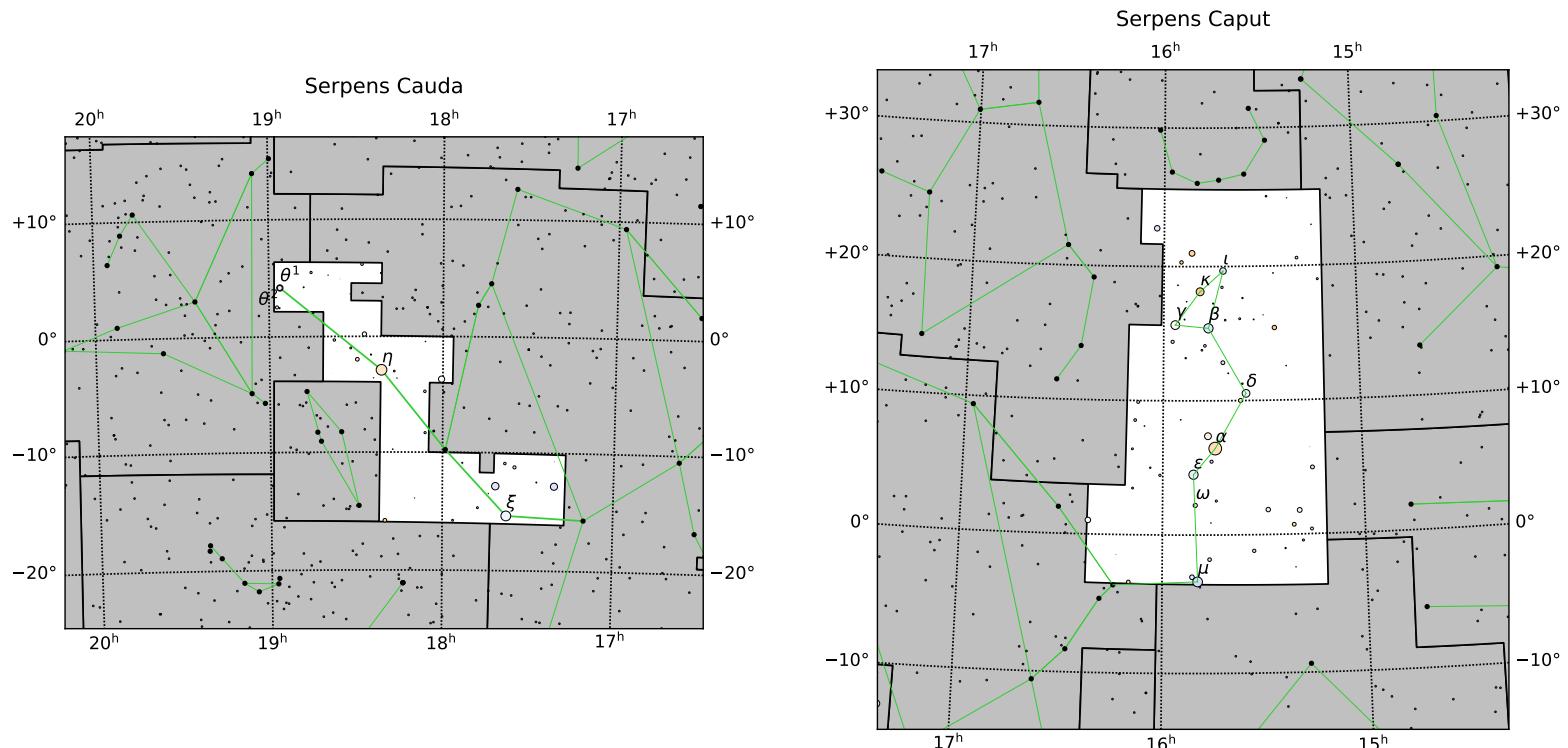
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# Serpens

“The Snake”

Pronunciation: /sɜːrpɪnз/

Genitive: Serpentis (/sər'pɛntɪs/)

Abbreviation: Ser

## History

Unique among the constellations for being split into two regions, Serpens is the snake held by the healer Asclepius according to the ancient Greeks. Snakes were seen as a symbol of rebirth in Greek society, thus explaining why ambulances in the US has a snake coiled around a staff printed on them. Since Serpens is split into two constellations, the head is Serpens Caput and the tail is Serpens Cauda.

## Facts

Serpens is visible at latitudes between  $+80^{\circ}$  and  $-80^{\circ}$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during July. There are no meteor showers in Serpens.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Unukalhai (/ju:nək.æl'hei/)	$\alpha$	15 <sup>h</sup> 44 <sup>m</sup> 16.1 <sup>s</sup>	+6°25'32.3"	2.6	Pale Orange	$74.0 \pm 0.3$ ly	K2IIIb
□		$\eta$	18 <sup>h</sup> 21 <sup>m</sup> 18.6 <sup>s</sup>	-2°53'55.8"	3.3	Pale Orange	$60.5 \pm 0.2$ ly	K0III-IV
□		$\mu$	15 <sup>h</sup> 49 <sup>m</sup> 37.2 <sup>s</sup>	-3°25'48.7"	3.5	Blue	$170 \pm 3$ ly	A0V
□		$\xi$	17 <sup>h</sup> 37 <sup>m</sup> 35.2 <sup>s</sup>	-15°23'54.8"	3.5	White	$105.3 \pm 0.6$ ly	A9III
□		$\beta$	15 <sup>h</sup> 46 <sup>m</sup> 11.3 <sup>s</sup>	+15°25'18.6"	3.7	Blue	$155 \pm 2$ ly	A2V + K3V

□		$\varepsilon$	15 <sup>h</sup> 50 <sup>m</sup> 49.0 <sup>s</sup>	+4°28'39.8"	3.7	Blue	70.4 ± 0.3 ly	A5V
□		$\delta$	15 <sup>h</sup> 34 <sup>m</sup> 48.1 <sup>s</sup>	+10°32'19.9"	3.8	Pale Blue	230 ± 10 ly	A9IV + F0IV
□		$\gamma$	15 <sup>h</sup> 56 <sup>m</sup> 27.2 <sup>s</sup>	+15°39'41.8"	3.9	White	36.70 ± 0.07 ly	F6V
□	Gudja (/gu:dʒə/)	$\kappa$	15 <sup>h</sup> 48 <sup>m</sup> 44.4 <sup>s</sup>	+18°8'29.6"	4.1	Orange	380 ± 10 ly	M0.5III
□		$\iota$	15 <sup>h</sup> 41 <sup>m</sup> 33.1 <sup>s</sup>	+19°40'13.4"	4.5	Blue	190 ± 7 ly	B9V + A1V
□	Alya (/æliə/)	$\theta^1$	18 <sup>h</sup> 56 <sup>m</sup> 13.2 <sup>s</sup>	+4°12'19.9"	4.6	Pale Blue	150 ly	A5V
□		$\theta^2$	18 <sup>h</sup> 56 <sup>m</sup> 13.2 <sup>s</sup>	+4°12'12.9"	5.0	Pale Blue	170 ly	A5V
□		$\omega$	15 <sup>h</sup> 50 <sup>m</sup> 17.5 <sup>s</sup>	+2°11'47.4"	5.2	Pale Orange	273 ± 6 ly	G8III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		M5	15 <sup>h</sup> 18 <sup>m</sup> 33.2 <sup>s</sup>	+2°4'51.7"	6.0	GbCl	23'	24.5 kly
□	Eagle Nebula	M16	18 <sup>h</sup> 18 <sup>m</sup> 48 <sup>s</sup>	-13°48'26"	6.0	Neb	1.2°	5.7 kly
□		NGC 6604	18 <sup>h</sup> 18 <sup>m</sup> 3.0 <sup>s</sup>	-12°14'30"	6.5	OpCl	6'	4.6 kly
□		NGC 5921	15 <sup>h</sup> 21 <sup>m</sup> 56.5 <sup>s</sup>	+5°4'14"	11.5	SpiGal	4.9'	65 Mly
□		NGC 5970	15 <sup>h</sup> 38 <sup>m</sup> 30.0 <sup>s</sup>	+12°11'11.9"	11.6	SpiGal	3'	91.9 Mly
□	Blinking Galaxy	NGC 6118	16 <sup>h</sup> 21 <sup>m</sup> 48.6 <sup>s</sup>	-2°17'0"	12.4	SpiGal	4.7'	82.9 Mly

## Notes

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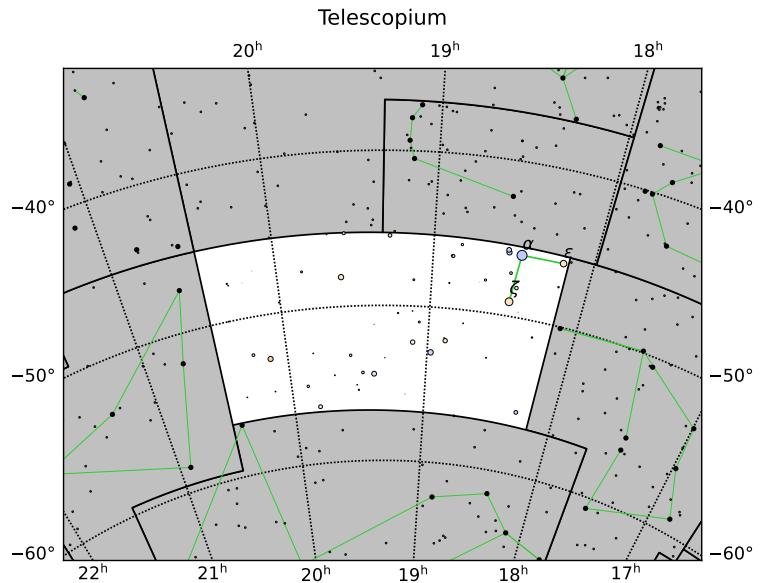
# Telescopium

## “The Telescope”

Pronunciation: /telɪskoʊpiəm/  
Genitive: Telescopii (/telɪskoʊpi.ai/)  
Abbreviation: Tel

## History

Telescopium was another recent addition by French astronomer Nicolas-Louis de Lacaille in 1751. This was not a traditional telescope used for astronomical observing, but instead an aerial telescope without a tube. Instead, the lens was mounted on a tall structure and the observer stood on the ground with the eyepiece and swiveled the lens around with a string or rod.



## Facts

Telescopium is visible at latitudes between  $+40^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire Southern Hemisphere and as far north as northern California, central Ohio, Spain, Turkey, and Japan. It is best seen at around 9:00 PM local time during August. There are no meteor showers within Telescopium.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$18^{\text{h}}26^{\text{m}}58.4^{\text{s}}$	$-45^{\circ}58'6.4''$	3.5	Blue	$278 \pm 4$ ly	B3IV
□		$\zeta$	$18^{\text{h}}28^{\text{m}}49.9^{\text{s}}$	$-49^{\circ}4'14.1''$	4.1	Pale Orange	$126 \pm 1$ ly	K1III-IV
□		$\varepsilon$	$18^{\text{h}}11^{\text{m}}13.8^{\text{s}}$	$-45^{\circ}57'15.9''$	4.5	Pale Orange	$420 \pm 30$ ly	K0III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6584	$18^{\text{h}}18^{\text{m}}37.6^{\text{s}}$	$-52^{\circ}12'56.8''$	8.3	GbCl	$7.9'$	45 kly
□		NGC 6861	$20^{\text{h}}7^{\text{m}}19.5^{\text{s}}$	$-48^{\circ}22'12.8''$	11.0	LenGal	$3'$	85.8 Mly

## Notes

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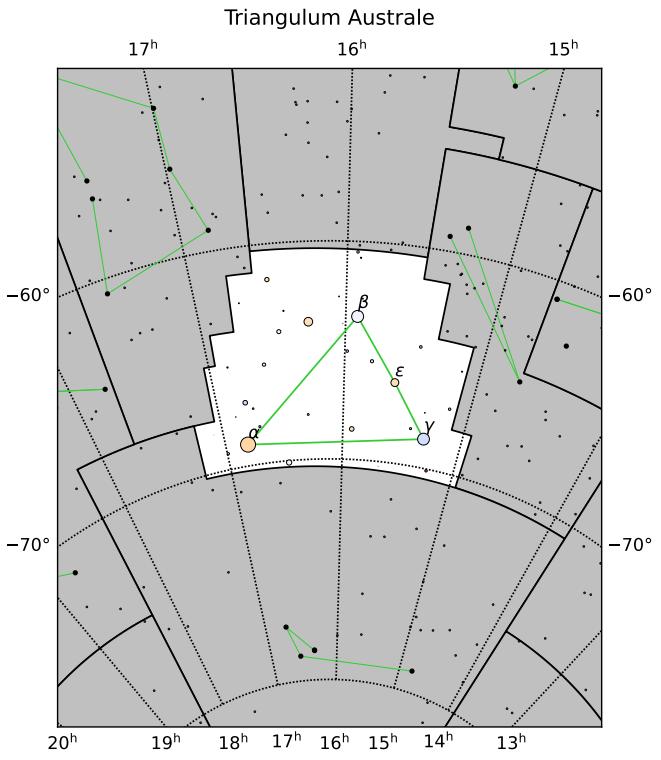
# Triangulum Australe

## “The Southern Triangle”

Pronunciation: /trai'æŋgjuləm əs'treili:/  
Genitive: Trianguli Australis (/trai'æŋgjulai ə'streilis/)  
Abbreviation: TrA

## History

Triangulum Australe has a mysterious history. Supposedly it was Italian explorer Amerigo Vespucci who first described this constellation, but his catalog is now lost. The first depiction was made by Dutch astronomer Petrus Plancius in 1589, but he misnamed it *Triangulus Antarcticus* and placed it in the wrong spot in the sky. His student, Dutch explorer Pieter Keyser, fixed his mistakes and gave it its modern name.



## Facts

Triangulum Australe is visible at latitudes between  $+25^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as Central America, sub-Saharan Africa, India, and Southeast Asia. It is best seen at around 9:00 PM local time during July. There are no meteor showers in Triangulum Australe.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Atria (/eitriə/)	α	16 <sup>h</sup> 48 <sup>m</sup> 39.9 <sup>s</sup>	-69°1'39.8"	1.9	Orange	$391 \pm 7$ ly	K2II-III
□		β	15 <sup>h</sup> 55 <sup>m</sup> 8.6 <sup>s</sup>	-63°25'50.6"	2.9	White	$40.37 \pm 0.08$ ly	F1V
□		γ	15 <sup>h</sup> 18 <sup>m</sup> 54.6 <sup>s</sup>	-68°40'46.4"	2.9	Blue	$184 \pm 1$ ly	A1V
□		ε	15 <sup>h</sup> 36 <sup>m</sup> 43.2 <sup>s</sup>	-66°19'1.3"	4.1	Orange	$202 \pm 2$ ly	K0III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 6025	16 <sup>h</sup> 3 <sup>m</sup> 42 <sup>s</sup>	-60°30'0"	5.1	OpCl	12'	2.7 kly
□		NGC 5979	15 <sup>h</sup> 47 <sup>m</sup> 41 <sup>s</sup>	-61°13'5"	12.1	PNeb	8"	13.3 kly

## Notes

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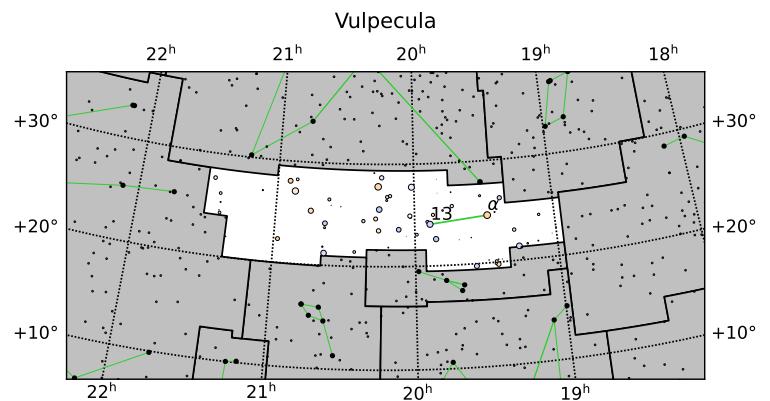
# Vulpecula

## “The Fox”

Pronunciation: /vʌl'pækjʊlə/  
Genitive: Vulpeculae (/vʌl'pækjʊli:/)  
Abbreviation: Vul

## History

Vulpecula was a constellation created by the Polish astronomer Johannes Hevelius in the late 17th century. Originally, it was described as a fox holding a goose in its mouth, but eventually it became known only as the fox. The goose is remembered through the name of Vulpecula’s brightest star, Anser, Latin for goose.



## Facts

Vulpecula is visible at latitudes between  $+90^\circ$  and  $-55^\circ$ , i.e., throughout the entire Northern Hemisphere as well as the entire populated Southern Hemisphere. It is best seen at around 9:00 PM local time during September. There are no meteor showers in Vulpecula.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Anser (/ænsər/)	$\alpha$	$19^{\text{h}}28^{\text{m}}42.3^{\text{s}}$	$+24^\circ39'53.7''$	4.4	Orange	$291 \pm 3 \text{ ly}$	M1III
□		13	$19^{\text{h}}53^{\text{m}}27.7^{\text{s}}$	$+24^\circ4'46.6''$	4.6	Blue	$339 \pm 3 \text{ ly}$	B9.5III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Brocchi's Cluster	Cr 399	$19^{\text{h}}25^{\text{m}}24^{\text{s}}$	$+20^\circ11'0''$	3.6	Ast	$1^\circ$	1.2 kly
□		NGC 6885	$20^{\text{h}}12^{\text{m}}0^{\text{s}}$	$+26^\circ29'0''$	5.7	OpCl	$7'$	2 kly
□		NGC 6940	$20^{\text{h}}34^{\text{m}}26^{\text{s}}$	$+28^\circ17'0''$	6.3	OpCl	$25'$	2.5 kly
□		NGC 6823	$19^{\text{h}}43^{\text{m}}9^{\text{s}}$	$+23^\circ18'0''$	7.1	OpCl	$40'$	6 kly
□	Dumbbell Nebula	M27	$19^{\text{h}}59^{\text{m}}36.3^{\text{s}}$	$+22^\circ43'16.1''$	7.5	PNeb	$8'$	1.4 kly
□		NGC 6834	$19^{\text{h}}18^{\text{m}}28.1^{\text{s}}$	$+6^\circ32'19.3''$	7.8	OpCl	$12'$	10.9 kly

## Notes

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# Autumn Constellations

Andromeda	Grus	Pisces
Aquarius	Lacerta	Piscis Austrinus
Aries	Octans	Sculptor
Cassiopeia	Pegasus	Triangulum
Cepheus	Perseus	Tucana
Cetus	Phoenix	

# Andromeda

“Andromeda, the Chained Woman”

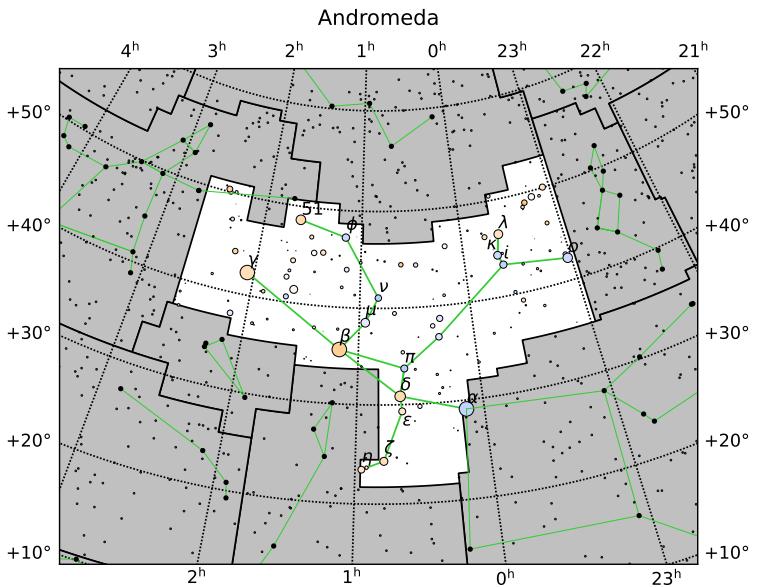
Pronunciation: /æn'dromidə/

Genitive: Andromedae (/æn'dromidi:/)

Abbreviation: And

## History

Andromeda has some firm mythology rooted in the ancient Greeks. Her mother, Cassiopeia, the queen of Ethiopia, bragged that her daughter was more beautiful than the Nereids, daughters of Poseidon. Poseidon punished Cassiopeia for her insolence by sending the sea monster Cetus to attack Ethiopia. The only way to stop the sea monster was to sacrifice her daughter, Andromeda, to the monster, chaining her against a cliff side in full view of the monster. It was the hero Perseus who stumbled upon the chained woman and saved her.



## Facts

Andromeda is visible at latitudes between  $+90^\circ$  and  $-40^\circ$ , i.e., throughout the entire Northern Hemisphere and much of the Southern Hemisphere excluding the southern tips of South America, Australia, and New Zealand. It is best seen at 9:00 PM local time during November. There is one minor meteor shower in Andromeda, the Andromedids, that peak around November 9 at three meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Alpheratz (/ælf'ræts/)	$\alpha$	0 <sup>h</sup> 8 <sup>m</sup> 23.3 <sup>s</sup>	+29°5'25.6"	2.1	Blue	$97 \pm 1$ ly	B8IV + A3V
□	Mirach (/marræk/)	$\beta$	1 <sup>h</sup> 9 <sup>m</sup> 43.9 <sup>s</sup>	+35°37'14.0"	2.1	Orange	$197 \pm 7$ ly	M0III
□	Almach (/ælmæk/)	$\gamma$	2 <sup>h</sup> 3 <sup>m</sup> 54.0 <sup>s</sup>	+42°19'47.0"	2.3	Orange	390 ly	K2IIb
□		$\delta$	0 <sup>h</sup> 39 <sup>m</sup> 19.7 <sup>s</sup>	+30°51'39.7"	3.3	Orange	$105.5 \pm 0.5$ ly	K3III + K4V
□	Nebmus (/nembøs/)	51	1 <sup>h</sup> 37 <sup>m</sup> 59.6 <sup>s</sup>	+48°37'41.6"	3.6	Orange	$169 \pm 4$ ly	K3III
□		$\sigma$	23 <sup>h</sup> 1 <sup>m</sup> 55.3 <sup>s</sup>	+42°19'33.7"	3.6	Blue	$350 \pm 30$ ly	B6III
□		$\lambda$	23 <sup>h</sup> 37 <sup>m</sup> 33.8 <sup>s</sup>	+46°27'29.3"	3.7	Pale Orange	$84.6 \pm 0.3$ ly	G8III-IV
□		$\mu$	0 <sup>h</sup> 56 <sup>m</sup> 45.2 <sup>s</sup>	+38°29'57.6"	3.9	Pale Blue	$130 \pm 4$ ly	A5V
□		$\zeta$	0 <sup>h</sup> 47 <sup>m</sup> 20.3 <sup>s</sup>	+24°16'1.8"	3.9	Pale Orange	$189 \pm 3$ ly	K1III
□		$\kappa$	23 <sup>h</sup> 40 <sup>m</sup> 24.5 <sup>s</sup>	+44°20'2.2"	4.1	Blue	$168 \pm 2$ ly	B9IV

□	$\phi$	1 <sup>h</sup> 9 <sup>m</sup> 30.1 <sup>s</sup>	+47°14'30.5"	4.3	Blue	720 ly	B7V + B9V
□	$\iota$	23 <sup>h</sup> 38 <sup>m</sup> 8.2 <sup>s</sup>	+43°16'5.1"	4.3	Blue	500 ± 10 ly	B8V
□	$\pi$	0 <sup>h</sup> 36 <sup>m</sup> 52.9 <sup>s</sup>	+33°43'9.6"	4.4	Blue	580 ± 20 ly	B5V
□	$\varepsilon$	0 <sup>h</sup> 38 <sup>m</sup> 33.3 <sup>s</sup>	+29°18'42.3"	4.4	Pale Orange	164 ± 2 ly	G6III
□	$\eta$	0 <sup>h</sup> 57 <sup>m</sup> 12.4 <sup>s</sup>	+23°25'3.5"	4.4	Pale Orange	240 ± 10 ly	G8III-IV + G8III-IV
□	$\nu$	0 <sup>h</sup> 49 <sup>m</sup> 48.8 <sup>s</sup>	+41°4'44.1"	4.5	Blue	620 ± 20 ly	B4-5V + F8V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Andromeda Galaxy	M31	0 <sup>h</sup> 42 <sup>m</sup> 44.3 <sup>s</sup>	+41°16'9"	3.4	SpiGal	3.1°	2.5 Mly
□		NGC 752	1 <sup>h</sup> 57 <sup>m</sup> 41 <sup>s</sup>	+37°50'0"	5.7	OpCl	1.3°	1.3 kly
□		M32	0 <sup>h</sup> 43 <sup>m</sup> 41.8 <sup>s</sup>	+40°51'55"	8.1	EllGal	8.7'	2.5 Mly
□	Blue Snowball Nebula	NGC 7662	23 <sup>h</sup> 25 <sup>m</sup> 54 <sup>s</sup>	+42°32'6"	8.6	PNeb	37"	4 kly
□		M110	0 <sup>h</sup> 40 <sup>m</sup> 22.1 <sup>s</sup>	+41°41'7.5"	8.9	EllGal	21.9'	2.6 Mly
□	Silver Sliver Galaxy	NGC 891	2 <sup>h</sup> 22 <sup>m</sup> 33.4 <sup>s</sup>	+42°20'57"	10.8	SpiGal	13.5'	27.3 Mly
□		NGC 7640	23 <sup>h</sup> 22 <sup>m</sup> 6.6 <sup>s</sup>	+40°50'43.5"	11.1	SpiGal	10.5'	29.7 Mly
□	Mirach's Ghost	NGC 404	1 <sup>h</sup> 9 <sup>m</sup> 27 <sup>s</sup>	+35°43'4"	11.2	LenGal	3.5'	10 Mly

## Notes

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# Aquarius

## “The Water-Bearer”

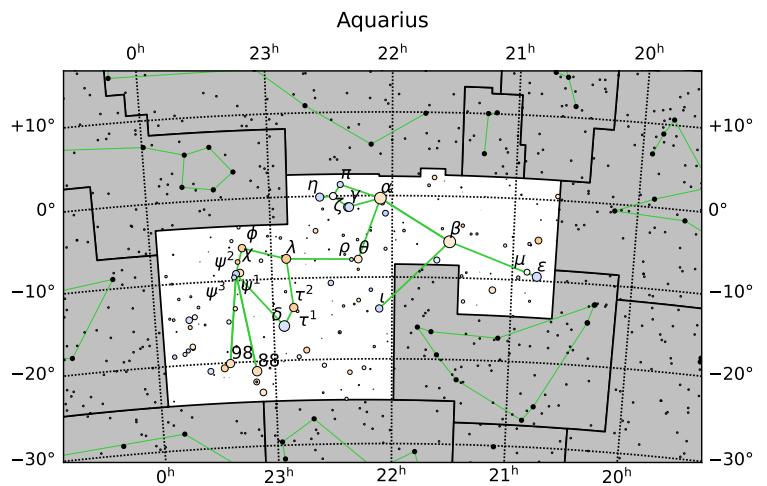
Pronunciation: /ə'kwɛəriəs/

Genitive: Aquarii (/ə'kwɛəriəi/)

Abbreviation: Aqr

## History

Aquarius as a constellation can be traced back to the ancient Babylonians who knew it as the god Ea, one of the first gods in the Babylonian mythos. In ancient Greek mythology, this water-bearer was instead Ganymede, a young boy whom Zeus took a liking to and kidnapped him to be the cup-bearer to the gods on Mount Olympus.



## Facts

Aquarius is visible at latitudes between  $+65^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire Southern Hemisphere and as far north as central Alaska and Scandinavia. It is best seen at around 9:00 PM local time during October. There are three major meteor showers in Aquarius: the Eta Aquariids, which peak around May 6 at 35 meteors per hour; the Delta Aquariids, which peaks around July 29 at 20 meteors per hour; and the Iota Aquariids, which peaks around August 6 at 8 meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Sadalsuud (/sædəl'su:əd/)	$\beta$	$21^{\text{h}}31^{\text{m}}33.5^{\text{s}}$	$-5^{\circ}34'16.2''$	2.9	Pale Orange	$550 \pm 20$ ly	G0Ib
□	Sadalmelik (/sædəl'mɛlk/)	$\alpha$	$22^{\text{h}}5^{\text{m}}47.0^{\text{s}}$	$-0^{\circ}19'11.5''$	2.9	Pale Orange	$520 \pm 20$ ly	G2Ib
□	Skat (/skæt/)	$\delta$	$22^{\text{h}}54^{\text{m}}39.0^{\text{s}}$	$-15^{\circ}49'15.0''$	3.3	Blue	$113 \pm 3$ ly	A3V
□		$\zeta$	$22^{\text{h}}28^{\text{m}}49.9^{\text{s}}$	$-0^{\circ}1'11.8''$	3.7	White	$92 \pm 3$ ly	F3V + F6IV
□		88	$23^{\text{h}}9^{\text{m}}26.8^{\text{s}}$	$-21^{\circ}10'20.7''$	3.7	Orange	$271 \pm 5$ ly	K1III
□		$\lambda$	$22^{\text{h}}52^{\text{m}}36.9^{\text{s}}$	$-7^{\circ}34'46.6''$	3.7	Orange	$365 \pm 10$ ly	M2.5III
□		$\varepsilon$	$20^{\text{h}}47^{\text{m}}40.6^{\text{s}}$	$-9^{\circ}29'44.8''$	3.8	Blue	$208 \pm 3$ ly	A1V
□	Sadachbia (/sə'dækbiə/)	$\gamma$	$22^{\text{h}}21^{\text{m}}39.4^{\text{s}}$	$-1^{\circ}23'14.4''$	3.8	Blue	$164 \pm 9$ ly	A0V
□		98	$23^{\text{h}}22^{\text{m}}58.2^{\text{s}}$	$-20^{\circ}6'2.1''$	4.0	Orange	$163 \pm 2$ ly	K0III
□		$\eta$	$22^{\text{h}}35^{\text{m}}21.4^{\text{s}}$	$-0^{\circ}7'3.0''$	4.0	Blue	$168 \pm 2$ ly	B9IV-V
□		$\tau^2$	$22^{\text{h}}49^{\text{m}}35.5^{\text{s}}$	$-13^{\circ}35'33.5''$	4.0	Orange	$318 \pm 9$ ly	K5III
□	Ancha (/æŋkə/)	$\theta$	$22^{\text{h}}16^{\text{m}}50.0^{\text{s}}$	$-7^{\circ}46'59.8''$	4.2	Pale orange	$187 \pm 2$ ly	G8III-IV

□		$\phi$	23 <sup>h</sup> 14 <sup>m</sup> 19.4 <sup>s</sup>	-6°2'56.4"	4.2	Orange	222 ± 6 ly	M1.5III
□		$\psi^1$	23 <sup>h</sup> 15 <sup>m</sup> 53.5 <sup>s</sup>	-9°5'15.9"	4.2	Orange	150 ± 2 ly	K1III
□		$\iota$	22 <sup>h</sup> 6 <sup>m</sup> 26.2 <sup>s</sup>	-13°52'10.9"	4.3	Blue	175 ± 2 ly	B8V
□		$\psi^2$	23 <sup>h</sup> 17 <sup>m</sup> 54.2 <sup>s</sup>	-9°10'57.1"	4.4	Blue	400 ± 20 ly	B5V
□		$\mu$	20 <sup>h</sup> 52 <sup>m</sup> 39.2 <sup>s</sup>	-8°58'59.9"	4.7	White	157 ± 2 ly	A3V
□		$\pi$	22 <sup>h</sup> 25 <sup>m</sup> 16.6 <sup>s</sup>	+1°22'38.6"	4.7	Blue	780 ± 50 ly	B1III-IV
□		$\psi^3$	23 <sup>h</sup> 18 <sup>m</sup> 57.7 <sup>s</sup>	-9°36'38.7"	5.0	Blue	262 ± 9 ly	A0V
□		$\chi$	23 <sup>h</sup> 16 <sup>m</sup> 50.9 <sup>s</sup>	-7°43'35.4"	5.1	Orange	610 ± 40 ly	M3III
□		$\rho$	22 <sup>h</sup> 20 <sup>m</sup> 11.9 <sup>s</sup>	-7°49'16.0"	5.3	Blue	870 ± 40 ly	B8III
□		$\tau^1$	22 <sup>h</sup> 47 <sup>m</sup> 42.8 <sup>s</sup>	-14°3'23.1"	5.7	Blue	355 ± 5 ly	B9V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		M2	21 <sup>h</sup> 33 <sup>m</sup> 27.0 <sup>s</sup>	-0°49'23.7"	6.3	GbCl	16'	55 kly
□	Helix Nebula	NGC 7293	22 <sup>h</sup> 29 <sup>m</sup> 38.6 <sup>s</sup>	-20°50'13.6"	7.6	PNeb	25'	650 ly
□	Saturn Nebula	NGC 7009	21 <sup>h</sup> 4 <sup>m</sup> 10.9 <sup>s</sup>	-11°21'48.3"	8.0	PNeb	41"	5.2 kly
□		M72	20 <sup>h</sup> 53 <sup>m</sup> 27.7 <sup>s</sup>	-12°32'14.3"	9.4	GbCl	6.6'	54.6 kly
□		NGC 7606	23 <sup>h</sup> 19 <sup>m</sup> 4.8 <sup>s</sup>	-8°20'6"	10.8	SpiGal	5.4'	98.5 Mly
□		NGC 7184	22 <sup>h</sup> 2 <sup>m</sup> 39.8 <sup>s</sup>	-20°48'46"	11.1	SpiGal	6'	99.3 Mly
□		NGC 7723	23 <sup>h</sup> 38 <sup>m</sup> 57.1 <sup>s</sup>	-12°57'40"	11.2	SpiGal	3.5'	91.5 Mly
□		NGC 7492	23 <sup>h</sup> 8 <sup>m</sup> 26.7 <sup>s</sup>	-15°36'39"	11.2	GbCl	4.2'	24.5 kly
□		NGC 7727	23 <sup>h</sup> 39 <sup>m</sup> 53.7 <sup>s</sup>	-12°17'34.0"	11.5	SpiGal	4.7'	73 Mly
□	Atoms for Peace Galaxy	NGC 7252	22 <sup>h</sup> 20 <sup>m</sup> 44.8 <sup>s</sup>	-24°40'42"	12.7	LenGal	1.9'	220 Mly

## Notes

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# Aries

## “The Ram”

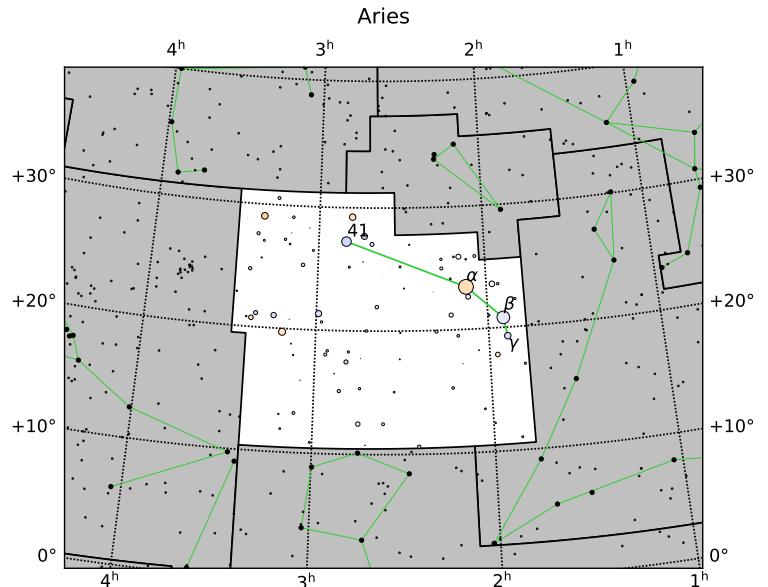
Pronunciation: /ɛəri:z/

Genitive: Arietis (/ə'raɪətəs/)

Abbreviation: Ari

## History

Aries was first associated with a ram by the ancient Babylonians in their myth about Dumuzi the Shepherd. Later, the ancient Greeks knew Aries as the golden ram that rescued Phrixus and Helle on orders from Hermes in the story of Jason and the Argonauts.



