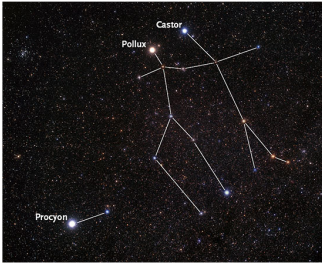
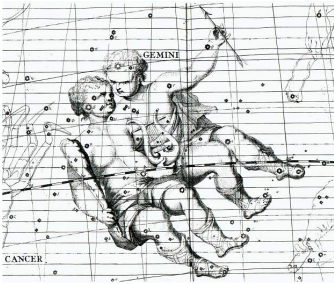


## Zodiac constellations 11: Gemini



The name of the 30<sup>th</sup> largest constellation is the Latin word for 'twins'. Both Uranus (William Herschel, 1781) and Pluto (Clyde Tombaugh, 1930) were discovered in Gemini. It is identified by its two brightest stars – Castor and Pollux, which mark the heads of the twins. They can be found to the east of the stars of Orion's belt. From the southern hemisphere, the star closer to the horizon is Castor, with Pollux above it.



Gemini is one of the original constellations. In Babylonian astronomy, the 'great twins', were regarded as minor gods. In Greek mythology, Castor and Pollux were the children of Leda, Pollux the son of Zeus by seduction and Castor the son of Tyndareus, King of Sparta and Leda's husband. Both were Argonauts, when mortal Castor died, Pollux begged Zeus to make his brother immortal. He did so by uniting them in the heavens. The twins are also mythologically linked with St Elmo's fire in their role as protectors of sailors.

The Sun passes through Gemini from late-June to late-July. The constellation contains over 80 stars visible with small equipment. Several of these stars are known to have exoplanets. There are few deep sky objects present, as the sky area of Gemini is directed away from the Milky Way.

Notable features include:

- Alpha Geminorum (Castor): a blue-white star with magnitude mag 1.6. 53 ly away, it is actually a multiple star. System consisting of two blue-white binaries with 470 yr orbital period, plus a pale red dwarf companion. Each star a spectroscopic binary ie Castor is a 6 star system. It was inaccurately labelled alpha by Johann Bayer (1603).
- Beta Geminorum (Pollux): the brighter twin, an orange giant with magnitude mag 1.2, It is also closer than Castor, 34 ly away
- M35: an open cluster lying at the feet of the twins. Discovered in 1745 by Swiss astronomer de Cheseaux, it is large and elongated. The 200 stars are arranged in chains 2,800 ly away, it is visible to the naked eye only if the skies very clear. It is best viewed through binoculars.



- Eskimo nebula (NGC 2392): a planetary nebula 3,000 ly away. Its eponymous name derives from the fringe of gas surrounding the central star, making it appear Eskimo-like through large telescopes. It is also known as the Clown Face Nebula
- Geminid meteor shower: this radiates from a point near Castor, in middle weeks of December, peaking in mid-month. It is one of three most active annual meteor showers. The meteors are slow and often bright. They are produced by debris in a common orbit with asteroid Phaethon. Its apparent asteroidal origin is usual, differing from the cometary sources of most meteors. This may account for the longer duration in flight and dearth of persistent trains.

Sources: Ridpath, I (Ed) 2012 Oxford dictionary of astronomy Oxford, OUP, Ridpath, I (Ed) 2006 Astronomy London, Dorling Kindersley, en.wikipedia.org