



DUNDEE ASTRONOMICAL SOCIETY

Sky Notes for January 2025

THE SUN



January 1 st	sunrise	0846 UT	sunset	1545 UT
January 15 th	sunrise	0835 UT	sunset	1607 UT
January 31 st	sunrise	0810 UT	sunset	1641 UT

In mid-January, the sky is reasonably dark between 1730 and 0700 UT.

The Sun travels through the zodiacal constellation of Sagittarius for the first part of January, moving into neighbouring Capricornus on Sunday 19th.

The Earth is at **perihelion** – the closest point to the Sun on its annual orbit – on Saturday January 4th, when it lies at a distance of 91.4 million miles (147 million kilometres). This is around 3% closer than at its most distant in July.

The sunrise, sunset and twilight times given here are for Dundee but generally apply across central Scotland.

THE MOON



The Moon is a narrow, young waxing crescent at the start of January, becoming visible low above the south-west horizon after sunset from Thursday 2nd onwards. On the evening of Friday 3rd, the crescent Moon will appear about 2° to the lower left of the bright planet Venus; on the following evening, Saturday 4th, the Moon will be very close to Saturn, and will actually occult the planet between 1720 and 1828 UT (see below for more details). The Moon will then slowly move away to the upper left of Saturn.

First Quarter is on the evening of Monday January 6th; the half-illuminated Moon will appear high in the south as the sky grows dark.

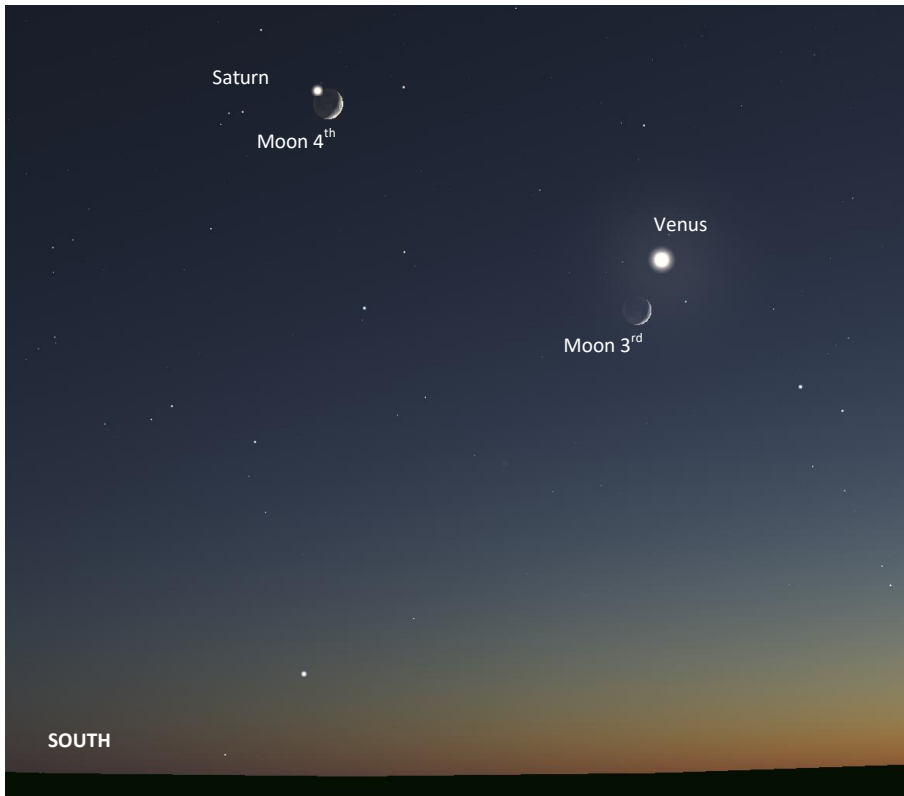
On the evening of Thursday 9th, the gibbous Moon will lie just to the lower left of the Pleiades star cluster, and will cross the south-eastern part of the cluster in the early hours of the morning, occulting several of its brightest stars. On the next night, Friday 10th, the Moon will lie just above the planet Jupiter.

Full Moon falls on the evening of Monday January 13th. The Moon rises in the north-east over an hour before sunset, shines high in the south at midnight and sets again in the north-west an hour after sunrise. The Moon will appear close to the planet Mars throughout the night.

Last Quarter is on the evening of Tuesday January 21st; the half-illuminated Moon rises in the south-east in the early hours of the morning and is low in the south at dawn.

The narrowing crescent Moon may be followed into the dawn twilight up until the morning of Saturday 25th.

New Moon is on Wednesday January 29th, and the young crescent Moon will become visible low in the south-west again from Friday 31st onwards. On that evening, the narrow Moon will appear to the lower right of the planets Saturn and Venus.



The young crescent Moon meets Venus and Saturn - view looking south-south-west on Friday 3rd and Saturday 4th January at 1700 UT. The Moon passes directly in front of Saturn from 1720 UT to 1828 UT on the 4th as seen from Dundee.