## Facts

Aries is visible at latitudes between  $+90^\circ$  and  $-60^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during December. There are several minor meteor showers in Aries, including the Daytime Arietid shower around June 7 with a peak of 54 meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Hamal (/hæməl/)	$\alpha$	2 <sup>h</sup> 7 <sup>m</sup> 10.4 <sup>s</sup>	+23°27'44.7"	2.0	Orange	$65.8 \pm 0.3$ ly	K1III
□	Sheratan (/ʃerətæn/)	$\beta$	1 <sup>h</sup> 54 <sup>m</sup> 38.4 <sup>s</sup>	+20°48'28.9"	2.7	Pale Blue	$59.6 \pm 0.8$ ly	A5V
□	Bharani (/bærəni/)	41	2 <sup>h</sup> 49 <sup>m</sup> 59.0 <sup>s</sup>	+27°15'37.8"	3.6	Blue	$166 \pm 2$ ly	B8V
□	Mesarthim (/me'sa:rθim/)	$\gamma$	1 <sup>h</sup> 53 <sup>m</sup> 31.8 <sup>s</sup>	+19°17'37.9"	3.9	Blue	$164 \pm 8$ ly + A1V	B9V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 772	1 <sup>h</sup> 59 <sup>m</sup> 19.6 <sup>s</sup>	+19°0'27"	11.1	SpiGal	7.2'	130 Mly
□		NGC 821	2 <sup>h</sup> 8 <sup>m</sup> 21.2 <sup>s</sup>	+10°59'41.5"	11.3	EllGal	3.3'	75.8 Mly
□		NGC 877	2 <sup>h</sup> 17 <sup>m</sup> 59.6 <sup>s</sup>	+14°32'38"	11.8	SpiGal	2.4'	154 Mly
□		NGC 680	1 <sup>h</sup> 49 <sup>m</sup> 47.3 <sup>s</sup>	+21°58'15"	11.9	EllGal	1.9'	123 Mly
□		NGC 972	2 <sup>h</sup> 34 <sup>m</sup> 13.4 <sup>s</sup>	+29°18'40.5"	12.1	SpiGal	10'	49.8 Mly
□		NGC 1156	2 <sup>h</sup> 59 <sup>m</sup> 42.2 <sup>s</sup>	+25°14'14"	12.3	IrrGal	3.3'	24.8 Mly

## Notes

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# Cassiopeia

“Cassiopeia, the Seated Queen”

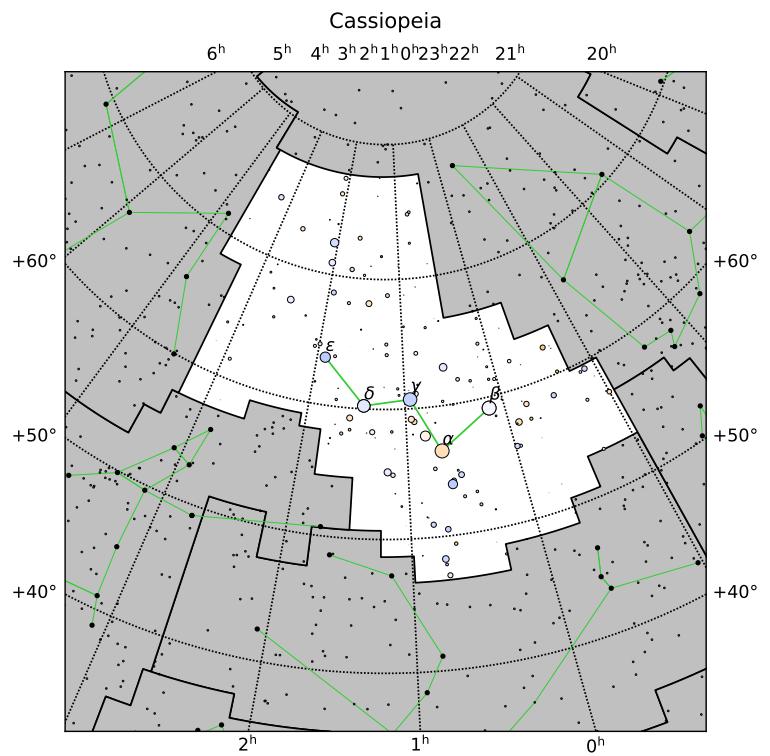
Pronunciation: /kæsi'oupiə/

Genitive: Cassiopeiae (/kæsiə'pi:ai/)

Abbreviation: Cas

## History

Cassiopeia is the boastful Ethiopian queen who claimed that her daughter, Andromeda, was lovelier than all the Nereids, beautiful daughters of Poseidon. As punishment for her hubris, Poseidon sent a sea monster, Cetus, to ravage the lands of Ethiopia. After the ordeal ended, Cassiopeia was forced to wheel around the skies in her throne, spending half of her time clinging to it so she does not fall off.



## Facts

Cassiopeia is visible at latitudes between  $+90^\circ$  and  $-20^\circ$ , i.e., throughout the entire Northern Hemisphere and as far south as Bolivia, central Africa, and northern Australia. It is best seen at around 9:00 PM local time during November. There is one minor meteor shower that radiates out of Cassiopeia.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Schedar (/ʃedɑ:r/)	$\alpha$	$0^{\text{h}}40^{\text{m}}30.4^{\text{s}}$	$+56^\circ32'14.4''$	2.2	Pale Orange	$228 \pm 2 \text{ ly}$	K0III
□	Caph (/kæf/)	$\beta$	$0^{\text{h}}9^{\text{m}}10.7^{\text{s}}$	$+59^\circ8'59.2''$	2.3	White	$54.7 \pm 0.3 \text{ ly}$	F2III
□	Navi (/navi/)	$\gamma$	$0^{\text{h}}56^{\text{m}}42.5^{\text{s}}$	$+60^\circ43'0.3''$	2.5	Blue	$550 \pm 10 \text{ ly}$	B0.5IV
□	Ruchbah (/rʌkbə/)	$\delta$	$1^{\text{h}}25^{\text{m}}49.0^{\text{s}}$	$+60^\circ14'7.0''$	2.7	Pale Blue	$99.4 \pm 0.4 \text{ ly}$	A5IV
□	Segin (/segm/)	$\varepsilon$	$1^{\text{h}}54^{\text{m}}23.7^{\text{s}}$	$+63^\circ40'12.4''$	3.4	Blue	$460 \pm 20 \text{ ly}$	B3V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Owl Cluster	NGC 457	1 <sup>h</sup> 19 <sup>m</sup> 32.6 <sup>s</sup>	+58°17'27"	6.4	OpCl	13'	7.9 kly
□		NGC 129	0 <sup>h</sup> 30 <sup>m</sup> 0 <sup>s</sup>	+60°13'6"	6.5	OpCl	21'	5.5 kly
□		NGC 654	1 <sup>h</sup> 44 <sup>m</sup> 0 <sup>s</sup>	+61°53'6"	6.5	OpCl	5'	7.8 kly
□		NGC 1027	2 <sup>h</sup> 42 <sup>m</sup> 43 <sup>s</sup>	+61°38'0"	6.7	OpCl	20'	3.1 kly
□	Caroline's Rose	NGC 7789	23 <sup>h</sup> 57 <sup>m</sup> 24 <sup>s</sup>	+56°42'30"	6.7	OpCl	16'	7.6 kly
□		M52	23 <sup>h</sup> 24 <sup>m</sup> 48.0 <sup>s</sup>	+61°35'36"	6.9	OpCl	13'	4.6 kly
□		NGC 225	0 <sup>h</sup> 43 <sup>m</sup> 39 <sup>s</sup>	+61°46'30"	7.0	OpCl	12'	2.1 kly
□		NGC 663	1 <sup>h</sup> 46 <sup>m</sup> 16 <sup>s</sup>	+61°12'54"	7.1	OpCl	16'	6.9 kly
□	Pacman Nebula	NGC 281	0 <sup>h</sup> 52 <sup>m</sup> 59.3 <sup>s</sup>	+56°37'19"	7.4	Neb	35'	9.5 kly
□		M103	1 <sup>h</sup> 33 <sup>m</sup> 22 <sup>s</sup>	+60°39'29"	7.4	OpCl	6'	10 kly
□		NGC 659	1 <sup>h</sup> 44 <sup>m</sup> 4 <sup>s</sup>	+60°40'0"	7.9	OpCl	6'	8.2 kly
□		NGC 637	1 <sup>h</sup> 43 <sup>m</sup> 4 <sup>s</sup>	+64°2'24"	8.2	OpCl	4.2'	7 kly
□		NGC 7790	23 <sup>h</sup> 58 <sup>m</sup> 24.2 <sup>s</sup>	+61°12'30"	8.5	OpCl	7.4'	10.8 kly
□		NGC 436	1 <sup>h</sup> 15 <sup>m</sup> 58 <sup>s</sup>	+58°48'42"	8.8	OpCl	5'	12.5 kly
□		NGC 146	0 <sup>h</sup> 33 <sup>m</sup> 3.9 <sup>s</sup>	+63°18'32"	9.1	OpCl	5'	11 kly
□		NGC 381	1 <sup>h</sup> 8 <sup>m</sup> 19.9 <sup>s</sup>	+61°35'2"	9.3	OpCl	6'	3.1 kly
□		NGC 559	1 <sup>h</sup> 29 <sup>m</sup> 31.2 <sup>s</sup>	+63°18'7.2"	9.5	OpCl	7'	7.2 kly
□		NGC 103	0 <sup>h</sup> 25 <sup>m</sup> 18 <sup>s</sup>	+61°21'0"	9.8	OpCl	5'	4.6 kly
□	Bubble Nebula	NGC 7635	23 <sup>h</sup> 20 <sup>m</sup> 48.3 <sup>s</sup>	+61°12'6"	10.0	Neb	15'	10 kly
□		NGC 185	0 <sup>h</sup> 38 <sup>m</sup> 58 <sup>s</sup>	+48°20'14.6"	10.1	EllGal	11.7'	2.1 Mly
□		NGC 147	0 <sup>h</sup> 33 <sup>m</sup> 12.1 <sup>s</sup>	+48°30'32"	10.5	EllGal	13.2'	2.5 Mly
□		NGC 136	0 <sup>h</sup> 31 <sup>m</sup> 36 <sup>s</sup>	+61°30'36"	11.0	OpCl	2'	18 kly
□		NGC 278	0 <sup>h</sup> 52 <sup>m</sup> 4.3 <sup>s</sup>	+47°33'2"	11.5	SpiGal	2.1'	39 Mly

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# Cepheus

“Cepheus, the King”

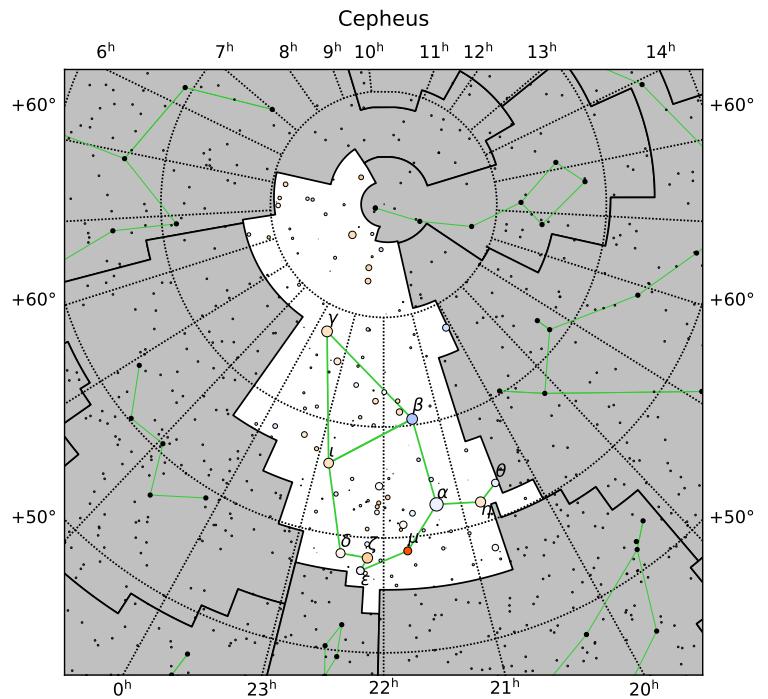
Pronunciation: /sɪfɪəs/

Genitive: Cephei (/sɪ:fɪə/) (not Cepheus)

Abbreviation: Cep

## History

Cepheus is the husband of Cassiopeia and the father of Andromeda and king of Ethiopia. It was Cepheus who consulted an oracle to figure out how to stop the raging sea monster, Cetus, from attacking their lands. And it was the king who chained his own daughter to a cliffside as sacrifice to that monster.



## Facts

Cepheus is visible at latitudes between  $+90^\circ$  and  $-10^\circ$ , i.e., throughout the entire Northern Hemisphere and as far south as central Brazil, the Congo, and Indonesia. It is best seen at around 9:00 PM local time during November. There are no meteor showers in Cepheus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Alderamin (/æl'dərəmɪn/)	α	21 <sup>h</sup> 18 <sup>m</sup> 34.8 <sup>s</sup>	+62°35'8.1"	2.5	Pale Blue	$49.05 \pm 0.08$ ly	A8V
□	Errai (/ɛ'rəi.i:/)	γ	23 <sup>h</sup> 39 <sup>m</sup> 20.9 <sup>s</sup>	+77°37'56.2"	3.2	Pale Orange	$44.98 \pm 0.09$ ly	K1III-IV + M4V
□	Alfirk (/ælfɔrk/)	β	21 <sup>h</sup> 28 <sup>m</sup> 39.6 <sup>s</sup>	+70°33'38.6"	3.2	Blue	$690 \pm 40$ ly	B1IV
□		ζ	22 <sup>h</sup> 10 <sup>m</sup> 51.3 <sup>s</sup>	+58°12'4.5"	3.4	Orange	$990 \pm 40$ ly	K1.5Ib
□		η	20 <sup>h</sup> 45 <sup>m</sup> 17.4 <sup>s</sup>	+61°50'19.6"	3.4	Pale Orange	$46.53 \pm 0.07$ ly	K0IV
□		ι	22 <sup>h</sup> 49 <sup>m</sup> 40.8 <sup>s</sup>	+66°12'1.5"	3.5	Pale Orange	$115.3 \pm 0.4$ ly	K0III
□		δ	22 <sup>h</sup> 29 <sup>m</sup> 10.3 <sup>s</sup>	+58°24'54.7"	4.1	Pale Yellow	$887 \pm 26$ ly	F5Ib + B7-8V
□		ε	22 <sup>h</sup> 15 <sup>m</sup> 2.2 <sup>s</sup>	+57°2'36.9"	4.2	White	$85 \pm 2$ ly	F0V
□		θ	20 <sup>h</sup> 29 <sup>m</sup> 34.9 <sup>s</sup>	+62°59'38.6"	4.2	Pale Blue	$127 \pm 3$ ly	A7III
□		μ	21 <sup>h</sup> 43 <sup>m</sup> 30.5 <sup>s</sup>	+58°46'48.2"	4.2	Red	3060 ly	M2Ia

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 7160	21 <sup>h</sup> 53 <sup>m</sup> 40 <sup>s</sup>	+62°36'12"	6.1	OpCl	13'	2.6 kly
□	Iris Nebula	NGC 7023	21 <sup>h</sup> 1 <sup>m</sup> 35.6 <sup>s</sup>	+68°10'10"	6.8	Neb	18'	1.3 kly
□	Wizard Nebula	NGC 7380	22 <sup>h</sup> 47 <sup>m</sup> 21 <sup>s</sup>	+58°7'54"	7.2	Neb	25'	8.5 kly
□	Cave Nebula	C9	22 <sup>h</sup> 57 <sup>m</sup> 17.1 <sup>s</sup>	+62°28'33.4"	7.7	Neb	50'	2.4 kly
□		NGC 6939	20 <sup>h</sup> 31 <sup>m</sup> 30 <sup>s</sup>	+60°39'42"	7.8	OpCl	7'	3.9 kly
□		NGC 7510	23 <sup>h</sup> 11 <sup>m</sup> 0 <sup>s</sup>	+60°34'0"	7.9	OpCl	7'	11.4 kly
□		NGC 7142	21 <sup>h</sup> 45 <sup>m</sup> 10 <sup>s</sup>	+65°46'18"	9.3	OpCl	12'	6.2 kly
□	Fireworks Galaxy	NGC 6946	20 <sup>h</sup> 34 <sup>m</sup> 52.3 <sup>s</sup>	+60°9'14"	9.6	SpiGal	11.5'	25.2 Mly
□		NGC 188	0 <sup>h</sup> 48 <sup>m</sup> 26 <sup>s</sup>	+85°14'30"	10.0	OpCl	15'	5.4 kly
□	Bow-Tie Nebula	NGC 40	0 <sup>h</sup> 13 <sup>m</sup> 1.0 <sup>s</sup>	+72°31'19.1"	10.7	PNeb	38"	3.5 kly
□		NGC 2300	7 <sup>h</sup> 32 <sup>m</sup> 20.5 <sup>s</sup>	+85°42'31.9"	10.8	LenGal	3'	96.9 Mly
□		NGC 6951	20 <sup>h</sup> 37 <sup>m</sup> 14.1 <sup>s</sup>	+66°6'20"	11.0	SpiGal	3.9'	75.3 Mly
□		NGC 7129	21 <sup>h</sup> 42 <sup>m</sup> 56 <sup>s</sup>	+66°6'12"	11.5	Neb	7'	3.3 kly
□		NGC 2276	7 <sup>h</sup> 27 <sup>m</sup> 14.3 <sup>s</sup>	+85°45'15"	11.8	SpiGal	2.8'	120 Mly

## Notes

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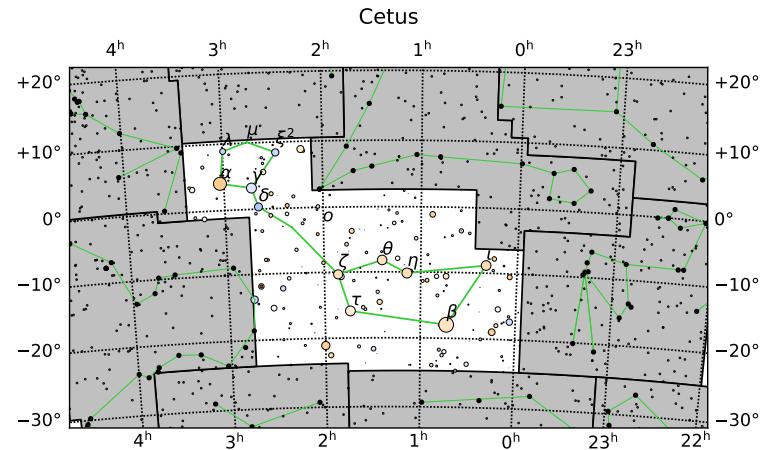
# Cetus

“Cetus, the Sea Monster”

Pronunciation: /sɪtəs/  
Genitive: Ceti (/sɪrtai/)   
Abbreviation: Cet

## History

Cetus is associated with the sea monster of the same name in ancient Greek mythology. It was Cetus who ravaged the lands of Ethiopia as punishment for Queen Cassiopeia's boastfulness about her daughter's, Andromeda, beauty. Eventually, he was slain by the hero Perseus.



## Facts

Cetus is visible at latitudes between  $+70^\circ$  and  $-90^\circ$ , i.e., throughout most of the populated world except for the most northern reaches of Canada and Russia. It is best seen at around 9:00 PM local time in November. There are a few minor meteor showers in Cetus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Diphda (/dɪfda/)	$\beta$	0 <sup>h</sup> 43 <sup>m</sup> 35.4 <sup>s</sup>	-17°59'11.8"	2.0	Pale Orange	$96.3 \pm 0.5$ ly	K0III
□	Menkar (/mɛŋka:r/)	$\alpha$	3 <sup>h</sup> 2 <sup>m</sup> 16.8 <sup>s</sup>	+4°5'23.1"	2.5	Orange	$249 \pm 8$ ly	M1.5III
□	Mira (maɪrə/)	$\nu$	2 <sup>h</sup> 19 <sup>m</sup> 20.8 <sup>s</sup>	-2°58'39.5"	2.0-10.1	Orange	300 ly	M7III
□		$\eta$	1 <sup>h</sup> 8 <sup>m</sup> 35.4 <sup>s</sup>	-10°10'56.2"	3.4	Pale Orange	$123.9 \pm 0.7$ ly	K1III
□	Kaffaljidhma (/kæfəl'dʒɪdmə/)	$\gamma$	2 <sup>h</sup> 43 <sup>m</sup> 18.0 <sup>s</sup>	+3°14'8.9"	3.5	Blue	$80 \pm 1$ ly	A3V + F3V + K5V
□		$\tau$	1 <sup>h</sup> 44 <sup>m</sup> 4.1 <sup>s</sup>	-15°56'14.9"	3.5	Pale Yellow	$11.912 \pm 0.007$ ly	G8V
□		$\iota$	0 <sup>h</sup> 19 <sup>m</sup> 25.7 <sup>s</sup>	-8°49'26.1"	3.6	Orange	$275 \pm 4$ ly	K1.5III
□		$\theta$	1 <sup>h</sup> 24 <sup>m</sup> 1.4 <sup>s</sup>	-8°10'59.7"	3.6	Pale Orange	$113.8 \pm 0.8$ ly	K0III
□	Baten Kaitos (/ber'tən 'kertəs/)	$\zeta$	1 <sup>h</sup> 51 <sup>m</sup> 27.6 <sup>s</sup>	-10°20'6.1"	3.7	Pale Orange	$235 \pm 10$ ly	K0III
□		$\delta$	2 <sup>h</sup> 39 <sup>m</sup> 29.0 <sup>s</sup>	+0°19'42.6"	4.1	Blue	$650 \pm 20$ ly	B2IV
□		$\mu$	2 <sup>h</sup> 44 <sup>m</sup> 56.5 <sup>s</sup>	+10°6'50.9"	4.3	White	$84.1 \pm 0.7$ ly	A9III
□		$\xi^2$	2 <sup>h</sup> 28 <sup>m</sup> 9.6 <sup>s</sup>	+8°27'36.2"	4.3	Blue	$197 \pm 5$ ly	B9.5III
□		$\lambda$	2 <sup>h</sup> 59 <sup>m</sup> 42.9 <sup>s</sup>	+8°54'26.5"	4.7	Blue	$580 \pm 20$ ly	B6III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Skull Nebula	NGC 246	0 <sup>h</sup> 47 <sup>m</sup> 3.3 <sup>s</sup>	-11°52'18.9"	8.0	PNeb	3.8'	1.6 kly
□	Cetus A	M77	2 <sup>h</sup> 42 <sup>m</sup> 40.8 <sup>s</sup>	-0°0'47.8"	9.6	SpiGal	7.1'	47 Mly
□	Claw Galaxy	NGC 247	0 <sup>h</sup> 47 <sup>m</sup> 8.5 <sup>s</sup>	-20°45'37"	9.9	SpiGal	21.4'	11.1 Mly
□		IC 1613	1 <sup>h</sup> 4 <sup>m</sup> 47.8 <sup>s</sup>	+2°7'4"	9.9	IrrGal	16.2'	2.4 Mly
□		NGC 720	1 <sup>h</sup> 53 <sup>m</sup> 0.5 <sup>s</sup>	-13°44'19"	10.2	EllGal	4.7'	80 Mly
□	Darth Vader's Galaxy	NGC 936	2 <sup>h</sup> 27 <sup>m</sup> 37.4 <sup>s</sup>	-1°9'22"	10.2	LenGal	4.7'	67.7 Mly
□		NGC 157	0 <sup>h</sup> 34 <sup>m</sup> 46.8 <sup>s</sup>	-8°23'47.4"	10.4	SpiGal	4.2'	76.3 Mly
□		NGC 584	1 <sup>h</sup> 31 <sup>m</sup> 20.8 <sup>s</sup>	-6°52'5.0"	10.5	EllGal	3'	62.3 Mly
□		NGC 1052	2 <sup>h</sup> 41 <sup>m</sup> 4.8 <sup>s</sup>	-8°15'20.8"	10.5	EllGal	3'	62 Mly
□		NGC 908	2 <sup>h</sup> 23 <sup>m</sup> 4.6 <sup>s</sup>	-21°14'2"	10.8	SpiGal	6'	56 Mly
□		NGC 596	1 <sup>h</sup> 32 <sup>m</sup> 52.1 <sup>s</sup>	-7°1'55"	10.9	EllGal	3.2'	67 Mly
□		NGC 779	1 <sup>h</sup> 59 <sup>m</sup> 42.3 <sup>s</sup>	-5°57'48"	11.2	SpiGal	4'	59 Mly
□		NGC 428	1 <sup>h</sup> 12 <sup>m</sup> 55.8 <sup>s</sup>	+0°58'51.6"	11.3	SpiGal	5'	48 Mly
□		NGC 1022	2 <sup>h</sup> 38 <sup>m</sup> 32.7 <sup>s</sup>	-6°40'39.0"	11.3	SpiGal	2.4'	67.7 Mly
□		NGC 1055	2 <sup>h</sup> 41 <sup>m</sup> 45.2 <sup>s</sup>	+0°26'35"	11.4	SpiGal	7.6'	52 Mly
□		NGC 151	0 <sup>h</sup> 34 <sup>m</sup> 2.8 <sup>s</sup>	-9°42'19.0"	11.5	SpiGal	3.7'	170 Mly
□		NGC 615	1 <sup>h</sup> 35 <sup>m</sup> 5.7 <sup>s</sup>	-7°20'25"	11.5	SpiGal	3.6'	85 Mly
□		NGC 1073	2 <sup>h</sup> 43 <sup>m</sup> 40.5 <sup>s</sup>	+1°22'34"	11.5	SpiGal	4.9'	55 Mly

## Notes

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# Grus

“The Crane”

Pronunciation: /grəs/

Genitive: Gruis (/gruɪs/)

Abbreviation: Gru

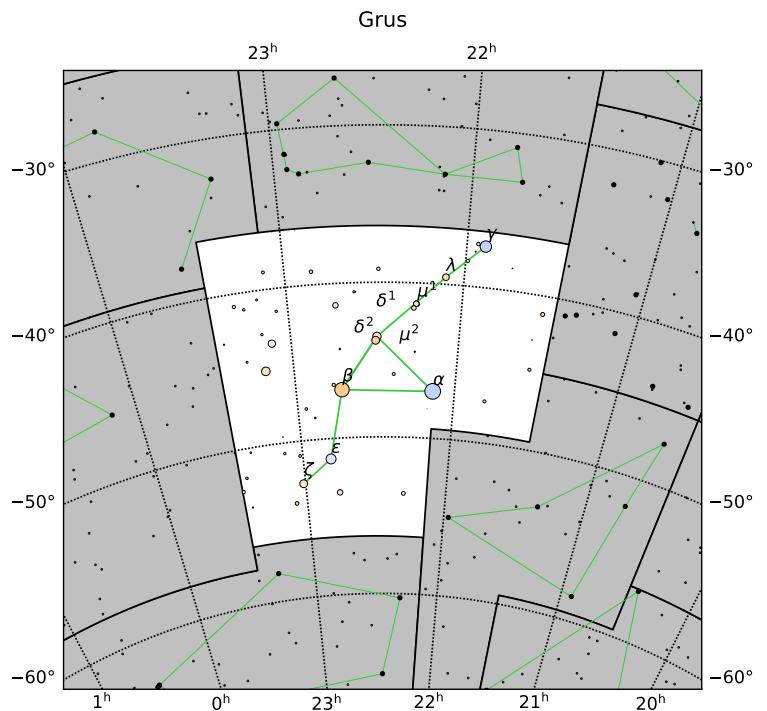
## History

Cleaved from the neighboring constellations, Grus was created by Dutch astronomer Petrus Plancius in 1598. Together with the nearby constellations, Grus is one of the “southern birds.” Previously, Grus was also known as “the heron” and “the flamingo,” but the image of a crane stuck.

## Facts

Grus is visible at latitudes between  $+34^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire Southern Hemisphere and as far north as the southern US, northern Africa, and central China. It is best seen at around 9:00 PM local time during October. There are no meteor showers within Grus.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Alnair (/æl'nɛər/)	$\alpha$	$22^{\text{h}} 8^{\text{m}} 14.0^{\text{s}}$	$-46^{\circ} 57' 39.5''$	1.7	Blue	$101.0 \pm 0.7 \text{ ly}$	B6V
□	Tiaki (/ti:a:ki/)	$\beta$	$22^{\text{h}} 42^{\text{m}} 40.1^{\text{s}}$	$-46^{\circ} 53' 4.5''$	2.1	Orange	$177 \pm 4 \text{ ly}$	M5III
□	Aldhanab (/ældənæb/)	$\gamma$	$21^{\text{h}} 53^{\text{m}} 55.7^{\text{s}}$	$-37^{\circ} 21' 53.5''$	3.0	Blue	$211 \pm 9 \text{ ly}$	B8III
□		$\varepsilon$	$22^{\text{h}} 48^{\text{m}} 33.3^{\text{s}}$	$-51^{\circ} 19' 0.7''$	3.5	Blue	$129 \pm 2 \text{ ly}$	A2IV
□		$\delta^1$	$22^{\text{h}} 29^{\text{m}} 16.2^{\text{s}}$	$-43^{\circ} 29' 44.0''$	4.0	Pale Orange	$309 \pm 6 \text{ ly}$	G6-8III
□		$\zeta$	$23^{\text{h}} 0^{\text{m}} 52.8^{\text{s}}$	$-52^{\circ} 45' 14.9''$	4.1	Pale Orange	$133 \pm 3 \text{ ly}$	K1III
□		$\delta^2$	$22^{\text{h}} 29^{\text{m}} 45.4^{\text{s}}$	$-43^{\circ} 44' 57.2''$	4.1	Orange	$356 \pm 7 \text{ ly}$	M4.5III
□		$\lambda$	$22^{\text{h}} 6^{\text{m}} 6.0^{\text{s}}$	$-39^{\circ} 32' 36.1''$	4.5	Orange	$242 \pm 4 \text{ ly}$	K3III
□		$\mu^1$	$22^{\text{h}} 15^{\text{m}} 36.9^{\text{s}}$	$-41^{\circ} 20' 48.4''$	4.8	Pale Yellow	$241 \pm 5 \text{ ly}$	G8III
□		$\mu^2$	$22^{\text{h}} 16^{\text{m}} 26.5^{\text{s}}$	$-41^{\circ} 37' 37.8''$	5.1	Pale Orange	$248 \pm 3 \text{ ly}$	G8III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		IC 1459	22 <sup>h</sup> 57 <sup>m</sup> 10.6 <sup>s</sup>	-36°27'44"	10.0	EllGal	5.2'	85 Mly
□		NGC 7213	22 <sup>h</sup> 9 <sup>m</sup> 16.3 <sup>s</sup>	-47°9'59"	10.1	LenGal	3.1'	72 Mly
□		IC 5201	22 <sup>h</sup> 20 <sup>m</sup> 57.4 <sup>s</sup>	-46°2'9"	10.8	SpiGal	8.5'	36.4 Mly
□		NGC 7418	22 <sup>h</sup> 56 <sup>m</sup> 36.2 <sup>s</sup>	-37°1'48.3"	11.0	SpiGal	3.5'	59.1 Mly
□		NGC 7424	22 <sup>h</sup> 57 <sup>m</sup> 18 <sup>s</sup>	-41°4'14"	11.0	SpiGal	9.5'	37.5 Mly
□		NGC 7552	23 <sup>h</sup> 16 <sup>m</sup> 10.7 <sup>s</sup>	-42°35'5"	11.2	SpiGal	3.4'	56 Mly
□		NGC 7531	23 <sup>h</sup> 14 <sup>m</sup> 48.5 <sup>s</sup>	-43°35'59.8"	11.3	SpiGal	4.5'	72.4 Mly
□		NGC 7582	23 <sup>h</sup> 18 <sup>m</sup> 23.5 <sup>s</sup>	-42°22'14"	11.4	SpiGal	5'	69.1 Mly
□		NGC 7079	21 <sup>h</sup> 32 <sup>m</sup> 35.2 <sup>s</sup>	-44°4'3"	11.6	LenGal	2.1'	110.6 Mly

## Notes

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# Lacerta

“The Lizard”

Pronunciation: /læ'kɜːrtə/

Genitive: Lacertae (/læ'kɜːrti/)

Abbreviation: Lac

## History

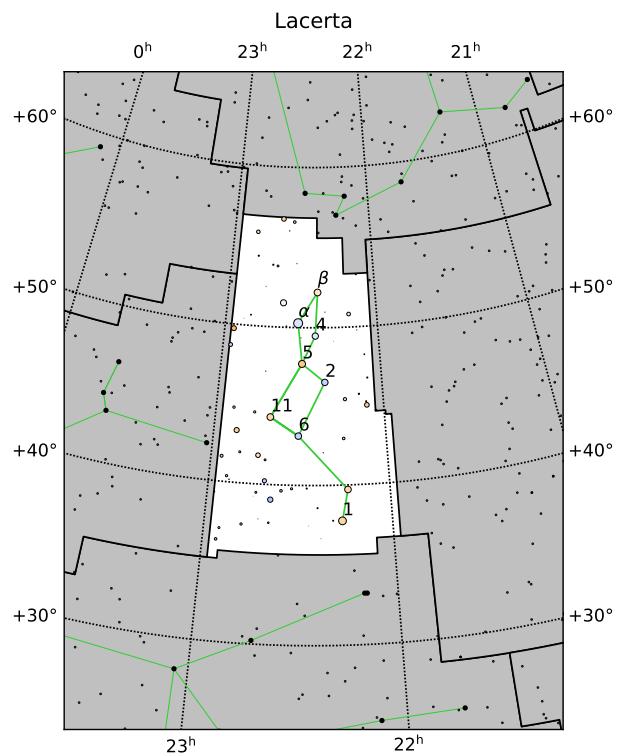
Lacerta is centered on a region without bright stars, and as such was a late addition to the night sky. In 1687, Polish astronomer Johannes Hevelius added it in honor of the starred agama lizard, a lizard with star-like spots found along the Mediterranean coast.

