

THE CONSTELLATION OCTANS, THE OCTANT

Octans is a faint constellation of the southern sky. Its name is Latin for the eighth part of a circle, but it is named after the octant, a navigational instrument. The constellation was devised by **Nicolas Louis de Lacaille** in 1759 out of faint south circumpolar stars and originally named it *l'Octans de Reflexion*, or “the reflecting octant,” which was the precursor to the modern sextant. He later renamed it as “Octans Hadleianus” in honour of the octant's inventor, **John Hadley**, who devised the navigational instrument in 1730.

There is no real mythology related to Octans, partially due to its extreme southerly latitude.

Octans is notable as the location of the south celestial pole. The constellation is circumpolar to the south pole – it never sets below the horizon. It does not have any stars brighter than fourth magnitude. The South Pole unlike the North Pole has no bright pole star: *Sigma Octantis* is a naked-eye star located about a degree away from the South Celestial Pole, but it is so faint (mag. 5.45) that it is practically useless for navigation purposes. Conveniently for navigators, the constellation **Crux, the Southern Cross, points toward the pole.**

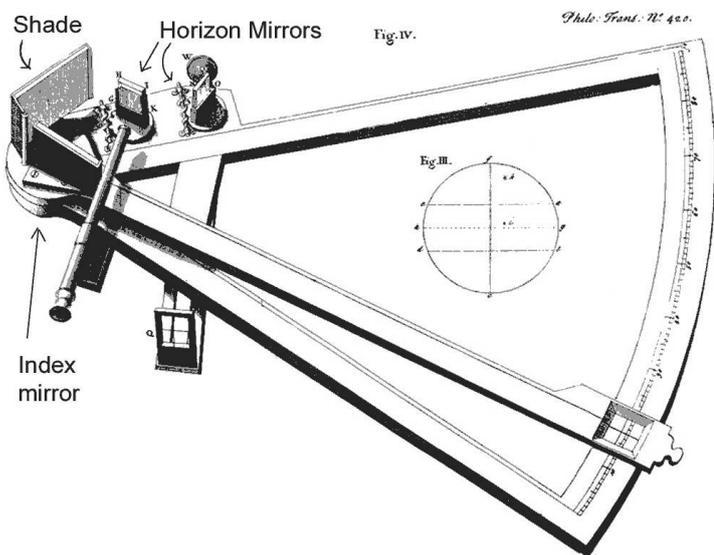
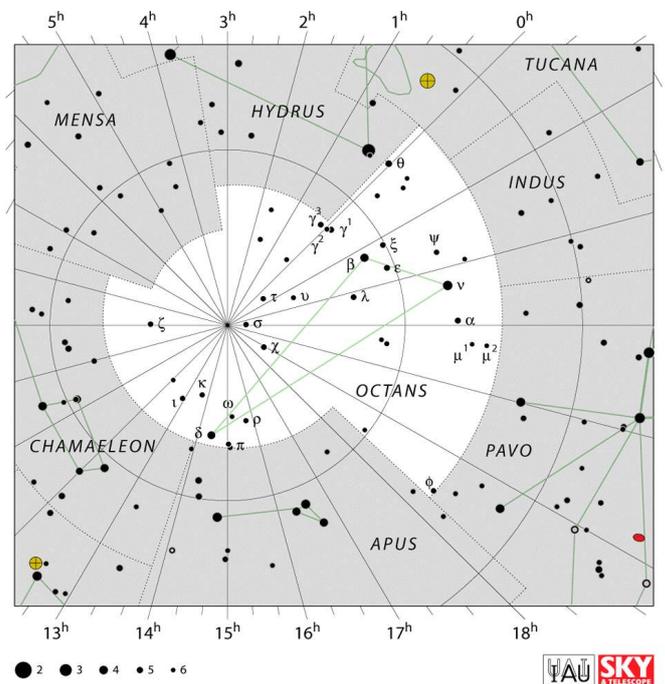
FACTS

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The octant instrument provided a number of advantages over previous instruments.

The sight was easy to align because the horizon and the star seem to move together as the ship pitched and rolled. This also created a situation where the error in observation was less dependent on the observer, as he could directly see both objects at once.

