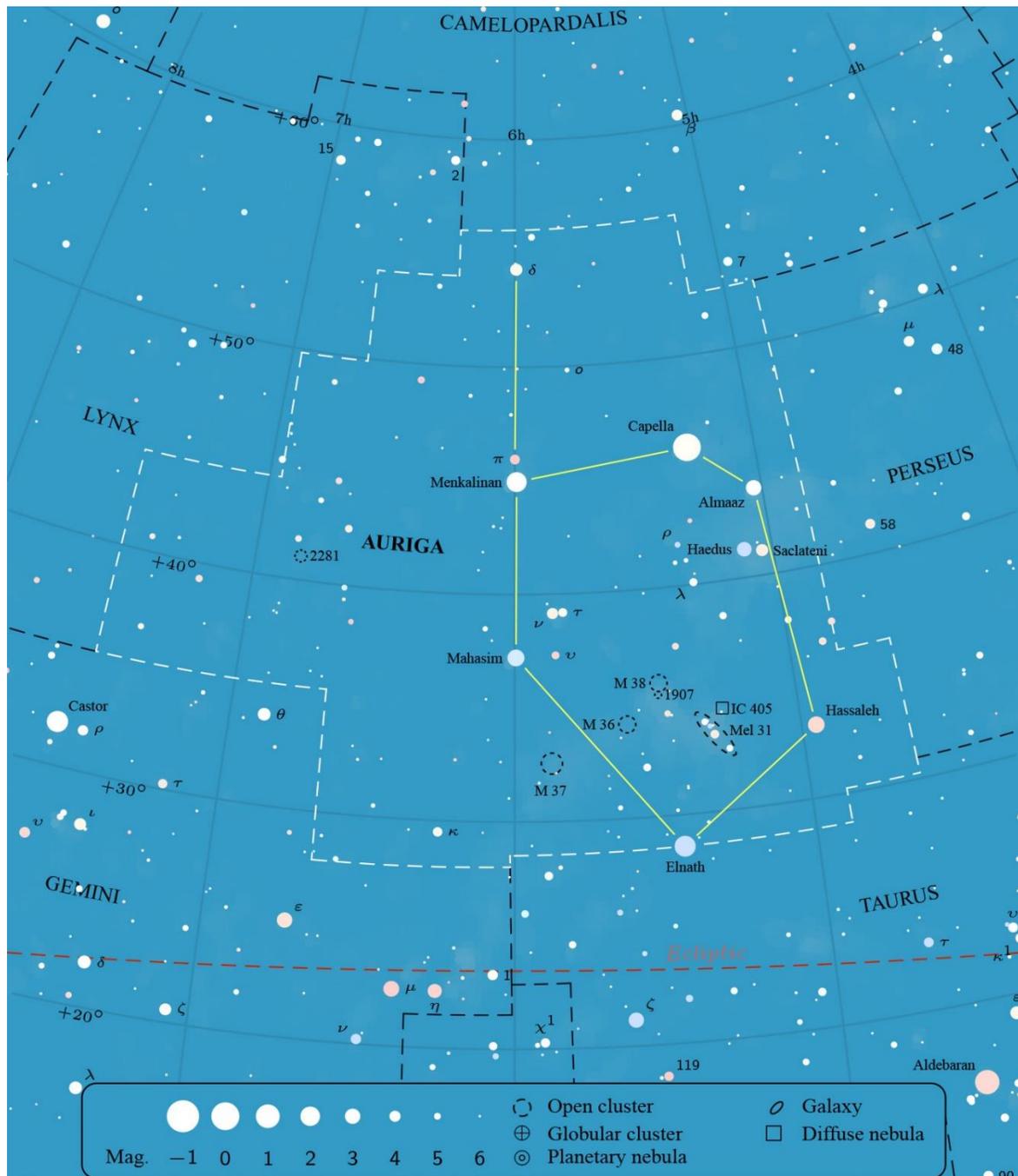


AUR

AURIGA

AURIGAE



Auriga, the Charioteer, is one of Ptolemy's original 48 star patterns. The constellation originally shared the star Elnath (gamma Aurigae) with Taurus. It was transferred to the constellation Taurus by the IAU in the early 20th century. However – the stick figure for Auriga above is depicted with its inclusion. In the UK Auriga is partially circumpolar but best seen during winter evenings when it is almost overhead. The Milky Way runs through the constellation and there are a few notable open clusters within its borders.