## Facts

Lacerta is visible at latitudes between  $+90^\circ$  and  $-40^\circ$ , i.e., throughout the entire Northern Hemisphere and much of the Southern Hemisphere excluding the southern halves of Chile, Argentina, and New Zealand. It is best seen at around 9:00 PM local time during October. There are no meteor showers within Lacerta.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$22^{\text{h}}31^{\text{m}}17.5^{\text{s}}$	$+50^\circ16'57.0''$	3.8	Blue	$102.6 \pm 0.4$ ly	A1V
□		1	$22^{\text{h}}15^{\text{m}}58.2^{\text{s}}$	$+37^\circ44'55.4''$	4.2	Orange	$620 \pm 30$ ly	K3II-III
□		5	$22^{\text{h}}29^{\text{m}}31.8^{\text{s}}$	$+47^\circ42'24.8''$	4.4	Orange	$1600 \pm 100$ ly	K9Ia + B2V
□		$\beta$	$22^{\text{h}}23^{\text{m}}33.6^{\text{s}}$	$+52^\circ13'44.6''$	4.4	Pale Orange	$170 \pm 1$ ly	G8III
□	HD 211073		$22^{\text{h}}13^{\text{m}}52.7^{\text{s}}$	$+39^\circ42'53.7''$	4.5	Orange	$580 \pm 30$ ly	K2.5III
□		11	$22^{\text{h}}40^{\text{m}}30.9^{\text{s}}$	$+44^\circ16'34.7''$	4.5	Orange	$333 \pm 9$ ly	K2.5III
□		6	$22^{\text{h}}30^{\text{m}}29.3^{\text{s}}$	$+43^\circ7'24.2''$	4.5	Blue	1900 ly	B2IV
□		2	$22^{\text{h}}21^{\text{m}}1.5^{\text{s}}$	$+46^\circ32'11.6''$	4.5	Blue	$550 \pm 10$ ly	B6V + B6V
□		4	$22^{\text{h}}24^{\text{m}}31.0^{\text{s}}$	$+49^\circ28'35.0''$	4.6	Blue	1900 ly	A0Ib



# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 7243	22 <sup>h</sup> 15 <sup>m</sup> 8.6 <sup>s</sup>	+49°53'51"	6.4	OpCl	21'	2.8 kly
□		NGC 7209	22 <sup>h</sup> 5 <sup>m</sup> 7 <sup>s</sup>	+46°29'0"	7.7	OpCl	25'	3.8 kly
□		NGC 7250	22 <sup>h</sup> 18 <sup>m</sup> 17.8 <sup>s</sup>	+40°33'44.7"	12.6	IrrGal	2'	50 Mly

## Notes

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# Octans

## “The Octant”

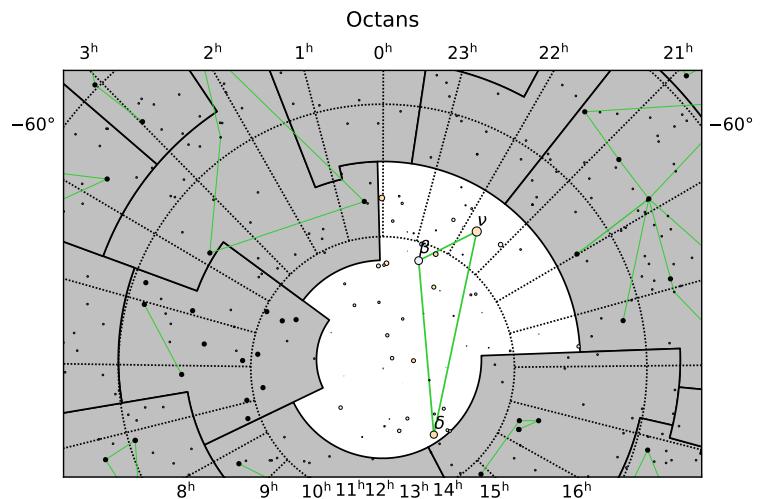
Pronunciation: /ɒktænz/

Genitive: Octantis (/ɒk'tæntɪs/)

Abbreviation: Oct

## History

Octans was created by French astronomer Nicolas-Louis de Lacaille in 1752 during his observations of the southern skies at the Cape of Good Hope. He named it in honor of the octant, an instrument used in navigation, invented in 1730 by English mathematician John Hadley.



## Facts

Octans is visible at latitudes between  $+90^\circ$  and  $-90^\circ$ , i.e., exclusively to the Southern Hemisphere. It is best seen at around 9:00 PM local time during October. There are no meteor showers in Octans.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\nu$	$21^{\text{h}} 41^{\text{m}} 28.6^{\text{s}}$	$-77^{\circ} 23' 24.2''$	3.7	Pale Orange	$63.3 \pm 0.8 \text{ ly}$	K1III
□		$\beta$	$22^{\text{h}} 46^{\text{m}} 3.5^{\text{s}}$	$-81^{\circ} 22' 53.8''$	4.1	Pale Blue	$149 \pm 3 \text{ ly}$	A9IV-V
□		$\delta$	$14^{\text{h}} 26^{\text{m}} 55.2^{\text{s}}$	$-83^{\circ} 40' 4.4''$	4.3	Orange	$299 \pm 4 \text{ ly}$	K2III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 7098	$21^{\text{h}} 44^{\text{m}} 16.1^{\text{s}}$	$-75^{\circ} 6' 41''$	11.3	SpiGal	$4'$	95 Mly
□		NGC 7095	$21^{\text{h}} 52^{\text{m}} 26.4^{\text{s}}$	$-81^{\circ} 31' 51''$	12.2	SpiGal	$2.8'$	114.5 Mly

## Notes

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# Pegasus

“The Winged Horse”

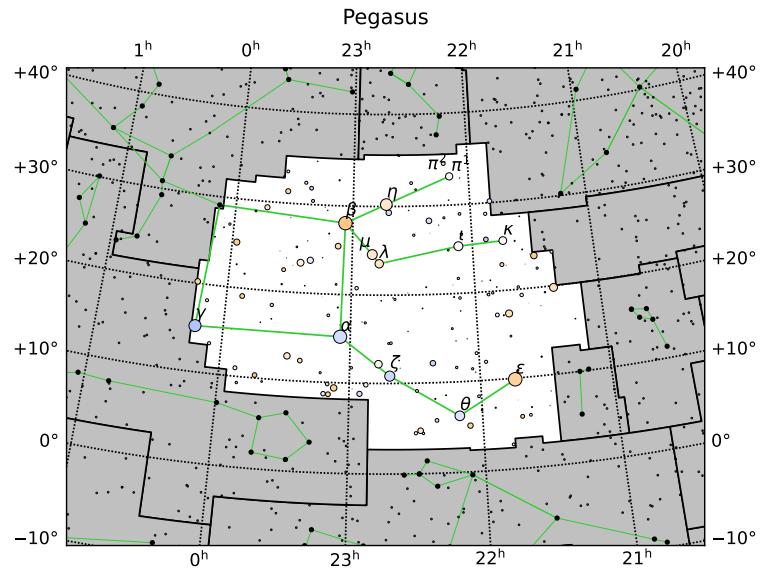
Pronunciation: /pəgəsəs/

Genitive: Pegasi (/pəgəsai/)

Abbreviation: Peg

## History

Our mythology about Pegasus comes primarily from the ancient Greeks. Pegasus was a winged horse with magical powers created when Perseus cut off the head of Medusa, born from Medusa’s blood. In one myth, Pegasus dug out a spring with its hooves which blessed those who drank its water with the ability to write poetry. Another story says that Pegasus was the steed of Bellerophon, tasked with killing the Chimera.



## Facts

Pegasus is visible at latitudes between  $+90^\circ$  and  $-60^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 local time during October. There is one minor meteor shower within Pegasus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Enif (/i:nif/)	$\varepsilon$	21 <sup>h</sup> 44 <sup>m</sup> 11.1 <sup>s</sup>	+9°52'30.0"	2.4	Orange	$690 \pm 20$ ly	K2 Ib-II
□	Scheat (/ʃi:a:t/)	$\beta$	23 <sup>h</sup> 3 <sup>m</sup> 46.5 <sup>s</sup>	+28°4'58.0"	2.4	Orange	$196 \pm 2$ ly	M2.5 II-III
□	Markab (/mə:rkbəb/)	$\alpha$	23 <sup>h</sup> 4 <sup>m</sup> 45.7 <sup>s</sup>	+15°12'19.0"	2.5	Blue	$133 \pm 1$ ly	A0 IV
□	Algenib (/æl'dʒi:nib/)	$\gamma$	0 <sup>h</sup> 13 <sup>m</sup> 14.2 <sup>s</sup>	+15°11'0.9"	2.8	Blue	$470 \pm 30$ ly	B2 IV
□	Matar (/meitarr/)	$\eta$	22 <sup>h</sup> 43 <sup>m</sup> 0.1 <sup>s</sup>	+30°13'16.5"	3.0	Pale Orange	$196 \pm 8$ ly	G2 II + F0 V
□	Homam (/joumæm/)	$\zeta$	22 <sup>h</sup> 41 <sup>m</sup> 27.7 <sup>s</sup>	+10°49'52.9"	3.4	Blue	$204 \pm 2$ ly	B8 V
□	Sadalbari (/sædəl'bæri/)	$\mu$	22 <sup>h</sup> 50 <sup>m</sup> 0.2 <sup>s</sup>	+24°36'5.7"	3.5	Pale Orange	$106.1 \pm 0.9$ ly	G8 III
□	Biham (/bai.a:m/)	$\theta$	22 <sup>h</sup> 10 <sup>m</sup> 12.0 <sup>s</sup>	+6°11'52.3"	3.5	Blue	$92 \pm 2$ ly	A2 V + M4-5.5 V
□		$\iota$	22 <sup>h</sup> 7 <sup>m</sup> 0.7 <sup>s</sup>	+25°20'42.4"	3.8	White	$38.5 \pm 0.2$ ly	F5 V + G8 V
□		$\lambda$	22 <sup>h</sup> 46 <sup>m</sup> 31.9 <sup>s</sup>	+23°33'56.4"	3.9	Pale Orange	$365 \pm 10$ ly	G8 II-III
□		$\kappa$	21 <sup>h</sup> 44 <sup>m</sup> 38.7 <sup>s</sup>	+25°38'42.1"	4.2	White	$112.9 \pm 0.7$ ly	F5 IV

<input type="checkbox"/>	$\pi^2$	22 <sup>h</sup> 9 <sup>m</sup> 59.2 <sup>s</sup>	+33°10'41.6"	4.3	White	263 ± 4 ly	F5III
<input type="checkbox"/>	$\pi^1$	22 <sup>h</sup> 9 <sup>m</sup> 13.6 <sup>s</sup>	+33°10'20.5"	5.6	Pale Orange	319 ± 4 ly	G8III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		M15	21 <sup>h</sup> 29 <sup>m</sup> 58.3 <sup>s</sup>	+12°10'1.2"	6.2	GbCl	18'	35.7 kly
<input type="checkbox"/>		NGC 7331	22 <sup>h</sup> 37 <sup>m</sup> 4.1 <sup>s</sup>	+34°24'36"	10.4	SpiGal	10.5'	39.8 Mly
<input type="checkbox"/>		NGC 7217	22 <sup>h</sup> 7 <sup>m</sup> 52.4 <sup>s</sup>	+31°21'33"	11.0	SpiGal	3.9'	50 Mly
<input type="checkbox"/>		NGC 7448	23 <sup>h</sup> 0 <sup>m</sup> 3.6 <sup>s</sup>	+15°58'49"	11.4	SpiGal	2.7'	79.5 Mly
<input type="checkbox"/>		NGC 7479	23 <sup>h</sup> 4 <sup>m</sup> 56.6 <sup>s</sup>	+12°19'22"	11.6	SpiGal	4.1'	105 Mly
<input type="checkbox"/>		NGC 7814	0 <sup>h</sup> 3 <sup>m</sup> 14.9 <sup>s</sup>	+16°8'44"	11.6	SpiGal	5.5'	40 Mly
<input type="checkbox"/>		NGC 23	0 <sup>h</sup> 9 <sup>m</sup> 53.4 <sup>s</sup>	+25°55'25.5"	11.9	SpiGal	1.9'	173.5 Mly
<input type="checkbox"/>		NGC 7457	23 <sup>h</sup> 0 <sup>m</sup> 59.9 <sup>s</sup>	+30°8'41.8"	11.9	LenGal	4'	43 Mly
<input type="checkbox"/>		NGC 7332	22 <sup>h</sup> 37 <sup>m</sup> 24.5 <sup>s</sup>	+23°47'54"	12.0	LenGal	4.1'	67.1 Mly
<input type="checkbox"/>	Fried Egg Galaxy	NGC 7742	23 <sup>h</sup> 44 <sup>m</sup> 15.7 <sup>s</sup>	+10°46'2"	12.4	SpiGal	2'	72.4 Mly
<input type="checkbox"/>	Stephan's Quintet	HCG 92	22 <sup>h</sup> 35 <sup>m</sup> 57.5 <sup>s</sup>	+33°57'36"		GalGrp		280 Mly

## Notes

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# Perseus

“Perseus, the Hero”

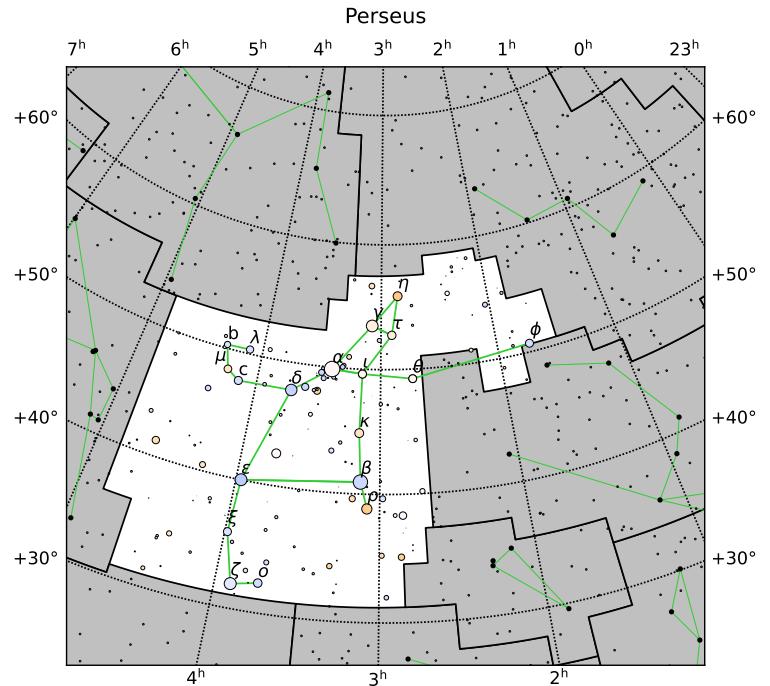
Pronunciation: /pɜːrsiəs/

Genitive: Persei (/pɜːrsiə/) /pɜːrsiə/

Abbreviation: Per

## History

Perseus represents the ancient Greek mythological figure of the same name, a hero sent to kill Medusa. Perseus slew Medusa in her sleep, and the winged horse Pegasus appeared from her body. Perseus continued to Ethiopia, where he saved the maiden Andromeda from the sea monster Cetus. The couple later wed and had many children.



## Facts

Perseus is visible at latitudes between  $+90^\circ$  and  $-35^\circ$ , i.e., throughout the entire Northern Hemisphere and including most of the Southern Hemisphere except for the southern halves of Chile, Argentina, Australia, and New Zealand. It is best seen at around 9:00 PM local time during December. The Perseids radiate out of Perseus, peaking at around August 12 at a rate of 100 meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Mirfak (/mɜːrfæk/)	$\alpha$	3 <sup>h</sup> 24 <sup>m</sup> 19.4 <sup>s</sup>	+49°51'40.2"	1.8	Pale Yellow	$510 \pm 10$ ly	F5Ib
□	Algol (/ælgɒl/)	$\beta$	3 <sup>h</sup> 8 <sup>m</sup> 10.1 <sup>s</sup>	+40°57'20.3"	2.1	Blue	$90 \pm 3$ ly	B8V + K0IV + A7V
□		$\zeta$	3 <sup>h</sup> 54 <sup>m</sup> 7.9 <sup>s</sup>	+31°53'1.1"	2.9	Blue	$750 \pm 30$ ly	B1Ib
□		$\varepsilon$	3 <sup>h</sup> 57 <sup>m</sup> 51.2 <sup>s</sup>	+40°0'36.8"	2.9	Blue	$640 \pm 30$ ly	B0.5V
□		$\gamma$	3 <sup>h</sup> 4 <sup>m</sup> 47.8 <sup>s</sup>	+53°30'23.2"	2.9	Pale Orange	$243 \pm 9$ ly	G8III + A2V
□		$\delta$	3 <sup>h</sup> 42 <sup>m</sup> 55.5 <sup>s</sup>	+47°47'15.2"	3.0	Blue	$520 \pm 40$ ly	B5III
□		$\rho$	3 <sup>h</sup> 5 <sup>m</sup> 10.6 <sup>s</sup>	+38°50'25.0"	3.4	Orange	$308 \pm 7$ ly	M4II
□	Miram (/maɪræm/)	$\eta$	2 <sup>h</sup> 50 <sup>m</sup> 41.8 <sup>s</sup>	+55°53'43.8"	3.8	Orange	$780 \pm 70$ ly	K3Ib
□	Misam (/maɪzəm/)	$\kappa$	3 <sup>h</sup> 9 <sup>m</sup> 29.8 <sup>s</sup>	+44°51'27.1"	3.8	Pale Orange	$112.7 \pm 0.8$ ly	G9.5III
□	Atik (/eɪtɪk/)	$\sigma$	3 <sup>h</sup> 44 <sup>m</sup> 19.1 <sup>s</sup>	+32°17'17.7"	3.8	Blue	1100 ly	B1III + B2V
□		$\tau$	2 <sup>h</sup> 45 <sup>m</sup> 15.5 <sup>s</sup>	+52°45'44.9"	3.9	Pale Orange	$254 \pm 7$ ly	G8III + A3-4V
□		c	4 <sup>h</sup> 8 <sup>m</sup> 39.7 <sup>s</sup>	+47°42'45.0"	4.0	Blue	$480 \pm 10$ ly	B3V

<input type="checkbox"/>	Menkib (/mɛŋkɪb/)	$\xi$	3 <sup>h</sup> 58 <sup>m</sup> 57.9 <sup>s</sup>	+35°47'27.7"	4.0	Blue	1200 ly	O7.5III
<input type="checkbox"/>		$\phi$	1 <sup>h</sup> 43 <sup>m</sup> 39.6 <sup>s</sup>	+50°41'19.4"	4.1	Blue	720 ± 30 ly	B2V
<input type="checkbox"/>		$\iota$	3 <sup>h</sup> 9 <sup>m</sup> 4.0 <sup>s</sup>	+49°36'47.8"	4.1	Pale Yellow	34.38 ± 0.08 ly	G0V
<input type="checkbox"/>		$\theta$	2 <sup>h</sup> 44 <sup>m</sup> 12.0 <sup>s</sup>	+49°13'42.4"	4.1	White	36.29 ± 0.09 ly	F8V + M1.5V
<input type="checkbox"/>		$\mu$	4 <sup>h</sup> 14 <sup>m</sup> 53.9 <sup>s</sup>	+48°24'33.6"	4.2	Pale Orange	900 ± 50 ly	G0Ib + B9.5V
<input type="checkbox"/>		$\lambda$	4 <sup>h</sup> 6 <sup>m</sup> 35.0 <sup>s</sup>	+50°21'4.6"	4.3	Blue	420 ± 10 ly	A0IV
<input type="checkbox"/>		b	4 <sup>h</sup> 18 <sup>m</sup> 14.6 <sup>s</sup>	+50°17'43.8"	4.5	Blue	310 ± 10 ly	A1III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>	Alpha Persei Cluster	Mel 20	3 <sup>h</sup> 26 <sup>m</sup> 42.0 <sup>s</sup>	+48°48'0"	1.2	OpCl	6.1°	570 ly
<input type="checkbox"/>	Double Cluster	NGC 869	2 <sup>h</sup> 18 <sup>m</sup> 58.6 <sup>s</sup>	+57°7'2.1"	3.7	OpCl	30'	7.5 kly
<input type="checkbox"/>	Double Cluster	NGC 884	2 <sup>h</sup> 22 <sup>m</sup> 32.1 <sup>s</sup>	+57°8'39.0"	3.8	OpCl	30'	7.6 kly
<input type="checkbox"/>		M34	2 <sup>h</sup> 42 <sup>m</sup> 7 <sup>s</sup>	+42°44.8'	5.5	OpCl	35'	1.5 kly
<input type="checkbox"/>	California Nebula	NGC 1499	4 <sup>h</sup> 3 <sup>m</sup> 18.0 <sup>s</sup>	+36°25'18.0"	6.0	Neb	2.5°	1 kly
<input type="checkbox"/>		NGC 1528	4 <sup>h</sup> 15 <sup>m</sup> 30.7 <sup>s</sup>	+51°13'4.8"	6.4	OpCl	23'	3.1 kly
<input type="checkbox"/>		NGC 1342	3 <sup>h</sup> 31 <sup>m</sup> 38 <sup>s</sup>	+37°22'36"	6.7	OpCl	17'	2.2 kly
<input type="checkbox"/>		NGC 957	2 <sup>h</sup> 33 <sup>m</sup> 21.0 <sup>s</sup>	+57°33'36"	7.6	OpCl	11'	5.9 kly
<input type="checkbox"/>		NGC 1245	3 <sup>h</sup> 14 <sup>m</sup> 48 <sup>s</sup>	+47°15'11"	8.4	OpCl	10'	9.8 kly
<input type="checkbox"/>		NGC 1169	3 <sup>h</sup> 3 <sup>m</sup> 34.8 <sup>s</sup>	+46°23'10.7"	9.0	SpiGal	4.2'	126 Mly
<input type="checkbox"/>	Little Dumbbell Nebula	M74	1 <sup>h</sup> 42 <sup>m</sup> 19.7 <sup>s</sup>	+51°34'31.7"	10.1	PNeb	2.7'	2.5 kly
<input type="checkbox"/>		NGC 1023	2 <sup>h</sup> 40 <sup>m</sup> 24.0 <sup>s</sup>	+39°3'48"	10.4	LenGal	8.7'	19 Mly
<input type="checkbox"/>		NGC 1161	3 <sup>h</sup> 1 <sup>m</sup> 14.1 <sup>s</sup>	+44°53'50"	11.1	LenGal	2.8'	90 Mly
<input type="checkbox"/>		NGC 1058	2 <sup>h</sup> 43 <sup>m</sup> 30.2 <sup>s</sup>	+37°20'27.2"	11.8	SpiGal	3.8'	27.4 Mly
<input type="checkbox"/>	Perseus A	NGC 1275	3 <sup>h</sup> 19 <sup>m</sup> 48.1 <sup>s</sup>	+41°30'42"	12.6	EllGal	2.2'	222 Mly

## Notes

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# Phoenix

## “The Phoenix”

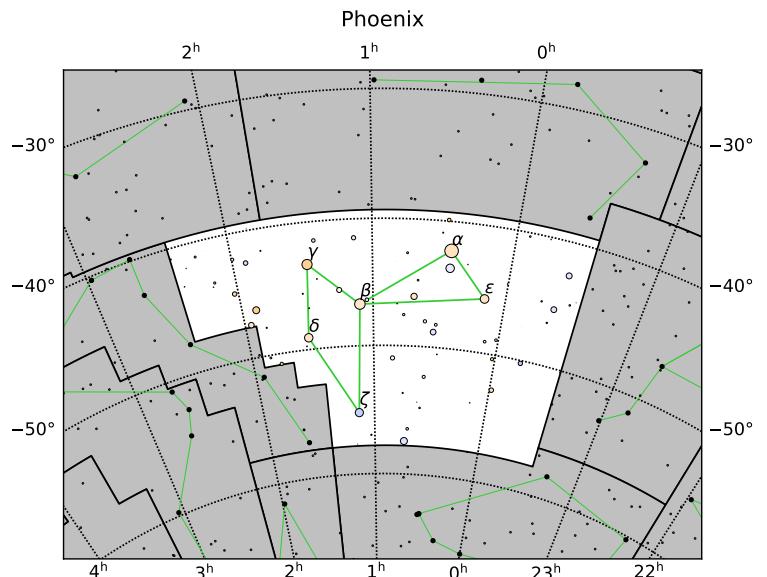
Pronunciation: /fɪnɪks/

Genitive: Phoenicis (/fi'naisɪs/)

Abbreviation: Phe

## History

Although the mythical Phoenix has ancient origins in Greek mythology, the constellation is a relatively recent addition by Dutch astronomer Petrus Plancius in 1597. The phoenix has roots in ancient Egypt and has been associated with hundreds of myths and stories.



## Facts

Phoenix is visible at latitudes between  $+32^{\circ}$  and  $-80^{\circ}$ , i.e., throughout the entire populated Southern Hemisphere and as far north as Central America, the Sahara, and Southeast Asia. It is best seen at around 9:00 PM local time during November. There is one minor meteor shower in Phoenix.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Ankaa (/æŋkə/)	$\alpha$	$0^{\text{h}}26^{\text{m}}17.1^{\text{s}}$	$-42^{\circ}18'21.6''$	2.4	Pale Orange	$82 \pm 1 \text{ ly}$	K0.5III
□		$\beta$	$1^{\text{h}}6^{\text{m}}5.0^{\text{s}}$	$-46^{\circ}43'6.3''$	3.3	Pale Orange	$200 \text{ ly}$	G8III + G8III
□		$\gamma$	$1^{\text{h}}28^{\text{m}}21.9^{\text{s}}$	$-43^{\circ}19'5.7''$	3.4	Orange	$234 \pm 6 \text{ ly}$	M0III
□		$\varepsilon$	$0^{\text{h}}9^{\text{m}}24.6^{\text{s}}$	$-45^{\circ}44'50.7''$	3.9	Pale Orange	$144 \pm 3 \text{ ly}$	K0III
□		$\delta$	$1^{\text{h}}31^{\text{m}}15.1^{\text{s}}$	$-49^{\circ}4'21.7''$	3.9	Pale Orange	$142 \pm 1 \text{ ly}$	G8.5III
□		$\zeta$	$1^{\text{h}}8^{\text{m}}23.1^{\text{s}}$	$-55^{\circ}14'44.7''$	3.9	Blue	$300 \pm 10 \text{ ly}$	B6V + B8V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 625	1 <sup>h</sup> 35 <sup>m</sup> 4.6 <sup>s</sup>	-41°26'10"	11.7	SpiGal	5.8'	12.7 Mly

Notes

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# Pisces

“The Fishes”

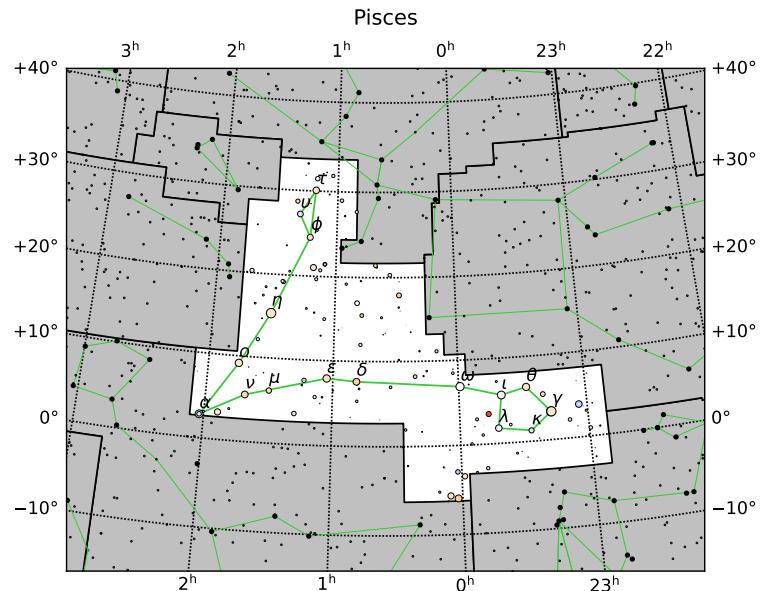
Pronunciation: /paɪsɪz/

Genitive: Piscium (/piʃiəm/)

Abbreviation: Psc

## History

Pisces was a constellation invented by the ancient Greeks to honor the story of Aphrodite and her son Eros evading the monster Typhon. To escape the monster, they leapt into the Euphrates River and transformed into two fish, connected by a cord of rope so they would not get separated from each other.



## Facts

Pisces is visible at latitudes between  $+90^\circ$  and  $-65^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during November. There is one minor meteor shower in Pisces.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Alpherg (/ælfɜːrg/)	$\eta$	1 <sup>h</sup> 31 <sup>m</sup> 29.0 <sup>s</sup>	+15°20'45.0"	3.6	Pale Orange	$350 \pm 30$ ly	G7III
□		$\gamma$	23 <sup>h</sup> 17 <sup>m</sup> 9.9 <sup>s</sup>	+3°16'56.2"	3.7	Pale Orange	$138 \pm 1$ ly	G8III
□	Alrescha (/æl'rɪʃə/)	$\alpha$	2 <sup>h</sup> 2 <sup>m</sup> 2.8 <sup>s</sup>	+2°45'49.5"	3.8	Pale Blue	$151 \pm 7$ ly	A0V + F2IV
□		$\omega$	23 <sup>h</sup> 59 <sup>m</sup> 18.7 <sup>s</sup>	+6°51'48.0"	4.0	White	$104.3 \pm 0.5$ ly	F4IV
□		$\iota$	23 <sup>h</sup> 39 <sup>m</sup> 57.0 <sup>s</sup>	+5°37'34.6"	4.1	Pale Yellow	$44.73 \pm 0.09$ ly	F7V
□	Torcular (/tɔːrkjʊlər/)	$o$	1 <sup>h</sup> 45 <sup>m</sup> 23.6 <sup>s</sup>	+9°9'27.9"	4.3	Pale Orange	$280 \pm 20$ ly	K0III
□		$\varepsilon$	1 <sup>h</sup> 2 <sup>m</sup> 56.6 <sup>s</sup>	+7°53'24.5"	4.3	Pale Orange	$182 \pm 2$ ly	K0III
□		$\theta$	23 <sup>h</sup> 27 <sup>m</sup> 58.1 <sup>s</sup>	+6°22'44.4"	4.3	Pale Orange	$149 \pm 2$ ly	K1III
□		$\delta$	0 <sup>h</sup> 48 <sup>m</sup> 40.9 <sup>s</sup>	+7°35'6.3"	4.4	Orange	$311 \pm 7$ ly	K4III
□		$\nu$	1 <sup>h</sup> 41 <sup>m</sup> 25.9 <sup>s</sup>	+5°29'15.4"	4.4	Orange	$363 \pm 9$ ly	K3III
□		$\lambda$	23 <sup>h</sup> 42 <sup>m</sup> 2.8 <sup>s</sup>	+1°46'48.1"	4.5	Pale Blue	$106.6 \pm 0.7$ ly	A7V
□		$\tau$	1 <sup>h</sup> 11 <sup>m</sup> 39.6 <sup>s</sup>	+30°5'22.7"	4.5	Pale Orange	$169 \pm 2$ ly	K0.5III

<input type="checkbox"/>	$\phi$	1 <sup>h</sup> 13 <sup>m</sup> 44.9 <sup>s</sup>	+24°35'1.3"	4.7	Pale Orange	400 ± 10 ly	K0III
<input type="checkbox"/>	$v$	1 <sup>h</sup> 19 <sup>m</sup> 28.0 <sup>s</sup>	+27°15'50.6"	4.8	Blue	308 ± 7 ly	A3V
<input type="checkbox"/>	$\mu$	1 <sup>h</sup> 30 <sup>m</sup> 11.1 <sup>s</sup>	+6°8'37.8"	4.8	Orange	304 ± 5 ly	K4III
<input type="checkbox"/>	$\kappa$	23 <sup>h</sup> 26 <sup>m</sup> 56.0 <sup>s</sup>	+1°15'20.2"	4.9	Blue	153 ± 2 ly	A2V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>	Phantom Galaxy	M74	1 <sup>h</sup> 36 <sup>m</sup> 41.8 <sup>s</sup>	+15°47'1"	10.0	SpiGal	10.5'	30 Mly
<input type="checkbox"/>		NGC 488	1 <sup>h</sup> 21 <sup>m</sup> 46.8 <sup>s</sup>	+15°24'19"	10.4	SpiGal	5.4'	98.3 Mly
<input type="checkbox"/>		NGC 524	1 <sup>h</sup> 24 <sup>m</sup> 47.7 <sup>s</sup>	+9°32'20"	10.5	LenGal	2.8'	86.1 Mly
<input type="checkbox"/>		NGC 741	1 <sup>h</sup> 56 <sup>m</sup> 21.0 <sup>s</sup>	+5°37'44"	11.3	EllGal	3'	241.8 Mly
<input type="checkbox"/>		NGC 128	0 <sup>h</sup> 29 <sup>m</sup> 15.0 <sup>s</sup>	+2°51'51"	11.6	LenGal	3'	190 Mly
<input type="checkbox"/>		NGC 660	1 <sup>h</sup> 43 <sup>m</sup> 2.4 <sup>s</sup>	+13°38'42"	12.0	SpiGal	2.7'	45 Mly

## Notes

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# Piscis Austrinus

## “The Southern Fish”

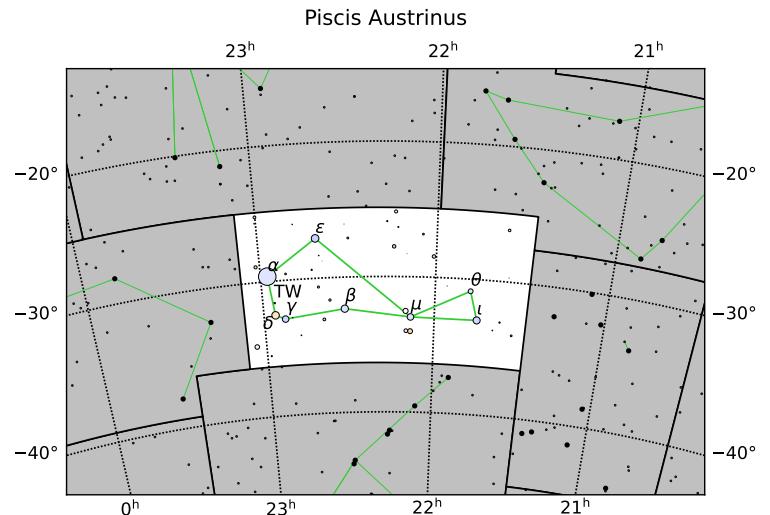
Pronunciation: /pəˈsɪs əsˈtrɪnəs/

Genitive: Piscis Austrini (/pəˈsɪs əsˈtrɪnai/)

Abbreviation: PsA

## History

Despite its southerly position, Piscis Austrinus was known to the ancient Babylonians who saw it as a fish. This tradition was passed to the ancient Greeks who knew it as the Great Fish swallowing the water poured out by Aquarius. However, no specific myths were tied to this fish unlike its northern counterpart, Pisces.