With the use of the manufacturing techniques available in the 18th century, the instruments were capable of reading very accurately. The size of the instruments was reduced with no loss of accuracy. An octant could be half the size of a Davis quadrant with no increase in error.

Using shades over the light paths, one could observe the sun directly, while moving the shades out of the light path allowed the navigator to observe faint stars. This made the instrument usable both night and day.

By 1780, the octant and sextant had almost completely eliminated all previous instruments.

It lies in the fourth quadrant of the southern hemisphere (SQ4) and can be seen at latitudes between +0° and -90°.

The neighboring constellations are **Apus, Chamaeleon, Hydrus, Indus, Mensa, Pavo and Tucana.**

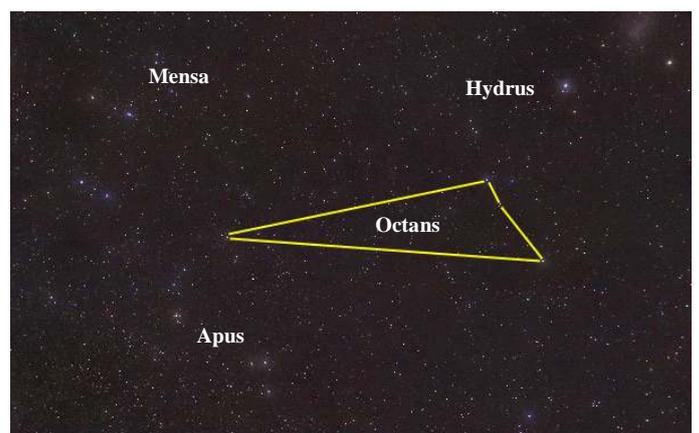
Octans contains two stars with known planets and has no Messier objects.

The brightest star in the constellation is *Nu Octantis*, with an apparent visual magnitude of 3.76.

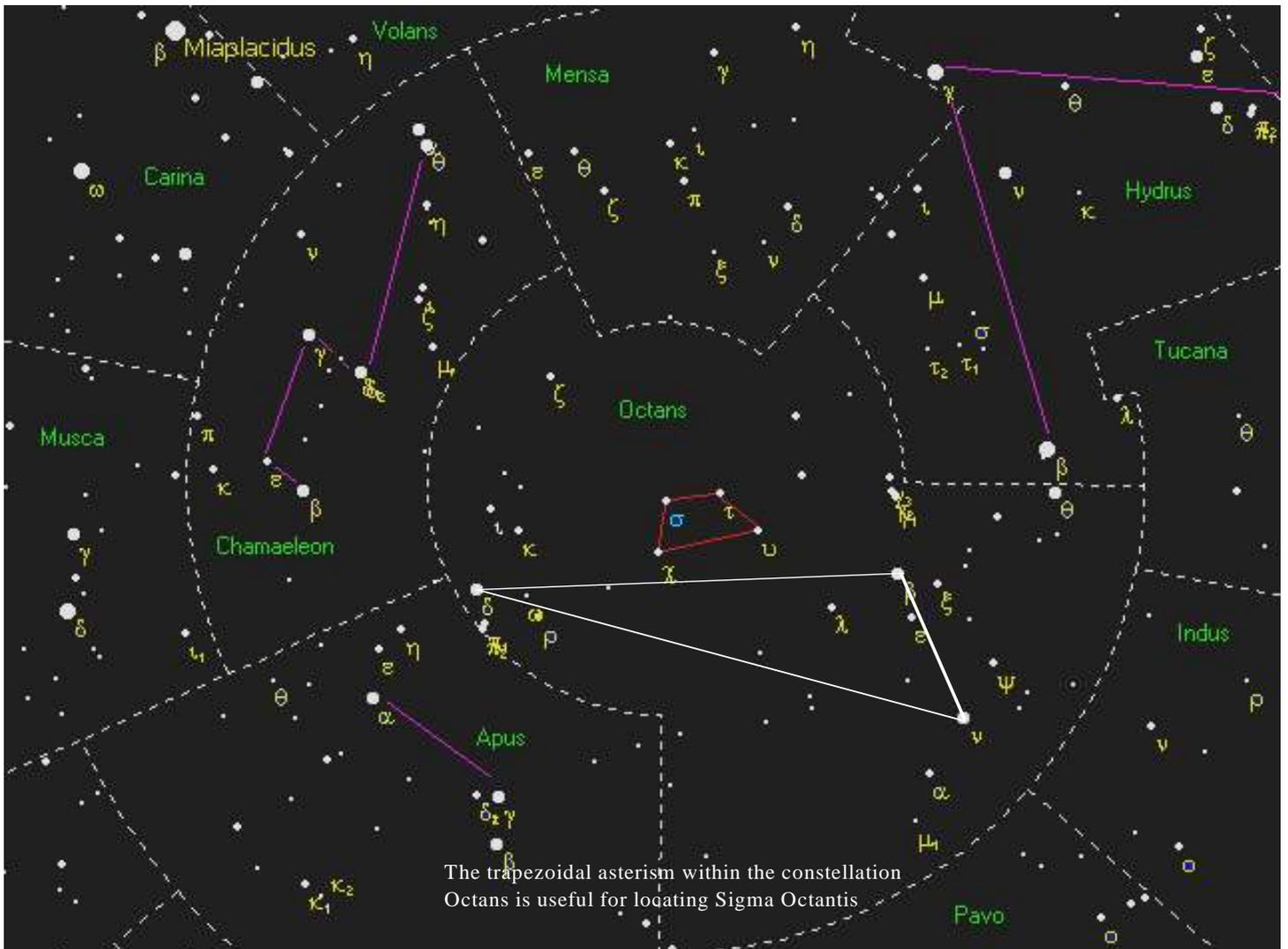
There are no meteor showers associated with the constellation.

