

## THE CONSTELLATION LUPUS, THE WOLF

Lupus is a constellation in the southern sky. Its name is Latin for wolf. Lupus was one of the 48 constellations listed by the 2nd century astronomer **Ptolemy**, and it remains one of the 88 modern constellations. It lies between Centaurus and Scorpius.

### STARS

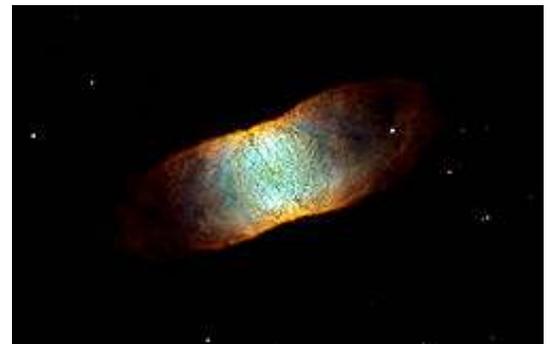
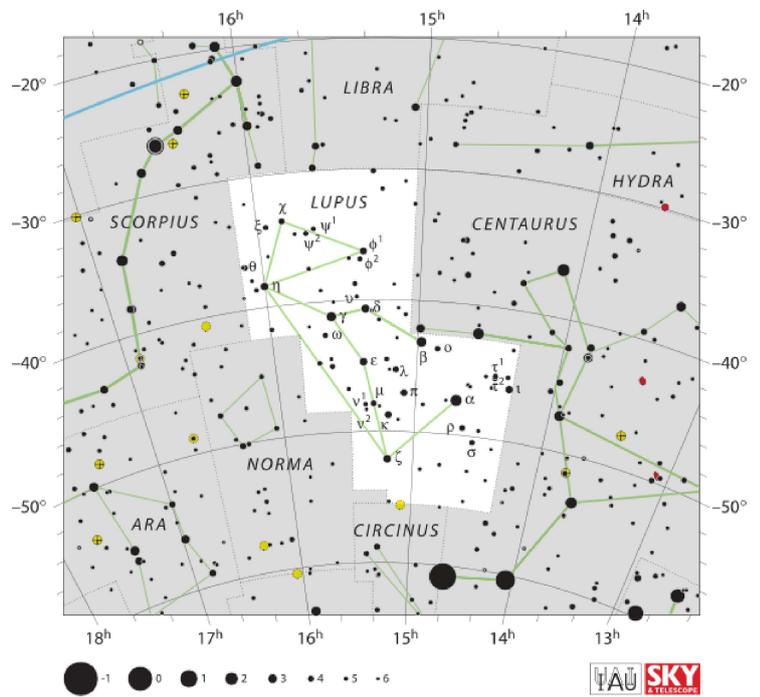
Lupus has around 30 stars of 2nd and 3rd magnitude and 70 of greater than 6th, including a number of binary or multiple stars. In his catalogue, **Patrick Moore** gives the names *Men* for *Lupi*, the brightest star in Lupus, and *KeKouan* for the blue giant  $\beta$  *Lupi*. Most of the brightest stars in Lupus are massive members of the nearest OB association, Scorpius-Centaurus.

### DEEP-SKY OBJECTS

Towards the north of the constellation are globular clusters NGC 5824 and NGC 5986, and close by the dark nebula B 228. To the south are two open clusters, NGC 5822 and NGC 5749, as well as globular cluster NGC 5927 on the eastern border with Norma. On the western border are two spiral galaxies and the Wolf-Rayet planetary nebula **IC 4406**, containing some of the hottest stars in existence. **IC 4406**, also called the **Retina Nebula**, is a cylindrical nebula at a distance of **5,000 light-years**. It has dust lanes throughout its center and has the shape of a torus. Despite this, it looks somewhat rectangular because it is seen from its side as viewed from Earth, almost in the plane of its equator. Another planetary nebula, NGC 5882, is towards the centre of the constellation. The transiting exoplanet Lupus-TR-3b lies in this constellation.

**The historic supernova SN 1006 is described by various sources as appearing on April 30 to May 1, 1006, in the constellation of Lupus.** SN 1006 was a supernova, widely seen on Earth beginning in the year 1006; the Earth was about 7,200 light-years away from the supernova. It was the brightest apparent magnitude stellar event in recorded history, **reaching an estimated -7.5 visual magnitude (over ten times as bright as Venus)**. This "guest star" was described by observers in China, Japan, Iraq, Egypt, and Europe, and possibly recorded in North American petroglyphs. The Egyptian Arabic astrologer and astronomer **Ali ibn Ridwan**, writing in a commentary on Ptolemy's *Tetrabiblos*, stated that the "...spectacle was a large circular body, 2½ to 3 times as large as Venus. The sky was shining because of its light. The intensity of its light was a little more than a quarter that of Moon". Some astrologers interpreted the event as a portent of plague and famine. There appear to have been two distinct phases in the early evolution of this supernova. There was first a three-month period at which it was at its brightest; after this period it diminished, then returned for a period of about eighteen months.

