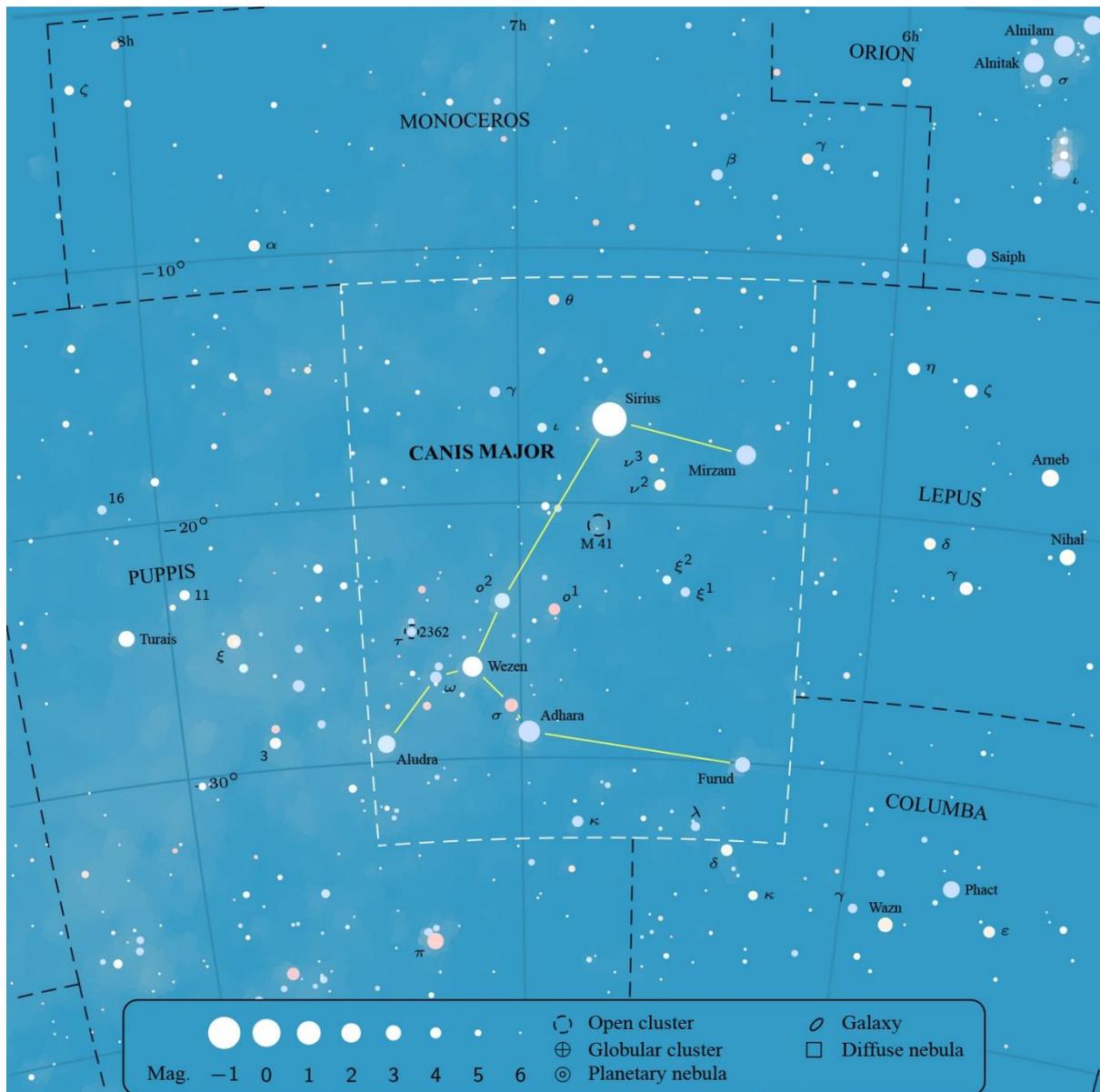


CMA

CANIS MAJOR

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Canis Major, the Great Dog, represents the larger of Orion's two hunting dogs. It is one of the original 48 constellations listed by Ptolemy in the 2nd century AD. The leading star of Canis Major is Sirius – the brightest star in the night sky. Sirius was particularly important to the ancient Egyptians. Each July, after a period of invisibility, the star would reappear in the morning sky – visible just before sunrise. This “heliacal rising” marked the beginning of the calendar and served as a warning that the Nile was about to flood.

Canis Major is situated just south of the celestial equator and southeast of Orion. It is best seen during winter evenings but it is always low above the southern horizon as seen from the UK.

STARS

α Canis Majoris (**Sirius**, mag. -1.4) is a white main sequence star and one of the nearest stars to the solar system with a distance of just 8.7 light-years. Sirius is a binary system and its companion is a white dwarf star of magnitude +8.4. They orbit one another with a period of 50 years. The angular separation varies between 3

and 12 arcseconds. The last periastron occurred in 1994 and the two stars will be easy to split with modest size telescopes until the middle of the 2030s.

β CMa (**Mirzam**, mag. +2.0v) is a bright blue-white giant star about 490 light-years away. Mirzam varies in brightness by a few tenths of magnitude over a period of about 6 hours. The change is too small to detect with the naked eye.

γ CMa (mag. +4.1) is definitely not the 3rd brightest star in the constellation! Perhaps it was labelled as gamma because it flanks Sirius (alpha) along with Mirzam (beta). The star is a blue-white giant at a distance of 440 light-years. It is a suspected spectroscopic binary.

δ CMa (**Wezen**, mag. +1.8) is a yellow supergiant of around 17 times the mass of the Sun and about 1,600 light-years away. It will evolve to become a red supergiant in the next 100,000 years.

ϵ CMa (**Adhara**, mag. +1.5) is the second brightest star in the constellation. It is also a fine double star for moderate to large telescopes. The primary appears white and the 7th magnitude secondary a deep yellow separated by 7 arcseconds. Adhara is a blue-white giant roughly 430 light years away. Analysis of its proper motion suggests that it was as close as 34 light-years away about 5 million years ago. At that time Adhara would have shone at magnitude -4.0 (rivaling the planet Venus). No other stars will shine as bright as this for at least the next 5 million years!

ζ CMa (**Furud**, mag. +3.0) is a blue-white main sequence star at distance of 360 light-years. It is a spectroscopic binary system.

η CMa (**Aludra**, mag. +2.5) is a blue-white supergiant approximately 2,000 light-years away. Small telescopes or binoculars show a wide, unrelated, 7th magnitude companion star.

DEEPSKY OBJECTS



M 41 (mag. +4.5) is a superb open cluster for binoculars and telescopes. It is visible to the eye as a misty patch of light 4 degrees due south of Sirius. It was discovered in the modern era by Giovanni Batista Hodierna by 1654 but it was likely known to Aristotle (c325 BCE).

M 41 (shown here) contains about 100 stars covering an area the size of the full moon. The distance to M 41 has been estimated to be 2,300 light-years.

NGC 2362 (mag. +4.1) is an open cluster whose brightest member is the class O supergiant star τ (tau) CMa. This cluster was also discovered by Hodierna and is well seen with binoculars – although it is always rather low in the sky from the UK. The distance to NGC 2362 has been

estimated as 5,000 light-years.

Gaia 1 is a large open cluster which was only discovered in 2017 following analysis of data from the ESA Gaia satellite. It lies 10 arcminutes east of Sirius and was not previously noticed because the glare from Sirius masked it in images! Gaia 1 contains around 1,200 stars and has a diameter in the sky of around 13 arcminutes; it is not a small cluster! The distance has been estimated as 15,000 light-years.