

The Night Sky in December 2023



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

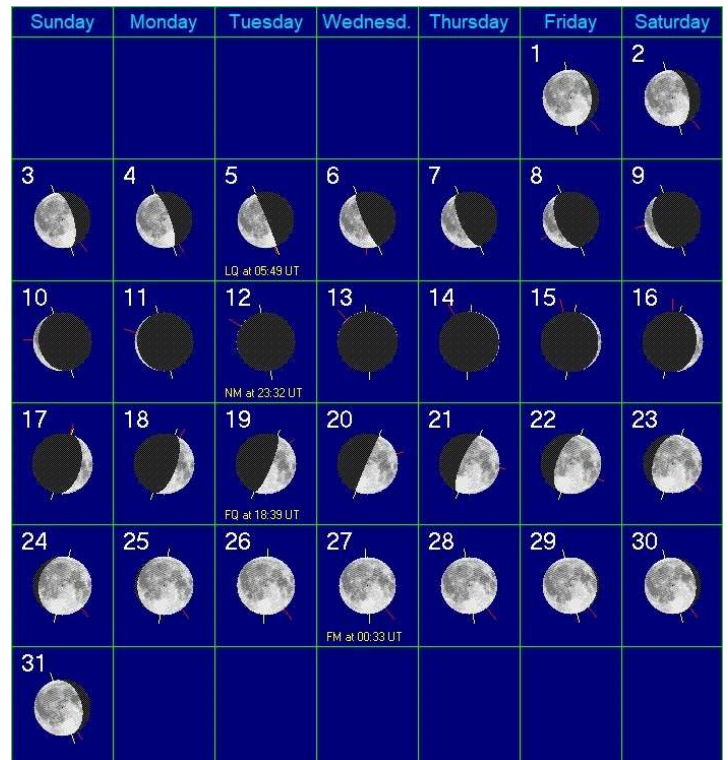
Diary of events to look out for this month:

- 1 Moon above Beehive Cluster M44
- 4 Mercury at greatest eastern elongation (evening twilight)
- 9 Venus left of crescent Moon (morning twilight)
- 12 New Moon
- 13 Geminids meteor shower peak (favourable)
- 17 Saturn above crescent Moon (evening)
- 19 Periton Astronomy Group meeting 7pm
- 22 Winter Solstice - at 03:27 GMT
- 24 Look out for strange sleigh like objects in the sky
- 27 Full Moon

THE MOON

Lunar Phases this month

Main Phases	
Third (last) quarter	5 Dec
New Moon	12 Dec
First quarter	19 Dec
Full Moon	27 Dec



[Graphic generated by Coelix Apex software]

New Moon is on 12 December and Full Moon is on 27 December.



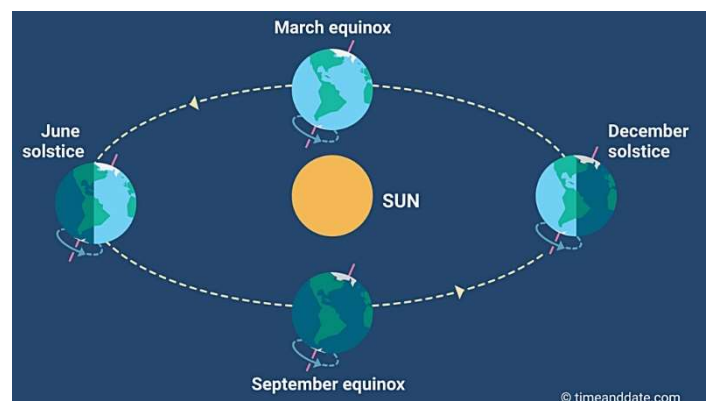
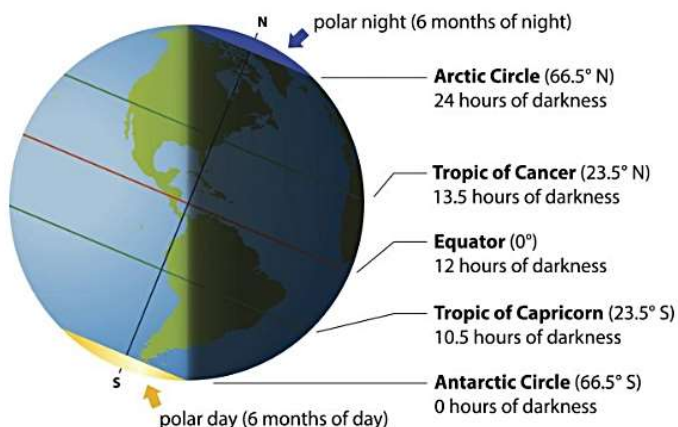
The Full Moon in December is called the Cold Moon, as the winter cold begins to fasten its grip for most people in the Northern Hemisphere.

