

TRIANGULUM AUSTRALE

the Southern Triangle

Triangulum Australe is a small constellation in the far southern celestial hemisphere. Its name is Latin for "the southern triangle", which distinguishes it from *Triangulum* in the northern sky and is derived from the almost equilateral pattern of its three brightest stars. It was first depicted on a celestial globe as *Triangulus Antarcticus* by **Petrus Plancius** in 1589, and later with more accuracy and its current name 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:

Alpha Trianguli Australis, known as Atria, is a second magnitude orange giant and the brightest star in the constellation, as well as the 42nd-brightest star in the night sky. Completing the triangle are the two white main sequence stars *Beta* and *Gamma Trianguli Australis*.

A triangle is a geometric shape that has three sides. There are two constellation triangles in the sky:

- *Triangulum*, the Northern Triangle, which is an old constellation, known to the ancient Babylonians (where it meant to represent a plough) and the Greeks. *Triangulum* was one of the 48 constellations listed by the 2nd century astronomer **Ptolemy**, and
- *Triangulum Australe* the small Southern Triangle, which is a new addition to the sky and was named by Johann Bayer in 1603. The three brightest stars of *Triangulum Australe*, are of second and third magnitude and form an approximately equilateral triangle.

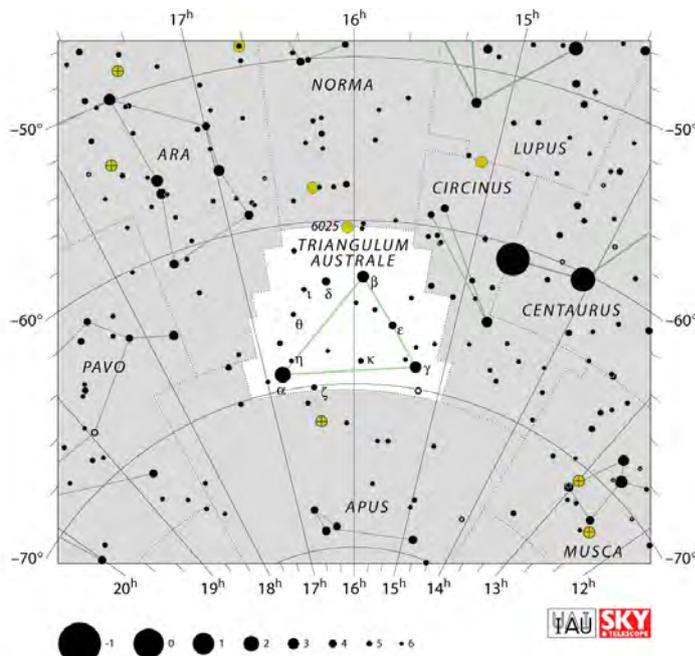
The two triangles in the sky each suggest a trinity. *Triangulum Australe*, the Southern Triangle, was given the title 'the Three Patriarchs', representing the biblical Abraham, Isaac, and Jacob, suggesting a masculine trinity.

HISTORY

The Italian navigator **Amerigo Vespucci** explored the New World at the beginning of the 16th century. He learnt to recognize the stars in the southern hemisphere and made a catalogue for his patron **king Manuel I of Portugal**, which is now lost. As well as the catalogue, Vespucci wrote descriptions of the southern stars, including a triangle which may be either *Triangulum Australe* or *Apus*. This was sent to his patron in Florence, **Lorenzo di Pierfrancesco de' Medici**, and published as *Mundus Novus* in 1504. The first depiction of the constellation was provided in 1589 by Flemish astronomer and clergyman **Petrus Plancius** on a 32½-cm diameter celestial globe published in Amsterdam by Dutch cartographer **Jacob Floris van Langren**, where it was called *Triangulus Antarcticus* and incorrectly portrayed to the south of *Argo Navis*. His student **Petrus Keyzer**, along with Dutch explorer **Frederick de Houtman**, coined the name *Den Zuyden Triangel*. The constellation was more accurately depicted in Johann Bayer's celestial atlas *Uranometria* in 1603, where it was also given its current name.

