

The Night Sky in January 2024



Monthly guide compiled by Doug Bickley

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ASTRONOMY
GROUP



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



Chart generated using StarCalc 5.73 software

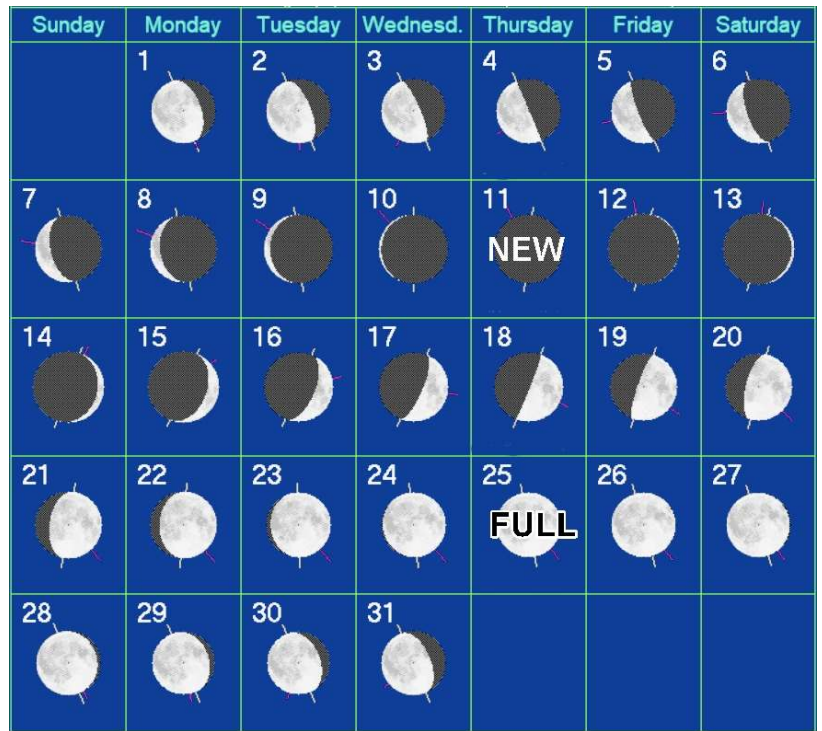
Diary of events to look out for this month:

- 3 Quadrantid meteor shower peak (after midnight)
- 8 Crescent Moon near Antares, Venus and Mercury (morning twilight)
- 11 New Moon
- 12 Mercury at greatest western elongation, Venus above right (morning twilight)
- 14 Crescent Moon left of Saturn (evening twilight)
- 15 Crescent Moon below Neptune (evening)
- 18 First quarter Moon above Jupiter (evening)
- 18 Periton Astronomy Group meeting 7pm
- 19 Moon above Uranus (evening)
- 20 Moon below left of Pleiades (evening)
- 24 Moon almost full with Castor and Pollux (evening)
- 24 Full Moon above Beehive Cluster (evening)
- 25 Full Moon

THE MOON

Lunar Phases this month

Main Phases	
Third (last) quarter	4 Jan
New Moon	11 Jan
First quarter	18 Jan
Full Moon	25 Jan



[Graphic generated by Coelix Apex software]

New Moon is on 11 January and Full Moon is on 25 January.



This month's Full Moon is sometimes called the Wolf Moon. It's thought that January's full Moon came to be known as the Wolf Moon because wolves were more likely to be heard howling at this time. It was traditionally believed that wolves howled due to hunger during winter, but we know today that wolves howl for different reasons. Howling and other wolf vocalizations are used to define territory, locate pack members, reinforce social bonds, and coordinate hunting.

(You may hear the Pack baying when Wolves are playing at home!)

Other traditional names for the January Moon have been recorded, mainly emphasizing the harsh coldness of the season: Cold Moon, Freeze-Up Moon, Great Moon, Greetings Moon and Spirit Moon.

THE SUN

Chart of sunrise and sunset times in Wolverhampton:

(Astronomical twilight now included now until the days get longer next year).

