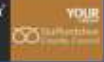


The Night Sky in October 2025



Monthly Guide compiled by Doug Bickley

PERTON LIBRARY
ASTRONOMY
GROUP



- The chart is based on location 52.6° N, 2.2° W (Periton, Wolverhampton) @ 21:00 on 15/10/2025
- The dotted line is the ecliptic
- We are looking SOUTH (as shown at the bottom of the chart) at the constellations Aquarius, Capricornus and Sagittarius then up towards Pegasus
- The centre of the chart is the point over your head (the zenith) and the edge is the horizon
- If you turn the chart upside down looking NORTH you'll be looking at the constellations Canes Venatici and Camelopardalis then up towards Cassiopeia

Events to look out for this month:

- 5 Moon forms triangle with Saturn and Neptune (evening)
- 6 Moon left of Saturn and Neptune (evening)
- 7 Full Moon (perigee, supermoon)
- 9 Moon forms triangle with Pleiades M45 and Uranus (evening)
- 10 Lunar occultation of Pleiades (morning twilight)
- 10 Moon forms triangle with Pleiades and Aldebaran (evening)
- 13 Moon rises near Jupiter (late evening)
- 15 Moon close to Beehive Cluster M44 (morning)
- 18 Perton Library Astronomy Group meeting 7pm
- 16 Moon above right of Regulus (morning)
- 19 Crescent Moon above right of Venus (morning twilight)
- 21 Orionid meteor shower peak
- 21 New Moon
- 26 End of BST. Clocks go back one hour to BST @ 2am

The phenomena of the month : October 2025

Times are given in UT for PERTON (2° 11' 53" W, 52° 35' 26" N, zone Z).

Date	Hour	Description of the phenomenon
yyyy mm dd	hh:mm	
1 2025 10 02	09:00	Venus at its perihelion (distance to the Sun = 0.71842 AU)
2 2025 10 02	13:25	Opposition of the asteroid 1 Ceres with the Sun (dist. to the Sun = 2.939 AU; magn. = 7.6)
3 2025 10 02	23:52	Close encounter between Mercury and Spica (topocentric dist. center to center = 1.7°)
4 2025 10 06	00:15	Close encounter between the Moon and Saturn (topocentric dist. center to center = 2.8°)
5 2025 10 07	03:48	FULL MOON
6 2025 10 08	12:36	Moon at perigee (geocentric dist. = 359819 km)
7 2025 10 08	19:00	Meteor shower : Draconids (5 meteors/hour at zenith; duration = 4.0 days)
8 2025 10 10	12:00	Mercury at its aphelion (distance to the Sun = 0.46671 AU)
9 2025 10 13	18:13	LAST QUARTER OF THE MOON
10 2025 10 13	22:17	Close encounter between the Moon and Jupiter (topocentric dist. center to center = 3.5°)
11 2025 10 13	22:33	Close encounter between the Moon and Pollux (topocentric dist. center to center = 3.1°)
12 2025 10 16	21:57	Opposition of the asteroid 85 Io with the Sun (dist. to the Sun = 2.314 AU; magn. = 10.4)
13 2025 10 19	18:45	Close encounter between the Moon and Venus (topocentric dist. center to center = 4.1°)
14 2025 10 20	05:46	Close encounter between Mercury and Mars (topocentric dist. center to center = 2.0°)
15 2025 10 21	00:00	Meteor shower : Orionids (20 meteors/hour at zenith; duration = 36.0 days)
16 2025 10 21	12:25	NEW MOON
17 2025 10 23	23:31	Moon at apogee (geocentric dist. = 406444 km)
18 2025 10 29	16:21	FIRST QUARTER OF THE MOON
19 2025 10 29	18:00	GREATEST EASTERN ELONGATION of Mercury (23.7°)
20 2025 10 29	22:20	Opposition of the asteroid 433 Eros with the Sun (dist. to the Sun = 1.369 AU; magn. = 10.1)