## Facts

Piscis Austrinus is visible at latitudes between  $+55^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire Southern Hemisphere and as far north as central Canada and Scotland. It is best seen at around 9:00 PM local time during October. There are no meteor showers in Piscis Austrinus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Fomalhaut (/fouməl.hɔrt/)	$\alpha$	$22^{\text{h}} 57^{\text{m}} 39.0^{\text{s}}$	$-29^{\circ} 37' 20.1''$	1.2	Blue	$25.13 \pm 0.09$ ly	A3V
□		$\varepsilon$	$22^{\text{h}} 40^{\text{m}} 39.3^{\text{s}}$	$-27^{\circ} 2' 37.0''$	4.2	Blue	$400 \pm 20$ ly	B8V
□		$\delta$	$22^{\text{h}} 55^{\text{m}} 56.9^{\text{s}}$	$-32^{\circ} 32' 22.6''$	4.2	Pale Orange	$172 \pm 2$ ly	G8III + G8IV
□		$\beta$	$22^{\text{h}} 31^{\text{m}} 30.3^{\text{s}}$	$-32^{\circ} 20' 45.9''$	4.3	Blue	$143 \pm 1$ ly	A1V + A2V
□		$\iota$	$21^{\text{h}} 44^{\text{m}} 56.8^{\text{s}}$	$-33^{\circ} 1' 32.8''$	4.4	Blue	$204 \pm 2$ ly	A0V
□		$\gamma$	$22^{\text{h}} 52^{\text{m}} 31.5^{\text{s}}$	$-32^{\circ} 52' 31.7''$	4.4	Blue	$203 \pm 6$ ly	A0V + F5V
□		$\mu$	$22^{\text{h}} 8^{\text{m}} 23.0^{\text{s}}$	$-32^{\circ} 59' 18.4''$	4.5	Blue	$122 \pm 2$ ly	A1.5IV
□		$\theta$	$21^{\text{h}} 47^{\text{m}} 44.1^{\text{s}}$	$-30^{\circ} 53' 53.9''$	5.0	Blue	$320 \pm 10$ ly	A1V + A1V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 7173	22 <sup>h</sup> 2 <sup>m</sup> 3 <sup>s</sup>	-31°58'24"	12.1	EllGal	1.9'	102 Mly
□		NGC 7176	22 <sup>h</sup> 2 <sup>m</sup> 8 <sup>s</sup>	-31°59'22"	12.1	EllGal	1.2'	93.9 Mly
□		NGC 7221	22 <sup>h</sup> 11 <sup>m</sup> 15 <sup>s</sup>	-30°33'47"	12.1	SpiGal	2.3'	195 Mly
□		NGC 7174	22 <sup>h</sup> 2 <sup>m</sup> 6 <sup>s</sup>	-31°59'35"	12.2	SpiGal	2.5'	93.9 Mly
□		IC 5156	22 <sup>h</sup> 3 <sup>m</sup> 15 <sup>s</sup>	-33°50'17"	12.2	SpiGal	2.3'	122 Mly

## Notes

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# Sculptor

## “The Sculptor”

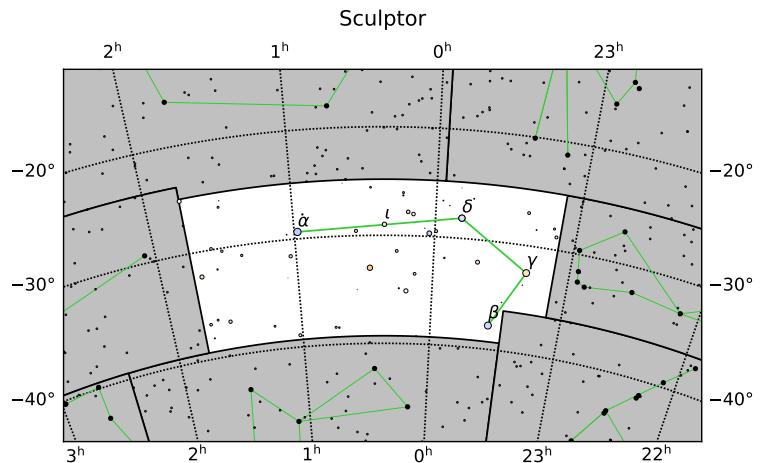
Pronunciation: /skʌlpɪtər/

Genitive: Sculptoris (/skəlp'tɔrɪs/)

Abbreviation: Scl

## History

Sculptor was added to the skies by French astronomer Nicolas-Louis de Lacaille in 1751. He depicted Sculptor as a three-legged table with a carved head on it, and an artist's mallet and two chisels on a block of marble beside it.



## Facts

Sculptor is visible at latitudes between  $+50^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and as far north as the US-Canada border, central Europe, and northern China. It is best seen at around 9:00 PM local time during November. There are no meteor showers in Sculptor.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		α	0 <sup>h</sup> 58 <sup>m</sup> 36.4 <sup>s</sup>	-29°21'26.8"	4.3	Blue	780 ± 30 ly	B7III
□		β	23 <sup>h</sup> 32 <sup>m</sup> 58.3 <sup>s</sup>	-37°49'5.8"	4.4	Blue	174 ± 1 ly	B9.5III
□		γ	23 <sup>h</sup> 18 <sup>m</sup> 49.4 <sup>s</sup>	-32°31'55.3"	4.4	Pale Orange	182 ± 2 ly	K1III
□		δ	23 <sup>h</sup> 48 <sup>m</sup> 55.5 <sup>s</sup>	-28°7'49.0"	4.6	Blue	137 ± 1 ly	A0V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Whale Galaxy	NGC 55	0 <sup>h</sup> 14 <sup>m</sup> 53.6 <sup>s</sup>	-39°11'48"	7.9	SpiGal	32.4'	6.5 Mly
□	Sculptor Galaxy	NGC 253	0 <sup>h</sup> 47 <sup>m</sup> 33 <sup>s</sup>	-25°17'18"	8.0	SpiGal	27.5'	11.4 Mly
□		NGC 300	0 <sup>h</sup> 54 <sup>m</sup> 53.5 <sup>s</sup>	-37°41'4"	9.0	SpiGal	21.9'	6.1 Mly
□		NGC 288	0 <sup>h</sup> 52 <sup>m</sup> 45.2 <sup>s</sup>	-26°34'57.4"	9.4	GbCl	13.8'	29.2 kly
□		NGC 613	1 <sup>h</sup> 34 <sup>m</sup> 18.2 <sup>s</sup>	-29°25'6.6"	10.0	SpiGal	5.2'	67.5 Mly
□		NGC 7793	23 <sup>h</sup> 57 <sup>m</sup> 49.8 <sup>s</sup>	-32°35'27.7"	10.0	SpiGal	9.3'	12.2 Mly
□		NGC 24	0 <sup>h</sup> 9 <sup>m</sup> 56.5 <sup>s</sup>	-24°57'42.3"	12.4	SpiGal	5.7'	23.8 Mly

## Notes

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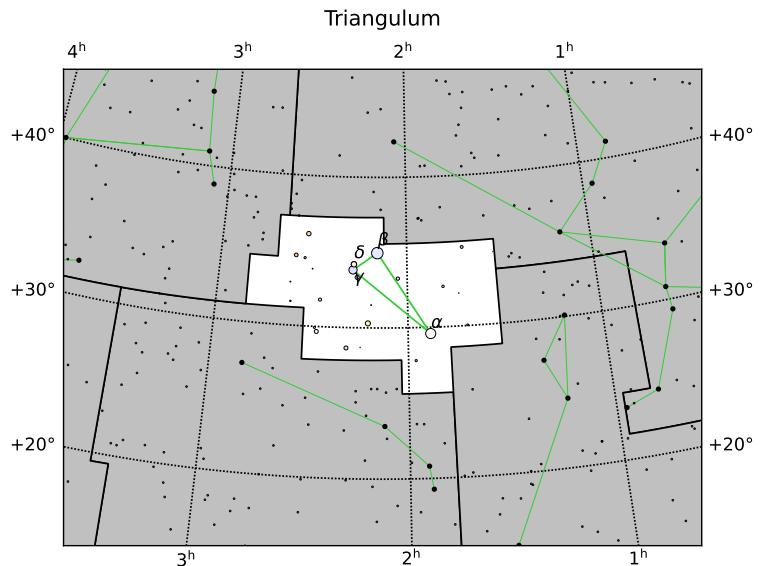
# Triangulum

## “The Triangle”

Pronunciation: /tri'æŋgjuləm/  
Genitive: Trianguli (/tri'æŋgjulai/)  
Abbreviation: Tri

## History

Despite its boring appearance, Triangulum has origins as far back as the ancient Babylonians who saw it as a plough. The ancient Greeks associated it with the Greek letter delta,  $\Delta$ , while the ancient Romans associated it with the triangular island of Sicily.



## Facts

Triangulum is visible at latitudes between  $+90^\circ$  and  $-60^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during December. There are no meteor showers in Triangulum.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\beta$	$2^h 9^m 32.6^s$	$+34^\circ 59' 14.3''$	3.0	Blue	$127 \pm 2$ ly	A5IV
□	Mothallah (/mə'thælə/)	$\alpha$	$1^h 53^m 4.9^s$	$+29^\circ 34' 43.8''$	3.4	Pale Yellow	$63.3 \pm 0.3$ ly	F5III
□		$\gamma$	$2^h 17^m 18.9^s$	$+33^\circ 50' 49.9''$	4.0	Blue	$112.3 \pm 1.0$ ly	A1V
□		$\delta$	$2^h 17^m 3.2^s$	$+34^\circ 13' 27.2''$	4.9	Yellow	$35.2 \pm 0.1$ ly	G0V + G9V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Triangulum Galaxy	M33	1 <sup>h</sup> 33 <sup>m</sup> 50.0 <sup>s</sup>	+30°39'36.7"	5.7	SpiGal	1.2°	3.2 Mly
□	Amatha Galaxy	NGC 925	2 <sup>h</sup> 27 <sup>m</sup> 16.9 <sup>s</sup>	+33°34'44.0"	10.7	SpiGal	10.5'	30.3 Mly
□		NGC 672	1 <sup>h</sup> 47 <sup>m</sup> 54.5 <sup>s</sup>	+27°25'58.0"	11.1	SpiGal	6.2'	23.4 Mly
□		NGC 890	2 <sup>h</sup> 22 <sup>m</sup> 1.0 <sup>s</sup>	+33°15'57.9"	11.1	LenGal	3'	180.2 Mly
□		NGC 1060	2 <sup>h</sup> 43 <sup>m</sup> 15.1 <sup>s</sup>	+32°25'29.9"	12.0	LenGal	2.3'	256 Mly

## Notes

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# Tucana

“The Toucan”

Pronunciation: /tju:’kemə/

Genitive: Tucanae (/tju:’kemi/)

Abbreviation: Tuc

## History

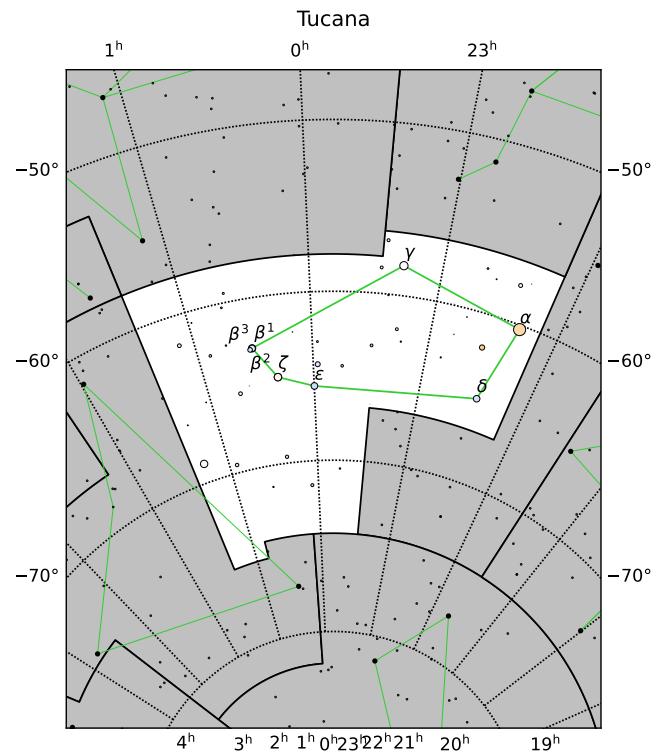
Tucana was one of the constellations added by Dutch astronomer Petrus Plancius in 1598. In his notes, he described this bird as “the Indian magpie,” meaning a bird with a long beak. In this case, it was the hornbill, a bird native to the Indonesian islands, although the hornbill is not technically a toucan.

## Facts

Tucana is visible at latitudes between  $+25^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire Southern Hemisphere and as far north as Central America, the Sahara, India, and Southeast Asia. It is best seen at around 9:00 PM local time in November. There are no meteor showers within Tucana.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$22^{\text{h}}18^{\text{m}}30.1^{\text{s}}$	$-60^{\circ}15'34.5''$	2.9	Orange	$184 \pm 3$ ly	K3III
□		$\gamma$	$23^{\text{h}}17^{\text{m}}25.8^{\text{s}}$	$-58^{\circ}14'8.6''$	4.0	White	$75 \pm 1$ ly	F1III
□		$\zeta$	$0^{\text{h}}20^{\text{m}}4.3^{\text{s}}$	$-64^{\circ}52'29.3''$	4.2	Pale Yellow	$28.01 \pm 0.04$ ly	F9.5V
□		$\beta^1$	$0^{\text{h}}31^{\text{m}}32.7^{\text{s}}$	$-62^{\circ}57'29.6''$	4.4	Blue	$140 \pm 1$ ly	B9V
□		$\beta^2$	$0^{\text{h}}31^{\text{m}}33.4^{\text{s}}$	$-62^{\circ}57'56.1''$	4.5	Blue	$166 \pm 8$ ly	A2V + A7V
□		$\beta^3$	$0^{\text{h}}32^{\text{m}}43.8^{\text{s}}$	$-63^{\circ}1'52''$	5.1	White	$152 \pm 3$ ly	A0V + A2V



# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Small Magellanic Cloud	NGC 292	0 <sup>h</sup> 52 <sup>m</sup> 44.8 <sup>s</sup>	-72°49'43"	2.7	IrrGal	5.3°	203.7 kly
□	47 Tucanae	NGC 104	0 <sup>h</sup> 24 <sup>m</sup> 5.7 <sup>s</sup>	-72°4'52.6"	4.1	GbCl	43.8'	14.5 kly
□		NGC 362	1 <sup>h</sup> 3 <sup>m</sup> 14.3 <sup>s</sup>	-70°50'55.6"	6.4	GbCl	12.9'	29.3 kly
□		NGC 121	0 <sup>h</sup> 26 <sup>m</sup> 48.3 <sup>s</sup>	-71°32'8.4"	11.2	GbCl	3.8'	199 kly

## Notes

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# Winter Constellations

Auriga	Eridanus	Orion
Caelum	Fornax	Pictor
Camelopardalis	Gemini	Puppis
Canis Major	Horologium	Reticulum
Canis Minor	Hydrus	Taurus
Carina	Lepus	Vela
Columba	Mensa	Volans
Dorado	Monoceros	

# Auriga

“The Charioteer”

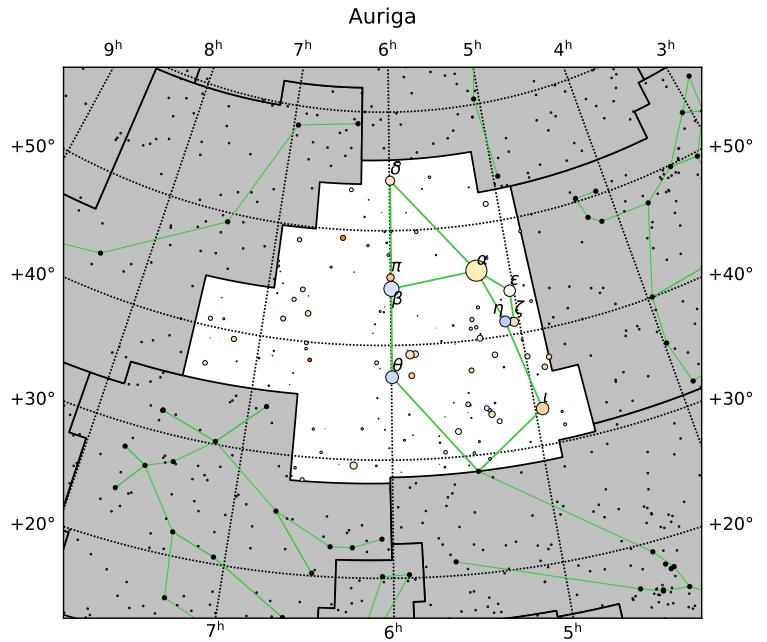
Pronunciation: /ɔ:rɪgə/

Genitive: Aurigae (/ɔ:rɪdʒi:/)

Abbreviation: Aur

## History

Although hints of Auriga can be traced back to the ancient Babylonians, it came into its own in ancient Greek mythology. Here, Auriga was known as the Greek hero Erichthonius of Athens, a son of the god Hephaestus, who was credited with the invention of the quadriga, the four-horse chariot. His first chariot was created in the image of the Sun’s chariot, and for this reason he was placed in the skies by Zeus.



## Facts

Auriga is visible at latitudes between  $+90^\circ$  and  $-40^\circ$ , i.e., throughout the entire Northern Hemisphere and throughout most of the Southern Hemisphere, excluding the southern tip of South America and southern New Zealand. It is best seen at around 9:00 PM local time during late February to early March. The Aurigid meteor shower peaks at around August 31 at six meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Capella (/kə'pələ/)	α	5 <sup>h</sup> 16 <sup>m</sup> 41.4 <sup>s</sup>	+45°59'52.8"	0.1	Pale Orange	$42.92 \pm 0.05$ ly	G3III
□	Menkalinan (/mɛŋ'kælmæn/)	β	5 <sup>h</sup> 59 <sup>m</sup> 31.7 <sup>s</sup>	+44°56'50.8"	1.9	Blue	$81.1 \pm 0.5$ ly	A1IV + A1IV
□	Mahasim (mahəsim/)	θ	5 <sup>h</sup> 59 <sup>m</sup> 43.3 <sup>s</sup>	+37°12'45.3"	2.6	Blue	$166 \pm 1$ ly	A0V + F2-5V
□	Hassaleh (/hæsəleɪ/)	υ	4 <sup>h</sup> 56 <sup>m</sup> 59.6 <sup>s</sup>	+33°9'58.0"	2.7	Orange	$490 \pm 30$ ly	K3II
□	Almaaz (/æl'ma:z/)	ε	5 <sup>h</sup> 1 <sup>m</sup> 58.1 <sup>s</sup>	+43°49'23.9"	2.9	Pale Yellow	3300 ly	F0Iab + B5V
□	Haedus (/hi:dəs/)	η	5 <sup>h</sup> 6 <sup>m</sup> 30.9 <sup>s</sup>	+41°14'4.1"	3.2	Blue	$243 \pm 4$ ly	B3V
□		δ	5 <sup>h</sup> 59 <sup>m</sup> 31.6 <sup>s</sup>	+54°17'5.1"	3.7	Pale Orange	$141 \pm 3$ ly	K0III
□	Sacleni (/sæk'lə'tini/)	ζ	5 <sup>h</sup> 2 <sup>m</sup> 28.7 <sup>s</sup>	+51°4'32.9"	3.8	Orange	620 ly	K5II + B7V
□		π	5 <sup>h</sup> 59 <sup>m</sup> 56.1 <sup>s</sup>	+45°56'12.3"	4.3	Orange	780 ly	M3II

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 2281	6 <sup>h</sup> 48 <sup>m</sup> 17 <sup>s</sup>	+41°4'42"	5.4	OpCl	25'	1.7 kly
□	Flaming Star Nebula	IC 405	5 <sup>h</sup> 16 <sup>m</sup> 5 <sup>s</sup>	+34°27'49"	6.0	Neb	37'	1.5 kly
□		M37	5 <sup>h</sup> 52 <sup>m</sup> 18 <sup>s</sup>	+32°33'2"	6.2	OpCl	24'	4.5 kly
□		M36	5 <sup>h</sup> 36 <sup>m</sup> 18 <sup>s</sup>	+34°8'24"	6.3	OpCl	10'	4.3 kly
□	Starfish Cluster	M38	5 <sup>h</sup> 28 <sup>m</sup> 43 <sup>s</sup>	+35°51'18"	7.4	OpCl	21'	3.5 kly
□		NGC 1893	5 <sup>h</sup> 22 <sup>m</sup> 44 <sup>s</sup>	+33°24'42"	7.5	OpCl	11'	3.8 kly
□		NGC 1664	4 <sup>h</sup> 51 <sup>m</sup> 6 <sup>s</sup>	+43°40'30"	7.6	OpCl	18'	4.2 kly
□		NGC 1907	5 <sup>h</sup> 28 <sup>m</sup> 6 <sup>s</sup>	+35°19'30"	8.2	OpCl	7'	4.5 kly
□		NGC 1931	5 <sup>h</sup> 31 <sup>m</sup> 26 <sup>s</sup>	+34°14'42"	10.1	Neb	3'	7 kly
□		IC 2149	5 <sup>h</sup> 56 <sup>m</sup> 24 <sup>s</sup>	+46°6'18"	10.6	PNeb	12"	3.6 kly

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# Caelum

“The Chisel”

Pronunciation: /sɪləm/  
Genitive: Caeli (/sɪlai/)  
Abbreviation: Cae

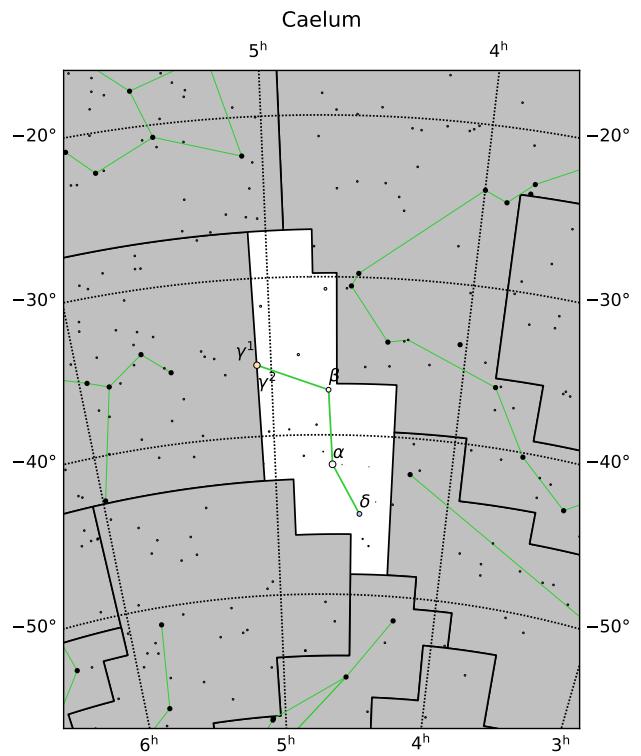
## History

Caelum was another of the constellations created by French astronomer Nicolas-Louis de Lacaille in 1751. Originally it had the longer name of *Caelum Sculptoris*, “the engraver’s chisel,” but eventually its name was shortened.

## Facts

Caelum is visible at latitudes between  $+40^{\circ}$  and  $-90^{\circ}$ , i.e., throughout the entire Southern Hemisphere and as far north as the central US, the Mediterranean, and northern China. It is best seen at around 9:00 PM local time during January. There is one minor meteor shower in Caelum.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		α	4 <sup>h</sup> 40 <sup>m</sup> 33.7 <sup>s</sup>	-41°51'49.5"	4.5	White	$65.7 \pm 0.7$ ly	F2V + M0.5V
□		γ¹	5 <sup>h</sup> 4 <sup>m</sup> 24.4 <sup>s</sup>	-35°28'58.7"	4.6	Orange	$185 \pm 2$ ly	K2III + G8IV
□		β	4 <sup>h</sup> 42 <sup>m</sup> 3.5 <sup>s</sup>	-37°8'39.5"	5.0	White	$94 \pm 1$ ly	F3V
□		δ	4 <sup>h</sup> 30 <sup>m</sup> 50.1 <sup>s</sup>	-44°57'13.5"	5.0	Blue	$700 \pm 30$ ly	B2IV-V
□		γ²	5 <sup>h</sup> 4 <sup>m</sup> 26.2 <sup>s</sup>	-35°42'17.8"	6.3	White	$341 \pm 2$ ly	F2IV-V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 1679	4 <sup>h</sup> 49 <sup>m</sup> 54 <sup>s</sup>	-31°57'52"	10.7	SpiGal	3.1'	36.9 Mly
□		NGC 1558	4 <sup>h</sup> 20 <sup>m</sup> 16 <sup>s</sup>	-45°1'53"	11.0	SpiGal	3.1'	201 Mly
□		NGC 1567	4 <sup>h</sup> 21 <sup>m</sup> 9 <sup>s</sup>	-48°15'16"	12.2	EllGal	1.5'	205 Mly
□		NGC 1570	4 <sup>h</sup> 22 <sup>m</sup> 9 <sup>s</sup>	-43°37'45"	12.3	EllGal	2.2'	202 Mly

## Notes

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# Camelopardalis

“The Giraffe”

Pronunciation: /kəˌmɛlə'pa:rðəlɪs/

Genitive: Camelopardalis (/kəˌmɛlə'pa:rðəlɪs/)

Abbreviation: Cam

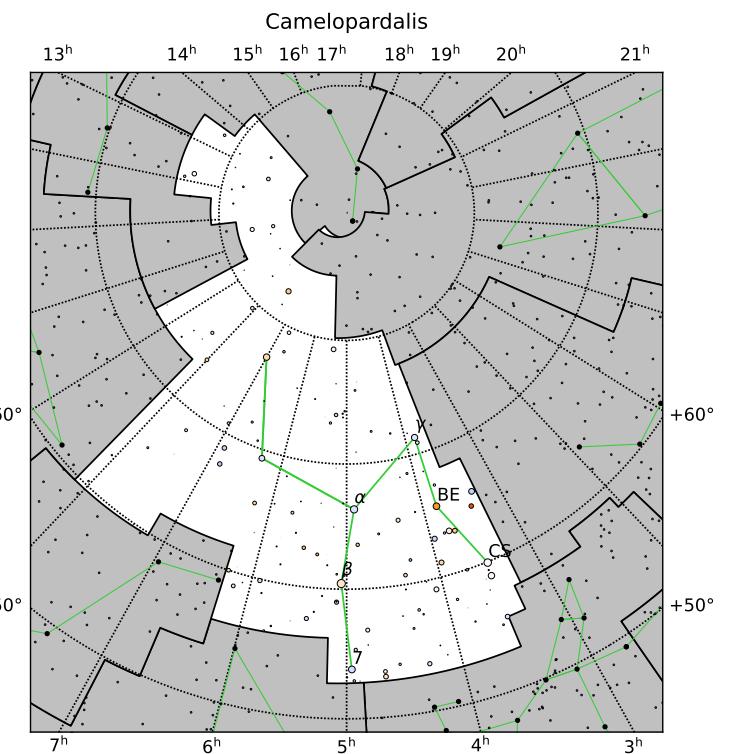
## History

Camelopardalis was one of Dutch astronomer Petrus Plancius's additions to the sky in 1613. Its name comes from the Greek word for “giraffe,” *kamēlos* meaning “camel” and *pardalis* meaning “spotted,” because it has a long neck like a camel and spots.

## Facts

Camelopardalis is visible at latitudes between  $+90^\circ$  and  $-10^\circ$ , i.e., throughout the entire Northern Hemisphere and only as far south as northern Brazil, sub-Saharan Africa, and Indonesia. It is best seen at around 9:00 PM local time during February. There is one minor meteor shower in Camelopardalis.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\beta$	$5^{\text{h}}3^{\text{m}}25.1^{\text{s}}$	$+60^\circ26'32.1''$	4.0	Pale Orange	$870 \pm 50$ ly	G1 Ib-IIa
□		CS	$3^{\text{h}}29^{\text{m}}4.1^{\text{s}}$	$+59^\circ56'25.2''$	4.2	White	3180 ly	B9 Ia
□		$\alpha$	$4^{\text{h}}54^{\text{m}}3.0^{\text{s}}$	$+66^\circ20'33.6''$	4.3	Blue	6000 ly	O9 Ia
□		BE	$3^{\text{h}}49^{\text{m}}31.3^{\text{s}}$	$+65^\circ31'33.6''$	4.4	Orange	800 ly	M2 II
□		7	$4^{\text{h}}57^{\text{m}}17.2^{\text{s}}$	$+53^\circ45'7.6''$	4.4	Blue	$370 \pm 30$ ly	A1 V
□	HD 49878		$7^{\text{h}}0^{\text{m}}4.0^{\text{s}}$	$+76^\circ58'38.7''$	4.6	Orange	$184 \pm 2$ ly	K4 III
□	HD 42818		$6^{\text{h}}18^{\text{m}}50.8^{\text{s}}$	$+69^\circ19'11.2''$	4.8	Blue	$175 \pm 2$ ly	A0 V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 1502	4 <sup>h</sup> 7 <sup>m</sup> 49 <sup>s</sup>	+62°19'55"	6.0	OpCl	9.7'	3.5 kly
□		NGC 2403	7 <sup>h</sup> 36 <sup>m</sup> 51 <sup>s</sup>	+65°36'9"	8.9	SpiGal	21.9'	9.7 Mly
□	Hidden Galaxy	IC 342	3 <sup>h</sup> 46 <sup>m</sup> 49 <sup>s</sup>	+68°5'46"	9.1	SpiGal	21.4'	10.7 Mly
□		NGC 1560	4 <sup>h</sup> 32 <sup>m</sup> 49 <sup>s</sup>	+71°52'59"	9.8	SpiGal	11.6'	9.8 Mly
□		NGC 2655	8 <sup>h</sup> 55 <sup>m</sup> 38 <sup>s</sup>	+78°13'3"	10.1	LenGal	4.9'	63 Mly
□		NGC 1961	5 <sup>h</sup> 42 <sup>m</sup> 5 <sup>s</sup>	+69°22'42"	10.9	SpiGal	4.6'	173 Mly
□		NGC 2146	6 <sup>h</sup> 18 <sup>m</sup> 38 <sup>s</sup>	+78°21'25"	11.4	SpiGal	6'	70 Mly
□		NGC 2366	7 <sup>h</sup> 28 <sup>m</sup> 55 <sup>s</sup>	+69°12'57"	11.4	IrrGal	8.1'	10 Mly
□		NGC 2715	9 <sup>h</sup> 8 <sup>m</sup> 6 <sup>s</sup>	+78°5'7"	11.6	SpiGal	4.9'	67.4 Mly
□		NGC 2748	9 <sup>h</sup> 13 <sup>m</sup> 43 <sup>s</sup>	+76°28'31"	11.7	SpiGal	2.3'	61.3 Mly
□		NGC 1569	4 <sup>h</sup> 30 <sup>m</sup> 49 <sup>s</sup>	+64°50'53"	11.9	IrrGal	3.6'	11 Mly
□	Lemon Slice Nebula	IC 3568	12 <sup>h</sup> 33 <sup>m</sup> 6 <sup>s</sup>	+82°34'0"	12.3	PNeb	21"	4.5 kly
□	Oyster Nebula	NGC 1501	4 <sup>h</sup> 6 <sup>m</sup> 59 <sup>s</sup>	+60°55'14"	13.0	PNeb	52"	4.2 kly

## Notes

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# Canis Major

“The Great Dog”

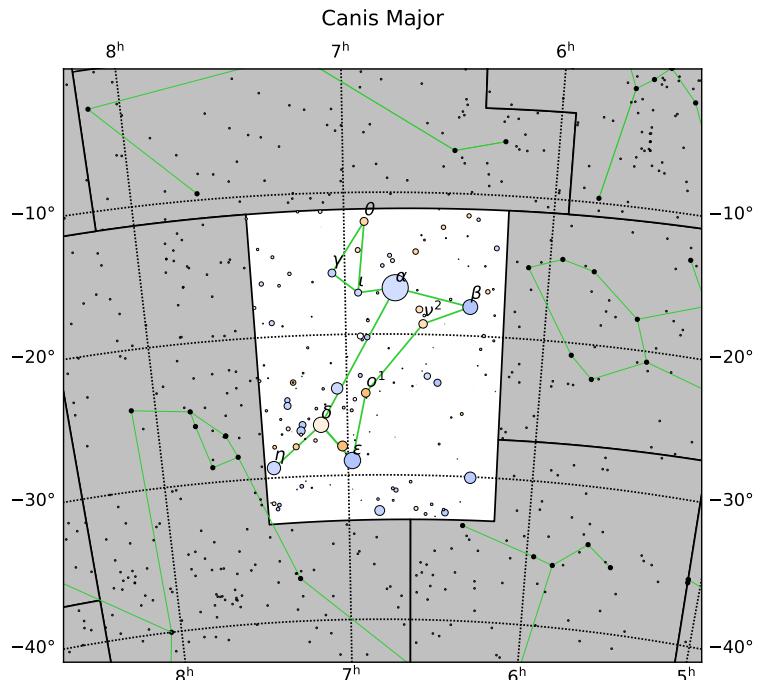
Pronunciation: /keɪnɪs 'meɪdʒər/

Genitive: Canis Majoris (/keɪnɪs meɪ'dʒɔris/)

Abbreviation: CMa

## History

Canis Major was a constellation invented by the ancient Greeks to represent various famous dogs. In one story, the dog was Laelaps, a gift from Zeus to his lover Europa. In another, it was the hound of the nymph Procris. In yet another it was a dog given to Cephalus by Aurora, famed for its speed. Bringing the nearby constellations into the mix, it is also seen as one of Orion’s hunting dogs, pursuing Lepus the hare or helping Orion fight Taurus the bull.



