

CONSTELLATION SCORPIUS, THE SCORPION

Scorpius is one of the twelve constellations of the zodiac. Its name is Latin for scorpion. It lies between Libra to the west and Sagittarius to the east. It is a large constellation located in the southern hemisphere near the centre of the Milky Way and one of the 48 Greek constellations listed by **Ptolemy** in the *Almagest*. But Scorpius pre-dates the Greeks, and is one of the oldest constellations known. The Sumerians called it *Girtab*, "the scorpion," some 5,000 years ago.

NOTABLE FEATURES

Scorpius contains many bright stars, including Antares, "rival of Mars," so named because of its distinct reddish hue and, being near the Ecliptic, is sometimes mistaken for the planet Mars.

Marking the tip of the scorpion's curved tail are Lambda Sco (Shaula) and Upsilon Sco (Lesath), whose names both mean "sting." Given their proximity to one another, the two are sometimes referred to as the Cat's Eyes.

The constellation's bright stars form a pattern like a longshoreman's hook. In Ancient Greek times the entire constellation of Libra was considered to be claws of Scorpius (*Chelae Scorpionis*), with a set of scales held aloft by Astraea (represented by adjacent Virgo) being formed from these western-most stars during later Greek times. The division into Libra was formalised during Roman times.

STARS OF SCORPIUS

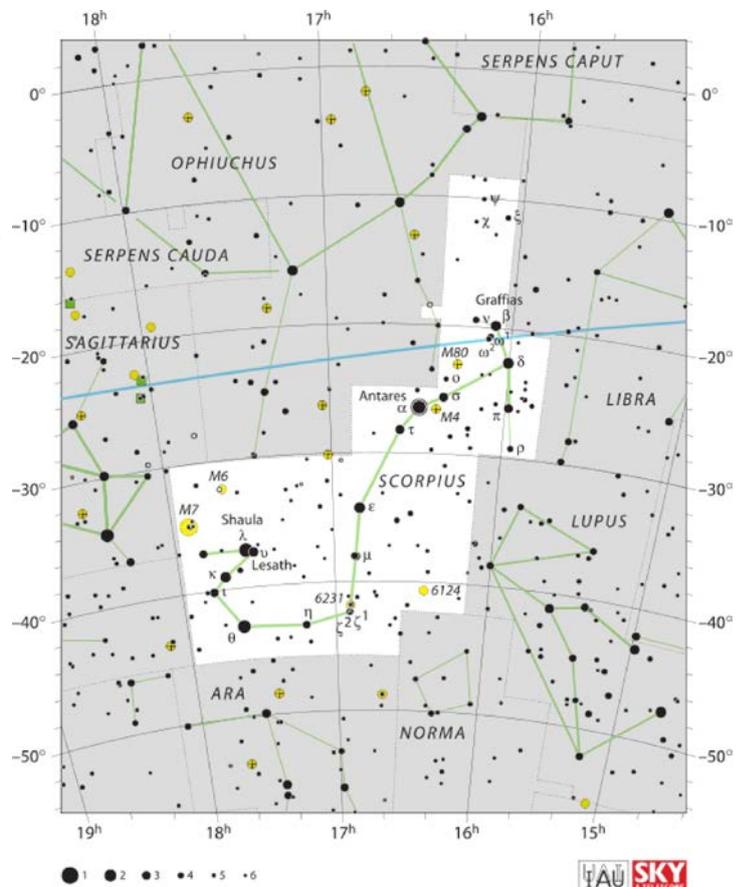
Alpha Scorpii, called *Antares*, at magnitude 0.96 is the brightest star in Scorpius. The name is from the Greek word meaning 'like Mars' on account of its strong reddish-orange colour, similar to that of the planet Mars. The name is often translated as 'rival of Mars', but the star name expert **Paul Kunitzsch** prefers the translation 'like Mars'.

Beta Scorpii is called *Graffias*, Latin for 'claws'. This star is sometimes also known as Acrab, from the Arabic for 'scorpion'.