Old English and Anglo-Saxon names are the 'Moon Before Yule' or the 'Long Night Moon', referring to the longest night of the year in the Northern Hemisphere: the December solstice. The Celts called it the Oak Moon or the Full Cold Moon. Other names from the American tribes are the long night moon and the oak moon. Enough names for you?!

Winter (December) Solstice

There are two solstices every year: one in December and one in June.

The December solstice marks the shortest day north of the equator and the longest day in the south.



The December solstice is the moment the Sun is directly above the Tropic of Capricorn in the Southern Hemisphere.

This is the southernmost latitude it reaches during the year. After the solstice, it begins moving north again.

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	Start	End	Start	End	Start	End
Dec-01	Fri	7:56 AM	3:58 PM	11:57 AM	08:01:51	5:51 AM	6:03 PM	6:32 AM	5:21 PM	7:16 AM	4:38 PM
Dec-10	Sun	8:08 AM	3:54 PM	12:01 PM	07:46:13	6:01 AM	6:01 PM	6:42 AM	5:19 PM	7:26 AM	4:35 PM
Dec-17	Sun	8:14 AM	3:54 PM	12:04 PM	07:39:48	6:06 AM	6:02 PM	6:48 AM	5:20 PM	7:33 AM	4:35 PM
Dec-24	Sun	8:18 AM	3:57 PM	12:07 PM	07:38:54	6:10 AM	6:05 PM	6:52 AM	5:23 PM	7:36 AM	4:38 PM
Dec-31	Sun	8:19 AM	4:03 PM	12:11 PM	07:43:35	6:12 AM	6:10 PM	6:54 AM	5:28 PM	7:38 AM	4:44 PM

Credit: time-ok.com

PLANETS THIS MONTH

This is the little table which I am now including each month as an easy to see summary of planetary observations, this is based on mid-month data:

Planetrise/Planetset, Fri, 15 Dec 2023				
Planet	Rise	Set	Meridian	Comment
Mercury	Sat 09:13	Sat 16:50	Sat 13:01	Very difficult to see
Venus	Sat 04:27	Sat 14:06	Sat 09:17	Good visibility
Mars	Sat 07:38	Sat 15:16	Sat 11:27	Extremely difficult to see
Jupiter	Fri 13:38	Sat 03:57	Fri 20:47	Perfect visibility
Saturn	Fri 11:53	Fri 21:47	Fri 16:50	Average visibility
Uranus	Fri 14:01	Sat 05:20	Fri 21:41	Average visibility
Neptune	Fri 12:29	Sat 00:01	Fri 18:15	Difficult to see

Data from timeanddate.com

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

Mercury is in the SE in Ophiuchus at a maximum altitude of 3° and again poorly positioned. The planet reaches greatest eastern elongation on 4 December, separated from the Sun by around 21°. Shining at mag. -0.3 on this date, it sets an hour after sunset and the planet is still hard to see. Inferior conjunction is on 22 December, after which Mercury re-emerges into the morning sky again.

Venus is in the SE in Virgo a decent maximum altitude of 16°, shining at mag. -4.1 a very bright morning object. At the start of the month it rises 4 hours before the Sun when you can get excellent views, possibly seeing that it is not a full disc, and towards the end of the month it rises only 3 hours before the Sun. In the morning twilight on 9 December the Moon appears close.

Mars is not visible this month.