## Facts

Canis Major is visible at latitudes between  $+60^\circ$

and  $-90^\circ$ , i.e., throughout most of the populated world except for Alaska, northern Canada, Scandinavia, and northern Russia. It is best seen at around 9:00 PM local time during February. There are no meteor showers in Canis Major.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Sirius (/sɪriəs/)	α	6 <sup>h</sup> 45 <sup>m</sup> 8.9 <sup>s</sup>	$-16^\circ 42' 58.0''$	-1.5	Blue	$8.709 \pm 0.005$ ly	A1V + DA2
□	Adhara (/ə'deərə/)	ε	6 <sup>h</sup> 58 <sup>m</sup> 37.6 <sup>s</sup>	$-28^\circ 58' 19''$	1.5	Blue	$430 \pm 30$ ly	B2II
□	Wezen (wi:zən/)	δ	7 <sup>h</sup> 8 <sup>m</sup> 23.5 <sup>s</sup>	$-26^\circ 23' 35.5''$	1.8	Pale Yellow	1600 ly	F8Ia
□	Mirzam (/mɜ:rzəm/)	β	6 <sup>h</sup> 22 <sup>m</sup> 42.0 <sup>s</sup>	$-17^\circ 57' 21.3''$	2.0	Blue	$490 \pm 20$ ly	B1III-III
□	Aludra (/ə'lʊ:drə/)	η	7 <sup>h</sup> 24 <sup>m</sup> 5.7 <sup>s</sup>	$-29^\circ 18' 11.2''$	2.5	Blue	2000 ly	B5Ia
□		ο <sup>1</sup>	6 <sup>h</sup> 54 <sup>m</sup> 8.0 <sup>s</sup>	$-24^\circ 11' 3.2''$	3.9	Orange	1990 ly	K2.5Iab
□		ν <sup>2</sup>	6 <sup>h</sup> 36 <sup>m</sup> 41.0 <sup>s</sup>	$-19^\circ 15' 21.2''$	4.0	Orange	$64.4 \pm 0.3$ ly	K1III
□		θ	6 <sup>h</sup> 54 <sup>m</sup> 11.4 <sup>s</sup>	$-12^\circ 2' 19.1''$	4.1	Orange	$260 \pm 10$ ly	K4III
□	Muliphein (/mjʊ:lifem/)	γ	7 <sup>h</sup> 3 <sup>m</sup> 45.5 <sup>s</sup>	$-15^\circ 37' 59.8''$	4.1	Blue	$440 \pm 10$ ly	B8II
□		ι	6 <sup>h</sup> 56 <sup>m</sup> 8.2 <sup>s</sup>	$-17^\circ 3' 15.3''$	4.4	Blue	3100 ly	B3Ib

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		Cr 140	7 <sup>h</sup> 24 <sup>m</sup> 53 <sup>s</sup>	-31°52'23"	3.5	OpCl	1°	1.2 kly
□	τ CMa Cluster	NGC 2362	7 <sup>h</sup> 18 <sup>m</sup> 41 <sup>s</sup>	-24°57'18"	3.8	OpCl	6'	4.8 kly
□		M41	6 <sup>h</sup> 46 <sup>m</sup> 0 <sup>s</sup>	-20°45'15"	4.5	OpCl	38'	2.3 kly
□		NGC 2354	7 <sup>h</sup> 14 <sup>m</sup> 10 <sup>s</sup>	-25°41'24"	6.5	OpCl	18'	4.3 kly
□	Caroline's Cluster	NGC 2360	7 <sup>h</sup> 17 <sup>m</sup> 43 <sup>s</sup>	-15°38'29"	7.2	OpCl	13'	3.7 kly
□		NGC 2374	7 <sup>h</sup> 23 <sup>m</sup> 56 <sup>s</sup>	-13°15'48"	8.0	OpCl	19'	4.3 kly
□		NGC 2204	6 <sup>h</sup> 15 <sup>m</sup> 33 <sup>s</sup>	-18°39'54"	8.6	OpCl	13'	13.4 kly
□		NGC 2217	6 <sup>h</sup> 21 <sup>m</sup> 40 <sup>s</sup>	-27°13'57"	11.7	LenGal	4.4'	73 Mly
□		NGC 2207	6 <sup>h</sup> 16 <sup>m</sup> 22 <sup>s</sup>	-21°22'22"	12.2	SpiGal	4.3'	81 Mly
□	Thor's Helmet	NGC 2359	7 <sup>h</sup> 18 <sup>m</sup> 30 <sup>s</sup>	-13°13'48"		Neb		12 kly

## Notes

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# Canis Minor

## “The Lesser Dog”

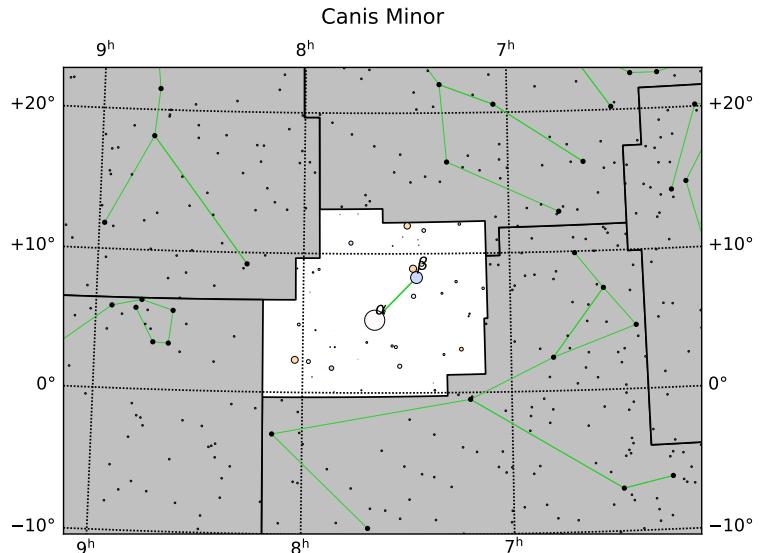
Pronunciation: /kənɪs 'mæmər/

Genitive: Canis Minoris (/kənɪs mi'nɔris/)

Abbreviation: CMi

## History

Canis Minor has always been associated with its counterpart, Canis Major, since the lesser dog always rises before the great dog. In Greek mythology, Canis Minor was sometimes a second hunting dog of Orion, or a dog owned by Icarus of Athens.



## Facts

Canis Minor is visible at latitudes between  $+90^\circ$  and  $-75^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during March. One minor meteor shower appears in Canis Minor.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
<input type="checkbox"/>	Procyon (/prou̇sion/)	$\alpha$	$7^{\text{h}}39^{\text{m}}18.1^{\text{s}}$	$+5^{\circ}13'30.0''$	0.3	White	$11.45 \pm 0.05$ ly	F5IV-V + DQZ
<input type="checkbox"/>	Gomeisa (/gō'maɪzə/)	$\beta$	$7^{\text{h}}27^{\text{m}}9.0^{\text{s}}$	$+8^{\circ}17'21.5''$	2.8	Blue	$160 \pm 10$ ly	B8V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		NGC 2485	$7^{\text{h}}56^{\text{m}}48^{\text{s}}$	$+7^{\circ}28'40''$	12.3	SpiGal	$1.6'$	104 Mly

## Notes

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# Carina

## “The Keel”

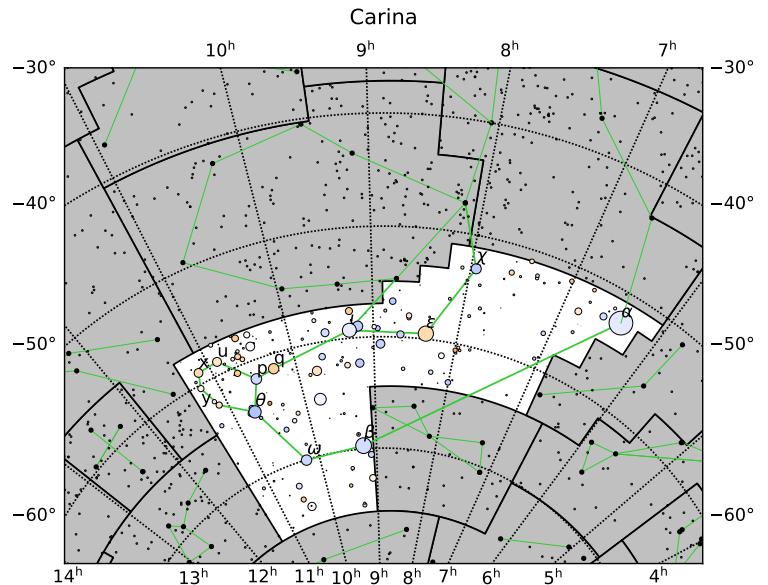
Pronunciation: /kə'raɪnə/

Genitive: Carinae (/kə'raɪni:/)

Abbreviation: Car

## History

Once a part of the larger constellation Argo Navis, the ship of Jason and the Argonauts in ancient Greek mythology, Carina now represents the keel of that ship. Argo Navis was separated into its component parts in 1763 by French astronomer Nicolas-Louis de La Caille.



## Facts

Carina is visible at latitudes between  $+20^\circ$  and  $-90^\circ$ , i.e., throughout the entire Southern Hemisphere and only as far north as the Caribbean, the Sahara, and Southeast Asia. It is best seen at around 9:00 PM local time during March. There are a few minor meteor showers in Carina.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Canopus (/kə'noupəs/)	$\alpha$	$6^{\text{h}}23^{\text{m}}57.1^{\text{s}}$	$-52^\circ41'44.4''$	-0.7	Pale Blue	$310 \pm 20$ ly	A9II
□	Miplacidus (/maɪə'plæsɪdəs/)	$\beta$	$9^{\text{h}}13^{\text{m}}12.0^{\text{s}}$	$-69^\circ43'1.9''$	1.7	Blue	$113.2 \pm 0.4$ ly	A1III
□	Avior (/eɪvjər/)	$\varepsilon$	$8^{\text{h}}22^{\text{m}}30.8^{\text{s}}$	$-59^\circ30'34.1''$	1.9	Orange	$610 \pm 50$ ly	K3III + B2V
□	Aspidiske (/æspɪ'dɪskɪ:/)	$\iota$	$9^{\text{h}}17^{\text{m}}5.4^{\text{s}}$	$-59^\circ16'30.8''$	2.2	Pale Blue	$690 \pm 70$ ly	A9Ib
□		$\theta$	$10^{\text{h}}42^{\text{m}}57.4^{\text{s}}$	$-64^\circ23'40.0''$	2.8	Blue	$460 \pm 10$ ly	B0.5V
□		$\omega$	$10^{\text{h}}13^{\text{m}}44.2^{\text{s}}$	$-70^\circ2'16.5''$	3.3	Blue	$342 \pm 3$ ly	B8III
□		$\rho$	$10^{\text{h}}32^{\text{m}}1.5^{\text{s}}$	$-61^\circ41'7.2''$	3.3	Blue	$480 \pm 30$ ly	B4V
□		$\sigma$	$10^{\text{h}}17^{\text{m}}5.0^{\text{s}}$	$-61^\circ19'56.3''$	3.4	Orange	$760 \pm 20$ ly	K2.5II
□		$\chi$	$7^{\text{h}}56^{\text{m}}46.7^{\text{s}}$	$-52^\circ58'56.0''$	3.6	Blue	$450 \pm 30$ ly	B3IV
□		$\upsilon$	$10^{\text{h}}53^{\text{m}}29.7^{\text{s}}$	$-58^\circ51'11.4''$	3.8	Pale Orange	$95.0 \pm 0.4$ ly	K0IV
□		$\chi$	$11^{\text{h}}8^{\text{m}}35.4^{\text{s}}$	$-58^\circ58'30.1''$	3.8	Pale Orange	6200 ly	G0-4Ia
□		$\gamma$	$11^{\text{h}}12^{\text{m}}36.0^{\text{s}}$	$-60^\circ19'3.5''$	4.6	White	12 700 ly	A5Ia
□	HD 96566		$11^{\text{h}}6^{\text{m}}32.4^{\text{s}}$	$-62^\circ25'26.8''$	4.5	Pale Orange	$376 \pm 6$ ly	G7.5III

<input type="checkbox"/>	HD 96919	11 <sup>h</sup> 8 <sup>m</sup> 34.0 <sup>s</sup>	-61°56'49.8"	5.2	Pale Blue	6200 ly	B9Ia
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## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>	Carina Nebula	NGC 3372	10 <sup>h</sup> 45 <sup>m</sup> 8.5 <sup>s</sup>	-59°52'4"	1.0	Neb	2°	8.5 kly
<input type="checkbox"/>	Southern Pleiades	IC 2602	10 <sup>h</sup> 42 <sup>m</sup> 57.5 <sup>s</sup>	-64°23'39"	1.9	OpCl	50'	547 ly
<input type="checkbox"/>	Wishing Well Cluster	NGC 3532	11 <sup>h</sup> 5 <sup>m</sup> 33 <sup>s</sup>	-58°46'14"	3.0	OpCl	55'	1.3 kly
<input type="checkbox"/>	Southern Beehive	NGC 2615	7 <sup>h</sup> 58 <sup>m</sup> 20 <sup>s</sup>	-60°45'12"	3.8	OpCl	30'	1.3 kly
<input type="checkbox"/>		NGC 3114	10 <sup>h</sup> 2 <sup>m</sup> 42 <sup>s</sup>	-60°6'0"	4.2	OpCl	40'	3.4 kly
<input type="checkbox"/>		NGC 3293	10 <sup>h</sup> 35 <sup>m</sup> 24 <sup>s</sup>	-58°13'28"	4.7	OpCl	8.2'	8.4 kly
<input type="checkbox"/>		NGC 2808	9 <sup>h</sup> 12 <sup>m</sup> 3.1 <sup>s</sup>	-64°51'48.6"	6.2	GbCl	13.8'	31.3 kly
<input type="checkbox"/>	Homunculus Nebula		10 <sup>h</sup> 45 <sup>m</sup> 3.6 <sup>s</sup>	-59°41'4"	6.2	Neb	18"	7.5 kly
<input type="checkbox"/>	Gabriela Mistral Nebula	NGC 3324	10 <sup>h</sup> 37 <sup>m</sup> 20 <sup>s</sup>	-58°38'30"	6.7	OpCl	11'	9.1 kly
<input type="checkbox"/>		IC 2714	11 <sup>h</sup> 17 <sup>m</sup> 27 <sup>s</sup>	-62°44'0"	8.2	OpCl	12'	4 kly
<input type="checkbox"/>		NGC 2867	9 <sup>h</sup> 21 <sup>m</sup> 25.4 <sup>s</sup>	-58°18'40.6"	9.7	PNeb	12"	7.3 kly
<input type="checkbox"/>		IC 2448	9 <sup>h</sup> 7 <sup>m</sup> 6.3 <sup>s</sup>	-69°56'30.7"	11.1	PNeb	21"	11 kly

## Notes

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# Columba

## “The Dove”

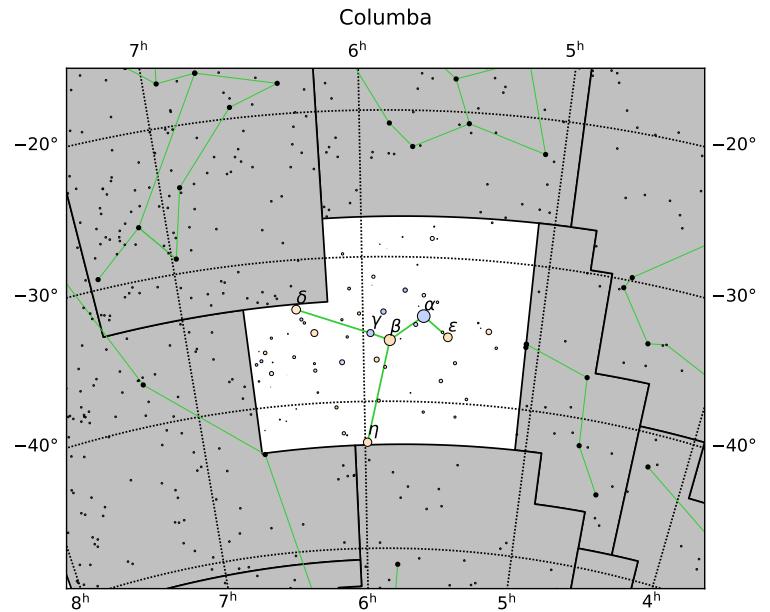
Pronunciation: /kəlʌmbə/

Genitive: Columbae (/kəlʌmbi:/)

Abbreviation: Col

## History

Columba was another of the additions by Dutch astronomer Petrus Plancius. It is supposed to represent Noah’s dove, sent out from the Ark to find dry land and returned holding an olive branch in its beak, a sign that the flood was subsiding. Alternatively, those familiar with Jason and the Argonauts might instead think of the dove as the one sent by the Argonauts between the sliding doors of the Clashing Rocks to ensure their safe passage.



## Facts

Canis Minor is visible at latitudes between  $+45^\circ$

and  $-90^\circ$ , i.e., south of Canada, southern Europe, and northern China. It is best seen at around 9:00 PM local time during February. There are no meteor showers in Columba.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Phact (/fækt/)	$\alpha$	5 <sup>h</sup> 39 <sup>m</sup> 38.9 <sup>s</sup>	$-34^\circ 4' 26.8''$	2.6	Blue	$261 \pm 8$ ly	B9V
□	Wazn (/wɒzən/)	$\beta$	5 <sup>h</sup> 50 <sup>m</sup> 57.6 <sup>s</sup>	$-35^\circ 46' 5.9''$	3.1	Pale Orange	$87.2 \pm 0.3$ ly	K1III
□		$\delta$	6 <sup>h</sup> 22 <sup>m</sup> 6.8 <sup>s</sup>	$-33^\circ 26' 11.0''$	3.9	Pale Orange	$234 \pm 9$ ly	G7II
□		$\epsilon$	5 <sup>h</sup> 31 <sup>m</sup> 12.7 <sup>s</sup>	$-35^\circ 28' 13.9''$	3.9	Pale Orange	$262 \pm 5$ ly	K1III-III
□		$\eta$	5 <sup>h</sup> 59 <sup>m</sup> 8.8 <sup>s</sup>	$-42^\circ 48' 54.5''$	4.0	Pale Orange	$472 \pm 8$ ly	G8/K1II
□		$\gamma$	5 <sup>h</sup> 57 <sup>m</sup> 32.2 <sup>s</sup>	$-35^\circ 16' 59.8''$	4.4	Blue	$870 \pm 40$ ly	B2.5IV + G8V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 1851	5 <sup>h</sup> 14 <sup>m</sup> 7 <sup>s</sup>	-40°2'48"	7.2	GbCl	9'	39.5 kly
□		NGC 1808	5 <sup>h</sup> 7 <sup>m</sup> 42 <sup>s</sup>	-37°30'47"	9.9	SpiGal	6.4'	22 Mly
□		NGC 1792	5 <sup>h</sup> 5 <sup>m</sup> 14 <sup>s</sup>	-37°58'51"	10.2	SpiGal	5.2'	31 Mly
□		NGC 2090	5 <sup>h</sup> 47 <sup>m</sup> 2 <sup>s</sup>	-34°15'2"	11.2	SpiGal	4.9'	44 Mly
□		NGC 2188	6 <sup>h</sup> 10 <sup>m</sup> 10 <sup>s</sup>	-34°6'22"	11.7	SpiGal	4.4'	27 Mly
□		NGC 1800	5 <sup>h</sup> 6 <sup>m</sup> 26 <sup>s</sup>	-31°57'15"	12.6	IrrGal	2'	26 Mly
□		IC 2158	6 <sup>h</sup> 5 <sup>m</sup> 18 <sup>s</sup>	-27°51'25"	13.0	SpiGal	1.7'	76 Mly

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# Dorado

“The Dolphinfish”

Pronunciation: /dɒrədəʊʊ/

Genitive: Doradus (/dɒrədəʊs/)

Abbreviation: Dor

## History

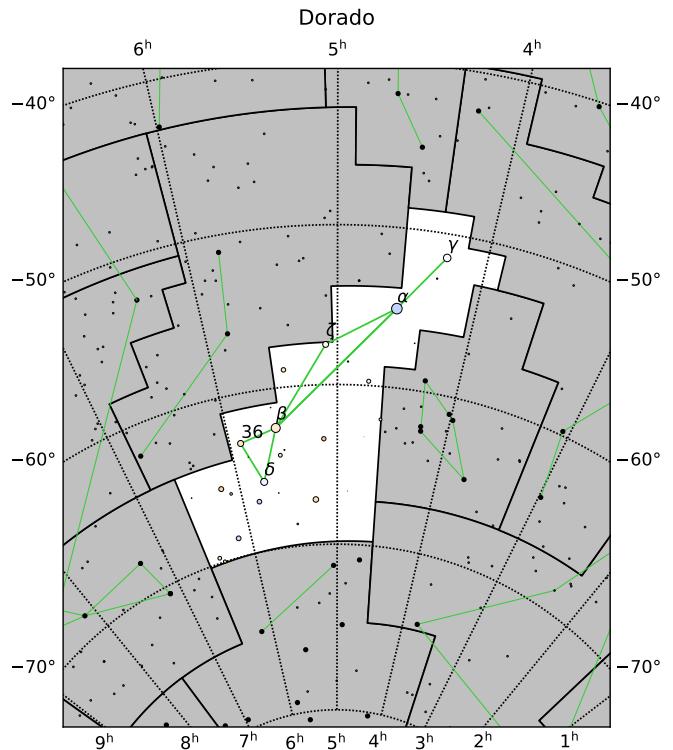
Dorado was first introduced by the Dutch explorers Pieter Keyser and Frederick de Houtman. Dorado represents an animal unknown to these European explorers, the dolphinfish or mahi-mahi. They were seen chasing flying fish and so Dorado was placed in the sky following Volans, the flying fish.

## Facts

Dorado is visible at latitudes between  $+20^{\circ}$  and  $-90^{\circ}$ , i.e., south of Central America, Egypt, and Vietnam. It is best seen at around 9:00 PM local time during January. There are no meteor showers in Dorado.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$4^{\text{h}}33^{\text{m}}59.8^{\text{s}}$	$-55^{\circ}2'41.9''$	3.3	Pale Blue	$169 \pm 3$ ly	A0III + B9IV
□		$\beta$	$5^{\text{h}}33^{\text{m}}37.5^{\text{s}}$	$-62^{\circ}29'23.3''$	3.5	Pale Yellow	$1050 \pm 100$ ly	F4-G4Ia-II
□		$\gamma$	$4^{\text{h}}16^{\text{m}}1.6^{\text{s}}$	$-51^{\circ}29'11.9''$	4.3	White	$66.7 \pm 0.4$ ly	F1V
□		$\delta$	$5^{\text{h}}44^{\text{m}}46.4^{\text{s}}$	$-65^{\circ}44'7.9''$	4.3	Pale Blue	$150 \pm 1$ ly	A7V
□		36	$5^{\text{h}}54^{\text{m}}6.1^{\text{s}}$	$-63^{\circ}5'23.2''$	4.7	Pale Orange	$88.3 \pm 0.6$ ly	K2III
□		$\zeta$	$5^{\text{h}}5^{\text{m}}30.7^{\text{s}}$	$-57^{\circ}28'21.7''$	4.8	White	$37.91 \pm 0.07$ ly	F7V + K7V



# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Large Magellanic Cloud		5 <sup>h</sup> 23 <sup>m</sup> 34 <sup>s</sup>	-69°45'24"	0.1	SpiGal	10°45'	163 kly
□	Tarantula Nebula		5 <sup>h</sup> 38 <sup>m</sup> 38 <sup>s</sup>	-69°5'42"	8.0	Neb	40'	163 kly
□		NGC 1968	5 <sup>h</sup> 27 <sup>m</sup> 23 <sup>s</sup>	-67°28'18"	8.2	OpCl	5'	163 kly
□		NGC 2055	5 <sup>h</sup> 36 <sup>m</sup> 44 <sup>s</sup>	-69°29'54"	8.4	OpCl	1.9'	163 kly
□		NGC 2074	5 <sup>h</sup> 39 <sup>m</sup> 3 <sup>s</sup>	-69°29'54"	8.5	Neb	4'	163 kly
□		NGC 1955	5 <sup>h</sup> 26 <sup>m</sup> 12 <sup>s</sup>	-67°29'54"	8.9	OpCl	4'	163 kly
□		NGC 1850	5 <sup>h</sup> 8 <sup>m</sup> 50 <sup>s</sup>	-68°45'36"	9.0	GbCl	3'	163 kly
□	Cosmic Reef	NGC 2014	5 <sup>h</sup> 32 <sup>m</sup> 24 <sup>s</sup>	-67°41'18"	9.0	Neb	5.1'	163 kly
□		NGC 2050	5 <sup>h</sup> 36 <sup>m</sup> 36 <sup>s</sup>	-69°24'12"	9.3	OpCl	3'	163 kly
□		NGC 1747	4 <sup>h</sup> 55 <sup>m</sup> 11 <sup>s</sup>	-67°10'42"	9.4	OpCl	4.4'	163 kly
□		NGC 1553	4 <sup>h</sup> 16 <sup>m</sup> 10 <sup>s</sup>	-55°46'49"	9.4	LenGal	4.5'	52 Mly
□	Bean Nebula	NGC 1763	4 <sup>h</sup> 56 <sup>m</sup> 52 <sup>s</sup>	-66°24'25"	9.4	Neb	5.2'	163 kly
□		NGC 2042	5 <sup>h</sup> 36 <sup>m</sup> 10 <sup>s</sup>	-68°54'54"	9.6	OpCl	57"	163 kly
□		NGC 2060	5 <sup>h</sup> 37 <sup>m</sup> 51 <sup>s</sup>	-69°10'24"	9.6	OpCl	1.7'	163 kly
□		NGC 2100	5 <sup>h</sup> 42 <sup>m</sup> 7 <sup>s</sup>	-69°12'27"	9.6	OpCl	2.5'	163 kly
□		NGC 2004	5 <sup>h</sup> 30 <sup>m</sup> 41 <sup>s</sup>	-67°17'22"	9.6	OpCl	3'	163 kly
□		NGC 1910	5 <sup>h</sup> 18 <sup>m</sup> 42 <sup>s</sup>	-69°14'12"	9.7	Neb	1.5'	163 kly
□		NGC 1672	4 <sup>h</sup> 45 <sup>m</sup> 43 <sup>s</sup>	-59°14'50"	9.7	SpiGal	6.6'	65 Mly
□		NGC 1818	5 <sup>h</sup> 4 <sup>m</sup> 13 <sup>s</sup>	-66°26'5"	9.7	GbCl	3.1'	163 kly
□	The Spanish Dancer	NGC 1566	4 <sup>h</sup> 20 <sup>m</sup> 0 <sup>s</sup>	-54°56'16"	9.7	SpiGal	8.3'	72 Mly
□		NGC 1866	5 <sup>h</sup> 13 <sup>m</sup> 39 <sup>s</sup>	-65°27'53"	9.7	GbCl	5.5'	163 kly
□		NGC 1549	4 <sup>h</sup> 15 <sup>m</sup> 45 <sup>s</sup>	-55°35'32"	9.8	EllGal	4.9'	60 Mly
□		NGC 1755	4 <sup>h</sup> 55 <sup>m</sup> 16 <sup>s</sup>	-68°12'23"	9.9	OpCl	2.2'	163 kly
□		NGC 1858	5 <sup>h</sup> 9 <sup>m</sup> 56 <sup>s</sup>	-68°54'6"	9.9	OpCl	4.4'	163 kly
□		NGC 1761	4 <sup>h</sup> 56 <sup>m</sup> 39 <sup>s</sup>	-66°29'0"	9.9	OpCl	4.2'	163 kly
□		NGC 1984	5 <sup>h</sup> 27 <sup>m</sup> 40 <sup>s</sup>	-69°8'6"	10.0	OpCl	1.5'	163 kly

## Notes

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# Eridanus

“The River”

Pronunciation: /ɪrɪdənəs/

Genitive: Eridani (/ɪrɪdənai/)

Abbreviation: Eri

## History

Eridanus represents a long and flowing river, flowing from north to south. Various sources suggest that Eridanus represents the Nile in Egypt or the Po in Italy. Although the flow of Eridanus does not match either, the Nile flowing from south to north and the Po from west to east. In Greek mythology, this river features in the story of Phaethon, the son of the sun god Helios, who stole his father’s chariot and crashed into this river on his fall from the skies.

