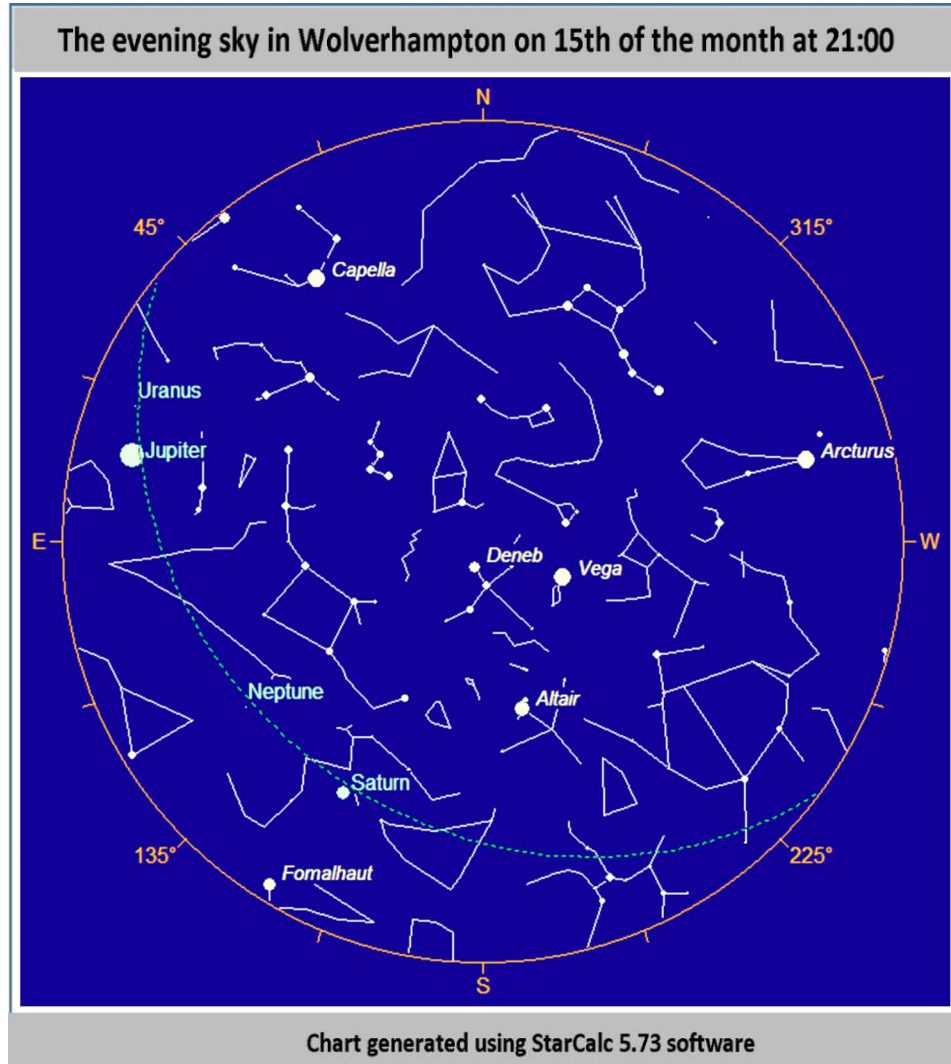


The Night Sky in September 2023



Monthly guide compiled by Doug Bickley

PERTON LIBRARY
ASTRONOMY
GROUP



Diary of events to look out for this month:

- 1 Aurigid meteor shower peak (unfavourable)
- 4 Moon forms triangle with Jupiter & Uranus
- 5 Moon below Pleiades (evening)
- 16 Mars just above crescent Moon (evening twilight)
- 14 New Moon
- 19 Neptune at opposition
- 21 Periton Astronomy Group meeting 7pm
- 22 Mercury greatest western elongation (morning twilight)
- 23 Autumn equinox
- 27 Moon & Saturn conjunction (morning)
- 29 Full Moon

THE MOON

Phases	
Third (last) quarter	6 Sept
New Moon	14 Sept
First quarter	22 Sept
Full Moon	29 Sept



[Graphic generated by Coelix Apex software]

New Moon is on 14 September and Full Moon is on 29 September.