*The Tetrabiblos* was **Claudius Ptolemy's** (c. AD 90–c. AD 168) companion volume to the *Almagest*. While the *Almagest* was the authoritative text on astronomy for more than a thousand years, the *Tetrabiblos* was equally influential in astrology, the effects of astronomy on earthly matters. But whilst the *Almagest's* authority was superseded by acceptance of the heliocentric model of the solar system, the *Tetrabiblos* remains an important theoretical work for astrology. **It is described as "indispensable" for serious students of astrology.** Opening page of *Tetrabiblos*, published in 1484.



## MYTHOLOGY

In ancient times, the constellation Lupus was considered an asterism within Centaurus, and was considered to have been an arbitrary animal, killed, or about to be killed, on behalf of, or for, Centaurus. It was not separated from Centaurus until **Hipparchus** of Bithynia named it *Therion* (meaning beast) in the 200s BC. No particular animal was associated with it until the Latin translation of Ptolemy's work identified it with the wolf.

The Greek constellation is probably based on the Babylonian figure known as the Mad Dog. This was a strange hybrid creature that combined the head and torso of a man with the legs and tail of a lion. It is often found in association with the sun god and another mythical being called the Bison-man, which is supposedly related to the Greek constellation of Centaurus.

The Roman mythological poet **Ovid** described four ages of man: Golden, Silver, Brazen, and Iron (the present age). In the Iron Age men become evil, greedy and dishonest. Zeus/Jupiter tells the assembled gods on Mount Olympus that he must punish these men and proceeds to tell them how he dealt with an especially corrupt man, Lycaon, king of Arcadia, whom he turned into a wolf for the crime of offering him a dish of human flesh in order to test his divinity. **Lycanthropes are people that could assume the shape of wolves. They are regarded as the 'werewolves' of folklore.**

Lykaion is a mountain in Arcadia and was the home of Lycaon, who is said to have founded the ritual of Zeus practised on its summit. The altar [the adjoining constellation is Ara, the altar] on the mountain consisted of a great mound of ashes with a retaining wall. According to Plato (Republic 565d-e) the sanctuary played host to the Lykaia, a mysterious archaic festival of athletic games held every four years.

Despite their often negative image as mad, wicked, evil, bloodthirsty animals, wolves have variously been credited, in mythology, fiction and reality, with adopting, nursing, and raising human feral children, the most famous examples being **Romulus and Remus**, the founders of Rome.

In the legend of Rome's foundation, Romulus and Remus were found in the Lupercal cave at the foot of the Palatine Hill in Rome by the lactating female wolf, lupa, who suckled them until discovered by the shepherd **Faustulus**. He with his wife, **Acca Larentia**, then raised the children. Wolf words have always been associations with higher education. **The Lyceum** (from Greek lycos, 'wolf'), named for its sanctuary to Lycian Apollo, was a gymnasium in ancient Athens, most famous for its association with **Aristotle**, whose writings cover many subjects, including physics, metaphysics, logic, rhetoric, theatre, politics, and ethics.

The debate concerning the existence of God is an issue in philosophy. It seems to be our wolf nature that investigates the existence or nature of God. In medieval church symbolism wolves represented heresy, and in Greek mythology Lycaon held an opinion at variance with the established religious beliefs

**Julius Schiller** (who attempted to replace all of the pagan constellations with Christian counterparts) saw in its stars Benjamin (the word ben-jamin translates as "son of the south" or "son of the right hand"). Centaur became Abraham about to sacrifice his son Isaac on the altar as the then current religious law demanded that the first-born son be sacrificed to God. "Then Abraham lifted his eyes and looked, and there behind him was a ram (Aries) caught in a thicket by its horns. So Abraham went and took the ram, and offered it up for a burnt offering instead of his son" [Gen. 22:10-13].

Although very ancient, Lupus is inconspicuous, lying partly in the Milky Way, south of Libra and Scorpius, east of the Centaur (Centaurus), with no star larger than 2.6 magnitude.



Romulus and Remus being given shelter by Faustulus,