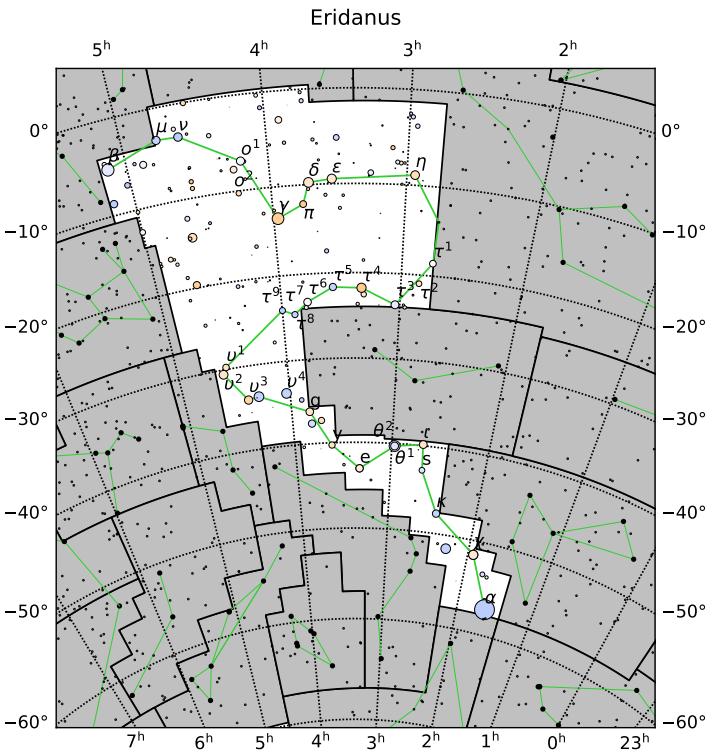
## Facts

Eridanus is visible at latitudes between  $+32^{\circ}$  and

$-90^{\circ}$ , i.e., south of Central America, Northern Africa, and Southeast Asia. It is best seen at around 9:00 PM local time during December. There are no meteor showers in Eridanus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Achernar (/eɪkərnɑ:r/)	$\alpha$	1 <sup>h</sup> 37 <sup>m</sup> 42.8 <sup>s</sup>	$-57^{\circ}14'12.3''$	0.4	Blue	$139 \pm 3$ ly	B6V + A1V
□	Cursa (/kɜ:rsə/)	$\beta$	5 <sup>h</sup> 7 <sup>m</sup> 51.0 <sup>s</sup>	$-5^{\circ}5'11.2''$	2.8	Pale Blue	$90.0 \pm 0.9$ ly	A3III
□	Zaurak (/zɔ:ræk/)	$\gamma$	3 <sup>h</sup> 58 <sup>m</sup> 1.8 <sup>s</sup>	$-13^{\circ}30'30.7''$	2.9	Orange	$192 \pm 3$ ly	M0III
□	Acamar (/ækəmə:r/)	$\theta^1$	2 <sup>h</sup> 58 <sup>m</sup> 15.7 <sup>s</sup>	$-40^{\circ}18'16.8''$	3.2	Pale Blue	$164 \pm 2$ ly	A3IV-V
□	Rana (/rænə/)	$\delta$	3 <sup>h</sup> 43 <sup>m</sup> 14.9 <sup>s</sup>	$-9^{\circ}45'48.2''$	3.5	Pale Orange	$29.49 \pm 0.08$ ly	K0IV
□		$v^4$	4 <sup>h</sup> 17 <sup>m</sup> 53.7 <sup>s</sup>	$-33^{\circ}47'54.1''$	3.6	Pale Blue	$178 \pm 1$ ly	B8V + B9.5V
□		$\chi$	1 <sup>h</sup> 55 <sup>m</sup> 57.5 <sup>s</sup>	$-51^{\circ}36'32.0''$	3.7	Pale Orange	$56.8 \pm 0.3$ ly	G8IV
□		$\tau^4$	3 <sup>h</sup> 19 <sup>m</sup> 31.0 <sup>s</sup>	$-21^{\circ}45'28.3''$	3.7	Orange	$307 \pm 9$ ly	M3/4III
□	Ran (/ræn/)	$\epsilon$	3 <sup>h</sup> 32 <sup>m</sup> 55.8 <sup>s</sup>	$-9^{\circ}27'29.7''$	3.7	Pale Orange	$10.457 \pm 0.004$ ly	K2V
□	Theemin (/θi:mən/)	$v^2$	4 <sup>h</sup> 35 <sup>m</sup> 33.0 <sup>s</sup>	$-30^{\circ}33'44.4''$	3.8	Pale Orange	$214 \pm 3$ ly	G8III
□	Azha (/eɪzə/)	$\eta$	2 <sup>h</sup> 56 <sup>m</sup> 25.6 <sup>s</sup>	$-8^{\circ}53'53.3''$	3.9	Pale Orange	$137 \pm 1$ ly	K1III



□		$\nu$	4 <sup>h</sup> 36 <sup>m</sup> 19.1 <sup>s</sup>	-3°21'8.9"	3.9	Blue	680 ± 30 ly	B1.5IV
□	Beemim (/bi:məm/)	$v^3$	4 <sup>h</sup> 24 <sup>m</sup> 2.2 <sup>s</sup>	-34°1'0.7"	4.0	Orange	296 ± 10 ly	K4III
□		$\mu$	4 <sup>h</sup> 45 <sup>m</sup> 30.2 <sup>s</sup>	-3°15'16.8"	4.0	Blue	520 ± 20 ly	B5IV
□	Beid (/baɪd/)	$o^1$	4 <sup>h</sup> 11 <sup>m</sup> 51.9 <sup>s</sup>	-6°50'15.3"	4.0	White	122 ± 1 ly	F0III
□		$\tau^3$	3 <sup>h</sup> 2 <sup>m</sup> 23.5 <sup>s</sup>	-23°37'28.1"	4.1	Pale Blue	88.6 ± 0.4 ly	A3IV-V
□		$\iota$	2 <sup>h</sup> 40 <sup>m</sup> 40.0 <sup>s</sup>	-39°51'19.4"	4.1	Pale Orange	151 ± 1 ly	K0III
□		$\theta^2$	2 <sup>h</sup> 58 <sup>m</sup> 16.4 <sup>s</sup>	-40°18'16.9"	4.1	Pale Blue	167 ± 1 ly	A1V
□		g	3 <sup>h</sup> 49 <sup>m</sup> 27.2 <sup>s</sup>	-36°12'34.9"	4.2	Pale Orange	217 ± 3 ly	G7III
□		$\tau^6$	3 <sup>h</sup> 46 <sup>m</sup> 50.9 <sup>s</sup>	-23°14'59.0"	4.2	White	57.5 ± 0.2 ly	F5IV-V
□		$\kappa$	2 <sup>h</sup> 26 <sup>m</sup> 59.1 <sup>s</sup>	-47°42'13.8"	4.3	Blue	510 ± 10 ly	B7IV
□		e	3 <sup>h</sup> 19 <sup>m</sup> 55.7 <sup>s</sup>	-43°4'11.2"	4.3	Pale Orange	19.704 ± 0.009 ly	G6V
□		$\tau^5$	3 <sup>h</sup> 33 <sup>m</sup> 47.3 <sup>s</sup>	-21°37'58.4"	4.3	Pale Blue	293 ± 6 ly	B0V + B9V
□		$\pi$	3 <sup>h</sup> 46 <sup>m</sup> 8.5 <sup>s</sup>	-12°6'5.7"	4.4	Orange	480 ± 40 ly	M1III
□	Keid (/kaɪd/)	$o^2$	4 <sup>h</sup> 15 <sup>m</sup> 16.3 <sup>s</sup>	-7°39'10.3"	4.4	Yellow	16.34 ± 0.01 ly	K0.5V
□		$\tau^1$	2 <sup>h</sup> 45 <sup>m</sup> 6.2 <sup>s</sup>	-18°34'21.2"	4.5	White	46 ± 1 ly	F7V
□		$v^1$	4 <sup>h</sup> 33 <sup>m</sup> 30.6 <sup>s</sup>	-29°45'59.4"	4.5	Pale Orange	127 ± 1 ly	K0III-IV
□		y	3 <sup>h</sup> 37 <sup>m</sup> 5.7 <sup>s</sup>	-40°16'28.7"	4.6	Pale Orange	230 ± 5 ly	K1III
□		$\tau^9$	3 <sup>h</sup> 59 <sup>m</sup> 55.5 <sup>s</sup>	-24°0'58.4"	4.6	Pale Blue	327 ± 7 ly	B9.5V
□		$\tau^8$	3 <sup>h</sup> 53 <sup>m</sup> 42.7 <sup>s</sup>	-24°36'44.0"	4.6	Pale Blue	380 ± 10 ly	B6V
□		s	2 <sup>h</sup> 39 <sup>m</sup> 48.0 <sup>s</sup>	-42°53'30.4"	4.7	Pale Blue	132 ± 2 ly	A1V + M2-5V
□	Angetenar (/æŋgɛtənər/)	$\tau^2$	2 <sup>h</sup> 51 <sup>m</sup> 2.3 <sup>s</sup>	-21°0'14.5"	4.8	Pale Orange	187 ± 2 ly	K0III
□		$\tau^7$	3 <sup>h</sup> 47 <sup>m</sup> 39.7 <sup>s</sup>	-23°52'28.8"	5.2	Pale Blue	251 ± 5 ly	A3V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 1291	3 <sup>h</sup> 17 <sup>m</sup> 18 <sup>s</sup>	-41°6'29"	8.5	SpiGal	9.7'	35 Mly
□		NGC 1395	3 <sup>h</sup> 38 <sup>m</sup> 30 <sup>s</sup>	-23°1'39"	9.6	EllGal	5.9'	77 Mly
□		NGC 1407	3 <sup>h</sup> 40 <sup>m</sup> 12 <sup>s</sup>	-18°34'48"	9.7	EllGal	4.5'	80 Mly
□		NGC 1232	3 <sup>h</sup> 9 <sup>m</sup> 45 <sup>s</sup>	-20°34'45"	9.9	SpiGal	7.4'	70 Mly
□	Haley's Coronet	NGC 1532	4 <sup>h</sup> 12 <sup>m</sup> 4 <sup>s</sup>	-32°52'27"	9.9	SpiGal	12.6'	48 Mly
□		NGC 1300	3 <sup>h</sup> 19 <sup>m</sup> 41 <sup>s</sup>	-19°24'41"	10.4	SpiGal	6.2'	69 Mly
□		NGC 1084	2 <sup>h</sup> 46 <sup>m</sup> 0 <sup>s</sup>	-7°34'42"	10.7	SpiGal	3.2'	58 Mly
□		NGC 1600	4 <sup>h</sup> 31 <sup>m</sup> 40 <sup>s</sup>	-5°5'10"	10.9	EllGal	2.5'	225 Mly
□		NGC 1400	3 <sup>h</sup> 39 <sup>m</sup> 31 <sup>s</sup>	-18°41'17"	11.0	LenGal	2.3'	23 Mly
□		NGC 1386	3 <sup>h</sup> 36 <sup>m</sup> 46 <sup>s</sup>	-35°59'58"	11.3	SpiGal	3.4'	37 Mly
□		NGC 1535	4 <sup>h</sup> 14 <sup>m</sup> 16 <sup>s</sup>	-12°44'22"	12.8	PNeb	39"	4.5 kly

## Notes

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# Fornax

“The Furnace”

Pronunciation: /fɔrnæks/

Genitive: Fornacis (/fɔrnɛɪsɪs/)

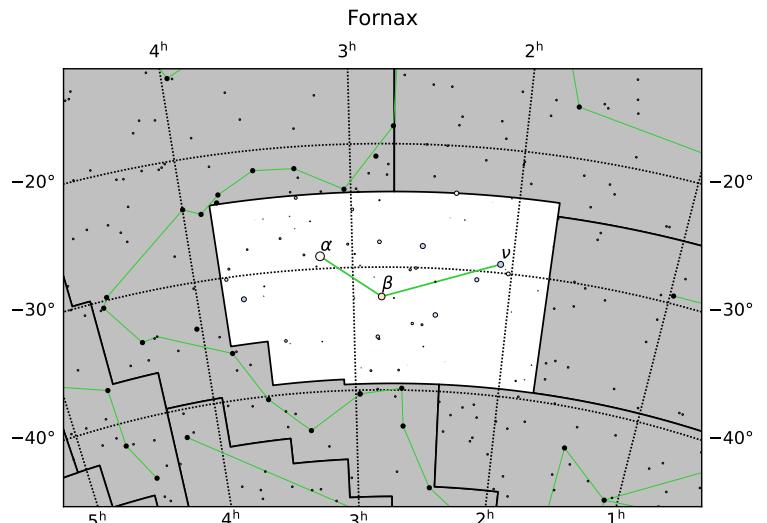
Abbreviation: For

## History

One of the more recent constellations introduced by Nicolas Louis de Lacaille, this was an instrument of the Scientific Revolution. He originally depicted it as a chemist’s furnace used for distillation.

## Facts

Fornax is visible at latitudes between  $+50^{\circ}$  and  $-90^{\circ}$ , i.e., south of the continental United States, much of France and central Europe, and China. It is best seen at around 9:00 PM local time during December. There are no meteor showers in Fornax.



## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Dalim (/dɛrlɪm/)	α	3 <sup>h</sup> 12 <sup>m</sup> 4.5 <sup>s</sup>	-28°59'15.4"	3.9	Pale Yellow	45.66 ± 0.08 ly	F8IV
□		β	2 <sup>h</sup> 49 <sup>m</sup> 5.4 <sup>s</sup>	-32°24'21.2"	4.5	Pale Orange	178 ± 2 ly	G8III
□		ν	2 <sup>h</sup> 4 <sup>m</sup> 29.4 <sup>s</sup>	-29°17'48.5"	4.7	Blue	370 ± 10 ly	B9.5III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Fornax A	NGC 1316	3 <sup>h</sup> 22 <sup>m</sup> 42 <sup>s</sup>	-37°12'30"	8.5	LenGal	12'	82 Mly
□	Great Barred Spiral Galaxy	NGC 1365	3 <sup>h</sup> 33 <sup>m</sup> 36 <sup>s</sup>	-36°8'25"	9.3	SpiGal	11.2'	74 Mly
□		NGC 1097	2 <sup>h</sup> 46 <sup>m</sup> 19 <sup>s</sup>	-30°16'30"	9.5	SpiGal	9.3'	53 Mly
□		NGC 1399	3 <sup>h</sup> 38 <sup>m</sup> 29 <sup>s</sup>	-35°27'2"	9.5	EllGal	6.9'	64 Mly
□		NGC 1398	3 <sup>h</sup> 38 <sup>m</sup> 52 <sup>s</sup>	-26°20'16"	9.7	SpiGal	7.1'	62 Mly
□		NGC 1380	3 <sup>h</sup> 36 <sup>m</sup> 28 <sup>s</sup>	-34°58'34"	10.0	LenGal	4.8'	86 Mly
□		NGC 1404	3 <sup>h</sup> 38 <sup>m</sup> 52 <sup>s</sup>	-35°35'40"	10.0	EllGal	3.3'	90 Mly
□		NGC 1350	3 <sup>h</sup> 31 <sup>m</sup> 8 <sup>s</sup>	-33°37'43"	10.3	SpiGal	5.2'	87 Mly
□		NGC 1340	3 <sup>h</sup> 28 <sup>m</sup> 20 <sup>s</sup>	-31°4'5"	10.4	EllGal	6'	54 Mly
□		NGC 1326	3 <sup>h</sup> 23 <sup>m</sup> 56 <sup>s</sup>	-36°27'53"	10.5	LenGal	3.9'	60 Mly

□		NGC 1201	$3^{\text{h}}4^{\text{m}}8^{\text{s}}$	$-26^{\circ}4'11''$	10.7	LenGal	$3.6'$	74 Mly
□		NGC 1387	$3^{\text{h}}36^{\text{m}}57^{\text{s}}$	$-35^{\circ}30'24''$	10.7	LenGal	$2.8'$	58 Mly
□		NGC 1379	$3^{\text{h}}36^{\text{m}}4^{\text{s}}$	$-35^{\circ}26'28''$	10.9	EllGal	$2.4'$	59 Mly
□		NGC 986	$2^{\text{h}}33^{\text{m}}34^{\text{s}}$	$-39^{\circ}2'42''$	10.9	SpiGal	$3.9'$	88 Mly
□		NGC 1385	$3^{\text{h}}37^{\text{m}}29^{\text{s}}$	$-24^{\circ}30'1''$	10.9	SpiGal	$3.4'$	67 Mly
□	Fornax B	NGC 1317	$3^{\text{h}}22^{\text{m}}44^{\text{s}}$	$-37^{\circ}6'13''$	11.0	SpiGal	$2.8'$	89 Mly
□	Robin's Egg Nebula	NGC 1360	$3^{\text{h}}33^{\text{m}}14^{\text{s}}$	$-25^{\circ}52'18''$	11.2	PNeb	$6.4'$	1.3 kly

## Notes

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# Fornax

“The Furnace”

Pronunciation: /fɔrnæks/

Genitive: Fornacis (/fɔrnɛɪsɪs/)

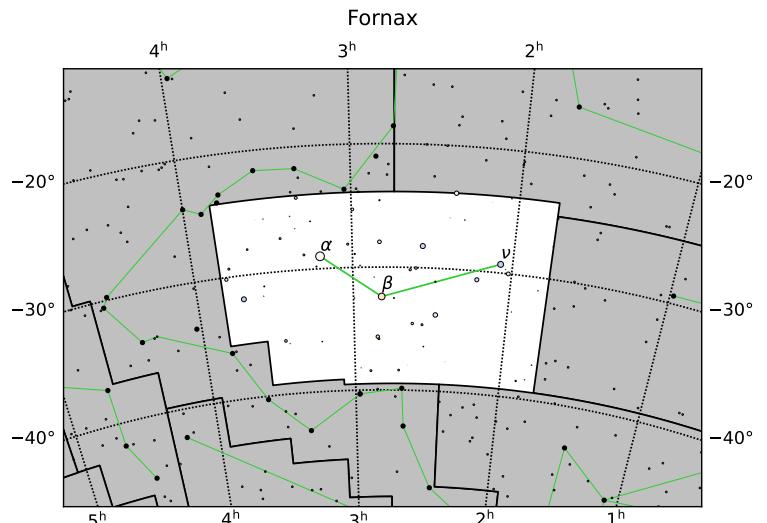
Abbreviation: For

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## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Dalim (/dɛrlɪm/)	α	3 <sup>h</sup> 12 <sup>m</sup> 4.5 <sup>s</sup>	-28°59'15.4"	3.9	Pale Yellow	45.66 ± 0.08 ly	F8IV
□		β	2 <sup>h</sup> 49 <sup>m</sup> 5.4 <sup>s</sup>	-32°24'21.2"	4.5	Pale Orange	178 ± 2 ly	G8III
□		ν	2 <sup>h</sup> 4 <sup>m</sup> 29.4 <sup>s</sup>	-29°17'48.5"	4.7	Blue	370 ± 10 ly	B9.5III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Fornax A	NGC 1316	3 <sup>h</sup> 22 <sup>m</sup> 42 <sup>s</sup>	-37°12'30"	8.5	LenGal	12'	82 Mly
□	Great Barred Spiral Galaxy	NGC 1365	3 <sup>h</sup> 33 <sup>m</sup> 36 <sup>s</sup>	-36°8'25"	9.3	SpiGal	11.2'	74 Mly
□		NGC 1097	2 <sup>h</sup> 46 <sup>m</sup> 19 <sup>s</sup>	-30°16'30"	9.5	SpiGal	9.3'	53 Mly
□		NGC 1399	3 <sup>h</sup> 38 <sup>m</sup> 29 <sup>s</sup>	-35°27'2"	9.5	EllGal	6.9'	64 Mly
□		NGC 1398	3 <sup>h</sup> 38 <sup>m</sup> 52 <sup>s</sup>	-26°20'16"	9.7	SpiGal	7.1'	62 Mly
□		NGC 1380	3 <sup>h</sup> 36 <sup>m</sup> 28 <sup>s</sup>	-34°58'34"	10.0	LenGal	4.8'	86 Mly
□		NGC 1404	3 <sup>h</sup> 38 <sup>m</sup> 52 <sup>s</sup>	-35°35'40"	10.0	EllGal	3.3'	90 Mly
□		NGC 1350	3 <sup>h</sup> 31 <sup>m</sup> 8 <sup>s</sup>	-33°37'43"	10.3	SpiGal	5.2'	87 Mly
□		NGC 1340	3 <sup>h</sup> 28 <sup>m</sup> 20 <sup>s</sup>	-31°4'5"	10.4	EllGal	6'	54 Mly
□		NGC 1326	3 <sup>h</sup> 23 <sup>m</sup> 56 <sup>s</sup>	-36°27'53"	10.5	LenGal	3.9'	60 Mly

□		NGC 1201	$3^{\text{h}}4^{\text{m}}8^{\text{s}}$	$-26^{\circ}4'11''$	10.7	LenGal	$3.6'$	74 Mly
□		NGC 1387	$3^{\text{h}}36^{\text{m}}57^{\text{s}}$	$-35^{\circ}30'24''$	10.7	LenGal	$2.8'$	58 Mly
□		NGC 1379	$3^{\text{h}}36^{\text{m}}4^{\text{s}}$	$-35^{\circ}26'28''$	10.9	EllGal	$2.4'$	59 Mly
□		NGC 986	$2^{\text{h}}33^{\text{m}}34^{\text{s}}$	$-39^{\circ}2'42''$	10.9	SpiGal	$3.9'$	88 Mly
□		NGC 1385	$3^{\text{h}}37^{\text{m}}29^{\text{s}}$	$-24^{\circ}30'1''$	10.9	SpiGal	$3.4'$	67 Mly
□	Fornax B	NGC 1317	$3^{\text{h}}22^{\text{m}}44^{\text{s}}$	$-37^{\circ}6'13''$	11.0	SpiGal	$2.8'$	89 Mly
□	Robin's Egg Nebula	NGC 1360	$3^{\text{h}}33^{\text{m}}14^{\text{s}}$	$-25^{\circ}52'18''$	11.2	PNeb	$6.4'$	1.3 kly

## Notes

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# Gemini

## “The Twins”

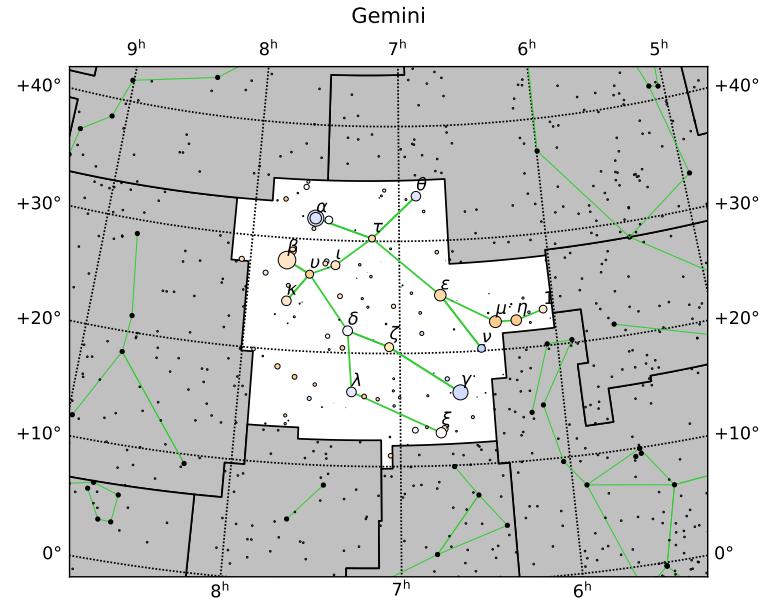
Pronunciation: /dʒəmɪnai/

Genitive: Geminorum (/dʒəmɪnɔrəm/)

Abbreviation: Gem

## History

Gemini was seen as twins since antiquity, when the ancient Babylonians saw the two bright stars ( $\alpha$  and  $\beta$  Geminorum) as dual personas of their underworld god, Nergal. The Greeks saw them as the twins Castor and Pollux. Both shared the same mother, Leda, but Pollux was the son of Zeus and Castor the son of Tyndareus. As such, Pollux was immortal while his twin was not. When Castor died, Pollux begged Zeus to give Castor immortality and he did so by putting both together in the heavens.



## Facts

Gemini is visible at latitudes between  $+90^\circ$  and  $-60^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during February. The Geminids radiate out of the sky near Castor, peaking around December 14 at 120 meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Pollux (/pɒləks/)	$\beta$	7 <sup>h</sup> 45 <sup>m</sup> 18.9 <sup>s</sup>	+28°1'34.3"	1.1	Pale Orange	$33.78 \pm 0.09$ ly	K0III
□	Castor (/kæstər/)	$\alpha$	7 <sup>h</sup> 34 <sup>m</sup> 35.9 <sup>s</sup>	+31°53'17.8"	1.9	Pale Blue	$51 \pm 3$ ly	A1V
□	Alhena (/ælhi:mə/)	$\gamma$	6 <sup>h</sup> 37 <sup>m</sup> 42.7 <sup>s</sup>	+16°23'57.4"	1.9	Pale Blue	$109 \pm 8$ ly	A1IV
□	Tejat (/ti:dʒət/)	$\mu$	6 <sup>h</sup> 22 <sup>m</sup> 57.6 <sup>s</sup>	+22°30'48.9"	2.9	Orange	$230 \pm 10$ ly	M3III
□	Mebsuta (/məbsu:tə/)	$\epsilon$	6 <sup>h</sup> 43 <sup>m</sup> 55.9 <sup>s</sup>	+25°7'52.1"	3.1	Pale Orange	$840 \pm 40$ ly	G8Ib
□	Propus (/prəʊpəs/)	$\eta$	6 <sup>h</sup> 14 <sup>m</sup> 52.7 <sup>s</sup>	+22°30'24.5"	3.2	Orange	$689 \pm 3$ ly	M2III
□	Alzirr (/ælzər/)	$\xi$	6 <sup>h</sup> 45 <sup>m</sup> 17.4 <sup>s</sup>	+12°53'44.1"	3.4	Pale Yellow	$58.7 \pm 0.2$ ly	F5IV-V
□	Wasat (/wəsət/)	$\delta$	7 <sup>h</sup> 20 <sup>m</sup> 7.4 <sup>s</sup>	+21°58'56.3"	3.5	White	$60.5 \pm 0.7$ ly	F0IV
□		$\kappa$	7 <sup>h</sup> 44 <sup>m</sup> 26.9 <sup>s</sup>	+24°23'52.8"	3.6	Pale Orange	$141 \pm 1$ ly	G9III
□		$\lambda$	7 <sup>h</sup> 18 <sup>m</sup> 5.6 <sup>s</sup>	+16°32'25.4"	3.6	Pale Blue	$100.9 \pm 0.6$ ly	A3V

□		$\theta$	$6^{\text{h}}52^{\text{m}}47.3^{\text{s}}$	$+33^{\circ}57'40.5''$	3.6	Pale Blue	$189 \pm 2$ ly	A2IV
□		$\iota$	$7^{\text{h}}25^{\text{m}}43.6^{\text{s}}$	$+27^{\circ}47'53.1''$	3.8	Pale Orange	$120.4 \pm 0.9$ ly	G9III
□	Mekbuda (/mek-bju:də/)	$\zeta$	$7^{\text{h}}4^{\text{m}}6.5^{\text{s}}$	$+20^{\circ}34'13.1''$	3.9	Pale Orange	$1061 \pm 14$ ly	F7Ib
□		$\nu$	$7^{\text{h}}35^{\text{m}}55.3^{\text{s}}$	$+26^{\circ}53'44.7''$	4.0	Orange	$270 \pm 20$ ly	M0III
□		$\nu$	$6^{\text{h}}28^{\text{m}}57.8^{\text{s}}$	$+20^{\circ}12'43.7''$	4.2	Blue	$540 \pm 30$ ly	B6III + B8III
□		1	$6^{\text{h}}4^{\text{m}}7.2^{\text{s}}$	$+23^{\circ}15'48.0''$	4.2	Pale Orange	$152.5 \pm 0.2$ ly	K0III
□		$\tau$	$7^{\text{h}}11^{\text{m}}8.4^{\text{s}}$	$+30^{\circ}14'42.6''$	4.4	Pale Orange	$321 \pm 8$ ly	K2III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		M35	$6^{\text{h}}9^{\text{m}}5^{\text{s}}$	$+24^{\circ}20'10''$	5.3	OpCl	$38.3'$	2.9 kly
□		NGC 2129	$6^{\text{h}}1^{\text{m}}6^{\text{s}}$	$+23^{\circ}19'41''$	6.7	OpCl	$6'$	6.6 kly
□		IC 444	$6^{\text{h}}31^{\text{m}}12^{\text{s}}$	$+23^{\circ}6'34''$	7.0	Neb	$32'$	
□		NGC 2395	$7^{\text{h}}27^{\text{m}}5^{\text{s}}$	$+13^{\circ}35'2''$	8.0	OpCl	$14'$	1.9 kly
□		NGC 2420	$7^{\text{h}}38^{\text{m}}24^{\text{s}}$	$+21^{\circ}34'30''$	8.3	OpCl	$6.4'$	9.0 kly
□		IC 2157	$6^{\text{h}}4^{\text{m}}43^{\text{s}}$	$+24^{\circ}5'28''$	8.4	OpCl	$5.6'$	7.3 kly
□		NGC 2331	$7^{\text{h}}6^{\text{m}}43^{\text{s}}$	$+27^{\circ}15'18''$	8.5	OpCl	$4.8'$	7.8 kly
□		NGC 2158	$6^{\text{h}}7^{\text{m}}26^{\text{s}}$	$+24^{\circ}5'56''$	8.6	OpCl	$5.3'$	17.8 kly
□		NGC 2266	$6^{\text{h}}43^{\text{m}}19^{\text{s}}$	$+26^{\circ}58'34''$	9.5	OpCl	$5.5'$	11.9 kly
□	Eskimo Nebula	NGC 2392	$7^{\text{h}}29^{\text{m}}10^{\text{s}}$	$+20^{\circ}54'42''$	9.7	PNeb	$20''$	6.0 kly
□		NGC 2355	$7^{\text{h}}16^{\text{m}}59^{\text{s}}$	$+13^{\circ}46'19''$	9.7	OpCl	$7'$	6.6 kly
□		NGC 2304	$6^{\text{h}}55^{\text{m}}1^{\text{s}}$	$+18^{\circ}1'14''$	10.0	OpCl	$3'$	14.9 kly
□	Jellyfish Nebula	IC 443	$6^{\text{h}}17^{\text{m}}0^{\text{s}}$	$+22^{\circ}34'0''$	12.0	SNR	$45'$	5 kly
□		NGC 2371	$7^{\text{h}}25^{\text{m}}34^{\text{s}}$	$+29^{\circ}29'26''$	13.5	PNeb	$44''$	5.6 kly

## Notes

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# Horologium

“The Pendulum Clock”

Pronunciation: /hɔrələoudʒiəm/

Genitive: Horologii (/hɔrələoudʒiəi/)

Abbreviation: Hor

## History

Another recent addition by French astronomer Nicolas Louis de Lacaille, Horologium represents a pendulum clock similar to the one used to time his observations. The clock has always been imagined with a fully marked face and even a seconds-hand, but there are very few stars in this area to suggest that.

## Facts

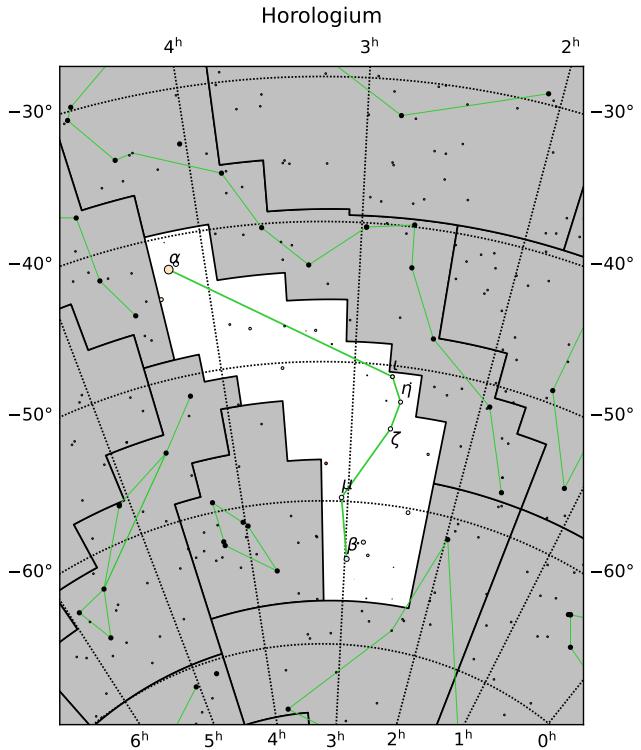
Horologium is visible at latitudes between  $+30^\circ$  and  $-90^\circ$ , i.e., south of the US-Mexico border, North Africa, and Southeast Asia. It is best seen at around 9:00 PM local time during December. There are no meteor showers in Horologium.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$4^{\text{h}}14^{\text{m}}0.1^{\text{s}}$	$-42^\circ17'39.7''$	3.9	Pale Orange	$115.0 \pm 0.5 \text{ ly}$	K2III
□		$\beta$	$2^{\text{h}}58^{\text{m}}47.8^{\text{s}}$	$-64^\circ4'16.6''$	5.0	Pale Blue	$312 \pm 4 \text{ ly}$	A3-5III
□		$\mu$	$3^{\text{h}}3^{\text{m}}36.8^{\text{s}}$	$-59^\circ44'16.0''$	5.1	White	$141.6 \pm 1.0 \text{ ly}$	F0III/IV
□		$\zeta$	$2^{\text{h}}40^{\text{m}}39.6^{\text{s}}$	$-54^\circ32'59.7''$	5.2	White	$160 \pm 2 \text{ ly}$	F6V
□		$\eta$	$2^{\text{h}}37^{\text{m}}24.4^{\text{s}}$	$-52^\circ32'35.1''$	5.3	White	$149 \pm 7 \text{ ly}$	A6V + F0V
□		$\iota$	$2^{\text{h}}42^{\text{m}}33.5^{\text{s}}$	$-50^\circ48'1.1''$	5.4	Pale Yellow	$56.61 \pm 0.04 \text{ ly}$	G0V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 1261	$3^{\text{h}}12^{\text{m}}16^{\text{s}}$	$-55^\circ12'58''$	8.6	GbCl	$6.9'$	48 kly
□		NGC 1433	$3^{\text{h}}42^{\text{m}}2^{\text{s}}$	$-47^\circ13'20''$	9.9	SpiGal	$6.5'$	49 Mly
□		NGC 1512	$4^{\text{h}}3^{\text{m}}54^{\text{s}}$	$-43^\circ20'56''$	10.3	SpiGal	$8.9'$	41 Mly
□		NGC 1448	$3^{\text{h}}44^{\text{m}}32^{\text{s}}$	$-44^\circ38'41''$	10.7	SpiGal	$7.6'$	53 Mly
□		NGC 1527	$4^{\text{h}}8^{\text{m}}24^{\text{s}}$	$-47^\circ53'49''$	10.8	LenGal	$3.7'$	57 Mly
□		NGC 1493	$3^{\text{h}}57^{\text{m}}27^{\text{s}}$	$-46^\circ12'39''$	11.3	SpiGal	$3.5'$	48 Mly



□	NGC 1411	$3^{\text{h}}38^{\text{m}}45^{\text{s}}$	$-44^{\circ}6'2''$	11.3	LenGal	$2.3'$	44 Mly
□	IC 1954	$3^{\text{h}}31^{\text{m}}31^{\text{s}}$	$-51^{\circ}54'17''$	11.6	SpiGal	$3.2'$	48 Mly
□	NGC 1249	$3^{\text{h}}10^{\text{m}}1^{\text{s}}$	$-53^{\circ}20'9''$	11.8	SpiGal	$4.9'$	48 Mly
□	NGC 1487	$3^{\text{h}}55^{\text{m}}46^{\text{s}}$	$-42^{\circ}22'5''$	11.9	IrrGal	$3.3'$	38 Mly

## Notes

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# Hydrus

“The Male Water Snake”

Pronunciation: /haɪdrəs/

Genitive: Hydri (/haɪdraɪ/)

Abbreviation: Hyi

## History

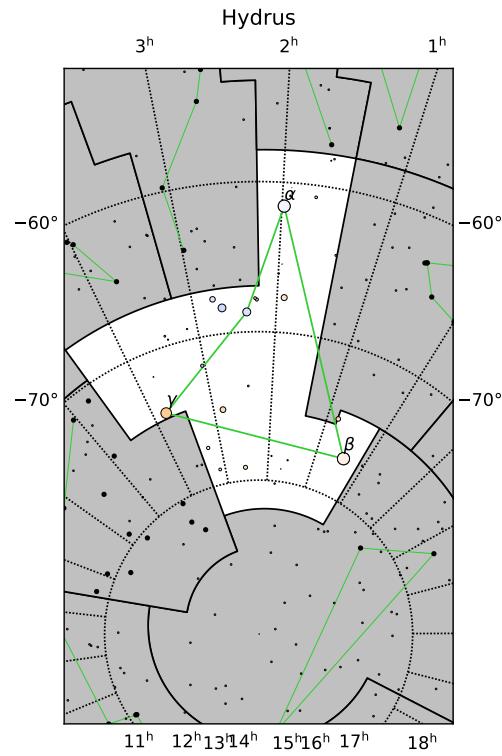
The counterpart to Hydra, Hydrus is the male water snake added to the skies by Petrus Plancius in the early 1600s. Hydrus represents the water snakes that Dutch explorers would have seen on their voyages.