Date		Sun			Day length		Astronomical Twilight		Nautical Twilight		Civil Twilight	
		Sunrise	Sunset	Solar Noon	Lenth	Difference	Start	End	Start	End	Start	End
Jan-01	Mon	8:19 AM	4:04 PM	12:11 PM	07:44:41	+1:06	6:12 AM	6:11 PM	6:54 AM	5:29 PM	7:38 AM	4:45 PM
Jan-08	Mon	8:17 AM	4:12 PM	12:14 PM	07:55:23	+1:50	6:11 AM	6:18 PM	6:53 AM	5:36 PM	7:36 AM	4:53 PM
Jan-15	Mon	8:12 AM	4:23 PM	12:17 PM	08:10:42	+2:27	6:08 AM	6:26 PM	6:49 AM	5:45 PM	7:32 AM	5:02 PM
Jan-22	Mon	8:04 AM	4:34 PM	12:19 PM	08:29:52	+2:57	6:03 AM	6:36 PM	6:44 AM	5:55 PM	7:26 AM	5:13 PM
Jan-29	Mon	7:55 AM	4:47 PM	12:21 PM	08:52:06	+3:21	5:56 AM	6:46 PM	6:36 AM	6:06 PM	7:17 AM	5:25 PM
Jan-31	Wed	7:52 AM	4:51 PM	12:21 PM	08:58:53	+3:25	5:53 AM	6:49 PM	6:33 AM	6:09 PM	7:15 AM	5:28 PM

Credit: time-ok.com

PLANETS THIS MONTH

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

Planetrise/Planetset, Mon, 15 Jan 2024				
Planet	Rise	Set	Meridian	Comment
Mercury	Tue 06:43	Tue 14:32	Tue 10:38	Average visibility
Venus	Tue 05:51	Tue 13:49	Tue 09:50	Good visibility
Mars	Tue 07:22	Tue 14:49	Tue 11:05	Very difficult to see
Jupiter	Mon 11:35	Tue 01:56	Mon 18:45	Perfect visibility
Saturn	Mon 09:56	Mon 20:01	Mon 14:58	Average visibility
Uranus	Mon 11:57	Tue 03:15	Mon 19:36	Average visibility
Neptune	Mon 10:27	Mon 22:02	Mon 16:14	Very difficult to see

Data from timeanddate.com

And here is my usual run down of planetary movements for the month of January:

Mercury is still in the SE in Ophiuchus at a maximum altitude of 6° shining at mag. 0.6 but brightening as the month progresses. On January 12 rising around 2 hours before the Sun mag. -3.9 Venus is close in the west, but at month end Mercury is heading back towards the Sun and will be difficult to see.

Venus is in the SE in Scorpius and is also low with a maximum altitude of 7°, shining at mag. -3.9 a bright morning object. On the morning of 8 January a 12%-lit crescent Moon appears close to the SW and a few days later mag. -3.9 Venus and mag. -0.2 Mercury appear close. Venus will stay bright lit all month.

Mars is in the SE in Scorpius but at an extremely low altitude of 2° and is too dim and close to the Sun to be visible so you will be lucky to see it this month.

Jupiter is still in Aires in the S, at a maximum altitude of 49° shining at mag -2.4 high enough in the sky to enable good observations of the belts. With larger telescopes the great red spot may be seen.

Saturn is still in Aquarius in the SSW at a maximum altitude of 21° and is an evening planet. On the 14 January a 14%-lit crescent Moon is close by. Saturn will be better for observations later in the year when it reaches opposition in September.

Uranus is still in the S in Aries reaching a maximum altitude of about 54° and shining at mag +5.7 and clearly visible with binoculars, although a telescope will be required to show any colour on the disc. Just after sunset on 19 January a 67%-lit Moon lies close by.

Neptune is in the SSW in Pisces at a maximum altitude of 32°, an evening planet shining at mag +7.9 although it is now losing altitude.

METEOR SHOWERS

Geminids (last month)

A group of members from Wolverhampton Astronomical Society met on 14 December at a dark(ish) sky site. Clouds cleared either side of 9pm and we were treated to quite a few Geminids. The author didn't manage to capture any photos.

Quadrantids

The Quadrantids is an above average shower, it is thought to be produced by dust grains left behind by an extinct comet known as 2003 EH1, which was discovered in 2003.

The shower is visible annually in early January and this year peaks on the night of the 2nd and morning of the 3rd. The shower will peak close to new moon, and so moonlight will present minimal interference but best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Boötes, but can appear anywhere in the sky.

