

CONSTELLATION SAGITTARIUS, THE ARCHER

Sagittarius is one of the 12 constellations of the zodiac. It is also one of the 48 constellations listed by the 2nd century astronomer **Ptolemy** and remains one of the 88 modern constellations. Its name is Latin for the archer, and its symbol is Sagittarius.svg. Sagittarius is commonly represented as a centaur pulling-back a bow. It lies between Scorpius and Ophiuchus to the west and Capricornus to the east. The center of the Milky Way lies in the westernmost part of Sagittarius.

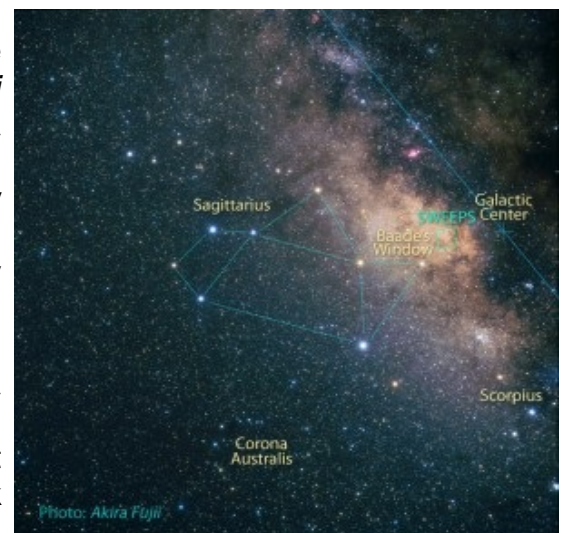
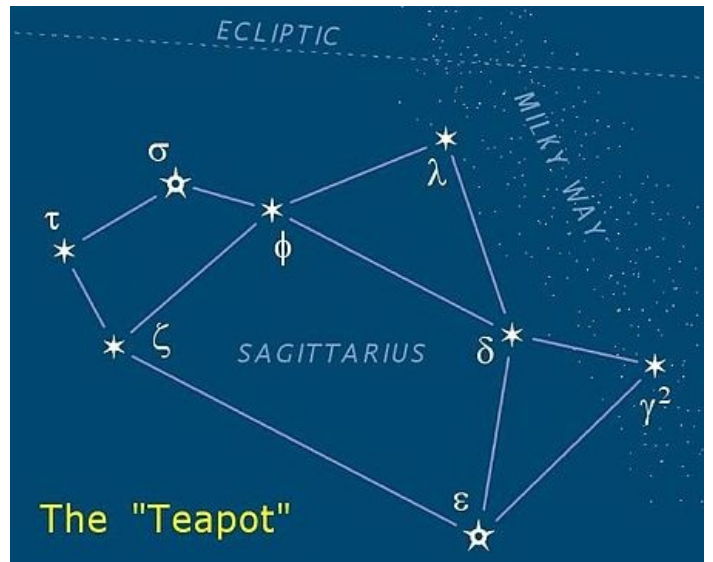
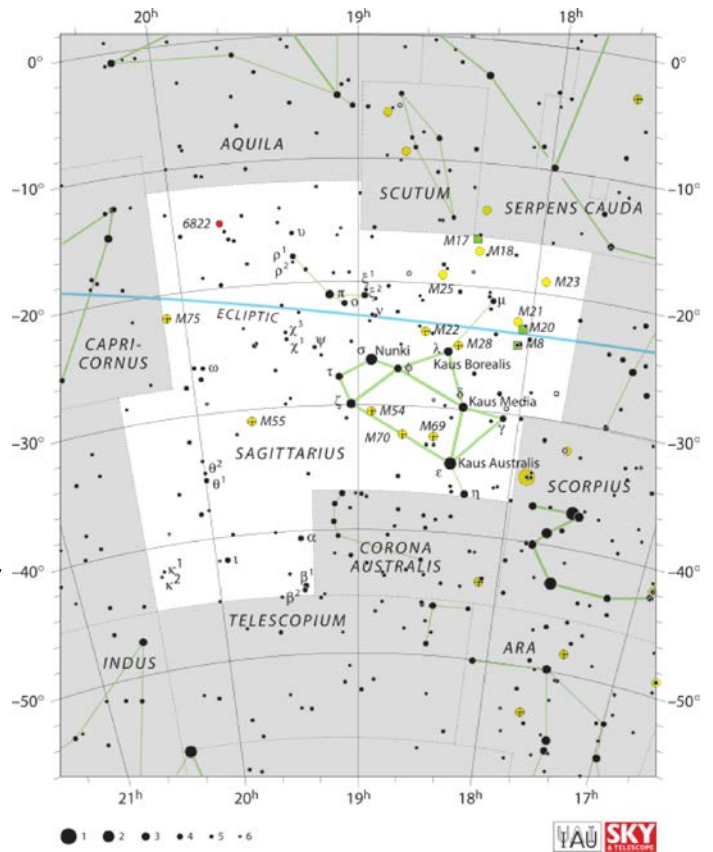
Sagittarius famously points its arrow at the heart of Scorpius, represented by the reddish star Antares, as the two constellations race around the sky. Following the direct line formed by *Delta Sagittarii* and *Gamma2* leads directly to Antares. Fittingly, *Sagittarii* is *Alnasl*, the Arabic word for "arrowhead", and *Delta Sagittarii* is called *Kaus Media*, the "center of the bow," from which the arrow protrudes. *Kaus Media* bisects *Lambda Sagittarii* and *Epsilon Sagittarii*, whose names *Kaus Borealis* and *Kaus Australis* refer to the northern and southern portions of the bow.