## Facts

Hydrus is visible at latitudes between  $+8^\circ$  and  $-90^\circ$ , i.e., south of the northern tip of South America, the Horn of Africa, and Indonesia. It is best seen at around 9:00 PM local time during November. There are no meteor showers in Hydrus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\beta$	$0^{\text{h}}25^{\text{m}}45.1^{\text{s}}$	$-77^\circ15'15.3''$	2.8	Pale Yellow	$24.33 \pm 0.02$ ly	G2IV
□		$\alpha$	$1^{\text{h}}58^{\text{m}}46.2^{\text{s}}$	$-61^\circ34'11.5''$	2.9	White	$71.8 \pm 0.7$ ly	F0IV
□		$\gamma$	$3^{\text{h}}47^{\text{m}}14.3^{\text{s}}$	$-74^\circ14'20.3''$	3.3	Orange	$214 \pm 2$ ly	M1III
□		$\delta$	$2^{\text{h}}21^{\text{m}}44.9^{\text{s}}$	$-68^\circ39'33.9''$	4.1	Blue	$140 \pm 2$ ly	A2V



## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 1511	$3^{\text{h}}59^{\text{m}}37^{\text{s}}$	$-67^\circ38'3''$	11.3	SpiGal	$3.5'$	65 Mly
□		NGC 1466	$3^{\text{h}}44^{\text{m}}33^{\text{s}}$	$-71^\circ40'18''$	11.6	GbCl	$3.5'$	163 kly
□		NGC 1629	$4^{\text{h}}29^{\text{m}}36^{\text{s}}$	$-71^\circ50'18''$	12.7	GbCl	$1.7'$	163 kly
□		NGC 1473	$3^{\text{h}}47^{\text{m}}26^{\text{s}}$	$-68^\circ13'14''$	12.9	IrrGal	$1.5'$	67 Mly
□		NGC 602	$1^{\text{h}}29^{\text{m}}32^{\text{s}}$	$-73^\circ33'38''$	13.0	OpCl	$2.7'$	204 kly

## Notes

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## Lepus

## “The Hare”

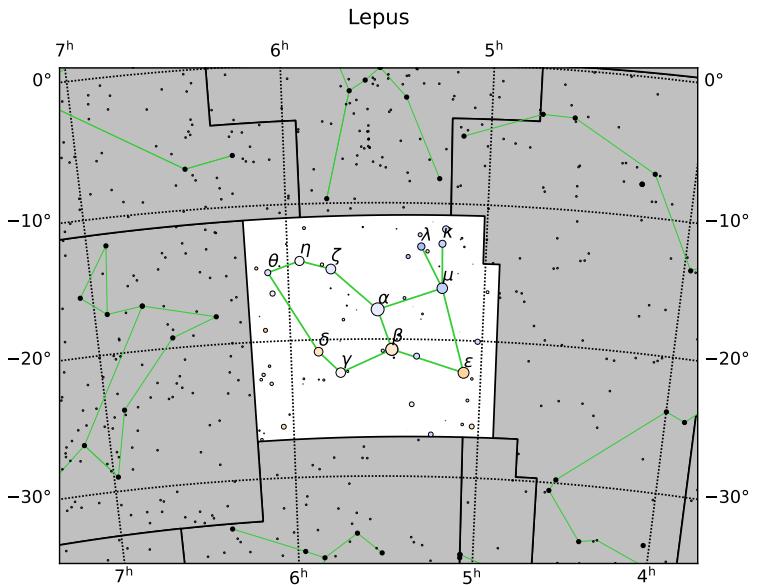
Pronunciation: /li:pəs/

Genitive: Leporis (/ləpərɪs/)

Abbreviation: Lep

## History

Not to be confused with Lupus, “the wolf,” Lepus was known to the Ancient Greeks, having been placed in the sky by the Greek messenger god Hermes in testament to its swiftness. It is interesting to note that Lepus finds itself running away from Canis Major, “the dog,” although some depictions put Lepus in hiding under the hunter Orion’s feet.



## Facts

Lepus is visible at latitudes between  $+63^{\circ}$  and  $-90^{\circ}$ , i.e., throughout most of the populated world. It is best seen at around 9:00 PM local time during January. There are no meteor showers in Lepus.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Arneb (/ɑːrnəb/)	α	5 <sup>h</sup> 32 <sup>m</sup> 43.8 <sup>s</sup>	-17°49'20.2"	2.6	Pale Blue	2200 ± 200 ly	F0Ib
□	Nihal (/nai̯æl/)	β	5 <sup>h</sup> 28 <sup>m</sup> 14.7 <sup>s</sup>	-20°45'34.0"	2.8	Pale Orange	160 ± 1 ly	G5II
□		ε	5 <sup>h</sup> 5 <sup>m</sup> 27.7 <sup>s</sup>	-22°22'15.7"	3.2	Orange	209 ± 1 ly	K4III
□		μ	5 <sup>h</sup> 12 <sup>m</sup> 55.9 <sup>s</sup>	-16°12'19.7"	3.3	Blue	170 ± 3 ly	B9IV
□		ζ	5 <sup>h</sup> 46 <sup>m</sup> 57.3 <sup>s</sup>	-14°49'19.0"	3.5	Pale Blue	70.5 ± 0.2 ly	A2V
□		γ	5 <sup>h</sup> 44 <sup>m</sup> 27.8 <sup>s</sup>	-22°26'54.2"	3.6	White	29.12 ± 0.05 ly	F7V
□		η	5 <sup>h</sup> 56 <sup>m</sup> 24.3 <sup>s</sup>	-14°10'3.7"	3.7	White	48.5 ± 0.2 ly	F1V
□		δ	5 <sup>h</sup> 51 <sup>m</sup> 19.3 <sup>s</sup>	-20°52'44.7"	3.9	Pale Orange	113.7 ± 0.7 ly	G8III-IV
□		λ	5 <sup>h</sup> 19 <sup>m</sup> 34.5 <sup>s</sup>	-13°10'36.4"	4.3	Blue	850 ± 50 ly	B0.5IV
□		κ	5 <sup>h</sup> 13 <sup>m</sup> 13.9 <sup>s</sup>	-12°56'28.6"	4.4	Pale Blue	730 ± 95 ly	B7V
□		θ	6 <sup>h</sup> 6 <sup>m</sup> 9.3 <sup>s</sup>	-14°56'6.9"	4.7	Pale Blue	173 ± 5 ly	A0V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		M79	5 <sup>h</sup> 24 <sup>m</sup> 10 <sup>s</sup>	-24°31'27"	8.2	GbCl	8.7'	37 kly
□	Spirograph Nebula	IC 418	5 <sup>h</sup> 27 <sup>m</sup> 28 <sup>s</sup>	-12°41'50"	9.0	PNeb	16"	4.4 kly
□		NGC 1964	5 <sup>h</sup> 33 <sup>m</sup> 22 <sup>s</sup>	-21°56'45"	10.8	SpiGal	5.6'	82 Mly
□		NGC 1744	4 <sup>h</sup> 59 <sup>m</sup> 57 <sup>s</sup>	-26°1'20"	11.1	SpiGal	8.1'	36 Mly
□		NGC 1832	5 <sup>h</sup> 12 <sup>m</sup> 3 <sup>s</sup>	-15°41'16"	11.3	SpiGal	2.6'	94 Mly
□		NGC 2139	6 <sup>h</sup> 1 <sup>m</sup> 8 <sup>s</sup>	-23°40'22"	11.6	SpiGal	2.6'	93 Mly
□		NGC 1784	5 <sup>h</sup> 5 <sup>m</sup> 27 <sup>s</sup>	-11°52'18"	11.7	SpiGal	4.0'	111 Mly

Notes

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# Mensa

## “The Table”

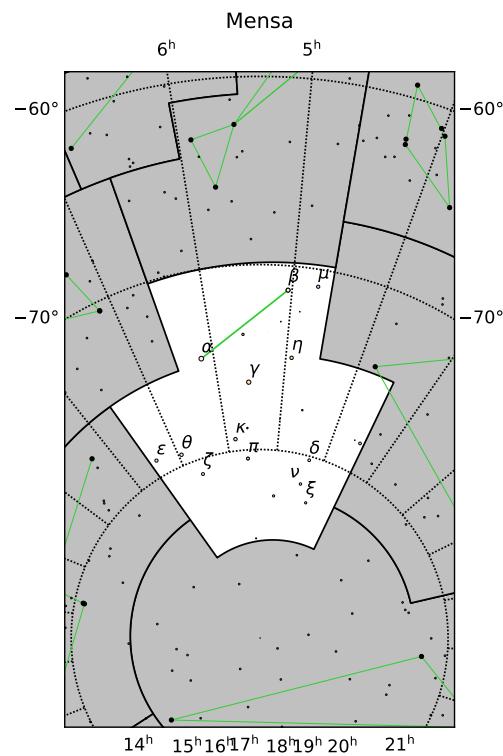
Pronunciation: /mənsə/

Genitive: Mensae (/mənsi:/)

Abbreviation: Men

## History

Mensa, a faint constellation in the southern skies, was named by French astronomer Nicolas Louis de Lacaille to commemorate Table Mountain near Cape Town, South Africa where he did most of his work. Containing part of the Large Magellanic Cloud, it gives Mensa the appearance of being capped by a white cloud, similar to the real Table Mountain sometimes.



## Facts

Mensa is visible at latitudes between  $+4^\circ$  and  $-90^\circ$ , i.e., throughout the entire southern hemisphere of the Earth. It is best seen at around 9:00 PM local time during January. There are no meteor showers in Mensa.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$6^h 10^m 14.5^s$	$-74^\circ 45' 11.0''$	5.1	Pale Orange	$33.32 \pm 0.02$ ly	G7V
□		$\gamma$	$5^h 31^m 53.0^s$	$-76^\circ 20' 27.5''$	5.2	Pale Orange	$104.9 \pm 0.5$ ly	K2III
□		$\beta$	$5^h 2^m 43.0^s$	$-71^\circ 18' 51.5''$	5.3	Pale Orange	$660 \pm 10$ ly	G8III
□		$\theta$	$6^h 56^m 34.5^s$	$-79^\circ 25' 12.7''$	5.5	Pale Blue	$385 \pm 2$ ly	B9.5V
□		$\kappa$	$5^h 50^m 16.8^s$	$-79^\circ 21' 40.9''$	5.5	Blue	$296 \pm 2$ ly	B9V
□		$\eta$	$4^h 55^m 11.2^s$	$-74^\circ 56' 12.7''$	5.5	Orange	$650 \pm 10$ ly	K4III
□		$\mu$	$4^h 43^m 4.0^s$	$-70^\circ 55' 51.7''$	5.5	Pale Blue	$477 \pm 5$ ly	B8II-III
□		$\epsilon$	$7^h 25^m 38.1^s$	$-79^\circ 5' 39.1''$	5.5	Pale Orange	$454 \pm 3$ ly	K2-3III
□		$\zeta$	$6^h 40^m 2.9^s$	$-80^\circ 48' 48.9''$	5.6	Pale Blue	$394 \pm 4$ ly	A5III
□		$\pi$	$5^h 37^m 9.9^s$	$-80^\circ 28' 8.8''$	5.7	Pale Yellow	$59.65 \pm 0.04$ ly	G0V
□		$\delta$	$4^h 17^m 59.3^s$	$-80^\circ 12' 50.5''$	5.7	Pale Orange	$468 \pm 8$ ly	K2-3III

<input type="checkbox"/>	$\nu$	4 <sup>h</sup> 20 <sup>m</sup> 58.1 <sup>s</sup>	-81°34'47.7"	5.8	White	176.5 ± 0.3 ly	F0-2III
<input type="checkbox"/>	$\xi$	4 <sup>h</sup> 58 <sup>m</sup> 51.0 <sup>s</sup>	-82°28'13.9"	5.8	Pale Orange	336 ± 2 ly	G8-K0III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
<input type="checkbox"/>		NGC 1848	5 <sup>h</sup> 8 <sup>m</sup> 11 <sup>s</sup>	-71°10'25"	9.7	OpCl	1'	163 kly
<input type="checkbox"/>		NGC 1845	5 <sup>h</sup> 6 <sup>m</sup> 20 <sup>s</sup>	-70°28'51"	10.2	OpCl	1.3'	163 kly
<input type="checkbox"/>		NGC 2122	5 <sup>h</sup> 48 <sup>m</sup> 55 <sup>s</sup>	-70°4'6"	10.4	Neb	6'	
<input type="checkbox"/>		NGC 2103	5 <sup>h</sup> 41 <sup>m</sup> 38 <sup>s</sup>	-71°19'49"	10.8	Neb	4'	
<input type="checkbox"/>		NGC 2031	5 <sup>h</sup> 33 <sup>m</sup> 41 <sup>s</sup>	-70°59'15"	10.8	GbCl	3.3'	163 kly
<input type="checkbox"/>		NGC 2019	5 <sup>h</sup> 31 <sup>m</sup> 56 <sup>s</sup>	-70°9'33"	10.9	GbCl	1.5'	163 kly
<input type="checkbox"/>		NGC 2018	5 <sup>h</sup> 31 <sup>m</sup> 24 <sup>s</sup>	-71°4'24"	10.9	Neb	8'	163 kly
<input type="checkbox"/>		NGC 2025	5 <sup>h</sup> 32 <sup>m</sup> 33 <sup>s</sup>	-71°43'3"	10.9	OpCl	1.9'	163 kly
<input type="checkbox"/>		NGC 2134	5 <sup>h</sup> 51 <sup>m</sup> 56 <sup>s</sup>	-71°5'53.6"	11.0	GbCl	2.8'	163 kly
<input type="checkbox"/>		NGC 1986	5 <sup>h</sup> 27 <sup>m</sup> 38 <sup>s</sup>	-69°58'30"	11.1	GbCl	2.8'	163 kly
<input type="checkbox"/>		NGC 1711	4 <sup>h</sup> 50 <sup>m</sup> 37 <sup>s</sup>	-69°59'2"	11.1	GbCl	3.5'	163 kly
<input type="checkbox"/>		NGC 2065	5 <sup>h</sup> 37 <sup>m</sup> 38 <sup>s</sup>	-70°14'11"	11.2	OpCl	2.3'	
<input type="checkbox"/>		NGC 2203	6 <sup>h</sup> 4 <sup>m</sup> 42 <sup>s</sup>	-75°26'18"	11.3	GbCl	3.2'	163 kly
<input type="checkbox"/>		NGC 1841	4 <sup>h</sup> 45 <sup>m</sup> 23 <sup>s</sup>	-83°59'48"	11.4	GbCl	54"	163 kly
<input type="checkbox"/>		NGC 2075	5 <sup>h</sup> 38 <sup>m</sup> 21 <sup>s</sup>	-70°41'6"	11.5	OpCl	49"	
<input type="checkbox"/>		NGC 2107	5 <sup>h</sup> 43 <sup>m</sup> 12 <sup>s</sup>	-70°38'27"	11.5	OpCl	1.7'	
<input type="checkbox"/>		NGC 1754	4 <sup>h</sup> 54 <sup>m</sup> 18 <sup>s</sup>	-70°26'33"	11.6	GbCl	1.6'	163 kly
<input type="checkbox"/>		NGC 2051	5 <sup>h</sup> 36 <sup>m</sup> 8 <sup>s</sup>	-71°0'43"	11.7	OpCl	1.5'	163 kly
<input type="checkbox"/>		NGC 2010	5 <sup>h</sup> 30 <sup>m</sup> 34 <sup>s</sup>	-70°49'8"	11.7	OpCl	1.9'	163 kly

## Notes

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# Monoceros

“The Unicorn”

Pronunciation: /mənəsərəs/

Genitive: Monocerotis (/mənəsərōtis/)

Abbreviation: Mon

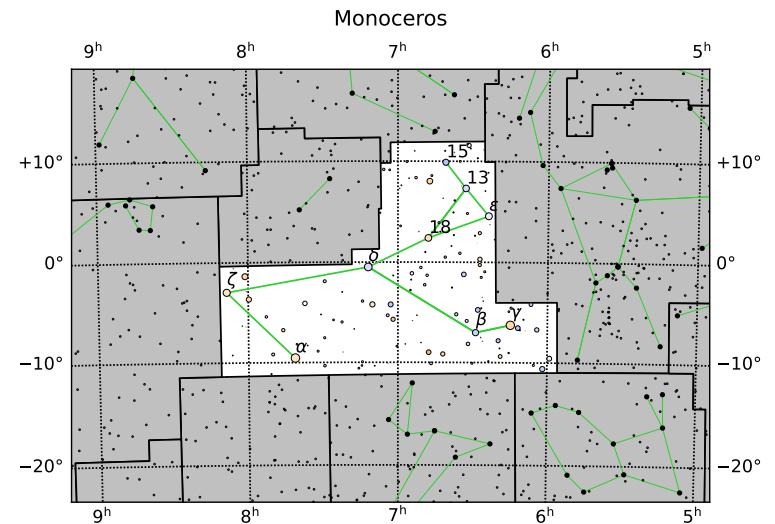
## History

Monoceros, although being a mythical beast, was not known to the Ancient Greeks. Instead, it was added to our skies by the Dutch astronomer Petrus Plancius in 1612. Therefore, there is no myth or story associated with the unicorn. It only fills an empty space between Hydra and Orion where there was no Greek constellation.

## Facts

Monoceros is visible at latitudes between  $+75^\circ$  and  $-90^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during February. There are two minor meteor showers in Monoceros.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$7^{\text{h}}41^{\text{m}}14.8^{\text{s}}$	$-9^{\circ}33'4.1''$	3.9	Pale Orange	$148 \pm 1$ ly	G9.5III
□		$\gamma$	$6^{\text{h}}14^{\text{m}}51.3^{\text{s}}$	$-6^{\circ}16'29.2''$	4.0	Pale Orange	$500 \pm 10$ ly	K1.5III
□		$\delta$	$7^{\text{h}}11^{\text{m}}51.9^{\text{s}}$	$-0^{\circ}29'34.0''$	4.2	Blue	$384 \pm 8$ ly	A2V
□		$\zeta$	$8^{\text{h}}8^{\text{m}}35.6^{\text{s}}$	$-2^{\circ}59'1.6''$	4.3	Pale Orange	$1060 \pm 90$ ly	G2Ib
□		$\epsilon$	$6^{\text{h}}23^{\text{m}}46.1^{\text{s}}$	$+4^{\circ}35'34.3''$	4.4	Pale Blue	$122 \pm 4$ ly	A5IV
□		13	$6^{\text{h}}32^{\text{m}}54.2^{\text{s}}$	$+7^{\circ}19'58.7''$	4.5	Blue	$2682 \pm 245$ ly	A0Ib
□		18	$6^{\text{h}}47^{\text{m}}51.6^{\text{s}}$	$+2^{\circ}24'43.8''$	4.5	Pale Orange	$400 \pm 10$ ly	K0III
□		$\beta$	$6^{\text{h}}28^{\text{m}}49.1^{\text{s}}$	$-7^{\circ}1'59.0''$	4.6	Blue	$677 \pm 157$ ly	B4V
□		15	$6^{\text{h}}40^{\text{m}}58.7^{\text{s}}$	$+9^{\circ}53'44.7''$	4.7	Blue	$920 \pm 130$ ly	O7V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 2232	6 <sup>h</sup> 27 <sup>m</sup> 33 <sup>s</sup>	-4°44'56"	3.9	OpCl	1°	1.1 kly
□	Christmas Tree Cluster & Cone Nebula	NGC 2264	6 <sup>h</sup> 40 <sup>m</sup> 52 <sup>s</sup>	+9°52'37"	3.9	Neb	20'	2.4 kly
□	Satellite Cluster	NGC 2244	6 <sup>h</sup> 32 <sup>m</sup> 11 <sup>s</sup>	+4°54'50"	4.8	OpCl	28'	5.3 kly
□		M50	7 <sup>h</sup> 2 <sup>m</sup> 48 <sup>s</sup>	-8°20'16"	5.9	OpCl	31.6'	3.3 kly
□	Great Bird Cluster	NGC 2301	6 <sup>h</sup> 51 <sup>m</sup> 46 <sup>s</sup>	+0°27'54"	6.0	OpCl	19.4'	2.9 kly
□		NGC 2343	7 <sup>h</sup> 8 <sup>m</sup> 7 <sup>s</sup>	-10°37'8"	6.7	OpCl	7.7'	3.6 kly
□		NGC 2353	7 <sup>h</sup> 14 <sup>m</sup> 33 <sup>s</sup>	-10°15'25"	7.1	OpCl	13.9'	4 kly
□		NGC 2335	7 <sup>h</sup> 6 <sup>m</sup> 45 <sup>s</sup>	-10°1'23"	7.2	OpCl	13.2'	5.6 kly
□		NGC 2251	6 <sup>h</sup> 34 <sup>m</sup> 43 <sup>s</sup>	+8°20'13"	7.3	OpCl	14.8'	5.0 kly
□		NGC 2286	6 <sup>h</sup> 47 <sup>m</sup> 39 <sup>s</sup>	-3°10'1"	7.5	OpCl	8.9'	8.0 kly
□		NGC 2506	8 <sup>h</sup> 0 <sup>m</sup> 2 <sup>s</sup>	-10°46'23"	7.6	OpCl	10.6'	11.1 kly
□		NGC 2252	6 <sup>h</sup> 35 <sup>m</sup> 1 <sup>s</sup>	+5°25'13"	7.7	OpCl	18'	2.2 kly
□		NGC 2324	7 <sup>h</sup> 4 <sup>m</sup> 8 <sup>s</sup>	+1°2'46"	8.4	OpCl	8.3'	17.0 kly
□		NGC 2215	6 <sup>h</sup> 20 <sup>m</sup> 48 <sup>s</sup>	-7°16'37"	8.5	OpCl	20.8'	3.2 kly
□		NGC 2236	6 <sup>h</sup> 29 <sup>m</sup> 40 <sup>s</sup>	+6°50'2"	8.5	OpCl	8.4'	9.3 kly
□		NGC 2250	6 <sup>h</sup> 33 <sup>m</sup> 41 <sup>s</sup>	-5°4'48"	8.9	OpCl	10'	4.4 kly
□	Rosette Nebula	NGC 2237	6 <sup>h</sup> 33 <sup>m</sup> 45 <sup>s</sup>	+4°59'54"	9.0	Neb	1.3°	5.2 kly
□	Butterfly Nebula	NGC 2346	7 <sup>h</sup> 9 <sup>m</sup> 23 <sup>s</sup>	-0°48'24"	11.6	PNeb	55"	4.5 kly
□	Dreyer's Nebula	IC 447	6 <sup>h</sup> 31 <sup>m</sup> 12 <sup>s</sup>	+10°2'0"		Neb	25'	

## Notes

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# Orion

## “The Hunter”

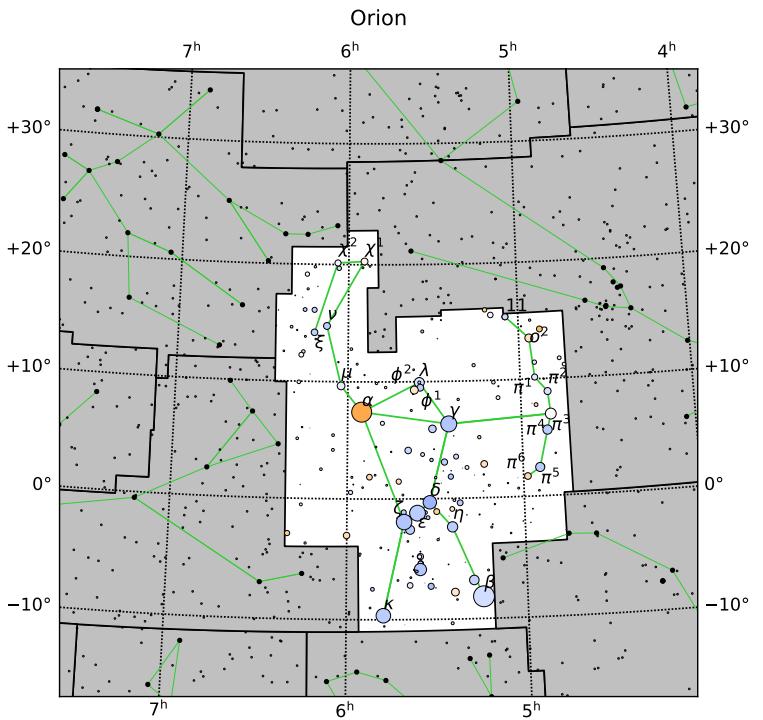
Pronunciation: /oʊrəiən/

Genitive: Orionis (/oʊrəiənɪs/)

Abbreviation: Ori

## History

Perhaps one of the most well-known constellations, Orion can trace its origins all the way back to the ancient Sumerians who inhabited what is now Iraq. The Ancient Greeks knew Orion as the hunter son of Poseidon and a mortal, armed with an unbreakable club of solid bronze. His dogs follow him in the sky in pursuit of the hare. He also has an associated myth with the Pleiades star cluster in the nearby constellation of Taurus.



## Facts

Orion is visible at latitudes between  $+85^{\circ}$  and  $-75^{\circ}$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during January. One major meteor shower in Orion is the Orionids, radiating away from Betelgeuse at a rate of 20 meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Rigel (/raɪdʒəl/)	$\beta$	5 <sup>h</sup> 14 <sup>m</sup> 32.3 <sup>s</sup>	$-8^{\circ}12'5.9''$	0.1	Blue	$863 \pm 78$ ly	B8Ia
□	Betelgeuse (/bɛtlədʒu:s/)	$\alpha$	5 <sup>h</sup> 55 <sup>m</sup> 10.3 <sup>s</sup>	$+7^{\circ}24'25.4''$	0.5	Orange	$548 \pm 90$ ly	M1Ia
□	Bellatrix (/belətriks/)	$\gamma$	5 <sup>h</sup> 25 <sup>m</sup> 7.9 <sup>s</sup>	$+6^{\circ}20'58.9''$	1.6	Blue	$250 \pm 10$ ly	B2III
□	Alnilam (/æl-nailæm/)	$\epsilon$	5 <sup>h</sup> 36 <sup>m</sup> 12.8 <sup>s</sup>	$-1^{\circ}12'6.9''$	1.7	Blue	$1980 \pm 540$ ly	B0Ia
□	Alnitak (/æl-naitæk/)	$\zeta$	5 <sup>h</sup> 40 <sup>m</sup> 45.5 <sup>s</sup>	$-1^{\circ}56'34.3''$	1.8	Blue	$1260 \pm 180$ ly	O9.5Iab
□	Saiph (/seif/)	$\kappa$	5 <sup>h</sup> 47 <sup>m</sup> 45.4 <sup>s</sup>	$-9^{\circ}40'10.6''$	2.1	Blue	$650 \pm 30$ ly	B0.5Ia
□	Mintaka (/mɪntəkə/)	$\delta$	5 <sup>h</sup> 32 <sup>m</sup> 0.4 <sup>s</sup>	$-0^{\circ}17'56.7''$	2.2	Blue	$690 \pm 85$ ly	O9.5II
□	Tabit (/tebit/)	$\pi^3$	4 <sup>h</sup> 49 <sup>m</sup> 50.4 <sup>s</sup>	$+6^{\circ}57'40.6''$	3.2	White	$26.32 \pm 0.04$ ly	F6V
□		$\eta$	5 <sup>h</sup> 24 <sup>m</sup> 28.6 <sup>s</sup>	$-2^{\circ}23'49.7''$	3.4	Blue	$975 \pm 310$ ly	B1V
□	Meissa (/maɪsə/)	$\lambda$	5 <sup>h</sup> 35 <sup>m</sup> 8.3 <sup>s</sup>	$+9^{\circ}56'3.0''$	3.7	Blue	$1100 \pm 200$ ly	O8III
□		$\pi^4$	4 <sup>h</sup> 51 <sup>m</sup> 12.4 <sup>s</sup>	$+5^{\circ}36'18.4''$	3.7	Blue	$1050 \pm 60$ ly	B2III
□		$\pi^5$	4 <sup>h</sup> 54 <sup>m</sup> 15.1 <sup>s</sup>	$+2^{\circ}26'26.4''$	3.7	Blue	$990 \pm 80$ ly	B2III

□		$\sigma^2$	4 <sup>h</sup> 56 <sup>m</sup> 22.3 <sup>s</sup>	+13°30'52.1"	4.1	Pale Orange	186 ± 2 ly	K2III
□		$\phi^2$	5 <sup>h</sup> 36 <sup>m</sup> 54.4 <sup>s</sup>	+9°17'26.4"	4.1	Pale Orange	117 ± 1 ly	G8III-IV
□		$\mu$	6 <sup>h</sup> 2 <sup>m</sup> 23.0 <sup>s</sup>	+9°38'50.2"	4.3	Pale Blue	150.4 ± 0.9 ly	A1V
□		$\pi^2$	4 <sup>h</sup> 50 <sup>m</sup> 36.7 <sup>s</sup>	+8°54'0.6"	4.4	Blue	224 ± 6 ly	A1V
□		$\phi^1$	5 <sup>h</sup> 34 <sup>m</sup> 49.2 <sup>s</sup>	+9°29'22.5"	4.4	Blue	1090 ± 90 ly	B0III
□		$\chi^1$	5 <sup>h</sup> 54 <sup>m</sup> 23.0 <sup>s</sup>	+20°16'34.2"	4.4	Pale Yellow	28.26 ± 0.07 ly	G0V
□		$\nu$	6 <sup>h</sup> 7 <sup>m</sup> 34.3 <sup>s</sup>	+14°46'6.5"	4.4	Blue	520 ± 30 ly	B3V
□		$\xi$	6 <sup>h</sup> 11 <sup>m</sup> 56.4 <sup>s</sup>	+14°12'31.6"	4.5	Blue	610 ± 30 ly	B3IV
□		$\pi^6$	4 <sup>h</sup> 58 <sup>m</sup> 32.9 <sup>s</sup>	+1°42'50.5"	4.5	Pale Orange	950 ± 80 ly	K0-1III
□		$\chi^2$	6 <sup>h</sup> 3 <sup>m</sup> 55.2 <sup>s</sup>	+20°8'18.4"	4.6	White	4300 ± 700 ly	B2Ia
□		$\pi^1$	4 <sup>h</sup> 54 <sup>m</sup> 53.7 <sup>s</sup>	+10°9'3.0"	4.7	Pale Blue	116 ± 1 ly	A3V
□		11	5 <sup>h</sup> 4 <sup>m</sup> 34.1 <sup>s</sup>	+15°24'14.8"	4.7	Blue	365 ± 10 ly	B9IV

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Lost Jewel of Orion	NGC 1980	5 <sup>h</sup> 35 <sup>m</sup> 14 <sup>s</sup>	-5°55'26"	2.5	OpCl	14'	1.3 kly
□	Orion Nebula	M42	5 <sup>h</sup> 35 <sup>m</sup> 17 <sup>s</sup>	-5°23'28"	4.0	Neb	1.1°	1.3 kly
□		NGC 1981	5 <sup>h</sup> 35 <sup>m</sup> 23 <sup>s</sup>	-4°29'10"	4.2	OpCl	28'	1.3 kly
□	The 37 Cluster	NGC 2169	6 <sup>h</sup> 8 <sup>m</sup> 30 <sup>s</sup>	+13°57'4"	5.9	OpCl	5'	3.3 kly
□		NGC 1662	4 <sup>h</sup> 48 <sup>m</sup> 47 <sup>s</sup>	+10°52'55"	6.4	OpCl	1.2°	1.4 kly
□		NGC 2175	6 <sup>h</sup> 9 <sup>m</sup> 39 <sup>s</sup>	+20°29'12"	6.8	OpCl	18'	6.4 kly
□	Horsehead Nebula	Barnard 33	5 <sup>h</sup> 40 <sup>m</sup> 59 <sup>s</sup>	-2°27'30"	6.8	Neb	8'	1.4 kly
□	Monkey Head Nebula	NGC 2174	6 <sup>h</sup> 9 <sup>m</sup> 24 <sup>s</sup>	+20°30'0"	6.8	Neb	40'	6.4 kly
□	Running Man Nebula	NGC 1973	5 <sup>h</sup> 35 <sup>m</sup> 16 <sup>s</sup>	-4°47'7"	7.0	Neb	40'	1.5 kly
□		NGC 2071	5 <sup>h</sup> 47 <sup>m</sup> 7 <sup>s</sup>	+0°17'39"	8.0	Neb	7'	1.3 kly
□		M78	5 <sup>h</sup> 46 <sup>m</sup> 47 <sup>s</sup>	+0°0'50"	8.3	Neb	8'	1.4 kly
□		NGC 2194	6 <sup>h</sup> 13 <sup>m</sup> 46 <sup>s</sup>	+12°48'47"	8.5	OpCl	9'	12.4 kly
□		NGC 2186	6 <sup>h</sup> 12 <sup>m</sup> 7 <sup>s</sup>	+5°27'11"	8.7	OpCl	5.8'	7.9 kly
□	De Mairan's Nebula	M43	5 <sup>h</sup> 35 <sup>m</sup> 32 <sup>s</sup>	-5°17'57"	9.0	Neb	20'	1.3 kly
□		NGC 1788	5 <sup>h</sup> 6 <sup>m</sup> 54 <sup>s</sup>	-3°21'0"	9.0	Neb	8'	1.3 kly
□		NGC 2112	5 <sup>h</sup> 53 <sup>m</sup> 49 <sup>s</sup>	+0°24'11"	9.1	OpCl	20.8'	3.7 kly
□	Flame Nebula	NGC 2024	5 <sup>h</sup> 41 <sup>m</sup> 54 <sup>s</sup>	-1°51'0"	10.0	Neb	30'	1.4 kly
□		NGC 2022	5 <sup>h</sup> 42 <sup>m</sup> 6 <sup>s</sup>	+9°5'11"	14.2	PNeb	18"	7.5 kly
□		NGC 1999	5 <sup>h</sup> 36 <sup>m</sup> 27 <sup>s</sup>	-6°43'18"		Neb	1.5'	1.5 kly

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# Pictor

“The Easel”

Pronunciation: /piktər/

Genitive: Pictoris (/piktooris/)

Abbreviation: Pic

## History

Pictor is another constellation added to our skies by the French astronomer Nicolas Louis de Lacaille. Although most of his additions were tools of the Age of Enlightenment, Pictor “the Easel” was added to represent all artistic accomplishments in those years despite easels being in use since antiquity.