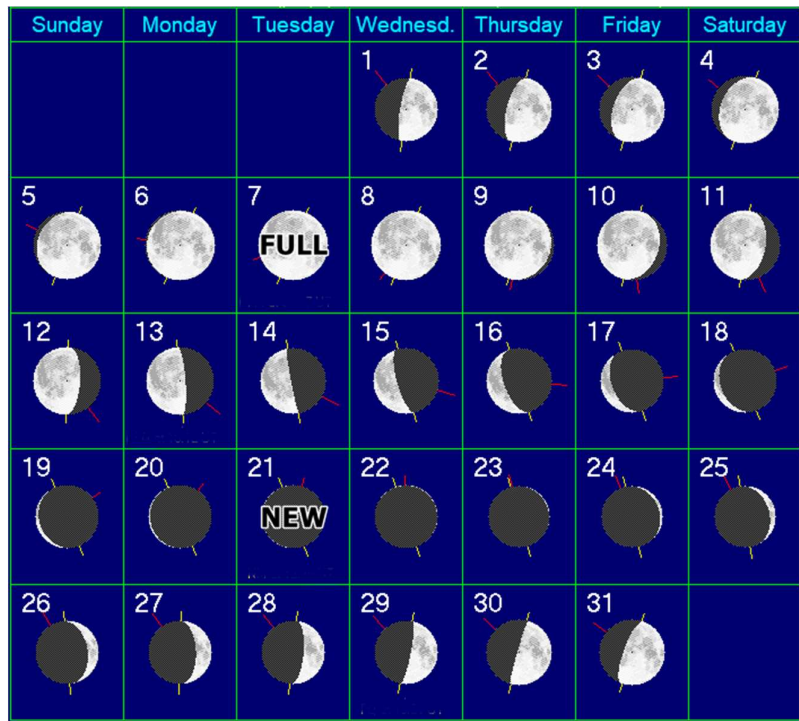
THE MOON

Lunar Phases this month

Full Moon is on 7 October.

New Moon is on 21 October.

There are quite a few worthwhile things to look for this month if you check the phenomena shown above.



You will see in the press that this month's is commonly called a Supermoon – let's see what that is.

However generally speaking astronomers don't tend to use the name, probably due to the term Supermoon's astrological origins. The technical name for a 'Supermoon' is a 'Perigee Syzygy Moon'.

The Moon's orbit isn't a perfect circle, but an ellipse, so the distance between the Earth and Moon varies. **Perigee** and its opposite **Apogee**, happen every month. In every 27 day orbit around Earth, the Moon reaches both its perigee, about 226,000 miles (363,300 km) from Earth, and its farthest point, or apogee, about 251,000 miles (405,500 km) from Earth.

This month's full Moon will occur at perigee, so that it appears slightly larger and brighter. When a full moon coincides with perigee, you will see that it's commonly named a "Supermoon". There will be three consecutive 'Supermoons' in 2025: 7 October, 5 November and 4 December (respectively the Hunter's Moon, the Beaver Moon and the Cold Moon).

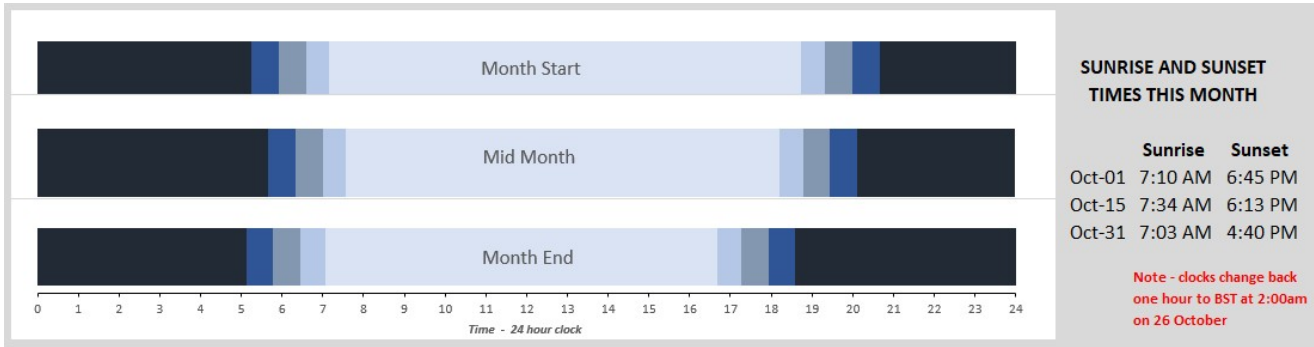
To add to the confusion, the October Hunter's Moon this year is called the Harvest Moon - this is the Full Moon nearest the autumnal equinox, which happened this year on Monday 22 September

As per usual, here are a few different names for the October Full Moon:

Traditionally, people in the Northern Hemisphere spent October preparing for the coming winter by hunting, slaughtering, and preserving meats, giving it its Anglo-Saxon name Hunter's Moon. Every three years, the Hunter's Moon is the Harvest Moon. Native Americans named this Full Moon the Drying Rice Moon, Falling Leaves Moon, and Freezing Moon. The Celts used Seed Fall Moon to describe this. Also, the Pagan Blood Moon or Sanguine Moon is used for this Full Moon. However, this should not be confused with a total lunar eclipse, a Blood Moon – which happened last month during the partial lunar eclipse on 7 September.

