

The Night Sky in January 2025



Monthly Guide compiled by Doug Bickley

PERTON LIBRARY
ASTRONOMY
GROUP



The evening sky in Wolverhampton on 15th of the month at 21:00

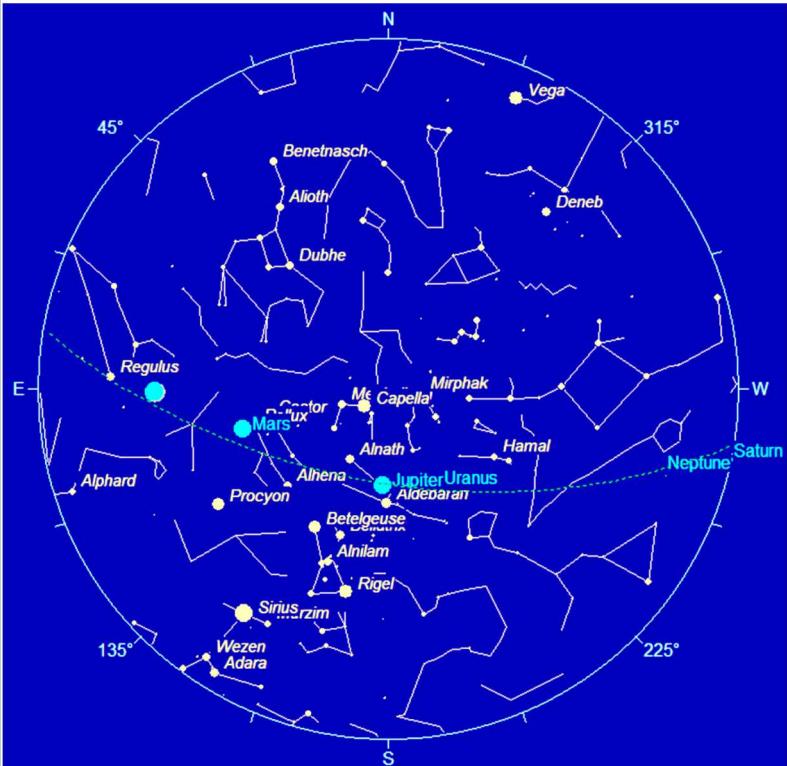


Chart generated using StarCalc 5.73 software

Events to look out for this month:

- 3 Quadrantid meteor shower peak
- 3 Crescent Moon blow and close to Venus
- 3 Crescent Moon occults Saturn (early evening)
- 4 Earth at Perihelion – the point on its orbit closest to the Sun
- 9 Moon forms triangle with Uranus and the Pleiades M45 (evening)
- 10 Moon occults part of Pleiades (morning)
- 10 Moon above Jupiter (evening)
- 10 Venus at greatest elongation
- 12 Mars closest to Earth
- 13 Full Moon, and forms triangle with Mars and Pollux (evening)
- 14 Moon above Beehive Cluster M44 (evening)
- 16 Mars at opposition in Gemini
- 16 Perton Astronomy Group meeting 7pm
- 18 Venus and Saturn in conjunction (evening)
- 29 New Moon
- 31 Crescent Moon below right of Saturn and Venus (evening twilight)