September's Harvest Moon is the full Moon that occurs closest to the September (autumnal) equinox and this time also corresponds with the traditional harvesting of corn. Also called the Corn Moon or Barley Moon and so called because this is when crops are gathered at the end of the summer season. At this time, the Moon appears particularly bright and rises early, letting farmers continue harvesting into the night.

Harvest Moon corresponds with the Anglo-Saxon name, while other Celtic and Old English names are Wine Moon and Song Moon.

THE SUN

Chart of sunrise and sunset times in Wolverhampton:

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

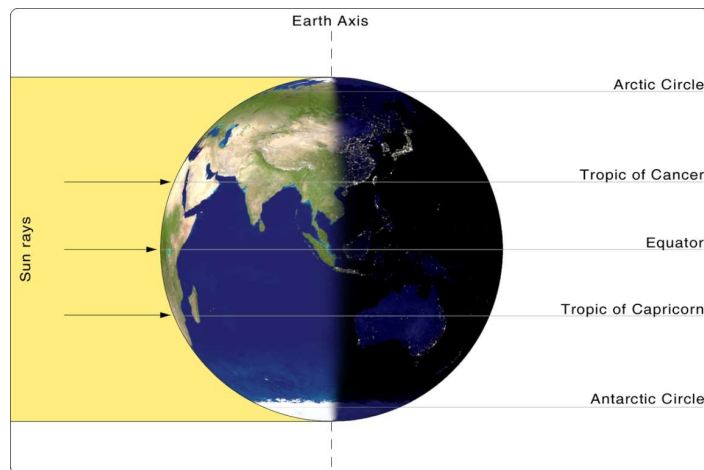
Date		Sun			Day length Lenth	Astronomical Twilight		Nautical Twilight		Civil Twilight	
		Sunrise	Sunset	Solar Noon		Start	End	Start	End	Start	End
Sep-01	Fri	6:19 AM	7:58 PM	1:08 PM	13:39:03	4:09 AM	10:07 PM	4:59 AM	9:18 PM	5:43 AM	8:33 PM
Sep-08	Fri	6:30 AM	7:41 PM	1:06 PM	13:11:03	4:26 AM	9:45 PM	5:13 AM	8:59 PM	5:55 AM	8:16 PM
Sep-15	Fri	6:42 AM	7:25 PM	1:03 PM	12:42:46	4:42 AM	9:25 PM	5:26 AM	8:40 PM	6:07 AM	7:59 PM
Sep-22	Fri	6:54 AM	7:08 PM	1:01 PM	12:14:19	4:57 AM	9:05 PM	5:39 AM	8:23 PM	6:20 AM	7:42 PM
Sep-29	Fri	7:05 AM	6:51 PM	12:58 PM	11:45:49	5:10 AM	8:46 PM	5:52 AM	8:05 PM	6:32 AM	7:25 PM
Sep-30	Sat	7:07 AM	6:49 PM	12:58 PM	11:41:46	5:12 AM	8:44 PM	5:53 AM	8:03 PM	6:33 AM	7:23 PM

This time of year presents a good time for stargazers to make the most of the improved seeing conditions as the summer's heat haze begins to die down (I joke!)

Summer is officially over! (Well astronomical summer anyway).

Constellations that are prominent in the mid to late evening sky in September include Cygnus, Aquila, Lyra, Perseus, and Cassiopeia, with the Great Square of Pegasus to the east of Cygnus. The "Summer Triangle" is also prominent, as is the constellation of Andromeda, which contains M31, also known as the Andromeda Galaxy (originally named the Andromeda Nebula).

The September Equinox marks the first day of autumn in the northern hemisphere, and the first day of spring in the southern hemisphere.



An equinox is not just a date but an exact point in time, this year the Autumn Equinox occurs on the 23 September at 6:50am GMT (7:50am BST). The Sun will be directly over the equator and as a result, the day and night almost exactly the same length throughout most of the world.