At its peak, the shower is expected to produce a "nominal" rate of around 120 meteors per hour (ZHR). As usual this zenithal hourly rate is calculated assuming a perfectly dark sky and that the radiant of the shower being directly overhead. In practice, any real observing sight will fall far short of these ideal conditions and the number of meteors you are likely to see may be around 40 per hour.

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	Hour	Description of the phenomenon
yyyy mm dd	hh:mm	
1	2024 01 01	15:28 Moon at apogee (geocentric dist. = 404909 km)
2	2024 01 04	01:01 Meteor shower : Quadrantids (110 meteors/hour at zenith; duration = 16.0 days)
3	2024 01 04	03:30 LAST QUARTER OF THE MOON
4	2024 01 06	07:38 Close encounter between Mars and M 8 (topocentric dist. center to center = 0.3°)
5	2024 01 11	11:57 NEW MOON
6	2024 01 12	18:00 GREATEST WESTERN ELONGATION of Mercury (23.5°)
7	2024 01 13	10:35 Moon at perigee (geocentric dist. = 362267 km)
8	2024 01 15	11:59 Close encounter between Mercury and M 8 (topocentric dist. center to center = 2.1°)
9	2024 01 16	04:10 Close encounter between Mars and M 22 (topocentric dist. center to center = 0.0°)
10	2024 01 18	03:52 FIRST QUARTER OF THE MOON
11	2024 01 18	18:39 Close encounter between the Moon and Jupiter (topocentric dist. center to center = 2.0°)
12	2024 01 19	17:46 Close encounter between the Moon and Uranus (topocentric dist. center to center = 2.2°)
13	2024 01 20	13:44 CONJUNCTION between Pluto and the Sun (geoc. dist. center to center = 2.8°)
14	2024 01 21	08:56 Close encounter between Mercury and M 22 (topocentric dist. center to center = 1.0°)
15	2024 01 24	10:51 Close encounter between Venus and M 8 (topocentric dist. center to center = 1.9°)
16	2024 01 24	17:59 Close encounter between the Moon and Pollux (topocentric dist. center to center = 2.2°)
17	2024 01 25	17:54 FULL MOON
18	2024 01 25	21:17 Close encounter between the Moon and M 44 (topocentric dist. center to center = 2.8°)
19	2024 01 27	16:28 Close encounter between Mercury and Mars (topocentric dist. center to center = 0.2°)
20	2024 01 29	08:14 Moon at apogee (geocentric dist. = 405777 km)
21	2024 01 30	10:23 Close encounter between Venus and M 22 (topocentric dist. center to center = 1.4°)

International Space Station (ISS)

Forecast time for visible passes this month

Plenty of passes this month and I've included all forecast ones in the table. Check for the highest mag and longest transit time, and if you use a camera with a long exposure you can get a long trail.