Among present-day astronomers, the shape outlined by the eight main stars of Sagittarius (Gamma, Delta, Epsilon, Lambda, Phi, Sigma, Tau, and Zeta) is popularly known as the Teapot. Its handle consists of Phi, Sigma, Tau, and Zeta, the top of the lid is marked by Lambda, while Delta, Epsilon, and Gamma are the triangular spout. **To complete the teapot metaphor, a particularly dense area of the Milky Way is seen rising above the spout, like a puff of steam rising from a boiling kettle.**

STARS

Alpha Sagittarii (Rukbat, meaning "the archer's knee") despite having the "alpha" appellation, is not the brightest star of the constellation, having a magnitude of only 3.96. Instead, the brightest star is *Epsilon Sagittarii* ("Kaus Australis," or "southern part of the bow"), at magnitude 1.85. *Sigma Sagittarii* ("Nunki") is the constellation's second-brightest star at magnitude 2.08. Nunki is a B2V star approximately 260 light years away. "Nunki" is a Babylonian name of uncertain origin, but thought to represent the sacred Babylonian city of Eridu on the Euphrates, which would make Nunki the oldest star name currently in use. *Zeta Sagittarii* ("Ascella"), with apparent magnitude 2.61 spectra, is actually a double star whose two components have magnitudes 3.3 and 3.5. *Delta Sagittarii* ("Kaus Media"), with magnitude 2.71 is only 85 light years from Earth. *Eta Sagittarii* is a double star with component magnitudes of 3.18 and 10. *Pi Sagittarii* is actually a triple system whose components have magnitudes 3.7, 3.8, and 6.0. *Beta Sagittarii* at magnitude 3.96 has the traditional name Arkab, meaning "Achilles tendon." It is located at a position associated with the forelegs of the centaur.

Supernova remnant Sagittarius A originated in an explosion that occurred some 100,000 years ago. It is the location of the black hole believed to be at the centre of the Milky Way Galaxy.



Sagittarius region of the Milky Way

MYTHOLOGY

In Greek mythology, Sagittarius is usually identified as a centaur: half human, half horse. However, perhaps due to the Greek's adoption of the older Sumerian constellation, some confusion surrounds the identity of the archer. Some identify Sagittarius as the centaur Chiron, the son of Philyra and Saturn and tutor to Jason. However, Chiron is in fact represented by the constellation Centaurus, the other heavenly centaur.