THE SUN

Graphical format showing sun rising, setting and twilight linked to an online data source (time-ok.com) to show twilight zones more clearly. Location is set at Wolverhampton UK.



Key:

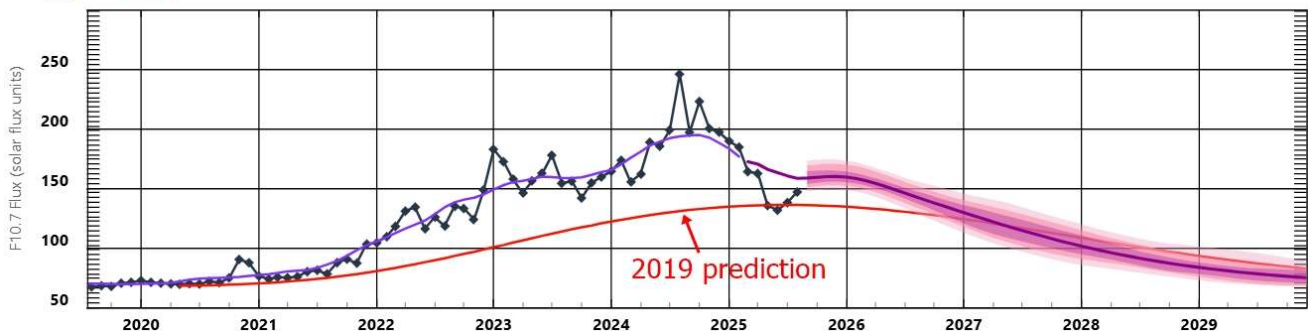
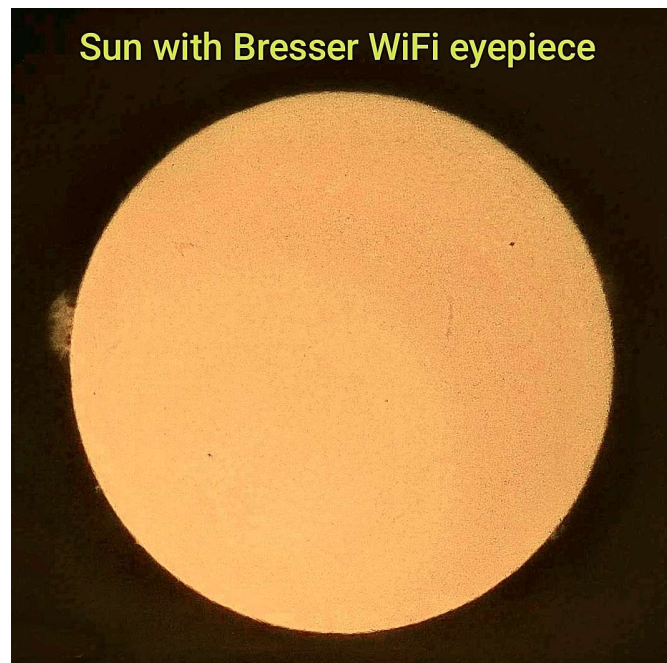
Night	Twilight			Day
	Astronomical	Nautical	Civil	

Note that British Summer Time ends in the early morning of Sunday 26th October and clocks should be put one hour back (fall back) as we move back to GMT Greenwich Mean Time or UT Universal Time.

The Sun is active with many sunspots in October 2025 and we are still within the predicted solar maximum for Solar Cycle 25.

If you have the right equipment look out for by increased sunspot numbers and more frequent CMEs.

This image was taken recently by the author.



