

SOUTHERN CONSTELLATIONS, CHAMAELEON

Chamaeleon is a small constellation in the southern sky. It is named after the chameleon, a kind of lizard. It was first defined in the 16th century as one of twelve constellations created by **Petrus Plancius** from the observations of **Pieter Dirkszoon Keyser** and **Frederick de Houtman**. It first appeared on a 35-cm diameter celestial globe published in 1597 in Amsterdam by Plancius. **Johann Bayer** was the first to put Chamaeleon in a celestial atlas, his *Uranometria* in 1603. It was just one of many constellations created by European explorers in the 15th and 16th centuries out of unfamiliar Southern Hemisphere stars.

This constellation, Chamaeleon, is adjacent to Octans which contains the South Pole. The name 'chameleon' means 'Earth lion', or 'lion of the earth', and is derived from the Greek words *chamai* (on the ground, on the earth) and *leon* (lion). {The main features of a chameleon are: Its skin changes colour to camouflage itself. The eyes can move in different directions simultaneously, can rotate to observe two different objects simultaneously giving a full 360-degree arc of vision around their body. Long tongues, some longer than their own body length, with suction cap at the tip}.

Chamaeleon is a small and unimportant constellation below Carina, Octans separating it from the south pole. **Pontanus**, in *Chilnead's Treatise*, included it with Musca as "the Chamaeleon with the flie"; but **Julius Schiller** (see below) entirely changed its character by combining it with *Apus* and *Musca* in his biblical Eve.

List of Stars

None of Chamaeleon's stars have specific names. There are four bright stars in Chamaeleon.

Alpha Chamaeleontis is a white-hued star of magnitude 4.1, 63 light-years from Earth.

Beta Chamaeleontis is a blue-white hued star of magnitude 4.2, 27 light-years from Earth.

Gamma Chamaeleontis is a red-hued giant star of magnitude 4.1, 413 light-years from Earth.

Delta Chamaeleontis a wide double star. The brighter star is Delta2 Chamaeleontis, a blue-hued star of magnitude 4.4, 364 light-years from Earth. Delta1 Chamaeleontis is an orange-hued giant star of magnitude 5.5, 354 light-years away.

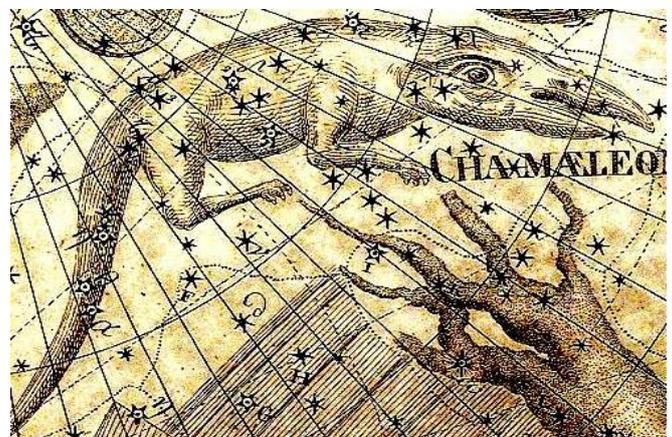
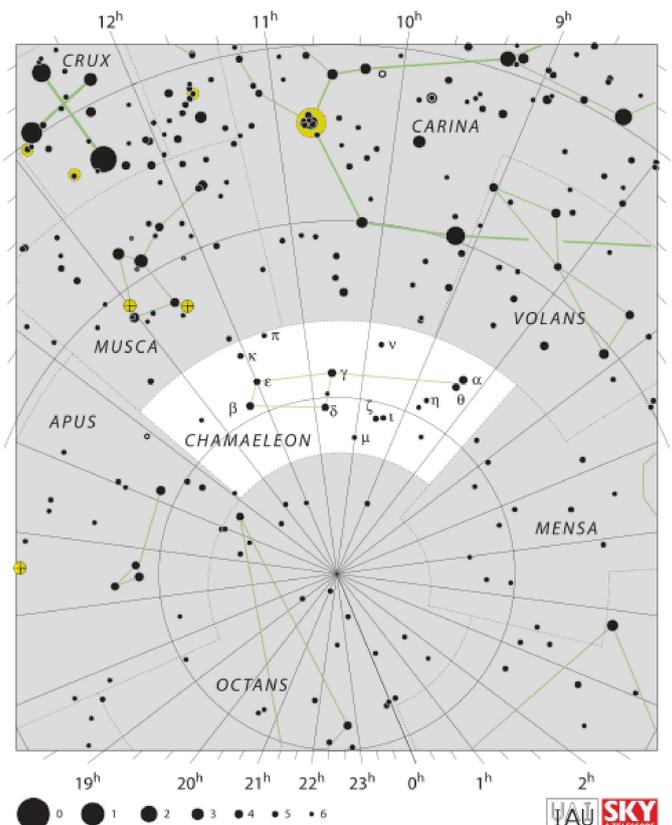
Chamaeleon is also the location of *Cha 110913*, a unique dwarf star or proto solar system.