An alternative tradition is that Chiron merely invented the constellation Sagittarius to help in guiding Jason and the Argonauts in their quest for the Golden Fleece.

DEEP-SKY OBJECTS

The Milky Way is at its densest near Sagittarius, so it contains 15 Messier objects and many star clusters and nebulae, such as the Lagoon Nebula (Messier 8), the Omega Nebula (Messier 17), and the Trifid Nebula (Messier 20), a large nebula containing some very young, hot stars (see below).

Sagittarius is the 15th largest constellation in the sky.

The Lagoon Nebula (M8) is an emission nebula that is located 5,000 light-years from Earth and measures 140 light-years by 60 light-years (1.5°). Though it appears grey in telescopes to the unaided eye, long-exposure photographs reveal its pink hue, common to emission nebulae. It is fairly bright, with an integrated magnitude of 3.0. The central area of the Lagoon Nebula is also known as the Hourglass Nebula, so named for its distinctive shape. The Lagoon Nebula also features three dark nebulae catalogued in Barnard's Catalogue.

The Lagoon Nebula was instrumental in the discovery of Bok globules, as **Bart Bok** studied prints of the nebula intensively in 1947 and hypothesised that the globules held protostars. Approximately 17,000 Bok globules were discovered in the nebula nine years later.

The Omega Nebula is a fairly bright nebula; it has an integrated magnitude of 6.0 and is 4890 light-years from Earth. It was discovered in 1746 by **Philippe Loys de Chésaux**; observers since him have differed greatly in how they view the nebula, hence its myriad of names. Most often viewed as a checkmark, it was seen as a swan by **George F. Chambers** in 1889, a loon by **Roy Bishop**, and as a curl of smoke by **Camille Flammarion**.^[12]

The Trifid Nebula (M20, NGC 6514) is an emission nebula in Sagittarius that lies less than two degrees from the Lagoon Nebula. Discovered by French comet-hunter **Charles Messier**, it is located between 2,000 and 9,000 light-years from Earth and has a diameter of approximately 50 light-years. The outside of the Trifid Nebula is a bluish reflection nebula; the interior is pink with two dark bands that divide it into three areas, sometimes called "lobes".

Hydrogen in the nebula is ionized, creating its characteristic color, by a central triple star, which formed in the intersection of the two dark bands. M20 is associated with a cluster that has a magnitude of 6.3

NGC 6559 is a star forming region located at a distance of about 5000 light-years from Earth, in the constellation of Sagittarius, showing both emission (red) and reflection (bluish) regions.

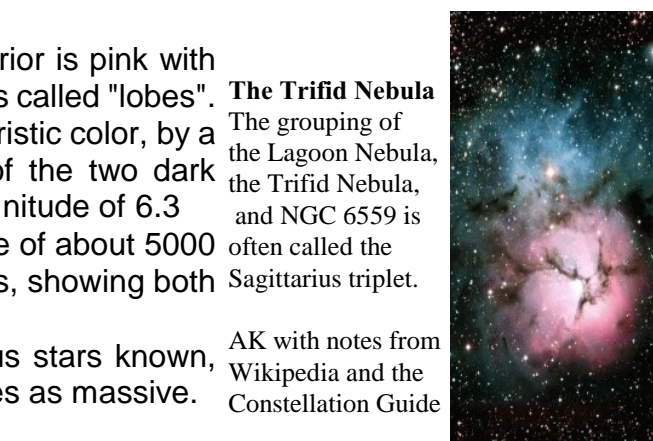
Pistol Star Nebula contains one of the most luminous stars known, four million times as luminous as our Sun and 200 times as massive.



Sagittarius, the centaur-like archer, drawing his bow on one of the Uranographia of Johann Bode 1801



The Lagoon Nebula was discovered independently by John Flamsteed in 1680, Guillaume Le Gentil in 1747, and Charles Messier in 1764.



The Trifid Nebula

The grouping of the Lagoon Nebula, the Trifid Nebula, and NGC 6559 is often called the Sagittarius triplet.

AK with notes from Wikipedia and the Constellation Guide