THE MOON

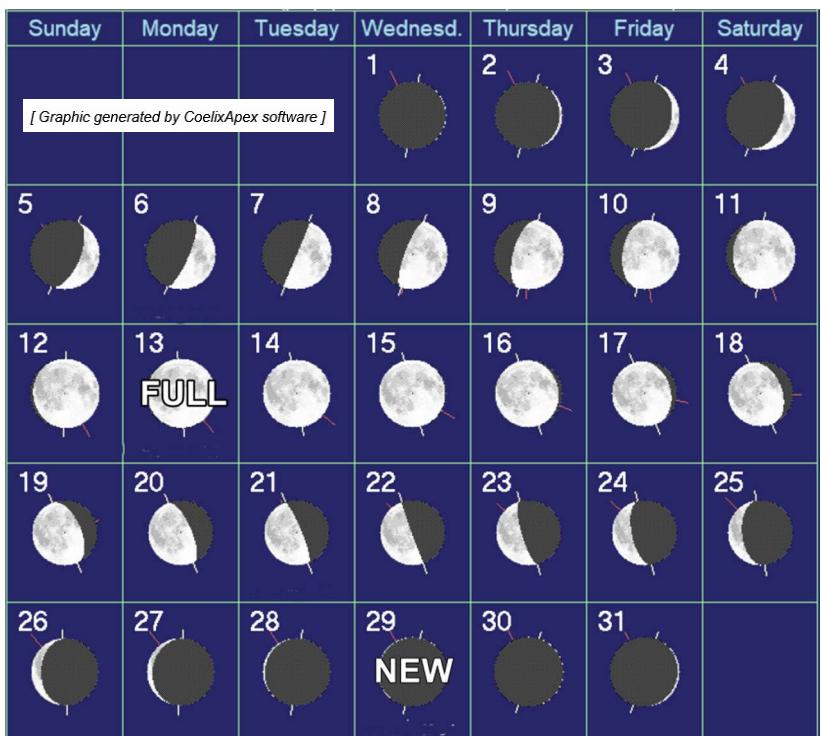
Lunar Phases this month

Full Moon is on 13 January.

This month's Full Moon is sometimes called the Wolf Moon.

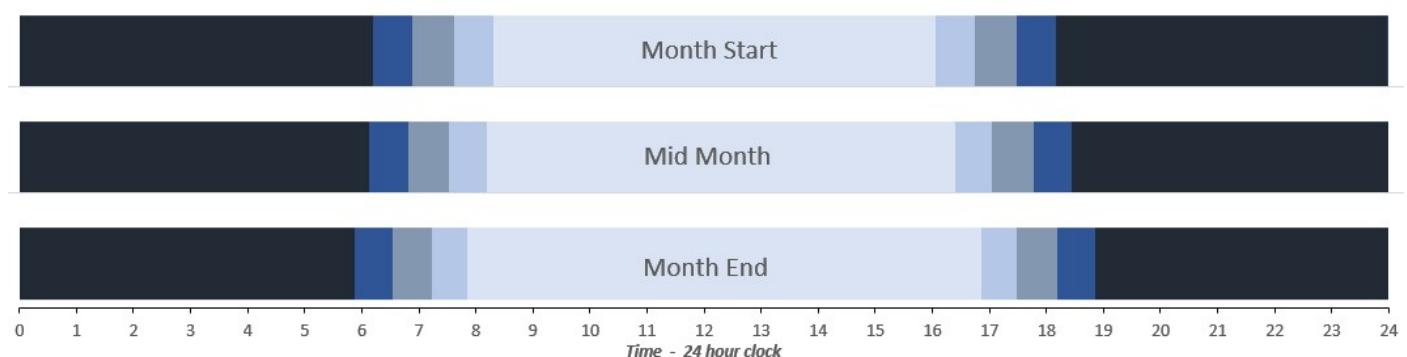
Native Americans, from where many of the full Moon names come from, would hear wolves howling at night during the cold January nights. Wolves howl to define their territory, locate other pack members, and coordinate hunting.

Other traditional names for the January Moon, mainly emphasizing the cold season are the Cold or Ice Moon and the Old Moon.



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.



Mid-month is 15 January – Sunrise is 8:11am and Sunset is 4:24pm.