THE PLANETS



Mercury is rising about 1½ hours before the Sun in early January and appears very low above the south-east horizon at dawn. However it is now moving back in towards the Sun and is a little lower each morning; by the middle of the month it will be lost in the bright dawn twilight.

Venus is at its **greatest elongation** from the Sun on January 10th and appears as a dazzling ‘Evening Star’ of magnitude -4.5 above the south-west horizon at sunset, setting well over four hours after the Sun.

Mars reaches **opposition** on January 16th, when it will shine as a magnitude -1.4 orange ‘star’ low in the east at sunset and almost 60° high in the south around midnight. During January, Mars is also moving **retrograde** – from east to west against the background stars – and travels from the constellation of Cancer into Gemini, ending the month to the lower right of the bright stars Castor and Pollux (the position of Mars on the star chart below is shown for mid-month). However, this is a rather unfavourable opposition, with Mars only approaching to just under 60 million miles from the Earth and showing at best a disc of just over 14 seconds of arc (oppositions of Mars vary over a 15- to 17-year cycle, and at more favourable oppositions - such as those of 2018 and 2035 - it can approach to within 35 million miles and appear over 24” in diameter).

Jupiter shines brightly and steadily at magnitude -2.6 in the south-east as the sky grows dark and is around 55° high in the south around mid-evening, lying among the stars of Taurus.

Saturn is low in the south-west in the evening twilight, at magnitude 1.1, and by the end of the month is setting around 2000 UT. It gradually approaches Venus as the month progresses, with the two planets appearing just 2° apart at their closest on the night of Saturday 18th; after this, Venus gradually draws away to the upper left of Saturn.

Uranus lies in eastern Aries about 18° to the west of Jupiter and 8° to the south-west of the Pleiades, and is easily seen in binoculars at magnitude 5.7.

Neptune is at magnitude 7.9 in south-west Pisces, about 12° north-east of Saturn; Venus also comes to within 3° of Neptune in the closing days of January.

OCCULTATION OF SATURN

The Moon will pass directly in front of the planet Saturn and occult it on the early evening of Saturday 4th January, when both objects will be in the south-south-west (see the illustration above). The more detailed diagrams below show the relative position of Saturn against the Moon’s disc just before disappearance at the Moon’s dark limb and just after reappearance at the bright limb. At Dundee, Saturn disappears at 1720 UT with the Moon 24° high; reappearance is just over an hour later at 1828 UT when the Moon will be 20° up.

The timings of the occultation vary by several minutes across the UK - you can find local details on websites such as **In the Sky** in-the-sky.org/news.php?id=20250104_16_100&town=2650752 by entering your own location.

Occultation of Saturn, Thursday 8th December:



Disappearance 1720 UT



Reappearance 1828 UT

METEORS



The annual **Quadrantid** meteor shower peaks on Friday January 3rd. The shower has a very sharp maximum, and although this is predicted to fall around midday this year, high meteor rates may be seen between midnight and dawn that morning, and possibly also during the following evening. With the Moon just a narrow crescent in the evening sky, there will be no interference this year from moonlight and rates of 40-50 meteors per hour are possible.

The Quadrantids take their name from the now-discarded constellation of **Quadrans Muralis**, the Mural Quadrant; the radiant point that the meteors seem to radiate out from lies near the handle of the Plough, which is low in the north during the evening and highest in the north-east at dawn.



THE STARS

January evenings sparkle with a spectacular array of stars – a single glance to the south takes in five of the ten brightest stars in the entire night sky, including **Sirius**, the brightest of them all.

Centrepiece of this dazzling celestial panorama is the large and distinctive outline of **Orion** the Hunter, with his central belt of three stars, shoulders above and knees below. The red giant star **Betelgeuse** marks his left shoulder, and blue-white **Rigel** his right knee. Following the line of the belt stars upwards to the right leads to the orange star **Aldebaran** in the V-shaped head of **Taurus** the Bull; a little further along this line is the star cluster of the **Pleiades** or Seven Sisters. This winter, the planet Jupiter makes a bright addition to the stars of Taurus.

Orion's belt points downwards to **Sirius**, often known by its nickname, the Dog Star. As well as being the brightest of the night-time stars, Sirius is also one of the closest, lying about 8.5 light years away – around 50 million million miles. Although it is actually a white star, Sirius always twinkles strongly, appearing to flash different colours as it does so.

The Square of **Pegasus** and the stars of **Andromeda** are in the south-west, with the 'W' of **Cassiopeia** just above. Below Andromeda are the small but notable constellations of **Triangulum** and **Aries**, the Ram. Low in the south-west is the large and rather faint outline of **Cetus**, the Whale.

Almost overhead are the stars of **Perseus** and **Auriga**, while the zodiacal constellation of **Gemini** with its twin stars **Castor** and **Pollux** is high in the south-east, this January joined by orange Mars. Below Gemini is the bright star **Procyon**, often referred to as the 'little Dog Star'. Low in the east is **Leo**, with the bright star **Regulus** at the bottom of the distinctive 'Sickle' of stars representing the Lion's head.