Jupiter is still in Aires in the S, at a maximum altitude of 50°, a beacon shining at mag -2.7 and you will have fantastic views this month. A bright gibbous Moon appears nearby on the evenings of 21 and 22 December.

Saturn is still in Aquarius in the S at a maximum altitude of 24° and is visible looking due S at the start of the month. A 28% waxing crescent Moon is just below Saturn on the evening of 17 December.

Uranus is still in the S in Aries reaching a maximum altitude of about 54° and shining at mag +5.6 and clearly visible on dark night all month long. A small telescope will show its greenish blue colour and you may detect that it is a disc.

Neptune is still in the S in Pisces at a maximum altitude of 34° shining at mag +7.9 and is an evening planet. If you want to try to see it do so nearer the start of the month.

METEOR SHOWERS

Geminids

The Geminids meteor shower which will be active from 4 December to 17 December, producing its peak rate of meteors around 14 December. As this is around the Full Moon the latter will not interfere, all we need is clear skies. The Geminids are usually one of the best meteor showers of the year.

The Wolverhampton Astronomical Society will be organising a viewing event for members so check out the Wolvas member's forum for more details.

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	
2023 12 01	03:03	Close encounter between the Moon and Pollux (topocentric dist. center to center = 1.9°)
2023 12 02	17:59	Close encounter between Mercury and M 8 (topocentric dist. center to center = 1.4°)
2023 12 04	04:50	Close encounter between the Moon and Regulus (topocentric dist. center to center = 3.2°)
2023 12 04	18:00	GREATEST EASTERN ELONGATION of Mercury (21.2°)
2023 12 04	18:42	Moon at apogee (geocentric dist. = 404346 km)
2023 12 05	05:49	LAST QUARTER OF THE MOON
2023 12 07	01:46	End of occultation of 15-eta Vir, Zaniah, (magn. = 3.89)
2023 12 09	08:31	Meteor shower : Monocerotids (3 meteors/hour at zenith; duration = 20.0 days)
2023 12 09	08:31	Meteor shower : Sigma Hydrids (7 meteors/hour at zenith; duration = 12.0 days)
2023 12 09	14:41	Close encounter between the Moon and Venus (topocentric dist. center to center = 4.2°)
2023 12 12	23:32	NEW MOON
2023 12 14	11:17	Meteor shower : Geminids (150 meteors/hour at zenith; duration = 12.0 days)
2023 12 15	17:55	Close encounter between the Moon and Pluto (topocentric dist. center to center = 3.1°)
2023 12 16	05:42	Meteor shower : Coma Berenicids (3 meteors/hour at zenith; duration = 11.0 days)
2023 12 16	18:53	Moon at perigee (geocentric dist. = 367901 km)
2023 12 19	18:39	FIRST QUARTER OF THE MOON
2023 12 20	04:01	Meteor shower : Dec. Leo Minorids (5 meteors/hour at zenith; duration = 61.0 days)
2023 12 22	03:27	WINTER SOLSTICE
2023 12 22	18:54	INFERIOR CONJUNCTION of Mercury with the Sun (geoc. dist. center to center = 2.1°)
2023 12 22	19:41	Meteor shower : Ursids (10 meteors/hour at zenith; duration = 9.0 days)
2023 12 23	21:04	Beginning of occultation of 63-tau2 Ari (magn. = 5.10)
2023 12 23	22:19	End of occultation of 63-tau2 Ari (magn. = 5.10)
2023 12 27	00:33	FULL MOON

International Space Station (ISS)