Key:

Night	Twilight			Day
	Astronomical	Nautical	Civil	

PLANETS THIS MONTH

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

Planet	Planetrise/Planetset, Wed, 15 Jan 2025			
	Rise	Set	Meridian	Comment
Mercury	Wed 07:28	Wed 14:57	Wed 11:12	Slightly difficult to see
Venus	Wed 09:57	Wed 20:51	Wed 15:23	Great visibility
Mars	Wed 15:48	Thu 08:56	Thu 00:22	Perfect visibility
Jupiter	Wed 12:59	Thu 05:16	Wed 21:08	Perfect visibility
Saturn	Wed 10:13	Wed 21:01	Wed 15:37	Average visibility
Uranus	Wed 12:04	Thu 03:36	Wed 19:50	Average visibility
Neptune	Wed 10:28	Wed 22:11	Wed 16:20	Very difficult to see

Data from timeanddate.com

And a run-down of planetary movements for the month of January:

The Earth reaches perihelion (its closest approach to the Sun on Saturday 4th January and all the planets are now visible in the night sky).

Mercury is still in the SE in Ophiuchus at a maximum altitude of 4°, shining at maximum mag -0.3 at the start of the month. It is a morning planet with best views at the start of January low in the dawn twilight but will be lost from view around 9 January as it heads back towards the Sun.

Venus is still in the SSW in Aquarius at a maximum altitude of 24° shining at mag -4.4, a bright evening planet, which it has been since last August. On 10 January it reaches greatest eastern elongation its farthest distance from the Sun in the evening sky. On the evening of 3 January, a 16%-lit waxing crescent Moon will be close by. On 18 January Venus and mag. +0.8 Saturn will be in conjunction, about 20° apart.

Mars is still in the S but moved from Cancer into Gemini at a maximum altitude of 62° shining at mag -1.2 pretty well all month. It reaches opposition on 16 January when it lies directly opposite the Sun, and is visible all night. This happens every 26 months. So Mars is shining particularly brightly around this time, and this month is a good time for observations, when with a decent telescope you might make out surface markings and polar caps.

Saturn is still in Aquarius in the SSW at a maximum altitude of 27°, shining at mag +0.8. Observations remain good this month. On 4 January the planet will be occulted by a 25%-lit waxing crescent Moon. On 18 January, shining at mag. +0.8, Saturn sits about 20° SSE of mag. -4.4 Venus.

Jupiter is still in Taurus in the S at a high maximum altitude of 59°, beautifully shining at mag -2.6 in the evening sky. On 10 January an 89%-lit waxing gibbous Moon is close to the N.

Uranus is on the Aries/Taurus border in the S at a maximum altitude of 55°, shining at mag +5.7 and fairly close to Jupiter so easy to find.

Neptune is still in the S in Pisces at a maximum altitude of 34°, an evening planet shining at mag +7.9 all month. On 310 January the planet is very close to Venus.

METEOR SHOWERS

Quadrantid meteor shower

We haven't had much luck recently observing in Wolverhampton, and we were beaten again by clouds when trying to see the Geminids last month.

Maybe we'll have better luck with the Quadrantid, which peak on 4 January 2025 although the total period of the shower lasts from 26 December 2024 to 12 January 2025. The Quadrantid meteor shower is one of the best of the year, with a maximum rate of 120 meteors per hour on a clear night. The meteors appear to radiate from the constellation Boötes, near the "handle" of Ursa Major, the Big Dipper. This year the peak is when the Moon is at third quarter so observations should be good (weather permitting!) before the Sun rises.

PHENOMENA OF THE MONTH

(Table generated using Coelix Apex software):

Times are given in UT for Perton (2°11' 0" W, 52°35' 0" N, zone R).