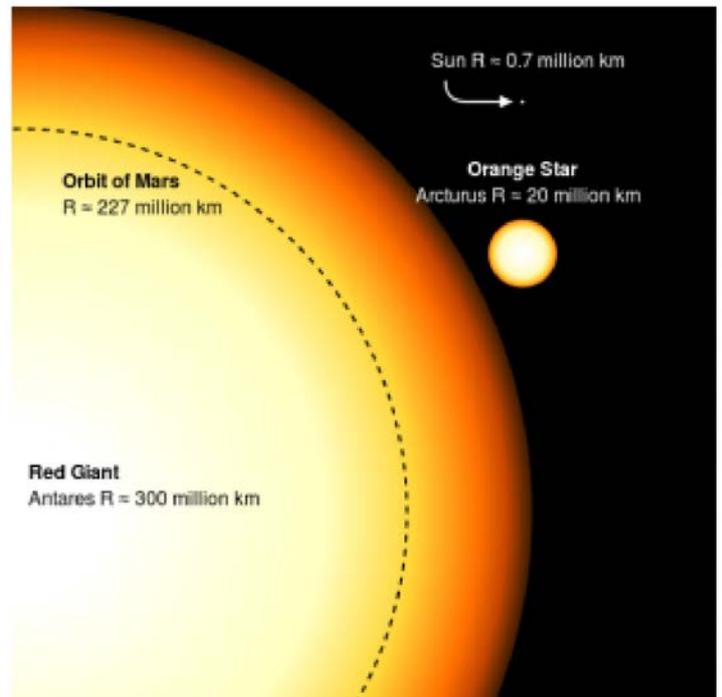
Delta Scorpii is called *Dschubba*, a strange-sounding name that is a corruption of the Arabic word meaning 'forehead', in reference to its position in the middle of the scorpion's head. Having always been a stable 2.3 magnitude star, it flared in July 2000 to 1.9 in a matter of weeks and is now a variable star, fluctuating between 2.0 and 1.6. This means that at its brightest it is the second brightest star in Scorpius

Lambda Scorpii, called *Shaula* from the Arabic meaning 'the sting' which is where **Ptolemy** described it as lying at the end of the scorpion's tail. In the *Almagest* he listed three stars as lying outside the constellation (i.e. they were so-called unformed stars). The first of these he described as 'The nebulous star to the rear of the sting'. This is most likely the large and bright open cluster we know as M7, which as a result is sometimes called Ptolemy's Cluster.

M7 is the most southerly of the objects listed by Charles Messier, at declination -34.8° .



Scorpius Constellation Map, by Sky & Telescope magazine



Antares is a remarkable supergiant star, several hundred times the diameter of our Sun. Comparison between them shown the Sun as the tiny dot toward the upper right. The black circle is the size of the orbit of Mars. Arcturus in the constellation Bootes is also included in the picture for size comparison.

DEEP-SKY OBJECTS

Due to its location on the Milky Way, this constellation contains many deep-sky objects such as the open clusters Messier 6 (the Butterfly Cluster) and Messier 7 (the Ptolemy Cluster), NGC 6231 and the globular clusters Messier 4 and Messier 80, NGC 6302, also called the Bug Nebula, is a bipolar planetary nebula. NGC 6334, also known as the Cat's Paw Nebula, is an emission nebula and star-forming region. Scorpius X-1 is an X-ray source about 9,000 light years distant. It was the first X-ray source discovered outside the solar system and it was discovered by a team led by the astrophysicist **Riccardo Giacconi** in 1962. Giacconi won a Nobel Prize for his work in 2002.

FACTS

- Scorpius is the 33rd constellation in size, occupying an area of 497 square degrees.
- It lies in the third quadrant of the southern hemisphere (SQ3) and can be seen at latitudes between +40° and -90°
- The neighbouring constellations are Ara, Corona Australis, Libra, Lupus, Norma, Ophiuchus and Sagittarius.
- Scorpius contains four Messier objects.
- It also has 13 stars with now known planets.
- The brightest star in the constellation is Antares, Alpha Scorpii, with an apparent visual magnitude of 0.96.
- There are two meteor showers associated with the constellation: the Alpha Scorpiids and the Omega Scorpiids.

