

Apus Constellation

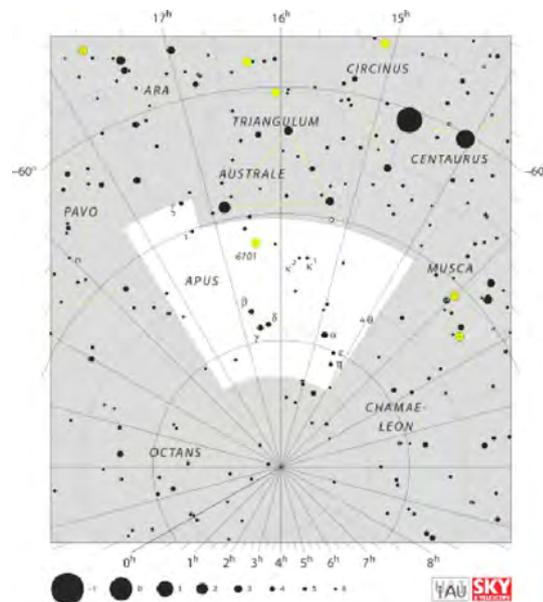
Visible at latitudes between $+5^\circ$ and -90° .

Best visible at 21:00 (9 p.m.) during the month of July.

Apus is a small constellation in the southern sky. It represents a bird-of-paradise, and its name means "without feet" in Greek because the bird-of-paradise was once wrongly believed to lack feet.

First depicted on a celestial globe by **Petrus Plancius** in 1598, it was charted on a star atlas by **Johann Bayer** in his 1603 *Uranometria*. The French explorer and astronomer **Nicolas Louis de Lacaille** charted and gave the brighter stars their Bayer designations in 1756.

The five brightest stars are all reddish in hue. Shading the others at apparent magnitude 3.8 is Alpha Apodis, an orange giant that has around 48 times the diameter and 928 times the luminosity of the Sun. Marginally fainter is Gamma Apodis, another ageing giant star. Delta Apodis is a double star, the two components of which are 103 arcseconds apart and visible with the naked eye. Two star systems have been found to have planets.

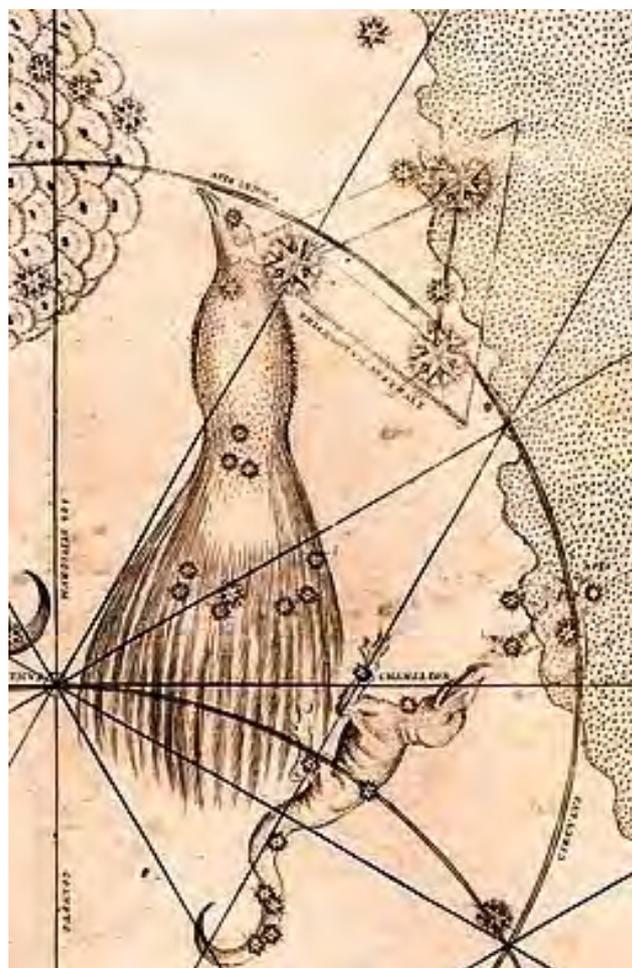


Apus was one of twelve constellations published by Petrus Plancius from the observations of **Pieter Dirkszoon Keyser** and **Frederick de Houtman** who had sailed on the first Dutch trading expedition, known as the *Eerste Schipvaart*, to the East Indies. It first appeared on a 35-cm diameter celestial globe published in 1598 in Amsterdam by Plancius with **Jodocus Hondius**. De Houtman included it in his southern star catalogue in 1603 under the Dutch name *De Paradijs Voghel*, "The Bird of Paradise", and Plancius called the constellation *Paradysvogel Apis Indica*; the first word is Dutch for "bird of paradise". *Apis* (Latin for "bee") is assumed to have been a typographical error for *avis* ("bird").

