CAS Sky Notes for December 2025

The winter nights are here. The winter constellations, like Gemini, Taurus and Orion are becoming observable throughout most of the night.

Planets

Mercury.

Mercury passed through inferior conjunction in late November and becomes a morning object. It reaches greatest western elongation on the 8th December and will be 20.7° from the Sun. The low declination may make it a tricky object, but it will be quite bright at magnitude -0.5 then.

Venus

Venus is not really observable this month as it approaches conjunction with the Sun. It will pass through superior conjunction next year.

Mars

Mars is technically still an evening object but is lost in the twilight.

Jupiter

Jupiter is becoming an evening object, it rises by 7.30pm in the middle of the month. It is a prominent object in Gemini, just below the twin stars of Castor and Pollux and is approaching opposition early in January. I recommend the website https://shallowsky.com/jupiter which shows you the position of the Galilean moons and the Great Red Spot at any time you pick.

Saturn

Saturn is well past opposition and is still visible throughout the night. Its magnitude is at +1 throughout the month, but the rings are very nearly edge on throughout the month. Although still fairly low in the sky, it can be found below the square of Pegasus. By mid month, its coordinates are: RA 23hr 46m, Dec -4°. note: As it's a planet, it won't twinkle like a star, making it easier to identify. You can use https://shallowsky.com to access the moons of Saturn as well.

Uranus

Uranus reached opposition on November 21st,and is therefore well placed for observation throughout the night. It lies in Taurus with coordinates: RA 03h 46m , Dec +19.5°, between the Pleiades and Aldebaran.

Neptune

Neptune has just passed opposition on 23rd September and is also observable throughout the night. It is not an easy object, but it can be found with coordinates: RA 23h 59m, Dec -1.5°. It is also below the square of Pegasus and not far from Saturn.

Moon Phases:

4th Dec: Full Moon
11th Dec: Last Quarter
20th Dec: New Moon
27th Dec: First Quarter

Lunar Occultation: On 12th December, between 07h 27m and 08h 28m the Moon will occult Regulus. It disappears on the bright side and this may just be observable around dawn.

Sun
The Sun is low in the sky at this time of year, but still fairly active as it is still near solar maximum, so do watch out for large Sunspot groups. Remember to **never look at the Sun directly without a proper solar filter**.

Aurora
Aurora may be easier to see this month as the northern skies get dark quite early. Watch out for any exceptional activity though, using one of the many aurora alert apps.

Meteors

The **Geminids** occur between the 4th and 17th December, with the peak on the evening of the 14th. The Zenithal Hourly Rate (ZHR) at maximum may exceed 100. They are one of the richest showers of the year and well worth looking out for. There are many slow and bright meteors to be seen. As we will be approaching new Moon, these could be very favourable.

Deep Sky Objects

The Milky Way is still well placed, passing nearly overhead. Be sure to go to as dark a site as possible if you wish to see it. Somewhere in the countryside around Guiting Power or Miserden may be the best, You can take a photo using a smart phone such as the iPhone 16. It needs to be on a tripod (or propped against something). Using night mode, you can take a 30 second single exposure. Using the *Astroshader App* makes the task better as it will stack in camera.
The **Orion Nebula** is becoming well placed, as well as the **Pleiades**.

The Andromeda galaxy (M31) is very well placed, being almost overhead by mid evening. This also applies to the *Double Cluster in Perseus*. Both make great objects in binoculars or a small telescope and fantastic objects for astrophotography.

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