PLANETS THIS MONTH

Here's my usual summary table showing planetary observation opportunities based on mid-month data:

Planetrise/Planetset, Wed, 15 Oct 2025				
Planet	Rise	Set	Meridian	Comment
Mercury	Wed 09:43	Wed 18:37	Wed 14:11	Difficult to see
Venus	Wed 05:33	Wed 17:47	Wed 11:40	Fairly good visibility
Mars	Wed 09:53	Wed 18:55	Wed 14:24	Very difficult to see
Jupiter	Wed 23:05	Thu 15:18	Thu 07:12	Fairly good visibility
Saturn	Wed 17:37	Thu 05:05	Wed 23:21	Perfect visibility
Uranus	Wed 19:26	Thu 11:21	Thu 03:23	Average visibility
Neptune	Wed 17:35	Thu 05:28	Wed 23:32	Difficult to see

Data from timeanddate.com

The planets are now returning to our late evening sky. We still have the Summer Triangle and our nearest galaxy Messier 31 in Andromeda high up. In the East our old friends the winter constellations of Orion and Taurus are starting to appear.

Here is my usual run-down of planetary movements for the month of October:

Mercury is an evening planet this month, reaching greatest eastern elongation on 29 October, close to the sun and won't be visible from the UK.

Venus is in the E in Leo at a reduced maximum altitude of 11° shining at mag -3.8 but as it approaches the Sun observing gets worse. On the morning of 19 October a 4%-lit waning crescent Moon will be close.

Mars has moved into an area near the Sun making observations difficult.

Jupiter is in Gemini in the S at an improved maximum altitude of 58°, shining at mag. -2.0 this month. The planet will brighten slightly by month end and is a good target for planetary observers,

Saturn is in the S just in Aquarius at a maximum altitude of 34°, shining at mag +0.4, and after reaching opposition on 21 September is well placed for observations. Given good seeing conditions and reasonable equipment it may be possible to see the planets largest moon Titan transiting the disk. On 6 October a 98%-lit waxing gibbous Moon will be very close.

Uranus is still in the S in Taurus, shining at mag. +5.6 at a maximum altitude of 57°, heading towards opposition on 21 November. During the month Uranus will sit just below the Pleiades.

Neptune is still in the S in Pisces at a maximum altitude of 36°, shining at mag. +7.8 and appears in the same part of the sky as Saturn, well placed for observations.

International Space Station (ISS)

Forecast time for all visible passes this month

Date	Mag	Transit time	Start			High point	End		
			Time	Alt.degs.	Az.		Time	Alt.degs.	Az.
17-Oct	-1.1	04:38	06:28	10°	S	18°	06:33	10°	E
18-Oct	-0.9	02:45	05:40	10°	SSE	12°	05:43	10°	ESE
19-Oct	-2.2	05:59	06:25	10°	SW	31°	06:31	10°	E
20-Oct	-1.8	03:44	05:38	19°	S	22°	05:42	10°	E
21-Oct	-0.9	01:07	04:51	14°	ESE	14°	04:52	10°	ESE
21-Oct	-3.1	05:33	06:24	17°	SW	50°	06:29	10°	E
22-Oct	-2.8	03:21	05:36	38°	SSE	38°	05:40	10°	E
22-Oct	-3.6	06:40	07:10	10°	W	76°	07:16	10°	E
23-Oct	-1.0	01:10	04:49	18°	ESE	18°	04:50	10°	E
23-Oct	-3.7	05:06	06:22	25°	WSW	69°	06:27	10°	E
24-Oct	-3.3	03:01	05:34	56°	SE	56°	05:37	10°	E
24-Oct	-3.7	06:40	07:07	10°	W	75°	07:14	10°	E
25-Oct	-0.9	00:58	04:47	17°	E	17°	04:48	10°	E
25-Oct	-3.8	04:47	06:20	31°	W	77°	06:25	10°	E
26-Oct	-3.2	02:46	04:32	56°	ESE	56°	04:35	10°	E
26-Oct	-3.5	06:28	06:05	11°	W	59°	06:12	10°	ESE
27-Oct	-0.7	00:45	03:45	16°	E	16°	03:45	10°	E
27-Oct	-3.7	04:30	05:18	36°	W	69°	05:22	10°	ESE
28-Oct	-2.8	02:29	04:30	46°	ESE	46°	04:32	10°	E
28-Oct	-2.9	05:56	06:03	12°	W	39°	06:09	10°	SE
29-Oct	-0.5	00:26	03:42	13°	E	13°	03:43	10°	E
29-Oct	-3.4	04:03	05:15	39°	WSW	50°	05:19	10°	ESE
30-Oct	-2.3	02:03	04:28	33°	SE	33°	04:30	10°	ESE
30-Oct	-2.2	04:53	06:01	13°	W	23°	06:06	10°	SSE
31-Oct	-2.8	03:11	05:13	31°	SW	31°	05:16	10°	SE

You can also install these apps to check for passes

Android:
ISS Detector
Satellite Tracker



IOS:
ISS Spotter



There are no evening passes visible this month so I've included all visible passes. Check the Heavens-Above website for this and the latest forecasts.