Nicolas Louis de Lacaille portrayed the constellations of *Norma*, *Circinus* and *Triangulum Australe* as a set square and ruler, a compass, and a surveyor's level respectively in a set of draughtsman's instruments in his 1756 map of the southern stars. Also depicting it as a surveyor's level, **German Johann Bode** gave it the alternate name of *Libella* (Level) in his *Uranographia*. There are few historic clues for this

southern triangle, except for 'Three Patriarchs'. The alpha star of the constellation is called Atria and **Isidore** makes a connection between the word atrium (plural atria) and the word three. **Philippus Caesius** saw the three main stars as representing the **Three Patriarchs, Abraham, Isaac and Jacob** (with Atria as Abraham). The Wardaman people of Australia perceived the stars of *Triangulum Australe* as the tail of the Rainbow Serpent, stretching out from Crux to Scorpius. Overhead in October, the Rainbow Serpent "gives Lightning a nudge" to bring on the wet season rains in November. There is also the story that St Patrick, preaching the doctrine of the Trinity to the pagan Irish, plucked a shamrock, a three-lobed leaf, and employed it as an example of the trinity.



Triangulum Australe, the **Southern Triangle**, is much more noticeable than its northern original *Triangulum*. The constellation lies south of Ara, between the tail of Pavo and the fore-feet of the Centaur (*Centaurus*), Gould assigning to it 46 components down to the 7th magnitude. The three brightest stars in the constellation form an equilateral triangle.

FACTS

- *Triangulum Australe* is the 83rd constellation in size, occupying an area of 110 square degrees. It is located in the third quadrant of the southern hemisphere and can be seen at latitudes between +25° and -90°.
- The neighboring constellations are Apus, Ara, Circinus and Norma.
- *Triangulum Australe* has one star with a confirmed planet and contains no Messier objects.
- There are no meteor showers associated with the constellation.
- The constellation boundaries, as set by **Eugène Delporte** in 1930, are defined by a polygon of 18 segments.
- *Triangulum Australe* belongs to the Hercules family of constellations, along with *Aquila*, *Ara*, *Centaurus*, *Corona Australis*, *Corvus*, *Crater*, *Crux*, *Cygnus*, *Hercules*, *Hydra*, *Lupus*, *Lyra*, *Ophiuchus*, *Sagitta*, *Scutum*, *Sextans*, *Serpens* and *Vulpecula*.

STORY

Triangulum Australe is not associated with any myths. It is the smallest of the 12 constellations created by the Dutch navigators Frederick de Houtman and Pieter Dirkszoon Keyser in the late 16th century. Nicolas Louis de Lacaille called the constellation “*le Triangle Austral ou le Niveau*” on his planisphere in 1756 and described it as a surveyor’s level (“niveau”). It was one of the several constellations that represented surveying instruments. The other two were Circinus, the compass, and Norma, the set square. Johann Bode gave the constellation the alternative name, Libella (the level), in his *Uranographia* in 1801.

MAJOR STARS

Atria – *Alpha Trianguli Australis* is the brightest star in *Triangulum Australe*. It has an apparent visual magnitude of 1.91 and is about 391 light years distant from Earth. It is a suspected binary star. Together with *Beta* and *Gamma Trianguli*, it forms the triangle asterism after which the constellation got its name.

The star’s traditional name, *Atria*, is a contraction of its Bayer designation, A(lpha) Tri(anguli) A(ustralis).

Beta Trianguli Australis is the second brightest star in the constellation. It has a visual magnitude of 2.85 and is 40.37 light years distant from the Sun. It is a double star composed of a yellow-white main sequence star and a 14th magnitude line-of-sight companion separated from the primary by 155 seconds of arc. The star is showing excess infrared emission, It could have a circumstellar disk.

Gamma Trianguli Australis is the third brightest star and the third star that forms the triangle asterism that dominates the constellation. It is a white main sequence dwarf of class A1 V.

Delta Trianguli Australis is the fourth brightest star in the constellation. It is a binary star with an apparent magnitude of 3.86, approximately 621 light years distant from the solar system.

Epsilon Trianguli Australis is a wide double star with an apparent visual magnitude of 4.11. It is approximately 216.1 light years distant from the Sun. The system consists of an orange giant of the spectral type K1-2III and a white main sequence star belonging to the spectral class A5.

Zeta Trianguli Australis is a spectroscopic binary star with magnitude 4.90. It is 39.5 light years distant from the Sun.

DEEP SKY OBJECTS

Although the constellation lies in the Milky Way and contains many stars, deep-sky objects are not prominent. They include the open cluster NGC 6025 (magnitude of 5.1), planetary nebula NGC5979 and ESO 137-001, a barred spiral galaxy notable for its long tail, stretching across 260,000 light years.

ESO 69-6. The galaxies of this beautiful interacting pair bear some resemblance to musical notes on a stave. Long tidal tails sweep out from the two galaxies, gas and stars were stripped out and torn away from their outer regions

The presence of these tails is the unique signature of strong gravitational interaction.

AK, from Wikipedia