Octans belongs to the Lacaille family of constellations, along with *Antlia, Caelum, Circinus, Fornax, Horologium, Mensa, Microscopium, Norma, Pictor, Reticulum, Sculptor, and Telescopium.*

The constellation used several stars from *Hydrus*.



The constellation Octans as it can be seen by the naked eye and the lines drawn. The surrounding constellations are indicated



MAJOR STARS IN OCTANS

Nu Octantis is the brightest star in the constellation. It has an apparent visual magnitude of 3.76 and is approximately 69 light years distant from the solar system. The star is an orange giant with the stellar classification K1III. It is one of the least luminous giant stars known, with a mass 1.4 times that of the Sun. It has a unconfirmed planet with a mass at least 2.5 times that of Jupiter in its orbit and a binary companion, separated by 2.55 astronomical units, orbiting each other with a 2.9 year period.

Beta Octantis is a white star halfway between the dwarf and subgiant stage of evolution. It has the stellar classification of A9IV-V. It has an apparent visual magnitude of 4.14 and is approximately 140 light years distant from the Sun. It is the second brightest star in Octans constellation.

Delta Octantis is an orange giant star belonging to the stellar class K2III. It has an apparent visual magnitude of 4.31 and is approximately 279 light years distant from the solar system.

Theta Octantis is another orange giant in Octans. It has the stellar classification K3III. It has an apparent magnitude of 4.79 and is approximately 221 light years distant from the Sun.

Alpha Octantis is a spectroscopic binary star composed of two F-class giants. It has a combined visual magnitude of 5.15 and is approximately 148 light years distant from the solar system.

Sigma Octantis is currently the southern pole star, and is sometimes known by the name *Polaris Australis*. It is the counterpart to *Polaris* in *Ursa Minor*, the northern pole star. *Sigma Octantis* is 25 times fainter than the North Star, which makes it too dim to be used for navigation, so it is the Southern Cross, which is usually used for establishing the position of the South Celestial Pole.

Mu-2 Octantis is another binary system in Octans. It consists of two yellow dwarf stars, HD 196067 and HD 196068, about 144 light years distant from Earth.

Pythagoras stated that the octave gave our planet its shape, and he said experiments have shown that when an octave is sounded the sand on a plate of glass arranges itself in the form of a circle.

The cosmo flower has eight petals.

The lemon has eight segments.

Noah's Ark contained eight humans.