[source: <https://www.heavens-above.com/>]

METEOR SHOWERS

October Meteor Showers

The Draconid meteor shower is one of the two meteor showers to annually grace the skies in the month of October. The Orionids is the second meteor shower in October. It usually peaks around October 21.

The **Draconids** are created when the Earth passes through the dust debris left by comet 21P/Giacobini-Zinner, which takes about 6.6 years to make a single revolution around the Sun. This meteor shower is considered to be one of the less interesting meteor showers. It peaks on 8 October.

The **Orionids** usually peak around October 20/21 with up to 20 meteors are visible every hour. The shower is the second meteor shower created by Comet Halley (the Eta Aquarids in May is the other one). The Orionids are named after Orion, because the meteors seem to emerge or radiate from the same area in the sky as the constellation. Halley takes around 76 years to make a complete revolution around the Sun. It will next be visible from Earth in 2061.

This year there should hopefully be good with no moonlight to interfere.

As always there is always the chance of seeing the odd sporadic meteor at any time of the year.

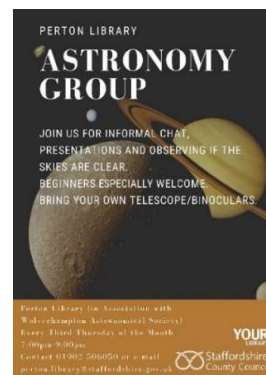
PERTON LIBRARY ASTRONOMY GROUP

The group meets on the third Thursday of every month of the year at Perton Library from 7pm to 9pm. No subscription, no need to book, all free, just drop in at any time during the evening.

(Location WV6 7QU or on what3words ///saints.empty.stands)

The group is a relaxed and friendly gathering with the occasional talk.

We are particularly suited to beginners who very often bring their telescopes along for advice on how to set up, and we have experienced members who can help with this. If the skies are clear we do try to do some observing with library and member equipment.



WOLVERHAMPTON ASTRONOMICAL SOCIETY LECTURE PROGRAMME

The Wolvas annual subscription remains a bargain at £10 per annum and you can sign up now our website www.wolvas.org.uk and pay your subscription, preferably by bank transfer.



We put together a yearly 16 lecture programme and some of this year's programme is shown below.

The host location for our live talks remains the University of Wolverhampton in the city centre. Access and facilities are excellent - details are available on the Wolvas website. Lectures in person or online will only be available to paid-up members of the Society. Members will receive regular emails with invitations to the Zoom sessions and reminders of the in-person lectures.

Non-members may attend the talks live for £2 on the door.

Our lecture season has finished for our usual summer break they will resume in September. Please keep an eye on our website for updates.

Here is a taster for some of the upcoming lectures:

06-Oct-25	AGM + Short Talk - Steve Wootton	Short Talk - Constellations of Canis Major & Minor
03-Nov-25	Robin Scagell (SPA Vice President)	City Astronomy
17-Nov-25	Mike Frost	Who's Who in the Moon
12-Jan-26	Dr Steve Barrett	ABC of Stellar Evolution
19-Jan-26	Andrew Thornett	Getting started in Radio Astronomy
02-Feb-26	Gary Poyner	T Corona Borealis - The Jewel in the Crown
16-Feb-26	Kieron Nixon	Understanding Special Relativity (without the maths)
02-Mar-26	Fran Bagnall	NASA's Juno Mission to Jupiter (live from Colorado)
16-Mar-26	Simon Banton	The Astronomy of Stonehenge
13-Apr-26	Linda Manas	Trigonometry in astronomy

As well as our webpage we will be posting details of events on social media, so keep an eye on our Facebook (<https://www.facebook.com/wolvasuk>) and X [Twitter] (<https://twitter.com/wolvasuk>) pages for the latest news.