	Date yyyy mm dd	Hour hh:mm	Description of the phenomenon
1	2025 01 03	06:47	Meteor shower : Quadrantids (80 meteors/hour at zenith; duration = 16.0 days)
2	2025 01 03	17:59	Close encounter between the Moon and Venus (topocentric dist. center to center = 1.9°)
3	2025 01 04	14:00	The Earth at its perihelion (distance to the Sun = 0.98333 AU)
4	2025 01 04	17:55	Close encounter between the Moon and Saturn (topocentric dist. center to center = 0.0°)
5	2025 01 06	23:56	FIRST QUARTER OF THE MOON
6	2025 01 07	23:35	Moon at perigee (geocentric dist. = 370171 km)
7	2025 01 09	09:14	Close encounter between Mercury and M 8 (topocentric dist. center to center = 0.9°)
8	2025 01 10	02:45	Close encounter between the Moon and the Pleiades (topocentric dist. center to center = 0.3°)
9	2025 01 10	06:00	GREATEST EASTERN ELONGATION of Venus (47.2°)
10	2025 01 10	21:21	Close encounter between the Moon and Jupiter (topocentric dist. center to center = 4.9°)
11	2025 01 13	10:18	Comet C/2024 G3 ATLAS at its perihelion (dist. to the Sun = 0.094 AU; magn. = -1.4)
12	2025 01 13	20:52	Close encounter between the Moon and Pollux (topocentric dist. center to center = 2.5°)
13	2025 01 13	22:27	FULL MOON
14	2025 01 14	04:18	Close encounter between the Moon and Mars (topocentric dist. center to center = 0.4°)
15	2025 01 14	09:20	Close encounter between Mercury and M 22 (topocentric dist. center to center = 0.1°)
16	2025 01 14	21:56	Close encounter between the Moon and M 44 (topocentric dist. center to center = 2.0°)
17	2025 01 18	23:46	Close encounter between Venus and Saturn (topocentric dist. center to center = 2.2°)
18	2025 01 19	14:00	Mercury at its aphelion (distance to the Sun = 0.46670 AU)
19	2025 01 21	02:58	Close encounter between the Moon and Spica (topocentric dist. center to center = 0.7°)
20	2025 01 21	04:55	Moon at apogee (geocentric dist. = 404298 km)
21	2025 01 21	12:26	CONJUNCTION between Pluto and the Sun (geoc. dist. center to center = 3.3°)
22	2025 01 21	20:31	LAST QUARTER OF THE MOON
23	2025 01 22	21:23	Close encounter between Mars and Pollux (topocentric dist. center to center = 2.4°)
24	2025 01 29	12:36	NEW MOON

International Space Station (ISS)

Forecast time for visible passes this month

Date	Mag	Transit time	Start			High point	End		
			Time	Alt.deg.	Az.		Time	Alt.deg.	Az.
14-Jan	-1.2	00:51	19:07	10°	SSW	15°	19:08	15°	SSW
15-Jan	-2.0	02:29	18:18	10°	SSW	19°	18:20	19°	SE
16-Jan	-1.5	03:22	17:29	10°	S	13°	17:32	10°	ESE
16-Jan	-2.1	01:55	19:03	10°	SW	29°	19:05	29°	SSW
17-Jan	-2.8	03:46	18:14	10°	SW	33°	18:17	29°	SE
17-Jan	-0.5	00:28	19:50	10°	WSW	13°	19:50	13°	WSW
18-Jan	-2.2	05:26	17:24	10°	SSW	24°	17:29	10°	E
18-Jan	-2.8	02:30	19:00	10°	WSW	45°	19:02	45°	SW
19-Jan	-3.4	04:28	18:10	10°	WSW	52°	18:14	32°	ESE
19-Jan	-0.8	00:49	19:46	10°	W	16°	19:47	16°	W
20-Jan	-2.9	06:16	17:20	10°	SW	40°	17:26	10°	E
20-Jan	-3.3	02:50	18:56	10°	W	60°	18:59	60°	WSW
21-Jan	-3.7	04:51	18:06	10°	WSW	70°	18:11	29°	E
21-Jan	-1.0	01:06	19:43	10°	W	19°	19:44	19°	W
22-Jan	-3.4	06:34	17:16	10°	WSW	60°	17:23	10°	E
22-Jan	-3.7	03:07	18:53	10°	W	71°	18:56	71°	SW
23-Jan	-3.8	05:11	18:02	10°	W	77°	18:08	24°	E
23-Jan	-1.2	01:23	19:39	10°	W	22°	19:40	22°	W
24-Jan	-3.6	06:38	17:12	10°	W	75°	17:19	10°	E
24-Jan	-3.5	03:31	18:49	10°	W	58°	18:52	56°	S
25-Jan	-3.6	05:42	17:59	10°	W	69°	18:04	17°	ESE
25-Jan	-1.4	01:45	19:35	10°	W	22°	19:37	22°	WSW
26-Jan	-2.6	04:07	18:45	10°	W	38°	18:49	29°	SSE
27-Jan	-3.0	06:27	17:55	10°	W	50°	18:01	10°	ESE
27-Jan	-1.2	02:07	19:32	10°	WSW	16°	19:34	16°	SW
28-Jan	-1.6	05:00	18:41	10°	W	23°	18:46	12°	SSE
29-Jan	-2.1	06:00	17:51	10°	W	32°	17:57	10°	SE
30-Jan	-0.8	03:05	18:38	10°	WSW	13°	18:41	10°	SSW
31-Jan	-1.0	04:49	17:47	10°	W	19°	17:51	10°	SSE