In Greek mythology Auriga was the Greek hero Erichthonius, the son of Hephaestus who was raised by the goddess Athena. Erichthonius is said to have invented the four-horse chariot, which he used in the battle against the usurper Amphictyon, the event that made Erichthonius the king of Athens. For his ingenuity – Zeus rewarded him with a place in the sky.

STARS

α Aurigae (**Capella**, mag. +0.1) is the sixth brightest star in the sky and is about 43 light-years away. Capella is actually a quadruple star system – a fact partially revealed by the spectrum of the star. Capella consists of a pair of yellow giant stars orbiting one another with a period of 104 days. Their separation is about 0.7 AU (less than the Earth-Sun distance). The two giants are orbited by another binary – a pair of red dwarf stars (named H and L). This pair is separated from the two giants by 10,000 AU (about 720 arcseconds on the sky) and are of 12th and 13th magnitude. The red dwarfs are separated by about 4 arcseconds.

β Aur (**Menkalinin**, mag. +1.9v) appears to the eye as a white star but is actually a spectroscopic binary comprising of a pair of subgiant stars. The stars partially eclipse each other every 4 days causing the brightness to vary by a few hundredths of a magnitude. The distance is about 81 light-years

δ Aur (mag. +3.7) is a spectroscopic binary and the primary component is an orange giant star. The distance is about 126 light-years.

ϵ Aur, (**Almaaz**, mag. +2.9v) is a multiple star which undergoes periodic eclipses. The star usually appears at mag. +2.9 but every 27 years it undergoes a dimming event (falling to mag. +3.8) for 18 – 24 months before recovering. The primary star in this system is a yellow supergiant and variability is caused by eclipses from an unknown secondary. Measurements obtained during the last such event in 2009 – 11 indicate the primary star is eclipsed by a secondary star (possibly a binary star) surrounded by an opaque debris disk. The next eclipse is due to begin in 2036.

ζ Aur (**Saclateni**, mag. +3.8v) is an eclipsing binary consisting of an orange giant and blue-white main-sequence star. The eclipses cause the brightness to fall by a couple of tenths of a magnitude every 972 days.

ι Aur (**Hasseleh**, mag. +2.9) is an orange giant star about 490 light-years away.

λ Aur (mag. +4.7) is a yellow main-sequence star on the point of evolving into a subgiant. It is about 41 light-years away.

θ Aur (**Mahasim**, mag. +2.6v) is a binary system consisting of a pair of main sequence stars. The primary is white and slightly variable in brightness. The secondary is much fainter (7th magnitude) and yellow-white. The separation is about 4 arcseconds.

DEEPSKY OBJECTS

M 36 (mag. +5.1) is an open cluster in Auriga. Visible with binoculars but best seen with telescopes at low power. The cluster contains about 60 stars and measures about 10 arcminutes in diameter. M 36 is about 4,340 light-years away.

M 37 (mag. +6.2) is an open cluster in Auriga and just over 3 degrees southeast of M 36. It is arguably the best open cluster in Auriga and one of the finest in the northern sky when viewed through a telescope. M 37 contains about 150 stars scattered over an area almost as large as the full moon. M 37 is about 4,500 light-years away.

M 38 (mag. +6.4) is an open cluster in Auriga and just over 2 degrees northwest of M 36. The brightest stars in the cluster appear to form an oblique cross. A smaller open cluster (**NGC 1907**) is just 0.5 degrees to the south. It is thought the clusters are passing each other in space and originated in separate parts of the Milky Way. M 38 contains about 100 stars and is around 3,500 light-years away.



Figure 1 Open cluster M 37 .



Figure 2 (Left) The open cluster M 36. (Centre) Open clusters M 38 and NGC 1907. (Right) The Flying Minnow asterism with the Flaming Star Nebula (IC 405). The star at the lower right is 14 Aurigae – an easy double star for small telescopes.

NGC 2281 (mag. +5.4) is an open cluster visible with binoculars and small telescopes. The cluster contains about 30 stars and is about 1,800 light-years away.

Mel 31 (mag. +5.9) is an open cluster nicknamed the Flying Minnow. It is visible to the naked eye and binoculars as a short line of faint stars to the east of Hasselleh and north of Elnath (in Taurus). The brightest member of the group is an orange giant (16 Aur) and is actually a foreground star and not a member of the cluster. Melotte 31 lies at a distance of about 400 light-years. The cluster is surrounded by nebulosity – the brightest part of which is **IC 405** (mag. +8.0) known as the Flaming Star Nebula.