CAS Sky Notes for September 2025

The nights are drawing in fast as we approach the autumnal equinox, giving greater opportunities for observing. The summer constellations, like Cygnus, Lyra, and Hercules are high in the sky and the Milky Way runs overhead when seen from a dark site. Try to escape the city lights if you want the best view though.

Planets

Mercury

Mercury will not really be visible this month. At the start it is still a morning object, but close to the Sun. It passes through superior conjunction (behind the Sun) on the 13th and into the evening sky. However, it remains too close to the Sun to observe.

Venus

Venus is still a prominent morning object, but the elongation decreases from 30° to 25° by the end of the month. The magnitude remains around -3.9, while the phase increases from 86% to 90% by the end of the month. The diameter is only around 11 arcsec.

Mars

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

Jupiter

Jupiter is still a morning object, but rises around midnight by the end of the month. It is a prominent object in the morning sky and is worth getting up to see – honest it really is!

Saturn

Saturn reaches opposition on the 21st and is therefore visible throughout the night. Its magnitude increases to +0.6, but the rings remain 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 0hr, Dec -2.5°. Note: As it's a planet, it won't twinkle like a star, making it easier to identify. Also, Titan will be at its furthest point from Saturn (about 150 arcsec) and is easily seen.

Uranus

Uranus is still a morning object, but rises by 10 pm by the end of the month. It lies in Taurus with coordinates: RA 03h 56m, Dec +20.2°, between the Pleiades and Aldebaran. By the end of the month it should be high enough to observe by midnight.

Neptune

Neptune is in Pisces and reaches opposition on 23rd September and is observable throughout the night. It is not an easy object, but it can be found with coordinates: RA 00h 06m, Dec -0.1°. It is also below the square of Pegasus. On the 8th September, the day after full Moon **and the Lunar eclipse**, Neptune, Saturn and the Moon will all be within 3.5° of each other.

Moon

Total Eclipse of the Moon: This occurs on the 7th September 2025.
The Moon rises during eclipse. The details are given below (<u>Times are in BST</u>):

P1 (enters Penumbra): 16:28	U1 (enters Umbra): 17:27
U2 (totality begins): 18:30	U3 (totality ends): 19:53
U4 (leaves Umbra): 20:56	P4 (leaves Penumbra): 21:55

The Moon rises around 19:30 and so only the later stages of the eclipse will be visible.

Phases:

7th Sept: Moon is Full (Eclipse)	**16th Sept:** Last Quarter
21st Sept: New Moon	**29th Sept:** First Quarter

Sun

The Sun is currently a little less active than one might expect near solar maximum, but 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 darker earlier. Watch out for any exceptional activity though, using one of the many aurora alert apps.

Meteors

There are no major meteor showers this month, but still keep an eye open for sporadic ones.

Deep Sky Objects

The Andromeda galaxy (M31) is well placed by late evening.
M51 (Whirlpool) and M101 (Pinwheel) near Ursa Major are also well placed for observation and photography. M13 and M92 globular clusters in Hercules make good targets. The Ring nebula (M57) in Lyra is another good target, being very high in the sky. While in that region, have a look at Alberio in Cygnus. It's a beautiful double star (orange and blue) and is an easy object to see and view in a small telescope. The Double cluster in Perseus is another object to view, either in a small telescope or with binoculars in the late evening.

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