All visible passes this month are shown in the table.

As always check the Heavens-Above website also if you want to see the latest forecasts.

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

You can also install
an app on your phone
to check for ISS passes

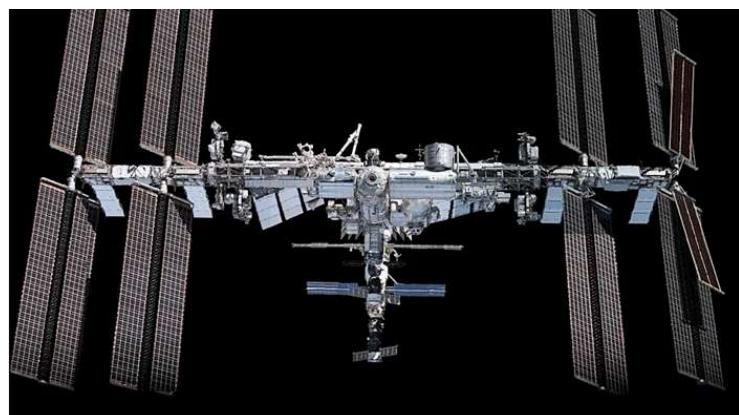
Android:
ISS Detector
Satellite Tracker



IOS:
ISS Spotter



You probably know that NASA has plans to decommission the ISS after more than 23 years of a continuous human presence aboard the microgravity laboratory with assembly missions starting in 1998 and occupation in 2000.



The lifetime of the primary structure is finite and has been affected by dynamic loading (such as spacecraft dockings/undockings) and orbital thermal cycling. Possibilities include deorbiting the space station – in around 2030 – and replacing it with commercial stations, and NASA will then concentrate on human missions to the Moon and Mars.

So early days but in five years' time you won't see this page (if I'm still writing it!).

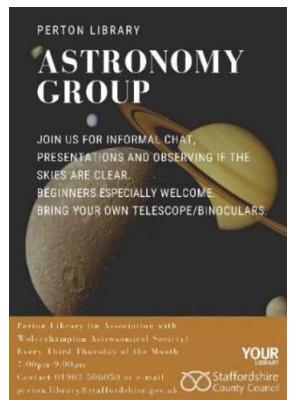
PERTON LIBRARY ASTRONOMY GROUP

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.

The lectures for the current year are shown in the table below, with some dates yet to be finalised, please keep an eye on our website for updates.

Date	Speaker	Title of Talk
13-Jan-25	Dr Julian Onions	Aperture Fever - does my mirror look big in this?
20-Jan-25	George Seabrooke	The Gaia Revolution
03-Feb-25	Dr Lucie Green	The Sun and Solar Orbiter
17-Feb-25	John Thatcher	The Beagle 2 Mars Lander
03-Mar-25	Dr Smoker <i>[live from Chile]</i>	A day in the life of an astronomer in Chile
17-Mar-25	TBA	
14-Apr-25	TBA	
12-May-25	Philip Price	TBC
09-Jun-25	Dr Helen Mason	The A-X of Solar Flares
23-Jun-25	TBA	Paul Pope Lecture <i>[free public lecture]</i>

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.