Deep-sky objects

In 1999, a nearby open cluster was discovered centred on the star *Eta Chamaeleontis*. The cluster, known as either the *Eta Chamaeleontis* cluster or *Mamajek 1*, is 8 million years old, and lies 316 light years from Earth.

The constellation also contains a number of molecular clouds that are forming low-mass T Tauri stars. The cloud complex lies some 400 to 600 light years from Earth, and contains tens of thousands of solar masses of gas and dust. The most prominent cluster of T Tauri stars and young B-type stars are in the Chamaeleon I cloud, and are associated with the reflection nebula IC 2631.

Chamaeleon contains one faint planetary nebula, NGC 3195. It appears in a telescope at about the same apparent size as Jupiter.



NGC 3195 is a bright planetary nebula in Chamaeleon. It lies halfway between the stars Delta and Zeta Chamaeleontis and is the southernmost bright nebula known. The nebula was discovered by **Sir John Herschel** in 1835. It has an apparent magnitude of 11.6 and is approximately 5,500 light years distant.

In Australia Chamaeleon is sometimes also **called the Frying Pan**. It is among the smallest constellations in the sky, 79th in size. It occupies an area of 132 square degrees. It does not contain any Messier objects. The neighbouring constellations are **Apus, Carina, Mensa, Musca, Octans, and Volans**. There are no meteor showers associated with the constellation.

The Dutch cartographer **Jodocus Hondius** depicted the constellation as a chamaeleon sticking its tongue out to catch the fly represented by the neighbouring constellation *Musca*.

So, back to Julius Schiller

Julius Schiller (1580 – 1627) was a Jesuit lawyer from Augsburg, Germany, who like his fellow citizen and colleague **Johann Bayer** published an alternate star atlas in celestial cartography. Schiller, with Bayer's assistance, published the star atlas *Coelum Stellatum Christianum*, which replaced all pagan constellations with biblical and early Christian figures. Specifically, Schiller **replaced the zodiacal constellations with the twelve apostles, the northern constellations by figures from the New Testament and the southern constellations by figures from the Old Testament**.

At that star-crossed time, Julius Schiller felt that the heavens of God and Christ were corrupted by pagan influence and that was too much to bear; something had to be done. The twelve zodiacal constellations naturally became the twelve apostles - Taurus the Bull became St. Andrew, Eridanus became the Red Sea; Argo became Noah's Ark; and Andromeda became the Sepulcher of Christ etc. A massive, forced conversion had taken place. All of the pagan constellations named after figures from Greek mythology were renamed with those from Christianity.

But Schiller's new star atlas was considered merely a curiosity and, in contrast to Bayer's Uranometria, did not gain general acceptance. It was too radical a change and never gained public use and traction; the constellations had been doing just fine for two thousand years and the religious imperative was not felt by contemporary scientists - nor anyone else, for that matter. except perhaps the Jesuits and some highly pious members of the laity.

In hindsight it is very similar to the failure of the metric system in the U.S. Despite the Metric Conversion Act of 1975, we Americans like our ounces, pounds, quarts, inches, and miles, thank you very much, they work. Now leave us alone. Take your litres and leave! **But Coelum stellatum Christianum was valuable for other reasons,** beyond trying to wrest the stars out of their pagan context. It was, upon its publication, the most accurate star atlas yet produced, despite its biblical gloss. For instance, it was the first celestial atlas to include the Great Nebula in Andromeda. it was the best available catalogue until **Johannes Hevelius** published his atlas 60 years later. Schiller was not himself an astronomer, but a first rate cartographer who used the observations of others to great effect. Despite Schiller's best efforts, ultimately the fate of *Coelum stellatum Christianum* and its Christianized constellations rested with the Old Gods. Their judgement was swift and stern.



Title page of the *Coelum Stellatum Christianum*



The Three Kings, formerly Hercules.