MYTHOLOGY

In Greek mythology, Scorpio is usually associated with Orion. It is written that Orion boasted to goddess Artemis and her mother, Leto, that he could kill every animal on the Earth. Although Artemis was known to be a hunter herself she offered protection to all creatures. Artemis and her mother Leto sent a scorpion to frighten Orion. The pair battled and the scorpion killed Orion. Zeus raised Orion and the Scorpion to heaven as a reminder for mortals to curb their excessive pride. So, whenever the Scorpion rises in the East, Orion quickly flees and sets in the West.

In another Greek story involving Scorpio, Phaeton (the mortal male offspring of Helios) went to his father, demanding to drive his father's Sun Chariot for a day. However Phaeton panicked and lost control of the white horses that drew the chariot. First Phaeton flew too high and encountered the celestial scorpion. Alarmed, he dipped the chariot too close to Earth, turning most of Africa into a desert. Zeus was then forced to intervene and struck the runaway chariot and Phaeton with a lightning bolt to put an end to its rampage and Phaeton plunged into the River Eridanos.

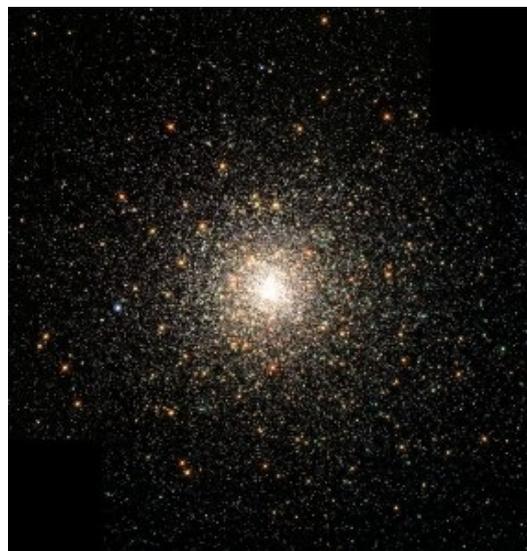
AK, with Notes from EarthSky, Wikipedia, Ridpath and Constellation Guide



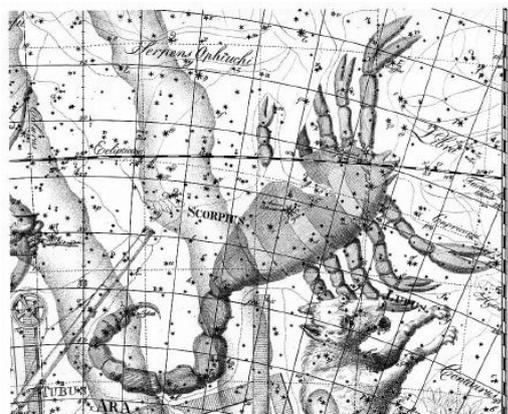
War and Peace Nebula – NGC 6357 – is a diffuse nebula in Scorpius. It contains many proto-stars. It got the name War and Peace Nebula because in infrared light the nebula's western part resembles a dove, while the eastern part resembles a skull.



Butterfly Cluster – 1654 Giovanni Batista Hodierna



Messier 80 (NGC 6093) is a globular cluster of magnitude 7.3, 33,000 light-years from Earth. It is a compact Shapley class II cluster; the classification indicates that it is highly concentrated and dense at its nucleus. M80 was discovered in 1781 by Charles Messier. It was the site of a rare discovery in 1860 when Arthur von Auwers discovered the nova T Scorpii



Scorpius from the Uranographia of Johann Bode (1801).



Cat's Paw Nebula – NGC 6334 is an emission nebula in Scorpius. It is a vast starforming region and one of the most active stellar nurseries containing some of the most massive stars known in the Milky Way. It is believed to contain tens of thousands of stars. The nebula was discovered by the English astronomer **John Herschel in 1837.**