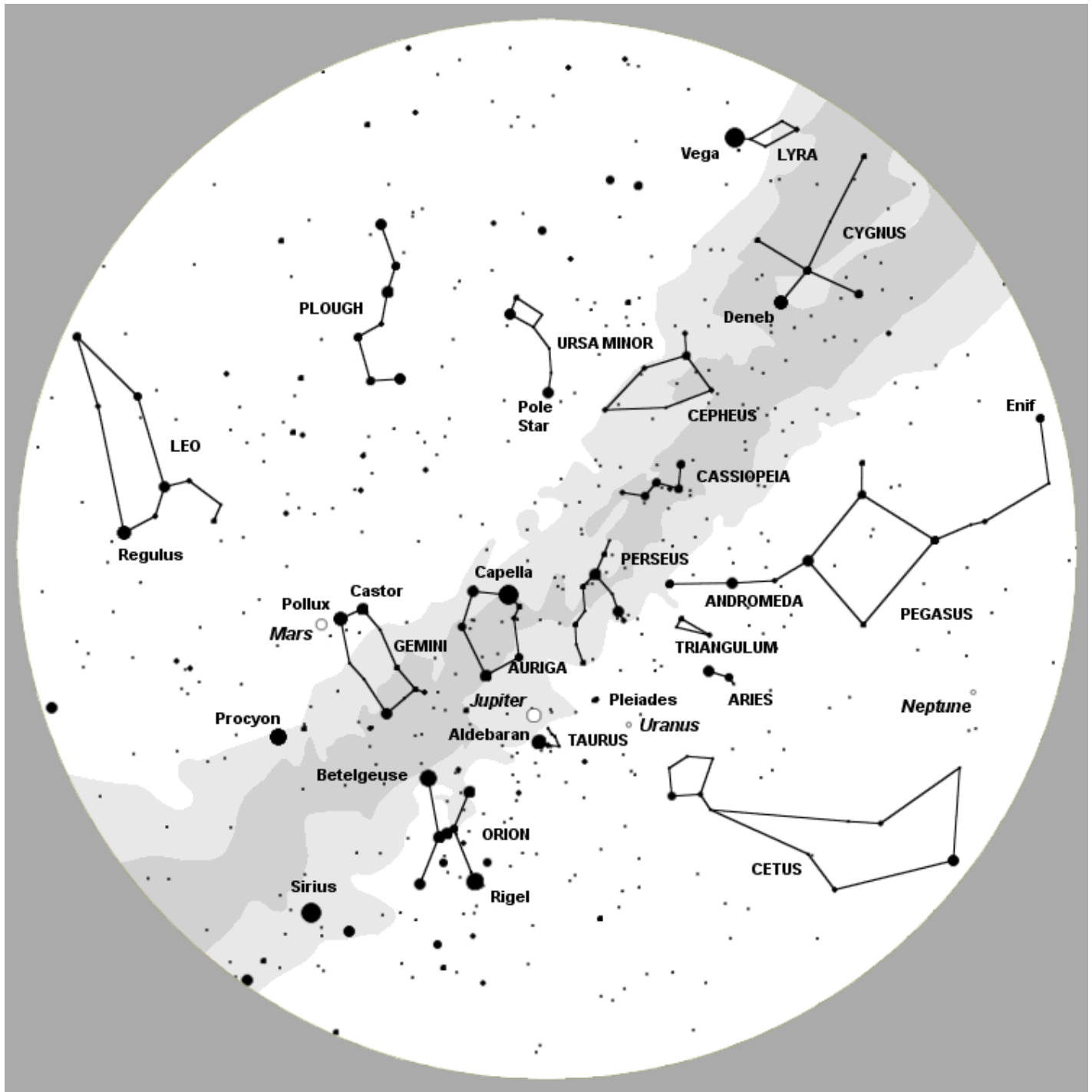
The seven stars of the **Plough** are in the north-east, the two 'pointer' stars showing the way to the **Pole Star**; low in the north-west are the stars **Deneb** in the cross-shaped constellation of **Cygnus** the Swan, and **Vega** in the small group of **Lyra**, the Lyre.

The **Milky Way** appears as a faint band of light, stretching from Deneb in the north-west, overhead through Cassiopeia, Perseus and Auriga, and into the south-east between Orion and Gemini. January evenings are among the best of the year for exploring the winter Milky Way with binoculars and small telescopes.

NORTH

EAST

WEST



Map created using TheSky X ©

SOUTH

THE SKY AT 9 PM GMT IN MID-JANUARY

The map above shows the night sky as it will appear from central Scotland at the time and date shown. The point in the sky directly overhead is at the centre of the map; the outer circle is the horizon with the cardinal compass points in the direction shown.

The map shows the brighter stars that are visible to the unaided eye. Some of the more distinctive constellations are outlined.