After its introduction on Plancius's globe, the constellation's first known appearance in a celestial atlas was in German cartographer Johann Bayer's *Uranometria* of 1603. Bayer called it *Apis Indica* while fellow astronomers **Johannes Kepler** and his son-in-law **Jakob Bartsch** called it *Apus* or *Avis Indica*. The name *Apus* is derived from the Greek *apous*, meaning "without feet". This referred to the Western misconception that the bird-of-paradise had no feet, which arose because the only specimens available in the West had their feet and wings removed. Such specimens began to arrive in Europe in 1522, when the survivors of Ferdinand Magellan's expedition brought them home. The constellation later lost some of its tail when Nicolas-Louis de Lacaille used those stars to establish *Octans* in the 1750s.

CHARACTERISTICS

Covering 206.3 square degrees and hence 0.5002% of the sky, Apus ranks 67th of the 88 modern constellations by area. Its position in the Southern Celestial Hemisphere means that the whole constellation is visible to observers south of 7°N . It is bordered by *Ara*, *Triangulum Australe* and *Circinus* to the north, *Musca* and *Chamaeleon* to the west, *Octans* to the south, and *Pavo* to the east. The three-letter abbreviation for the constellation, as adopted by the International Astronomical



Detail of Johann Bayer's 1603 *Uranometria*, showing the constellations Apus, Chamaeleon, Musca (as "Apis", the Bee), and Triangulum Australe, as well as the South celestial pole.

Union in 1922, is 'Aps'. The official constellation boundaries, as set by **Eugène Delporte** in 1930, are defined by a polygon of six segments. In the equatorial coordinate system, the right ascension coordinates of these borders lie between 13h 49.5m and 18h 27.3m, while the declination coordinates are between -67.48° and -83.12°.

LIST OF STARS IN APUS

Lacaille gave twelve stars Bayer designations, labelling them Alpha through to Kappa, including two stars next to each other as Delta and another two stars near each other as Kappa. Within the constellation's borders, there are 39 stars brighter than or equal to apparent magnitude 6.5. Beta, Gamma and Delta Apodis form a narrow triangle, with Alpha Apodis lying to the east. The five brightest stars are all red-tinged, which is unusual among constellations.

Two star systems have had exoplanets discovered by doppler spectroscopy, and the substellar companion of a third star system—the sunlike star HD 131664—has since been found to be a brown dwarf with a calculated mass of the companion to 23 times that of Jupiter (minimum of 18 and maximum of 49 Jovian masses). HD 134606 is a yellow sunlike star of spectral type G6IV that has begun expanding and cooling off the main sequence. Three planets orbit it with periods of 12, 59.5 and 459 days, successively larger as they are further away from the star. HD 137388 is another star—of spectral type K2IV—that is cooler than the Sun and has begun cooling off the main sequence. Around 47% as luminous and 88% as massive as the Sun, with 85% of its diameter, it is thought to be around 7.4 ± 3.9 billion years old. It has a planet that is 79 times as massive as the Earth and orbits its sun every 330 days at an average distance of 0.89 astronomical units.

DEEP-SKY OBJECTS

The Milky Way covers much of the constellation's area. Of the deep-sky objects in Apus, there are two prominent globular clusters—NGC 6101 and IC 4499—and a large faint nebula that covers several degrees east of Beta and Gamma Apodis. NGC 6101 is a globular cluster of apparent magnitude 9.2 located around 50,000 light-years distant from Earth, which is around 160 light-years across. Around 13 billion years old, it contains a high concentration of massive bright stars known as blue stragglers, thought to be the result of two stars merging. IC 4499 is a loose globular cluster in the medium-far galactic halo; its apparent magnitude is 10.6.

The galaxies in the constellation are faint. IC 4633 is a very faint spiral galaxy surrounded by a vast amount of Milky Way line-of-sight integrated flux nebulae—large faint clouds thought to be lit by large numbers of stars.



Globular cluster IC 4499 taken by Hubble Space Telescope.