## Facts

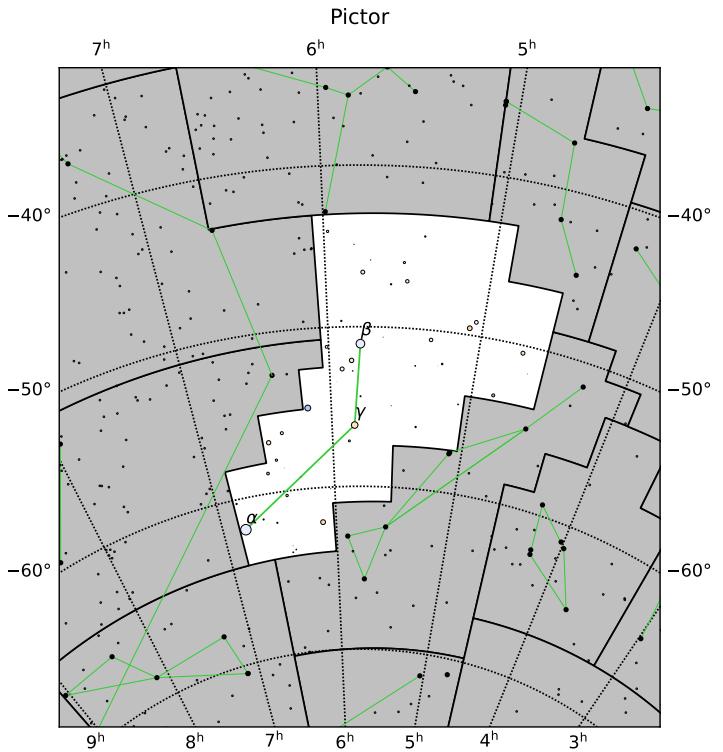
Pictor is visible at latitudes between  $+26^{\circ}$  and  $-60^{\circ}$ , i.e., south of the Caribbean, Northern Africa, and Southeast Asia. It is best seen at around 9:00 PM local time during January. There are no meteor showers in Pictor.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$6^{\text{h}}48^{\text{m}}11.5^{\text{s}}$	$-61^{\circ}56'29.0''$	3.3	Pale Blue	$97 \pm 5$ ly	A8V
□		$\beta$	$5^{\text{h}}47^{\text{m}}17.1^{\text{s}}$	$-51^{\circ}3'59.4''$	3.9	Pale Blue	$63.4 \pm 0.1$ ly	A6V
□		$\gamma$	$5^{\text{h}}49^{\text{m}}49.7^{\text{s}}$	$-56^{\circ}10'0.0''$	4.5	Pale Orange	$177 \pm 1$ ly	K1III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		NGC 2191	$6^{\text{h}}8^{\text{m}}24^{\text{s}}$	$-52^{\circ}30'44''$	12.3	LenGal	$1.7'$	221 Mly
□		NGC 1705	$4^{\text{h}}54^{\text{m}}13^{\text{s}}$	$-53^{\circ}21'40''$	12.4	LenGal	$1.9'$	31 Mly
□		NGC 1930	$5^{\text{h}}25^{\text{m}}57^{\text{s}}$	$-46^{\circ}43'43''$	12.4	EllGal	$1.9'$	211 Mly
□		NGC 2104	$5^{\text{h}}47^{\text{m}}5^{\text{s}}$	$-51^{\circ}33'11''$	12.7	SpiGal	$2.0'$	59 Mly
□		NGC 1803	$5^{\text{h}}5^{\text{m}}27^{\text{s}}$	$-49^{\circ}34'5''$	12.9	SpiGal	$1.3'$	198 Mly



## Notes

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# Puppis

“The Stern”

Pronunciation: /pʌpis/

Genitive: Puppis (/pʌpis/)

Abbreviation: Pup

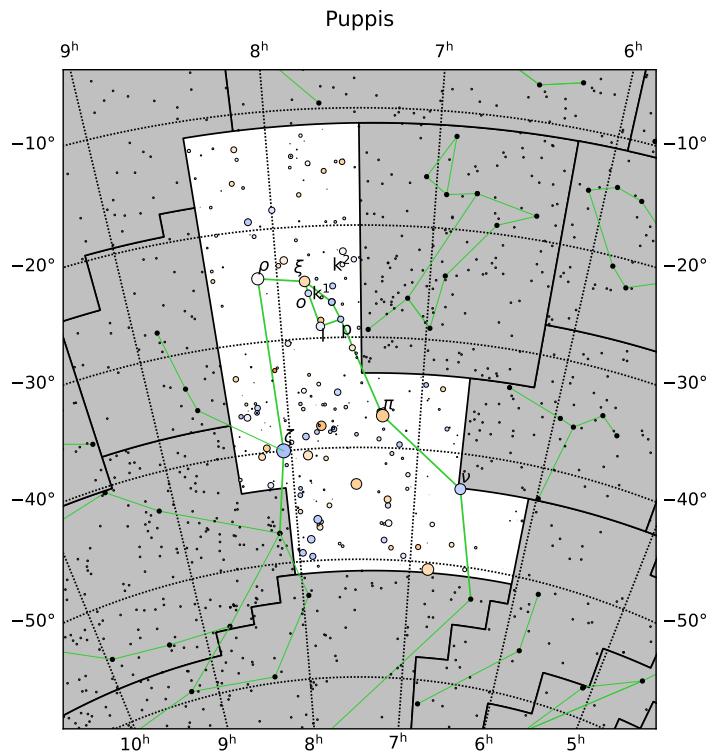
## History

Another constellation that was part of the larger constellation Argo Navis, the ship of Jason and the Argonauts in ancient Greek mythology, Puppis is the stern, or poop deck, of the ship. It was French astronomer Nicolas Louis de Lacaille who separated Argo Navis in 1763.

## Facts

Puppis is visible at latitudes between  $+40^{\circ}$  and  $-90^{\circ}$ , i.e., south of the American Great Lakes, the Pyrenees, and Mongolia. It is best seen at around 9:00 PM local time during February. There are three minor meteor showers in Puppis.

## Stars



X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Naos (/naʊs/)	$\zeta$	$8^{\text{h}}3^{\text{m}}35.1^{\text{s}}$	$-40^{\circ}0'11.6''$	2.2	Blue	$1080 \pm 40$ ly	O4I
□		$\pi$	$7^{\text{h}}17^{\text{m}}8.6^{\text{s}}$	$-37^{\circ}5'50.9''$	2.7	Orange	$810 \pm 70$ ly	K3IIb
□	Tureis (/tjuəreɪs/)	$\rho$	$8^{\text{h}}7^{\text{m}}32.6^{\text{s}}$	$-24^{\circ}18'15.6''$	2.8	White	$63.5 \pm 0.2$ ly	F5III
□		$\nu$	$6^{\text{h}}37^{\text{m}}45.7^{\text{s}}$	$-43^{\circ}11'45.4''$	3.2	Blue	$370 \pm 10$ ly	B8III
□	Azmidi (/æzmɪdi/)	$\xi$	$7^{\text{h}}49^{\text{m}}17.7^{\text{s}}$	$-24^{\circ}51'35.2''$	3.4	Pale Orange	$1200 \pm 90$ ly	G6I
□		1	$7^{\text{h}}43^{\text{m}}48.5^{\text{s}}$	$-28^{\circ}57'17.4''$	3.9	Pale Blue	$5500 \pm 1600$ ly	A2I
□		$o$	$7^{\text{h}}48^{\text{m}}5.2^{\text{s}}$	$-25^{\circ}56'13.8''$	4.5	Blue	$1400 \pm 100$ ly	B1IV
□		$k^2$	$7^{\text{h}}38^{\text{m}}49.9^{\text{s}}$	$-26^{\circ}48'13.8''$	4.4	Blue	$393 \pm 5$ ly	B5IV
□		$k^1$	$7^{\text{h}}38^{\text{m}}49.4^{\text{s}}$	$-26^{\circ}48'6.5''$	4.5	Blue	$361 \pm 8$ ly	B6V
□		p	$7^{\text{h}}35^{\text{m}}22.9^{\text{s}}$	$-28^{\circ}22'9.6''$	4.7	Blue	$220 \pm 10$ ly	B8V

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□		M47	7 <sup>h</sup> 36 <sup>m</sup> 35 <sup>s</sup>	-14°29'20"	4.4	OpCl	31.1'	1.6 kly
□		NGC 2477	7 <sup>h</sup> 52 <sup>m</sup> 11 <sup>s</sup>	-38°32'13"	5.8	OpCl	18'	4.9 kly
□		M46	7 <sup>h</sup> 41 <sup>m</sup> 46 <sup>s</sup>	-14°50'38"	6.1	OpCl	25.3'	5.4 kly
□		M93	7 <sup>h</sup> 44 <sup>m</sup> 33 <sup>s</sup>	-23°51'11"	6.2	OpCl	24.2'	3.4 kly
□		NGC 2546	8 <sup>h</sup> 12 <sup>m</sup> 19 <sup>s</sup>	-37°39'40"	6.3	OpCl	27.5'	3.2 kly
□		NGC 2527	8 <sup>h</sup> 4 <sup>m</sup> 59 <sup>s</sup>	-28°7'19"	6.5	OpCl	49'	2.1 kly
□		NGC 2539	8 <sup>h</sup> 10 <sup>m</sup> 37 <sup>s</sup>	-12°50'2"	6.5	OpCl	22.4'	4.3 kly
□		NGC 2423	7 <sup>h</sup> 37 <sup>m</sup> 11 <sup>s</sup>	-13°51'47"	6.7	OpCl	32.2'	3.1 kly
□		NGC 2439	7 <sup>h</sup> 40 <sup>m</sup> 46 <sup>s</sup>	-31°41'38"	6.9	OpCl	8.5'	14 kly
□		NGC 2571	8 <sup>h</sup> 18 <sup>m</sup> 53 <sup>s</sup>	-29°46'30"	7.0	OpCl	15.2'	4.5 kly
□		Mel 71	7 <sup>h</sup> 37 <sup>m</sup> 31 <sup>s</sup>	-12°3'54"	7.1	OpCl	9'	7.5 kly
□		NGC 2409	7 <sup>h</sup> 31 <sup>m</sup> 30 <sup>s</sup>	-17°13'44"	7.3	OpCl	16.3'	4.3 kly
□		NGC 2482	7 <sup>h</sup> 55 <sup>m</sup> 8 <sup>s</sup>	-24°15'47"	7.3	OpCl	17.9'	4.5 kly
□		NGC 2567	8 <sup>h</sup> 18 <sup>m</sup> 34 <sup>s</sup>	-30°37'52"	7.4	OpCl	7.7'	6 kly
□		NGC 2396	7 <sup>h</sup> 27 <sup>m</sup> 56 <sup>s</sup>	-11°43'30"	7.4	OpCl	22.1'	5 kly
□		NGC 2533	8 <sup>h</sup> 7 <sup>m</sup> 5 <sup>s</sup>	-29°52'19"	7.6	OpCl	6.6'	10 kly
□		NGC 2483	7 <sup>h</sup> 55 <sup>m</sup> 36 <sup>s</sup>	-27°54'0"	7.6	OpCl	3.3'	
□		NGC 2489	7 <sup>h</sup> 56 <sup>m</sup> 15 <sup>s</sup>	-30°3'36"	7.9	OpCl	7.9'	7 kly
□		NGC 2414	7 <sup>h</sup> 33 <sup>m</sup> 10 <sup>s</sup>	-15°26'56"	7.9	OpCl	5.2'	20 kly
□		NGC 2298	6 <sup>h</sup> 48 <sup>m</sup> 59 <sup>s</sup>	-36°0'19"	8.9	GbCl	9.6'	27 kly
□		NGC 2440	7 <sup>h</sup> 41 <sup>m</sup> 55 <sup>s</sup>	-18°12'30"	9.4	PNeb	22"	4 kly
□		NGC 2438	7 <sup>h</sup> 41 <sup>m</sup> 50 <sup>s</sup>	-14°44'7"	10.8	PNeb	1.2'	2.4 kly
□		NGC 2452	7 <sup>h</sup> 47 <sup>m</sup> 26 <sup>s</sup>	-27°20'7"	12.2	PNeb	18"	9.5 kly

## Notes

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# Reticulum

## “The Reticle”

Pronunciation: /rítikjúləm/

Genitive: Reticuli (/ritikjolai/)

Abbreviation: Ret

## History

Commemorating the reticle in the eyepiece of his telescope, French astronomer Nicolas Louis de Lacaille placed Reticulum in the heavens in 1756. His reticle consisted of a diamond shape formed by silk threads to help judge the positions of stars as they passed through his eyepiece.

## Facts

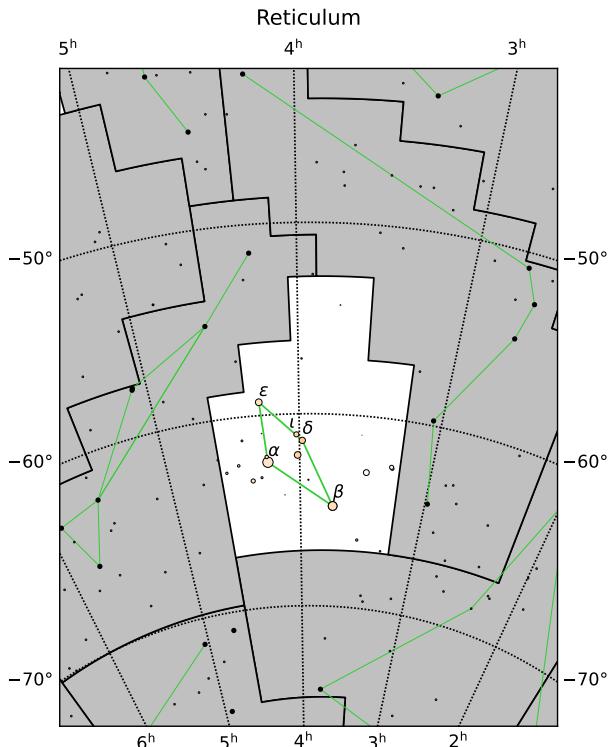
Reticulum is visible at latitudes between  $+23^{\circ}$  and  $-90^{\circ}$ , i.e., south of the US-Mexico border, North Africa, and Southeast Asia. It is best seen at around 9:00 PM local time during January. There are no meteor showers in Reticulum.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\alpha$	$4^{\text{h}}14^{\text{m}}25.5^{\text{s}}$	$-62^{\circ}28'25.9''$	3.3	Pale Orange	$161.6 \pm 0.8 \text{ ly}$	G8II-III
□		$\beta$	$3^{\text{h}}44^{\text{m}}12.0^{\text{s}}$	$-64^{\circ}48'24.9''$	3.8	Pale Orange	$97 \pm 2 \text{ ly}$	K0IV
□		$\epsilon$	$4^{\text{h}}16^{\text{m}}29.0^{\text{s}}$	$-59^{\circ}18'7.8''$	4.4	Pale Orange	$59.5 \pm 0.2 \text{ ly}$	K2III-IV
□		$\delta$	$3^{\text{h}}58^{\text{m}}44.7^{\text{s}}$	$-61^{\circ}24'0.7''$	4.6	Orange	$530 \pm 20 \text{ ly}$	M2III
□		$\iota$	$4^{\text{h}}1^{\text{m}}18.2^{\text{s}}$	$-61^{\circ}4'43.8''$	5.0	Orange	$319 \pm 5 \text{ ly}$	K4III

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Topsy Galaxy	NGC 1313	$3^{\text{h}}18^{\text{m}}16^{\text{s}}$	$-66^{\circ}29'54''$	8.7	SpiGal	$9.1'$	21 Mly
□		NGC 1574	$4^{\text{h}}21^{\text{m}}59^{\text{s}}$	$-56^{\circ}58'29''$	10.4	LenGal	$3.4'$	50 Mly
□		NGC 1543	$4^{\text{h}}12^{\text{m}}43^{\text{s}}$	$-57^{\circ}44'17''$	10.5	LenGal	$4.9'$	56 Mly
□		NGC 1559	$4^{\text{h}}17^{\text{m}}36^{\text{s}}$	$-62^{\circ}47'1''$	10.7	SpiGal	$3.5'$	63 Mly
□		IC 2056	$4^{\text{h}}16^{\text{m}}24^{\text{s}}$	$-60^{\circ}12'25''$	11.9	SpiGal	$1.9'$	54 Mly



## Notes

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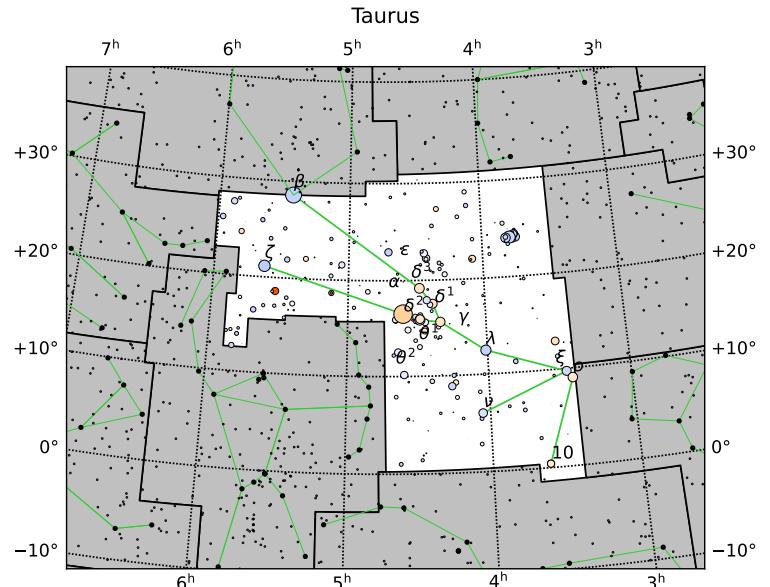
# Taurus

## “The Bull”

Pronunciation: /tɔrəs/  
Genitive: Tauri (/tɔraɪ/)  
Abbreviation: Tau

## History

Known as “the Bull” since Paleolithic times, Taurus has featured in the mythos of many cultures, from Babylonian, Egyptian, Sumerian, Druidic, and Greek societies. The Greeks associated Taurus with Zeus in the disguise he adopted for an affair he had with the mortal Europa.



## Facts

Taurus is visible at latitudes between  $+90^\circ$  and  $-65^\circ$ , i.e., throughout the entire populated world. It is best seen at around 9:00 PM local time during January. There is one major meteor shower in Taurus. The Taurids peak around October and November at a rate of five meteors per hour.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Aldebaran (/ældəbərən/)	α	4 <sup>h</sup> 35 <sup>m</sup> 55.2 <sup>s</sup>	+16°30'33.5"	0.9	Orange	$65.3 \pm 1.0$ ly	K5III
□	Elnath (/ɛlnæθ/)	β	5 <sup>h</sup> 26 <sup>m</sup> 17.5 <sup>s</sup>	+28°36'26.8"	1.7	Blue	$134 \pm 2$ ly	B7III
□	Tianguan (/tiængwan/)	ζ	5 <sup>h</sup> 37 <sup>m</sup> 38.7 <sup>s</sup>	+21°8'33.2"	3.0	Blue	$445 \pm 50$ ly	B2III
□	Chamukuy (/tʃa:mu:kui/)	θ <sup>2</sup>	4 <sup>h</sup> 28 <sup>m</sup> 39.7 <sup>s</sup>	+15°52'15.2"	3.4	Pale Blue	$150 \pm 2$ ly	A7III
□		λ	4 <sup>h</sup> 0 <sup>m</sup> 40.8 <sup>s</sup>	+12°29'25.2"	3.5	Blue	B3V + A4IV	
□	Ain (/em/)	ε	4 <sup>h</sup> 28 <sup>m</sup> 37.0 <sup>s</sup>	+19°10'49.6"	3.5	Pale Orange	$149 \pm 1$ ly	K0III
□		o	3 <sup>h</sup> 24 <sup>m</sup> 48.8 <sup>s</sup>	+9°1'44.0"	3.6	Pale Yellow	$191 \pm 4$ ly	G6III
□	Prima Hyadum (/praimə haɪədəm/)	γ	4 <sup>h</sup> 19 <sup>m</sup> 47.6 <sup>s</sup>	+15°37'39.5"	3.7	Pale Orange	$154 \pm 9$ ly	G8III
□		ξ	3 <sup>h</sup> 27 <sup>m</sup> 10.2 <sup>s</sup>	+9°43'57.6"	3.8	Blue	$210 \pm 10$ ly	B9V + B9V
□	Secunda Hyadum (/sikəndə haɪədəm/)	δ <sup>1</sup>	4 <sup>h</sup> 22 <sup>m</sup> 56.1 <sup>s</sup>	+17°32'33.0"	3.8	Pale Orange	$156 \pm 4$ ly	K0III

□		$\theta^1$	$4^{\text{h}}28^{\text{m}}34.5^{\text{s}}$	$+15^{\circ}57'43.8''$	3.8	Pale Orange	$154 \pm 2$ ly	G9III
□		$\nu$	$4^{\text{h}}3^{\text{m}}9.4^{\text{s}}$	$+5^{\circ}59'21.5''$	3.9	Pale Blue	$116.9 \pm 0.8$ ly	A1V
□		10	$3^{\text{h}}36^{\text{m}}52.4^{\text{s}}$	$+0^{\circ}24'6.0''$	4.3	White	$45.5 \pm 0.3$ ly	F8V
□		$\delta^3$	$4^{\text{h}}25^{\text{m}}29.4^{\text{s}}$	$+17^{\circ}55'40.5''$	4.3	Blue	$155 \pm 1$ ly	A2IV
□		$\delta^2$	$4^{\text{h}}24^{\text{m}}5.8^{\text{s}}$	$+17^{\circ}26'38.9''$	4.8	Pale Blue	$161 \pm 3$ ly	A2V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Hyades	C50	$4^{\text{h}}49^{\text{m}}47^{\text{s}}$	$+16^{\circ}56'53''$	0.5	OpCl	$5.5^{\circ}$	155 ly
□	Pleiades	M45	$3^{\text{h}}46^{\text{m}}24^{\text{s}}$	$+24^{\circ}6'50''$	1.6	OpCl	$1.8^{\circ}$	444 ly
□		NGC 1750	$5^{\text{h}}3^{\text{m}}43^{\text{s}}$	$+23^{\circ}41'42''$	6.1	OpCl	$50.3'$	2.4 kly
□		NGC 1647	$4^{\text{h}}45^{\text{m}}55^{\text{s}}$	$+19^{\circ}4'44''$	6.4	OpCl	$50'$	1.9 kly
□		NGC 1807	$5^{\text{h}}10^{\text{m}}48^{\text{s}}$	$+16^{\circ}31'19''$	7.0	OpCl	$15'$	
□		NGC 1817	$5^{\text{h}}12^{\text{m}}33^{\text{s}}$	$+16^{\circ}41'46''$	7.7	OpCl	$16'$	5.9 kly
□	Crab Nebula	M1	$5^{\text{h}}34^{\text{m}}32^{\text{s}}$	$+22^{\circ}0'52''$	8.4	Neb	$7'$	6.5 kly
□		NGC 1514	$4^{\text{h}}9^{\text{m}}17^{\text{s}}$	$+30^{\circ}46'33''$	9.5	PNeb	$1.7'$	1.5 kly
□	Barnard's Merope Nebula	IC 349	$3^{\text{h}}46^{\text{m}}21^{\text{s}}$	$+23^{\circ}56'28''$	13.0	Neb	$30''$	440 ly
□	Merope Nebula	NGC 1435	$3^{\text{h}}46^{\text{m}}24^{\text{s}}$	$+23^{\circ}54'0''$	13.0	Neb	$30'$	440 ly

## Notes

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# Vela

“The Sails”

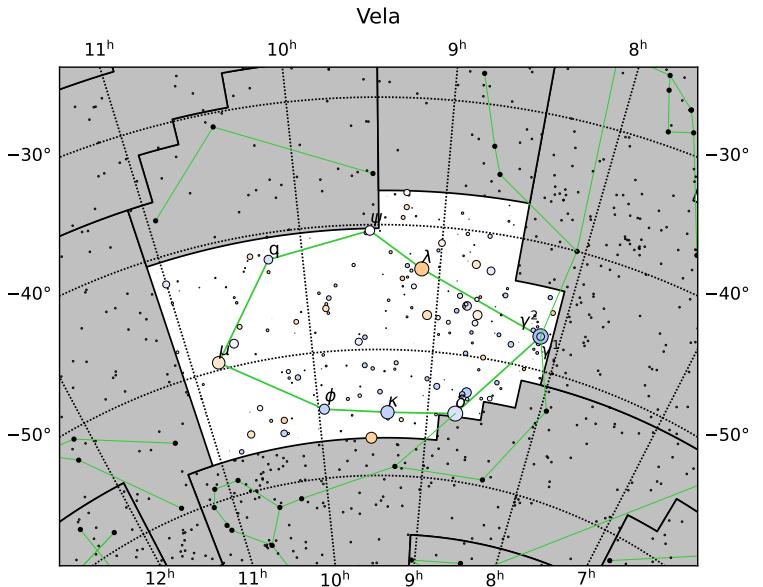
Pronunciation: /vi:lə/

Genitive: Velorum (/vloɔrəm/)

Abbreviation: Vel

## History

The final third of the larger constellation of Argo Navis, Vela represents the ship’s sails. Split up by French astronomer Nicolas Louis de Lacaille in 1763, he kept the same set of Greek letters for all three parts. Thus, Vela possesses no stars labeled alpha or beta, since those stars were found in Carina.



## Facts

Vela is visible at latitudes between  $+30^{\circ}$  and  $-90^{\circ}$ , i.e., south of the US-Mexico border, Northern Africa, and Southeast Asia. It is best seen at around 9:00 PM local time during March. There are three minor meteor showers in Vela.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□	Regor (/rɪgɔ:r/)	$\gamma^2$	$8^{\text{h}}9^{\text{m}}32.0^{\text{s}}$	$-47^{\circ}20'12''$	1.8	Blue	$1100 \pm 110$ ly	WC8
□	Alsephina (/ælsɪ-famə/)	$\delta$	$8^{\text{h}}44^{\text{m}}42.2^{\text{s}}$	$-54^{\circ}42'32''$	2.0	Blue	$80.6 \pm 0.8$ ly	A2IV
□	Suhail (/su:heil/)	$\lambda$	$9^{\text{h}}7^{\text{m}}59.8^{\text{s}}$	$-43^{\circ}25'57''$	2.2	Orange	$544 \pm 10$ ly	K4Ib
□	Markeb (/markeb/)	$\kappa$	$9^{\text{h}}22^{\text{m}}6.8^{\text{s}}$	$-55^{\circ}0'38''$	2.5	Blue	$572 \pm 30$ ly	B2IV
□		$\mu$	$10^{\text{h}}46^{\text{m}}46.2^{\text{s}}$	$-49^{\circ}25'13''$	2.7	Pale Orange	$117.2 \pm 1.6$ ly	G6III
□		$\phi$	$9^{\text{h}}56^{\text{m}}51.7^{\text{s}}$	$-54^{\circ}34'4''$	3.5	Blue	$1590 \pm 85$ ly	B5Ib
□		$q$	$10^{\text{h}}14^{\text{m}}44.2^{\text{s}}$	$-42^{\circ}7'19''$	3.9	Blue	$101.4 \pm 0.5$ ly	A2V
□		$\psi$	$9^{\text{h}}30^{\text{m}}42.0^{\text{s}}$	$-40^{\circ}28'0''$	3.9	White	$61.4 \pm 0.4$ ly	F3V
□		$\gamma^1$	$8^{\text{h}}9^{\text{m}}29.3^{\text{s}}$	$-47^{\circ}20'43''$	4.2	Blue	$1250 \pm 60$ ly	B2III

# Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Omicron Velorum Cluster	IC 2391	8 <sup>h</sup> 41 <sup>m</sup> 10 <sup>s</sup>	-52°59'28"	2.5	OpCl	1.6°	500 ly
□		IC 2395	8 <sup>h</sup> 42 <sup>m</sup> 7 <sup>s</sup>	-48°5'24"	4.6	OpCl	25.1'	2.4 kly
□		NGC 2547	8 <sup>h</sup> 9 <sup>m</sup> 52 <sup>s</sup>	-49°10'35"	4.7	OpCl	34'	1.3 kly
□		NGC 3228	10 <sup>h</sup> 21 <sup>m</sup> 31 <sup>s</sup>	-51°48'50"	6.0	OpCl	1°	1.6 kly
□		NGC 2669	8 <sup>h</sup> 46 <sup>m</sup> 27 <sup>s</sup>	-52°55'52"	6.1	OpCl	14.2'	3.8 kly
□		NGC 2910	9 <sup>h</sup> 30 <sup>m</sup> 34 <sup>s</sup>	-52°54'47"	7.2	OpCl	6.4'	4.4 kly
□		NGC 2645	8 <sup>h</sup> 39 <sup>m</sup> 5 <sup>s</sup>	-46°14'6"	7.3	OpCl	5.2'	6.2 kly
□		NGC 3330	10 <sup>h</sup> 38 <sup>m</sup> 38 <sup>s</sup>	-54°8'53"	7.4	OpCl	14.9'	5.9 kly
□		NGC 2670	8 <sup>h</sup> 45 <sup>m</sup> 33 <sup>s</sup>	-48°48'4"	7.8	OpCl	13.2'	5 kly
□		NGC 3201	10 <sup>h</sup> 17 <sup>m</sup> 37 <sup>s</sup>	-46°24'45"	8.2	GbCl	18.2'	14.7 kly
□		NGC 2925	9 <sup>h</sup> 33 <sup>m</sup> 17 <sup>s</sup>	-53°24'47"	8.3	OpCl	16.9'	2.5 kly
□		NGC 2659	8 <sup>h</sup> 42 <sup>m</sup> 32 <sup>s</sup>	-44°59'56"	8.6	OpCl	5'	7.2 kly
□		NGC 2660	8 <sup>h</sup> 42 <sup>m</sup> 40 <sup>s</sup>	-47°12'4"	8.8	OpCl	4.2'	10.6 kly
□		NGC 3033	9 <sup>h</sup> 48 <sup>m</sup> 35 <sup>s</sup>	-56°24'54"	8.8	OpCl	12.2'	6.1 kly
□		NGC 3105	10 <sup>h</sup> 0 <sup>m</sup> 41 <sup>s</sup>	-54°47'24"	9.7	OpCl	2.2'	31.3 kly
□		NGC 2972	9 <sup>h</sup> 40 <sup>m</sup> 14 <sup>s</sup>	-50°19'34"	9.9	OpCl	5.2'	6.8 kly
□	Eight-Burst Nebula	NGC 3132	10 <sup>h</sup> 7 <sup>m</sup> 2 <sup>s</sup>	-40°26'11"	10.0	PNeb	45"	2.5 kly
□		NGC 2792	9 <sup>h</sup> 12 <sup>m</sup> 26 <sup>s</sup>	-42°25'39"	11.8	PNeb	21"	10 kly
□	Pencil Nebula	NGC 2736	9 <sup>h</sup> 0 <sup>m</sup> 17 <sup>s</sup>	-45°54'57"	12.0	Neb	30'	800 ly
□		NGC 2899	9 <sup>h</sup> 27 <sup>m</sup> 3 <sup>s</sup>	-56°6'21"	12.4	PNeb	1.5'	3.3 kly

## Notes

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# Volans

“The Flying Fish”

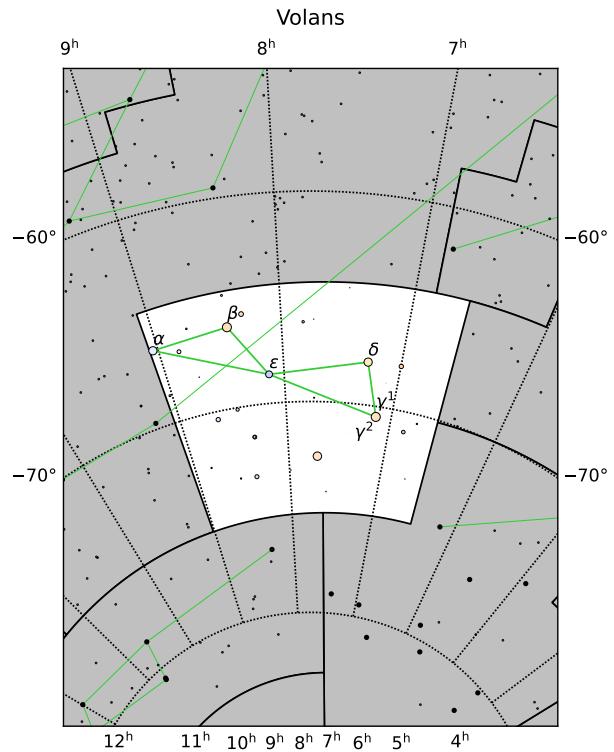
Pronunciation: /voulænz/

Genitive: Volantis (/vplæntis/)

Abbreviation: Vol

## History

Introduced by the Dutch explorers Pieter Keyser and Frederick de Houtman, Volans represents the real flying fish, a family of about 64 species. These fish would sometimes leap out of the water and land on the decks of ships and subsequently used for food. In the sky, Volans is being chased by the predatory Dorado, as happens in reality.



## Facts

Volans is visible at latitudes between  $+15^\circ$  and  $-90^\circ$ , i.e., south of Central America, the Horn of Africa, and Vietnam. It is best seen at 9:00 PM local time during March. There are no meteor showers in Volans.

## Stars

X	Name	ID	R.A.	Dec.	Mag.	Color	Distance	Type
□		$\gamma^2$	$7^h 8^m 44.9^s$	$-70^\circ 29' 56''$	3.7	Orange	$133.3 \pm 0.6$ ly	K0III
□		$\beta$	$8^h 25^m 44.2^s$	$-66^\circ 8' 13''$	3.8	Orange	$108.0 \pm 0.4$ ly	K2III
□		$\delta$	$7^h 16^m 49.8^s$	$-67^\circ 57' 26''$	4.0	Pale Orange	$738 \pm 18$ ly	F8Ib
□		$\alpha$	$9^h 2^m 26.8^s$	$-66^\circ 23' 46''$	4.0	Pale Blue	$124.9 \pm 0.6$ ly	A5V
□		$\epsilon$	$8^h 7^m 55.8^s$	$-68^\circ 37' 1''$	4.3	Blue	$645 \pm 16$ ly	B5III
□		$\gamma^1$	$7^h 8^m 42.4^s$	$-70^\circ 29' 50''$	5.6	White	$143.4 \pm 2.9$ ly	F2V

## Deep-Sky Objects

X	Name	ID	R.A.	Dec.	Mag.	Type	Size	Distance
□	Meathook Galaxy	NGC 2442	$7^h 36^m 24^s$	$-69^\circ 31' 51''$	9.7	SpiGal	$5.5'$	69 Mly
□		NGC 2434	$7^h 34^m 51^s$	$-69^\circ 17' 3''$	10.7	EllGal	$2.5'$	69 Mly
□		NGC 2305	$6^h 48^m 37^s$	$-64^\circ 16' 24''$	11.7	EllGal	$2'$	155 Mly
□		NGC 2397	$7^h 21^m 20^s$	$-69^\circ 0' 5''$	11.8	SpiGal	$2.5'$	61 Mly
□		NGC 2307	$6^h 48^m 51^s$	$-64^\circ 20' 8''$	12.0	SpiGal	$1.7'$	69 Mly

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