Forecast time for visible passes this month

No evening passes visible from Wolverhampton this month, so I've included all forecast passes. 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-Dec	-3.2	06:30	17:15	10°	W	57°	17:22	11°	ESE
01-Dec	-1.3	02:20	18:52	10°	W	19°	18:55	19°	SW
02-Dec	-1.8	04:54	18:04	10°	W	26°	18:09	15°	SSE
03-Dec	-2.2	06:13	17:15	10°	W	35°	17:22	10°	SE
04-Dec	-0.8	03:47	18:05	10°	WSW	14°	18:08	10°	S
05-Dec	-1.0	05:06	17:16	10°	W	20°	17:21	10°	SSE
07-Dec	0.0	00:39	17:17	10°	SW	10°	17:18	10°	SW
16-Dec	-0.4	03:00	06:48	10°	SSE	12°	06:51	10°	ESE
18-Dec	-1.3	05:29	06:45	10°	SSW	23°	06:51	10°	E
19-Dec	-0.9	04:30	05:57	10°	S	17°	06:02	10°	ESE
20-Dec	-0.7	02:04	05:10	11°	SSE	12°	05:12	10°	ESE
20-Dec	-2.5	06:23	06:44	10°	SW	40°	06:50	10°	E
21-Dec	-2.0	04:32	05:57	21°	SSW	30°	06:01	10°	E
21-Dec	-3.5	06:43	07:31	10°	WSW	71°	07:38	10°	E
22-Dec	-1.3	02:00	05:10	21°	SE	21°	05:12	10°	E
22-Dec	-3.3	06:04	06:43	14°	WSW	61°	06:49	10°	E
23-Dec	-3.1	03:51	05:57	43°	SSW	49°	06:00	10°	E
23-Dec	-3.6	06:45	07:30	10°	W	77°	07:37	10°	E
24-Dec	-1.4	01:41	05:10	24°	ESE	24°	05:12	10°	E
24-Dec	-3.7	05:32	06:43	20°	W	76°	06:48	10°	E
25-Dec	-3.7	03:29	05:56	68°	S	69°	05:59	10°	E
25-Dec	-3.5	06:43	07:29	10°	W	67°	07:36	10°	ESE
26-Dec	-1.3	01:30	05:09	24°	E	24°	05:10	10°	E
26-Dec	-3.7	05:17	06:42	24°	W	75°	06:47	10°	E
27-Dec	-3.8	03:19	05:55	77°	SSE	77°	05:58	10°	E
27-Dec	-3.0	06:31	07:28	10°	W	47°	07:35	10°	SE
28-Dec	-1.3	01:23	05:08	23°	E	23°	05:09	10°	E
28-Dec	-3.5	05:06	06:41	25°	W	59°	06:46	10°	ESE
29-Dec	-3.6	03:12	05:54	68°	SSE	68°	05:57	10°	ESE
29-Dec	-2.3	05:53	07:27	10°	W	28°	07:33	10°	SSE
30-Dec	-1.2	01:18	05:06	21°	E	21°	05:08	10°	E
30-Dec	-2.8	04:44	06:39	23°	WSW	38°	06:44	10°	SE
31-Dec	-3.1	02:57	05:52	47°	S	47°	05:55	10°	ESE
31-Dec	-1.5	04:15	07:26	10°	WSW	16°	07:30	10°	S

A good quick way to check passes is to use one of these excellent apps:



Android:
ISS Detector Satellite Tracker



iOS:
ISS Spotter

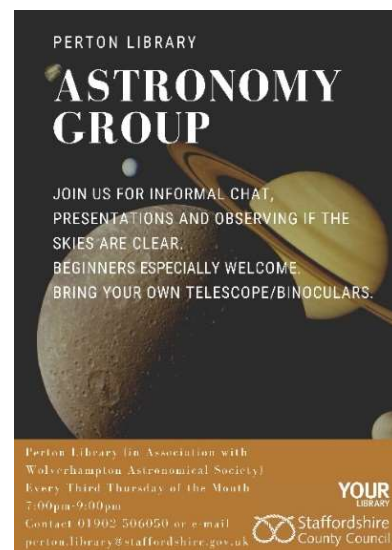
PERTON LIBRARY ASTRONOMY GROUP

The group meets on the third Thursday of every month of the year at Periton Library (WV6 7QU or on what3words the entrance is ///saints.empty.stands), from 7pm to 9pm. No subscription, no need to book, all free, just drop in at any time during the evening. The group is a relaxed and friendly gathering with the occasional talk.

Note – we have had to change our December meeting to Tuesday 19 December when the author will give a presentation about the Star of Bethlehem.

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.