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

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

Date	Mag	Transit time	Start			High point	End		
			Time	Alt.degs.	Az.		Time	Alt.degs.	Az.
01-Jan	-0.8	00:47	04:59	16°	ESE	16°	05:00	10°	ESE
01-Jan	-2.2	03:42	06:32	21°	WSW	24°	06:36	10°	SSE
02-Jan	-2.1	02:04	05:45	27°	S	27°	05:47	10°	SE
03-Jan	-0.6	00:14	04:58	11°	SE	11°	04:58	10°	SE
03-Jan	-1.5	01:51	06:30	13°	SW	13°	06:32	10°	S
04-Jan	-1.2	00:43	05:43	13°	S	13°	05:44	10°	SSE
16-Jan	-1.3	00:55	18:54	10°	SSW	15°	18:55	15°	S
17-Jan	-1.6	02:15	18:05	10°	S	14°	18:07	14°	SE
17-Jan	-0.6	00:21	19:40	10°	SW	12°	19:40	12°	SW
18-Jan	-2.4	02:16	18:50	10°	SW	30°	18:52	30°	S
19-Jan	-2.3	04:01	18:00	10°	SSW	25°	18:04	20°	ESE
19-Jan	-1.0	01:02	19:36	10°	WSW	18°	19:37	18°	WSW
20-Jan	-1.8	04:42	17:11	10°	S	18°	17:16	10°	E
20-Jan	-3.4	03:02	18:46	10°	WSW	53°	18:49	53°	S
21-Jan	-3.0	04:55	17:56	10°	SW	42°	18:01	22°	E
21-Jan	-1.4	01:25	19:33	10°	W	23°	19:34	23°	W
22-Jan	-2.5	05:58	17:07	10°	SW	31°	17:13	10°	E
22-Jan	-3.8	03:27	18:43	10°	WSW	72°	18:46	71°	SSE
23-Jan	-3.5	05:26	17:53	10°	WSW	62°	17:58	20°	E
23-Jan	-1.7	01:41	19:29	10°	W	27°	19:31	27°	W
24-Jan	-3.9	03:44	18:39	10°	W	77°	18:43	64°	ESE
25-Jan	-3.7	05:47	17:49	10°	W	76°	17:55	17°	E
25-Jan	-2.0	02:00	19:25	10°	W	32°	19:27	32°	W
26-Jan	-3.6	04:06	18:35	10°	W	67°	18:39	46°	SE
26-Jan	-0.2	00:09	20:12	10°	W	11°	20:12	11°	W
27-Jan	-3.7	06:15	17:45	10°	W	75°	17:51	13°	E
27-Jan	-2.2	02:25	19:21	10°	W	32°	19:24	32°	SW
28-Jan	-3.1	04:42	18:31	10°	W	48°	18:36	27°	SE
28-Jan	-0.4	00:12	20:08	10°	WSW	11°	20:09	11°	WSW
29-Jan	-3.3	06:34	17:41	10°	W	61°	17:47	10°	ESE
29-Jan	-1.7	02:57	19:18	10°	W	22°	19:21	21°	SSW
30-Jan	-2.1	05:35	18:27	10°	W	30°	18:33	12°	SSE
31-Jan	-2.5	06:18	17:37	10°	W	41°	17:43	10°	SE

As usual have a quick check with one of these apps:



Android:
ISS Detector Satellite Tracker



IOS:
ISS Spotter

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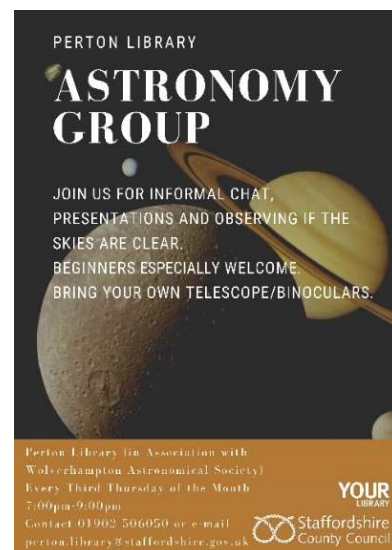
The group meets on the third Thursday of every month of the year at Periton Library from 7pm to 9pm. No subscription, no need to book, all free, just drop in at any time during the evening.

(Location WV6 7QU or on what3words the entrance is *///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 – we have experienced members who can help with this.

If the skies are clear we do try to do some observing from an area at the rear of the building.



WOLVERHAMPTON ASTRONOMICAL SOCIETY LECTURES

The 2022/23 lecture season has come to an end but speaker bookings for next year's 2023/24 program is pretty well complete and here is an up to date list:

Date	Speaker	Title of Talk
20/11/2023	Martin Griffiths	Detecting Life on Exoplanets
04/12/2023	Gary Palmer	The Sun: An Introduction to Solar Imaging
08/01/2024	Steve Barrett	End Of Everything
22/01/2024	Mark McIntyre	Meteors: An Observers Guide
05/02/2024	Paul Money	Wonders of Our Universe
19/02/2024	Paul Fellows	Quark Stars and Strange Matter
04/03/2024	Paul Pope Lecture	Chris Lintott – It's Never Aliens
18/03/2024	Steve Tonkin	Right Light At Night
15/04/2024	Damian Hardwick	Sir Bernard Lovell & His Telescope
13/05/2024	John Thatcher	The James Webb Space Telescope At Work
10/06/2024	Members Evening	Members talks or discussion tables



The host location for our live talks remains the University of Wolverhampton in the city centre. Access and facilities are excellent and car parking adjacent. Details are available on the Wolvas website. Lectures in person or online will only be available to paid-up members of the Society.

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

Watch out for updates

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.