PLANETS THIS MONTH

Here is the usual run down of planetary movements for the month of September.

Mercury is in the E in Leo at a maximum altitude of 7° shining at mag -0.5 which is only a slight improvement. It won't be visible early in the month. Inferior conjunction is on 6 September, when the planet lines up with the Sun, and it will be a morning object. After greatest western elongation on 22 September it will increase in brightness but being close to the Sun take care with observations. If you do spot it don't forget that as an inferior planet (its orbit lies between the Earth and Sun) like Venus, Mercury shows phases.

Venus is still in the E in Leo at an improved maximum altitude of 18° , a brilliant morning object shining at the beginning of the month at mag -4.3 and rising well before the Sun. Greatest western elongation will occur next month and it will then be visible in the early hours against dark skies.

Mars is not visible this month, being too close to the Sun.

Jupiter is still in Aires in the S, at a maximum altitude of 52° , shining at mag. -2.5 and is visible all night. A bright unmistakable object in the sky it is close to a waning Moon on the nights of 4 and 5 September.

Saturn is in Aquarius in the S with a maximum altitude of 24° and shining at mag +0.5 but still easily found after opposition at the end of August due south all month. As the altitude has improved over last year views of the planet should be better and given clear skies the rings will be easily seen.

Uranus is in the S in Aries reaching a maximum altitude of about 55° and shining at mag +5.7 so should be identifiable with binoculars if you know where to look. There are many apps for mobile phones that can help.

Neptune is the S in Pisces at a maximum altitude of 34° but shining at only mag +7.8 and as for Uranus you will require at least a good set of binoculars to see a tiny dot which is the blue giant planet.

METEOR SHOWERS

Alpha Aurigids

The Aurigid meteor shower will be active from 28 August to 5 September, producing its peak rate of meteors around 1 September at an altitude of 55° after midnight. Since the radiant point in the constellation Auriga is circumpolar it is always above the horizon and the shower will be active throughout the night.

Don't expect too much from this meteor shower – it is classed as a minor one, expect maybe only five meteors in an hour. Also the Moon will be only 2 days past full, presenting significant interference throughout the night. The parent body responsible for creating the Aurigid shower has been identified as comet C/1911 N1 (Kieess).

Perseids last month

Members of the Wolverhampton Astronomical Society had a successful meteor watch on Friday 11 August and we saw several Perseids including a couple of really spectacular meteor trails.

Despite taking lots of pictures the author did not catch one at all, but Steve Wootton got this great shot of one of the Perseids.



But - keep looking up anyway, you may be lucky and see a sporadic meteor not associated with any particular shower.

PHENOMENA OF THE MONTH

(Table generated using Coelix Apex software):

The phenomena of the month : September 2023		
Times are given in daylight time for Perton (2° 11' 0" W, 52° 35' 0" N, zone R).		
Date	Hour	Description of the phenomenon
yyyy mm dd	hh:mm	
1	2023 08 31	22:35 Meteor shower : Alpha Aurigids (6 meteors/hour at zenith; duration = 8.0 days)
2	2023 09 06	07:09 INFERIOR CONJUNCTION of Mercury with the Sun (geoc. dist. center to center = 3.8°)
3	2023 09 06	18:21 LAST QUARTER OF THE MOON
4	2023 09 09	17:04 Meteor shower : Sept. Perseids (5 meteors/hour at zenith; duration = 16.0 days)
5	2023 09 09	22:51 Close encounter between the Moon and Pollux (topocentric dist. center to center = 2.1°)
6	2023 09 12	11:42 Moon at apogee (geocentric dist. = 406291 km)
7	2023 09 12	23:47 Close encounter between the Moon and Regulus (topocentric dist. center to center = 3.3°)
8	2023 09 14	21:40 NEW MOON
9	2023 09 18	00:00 VENUS at maximum brightness (magn. -4.58)
10	2023 09 22	06:00 GREATEST WESTERN ELONGATION of Mercury (17.8°)
11	2023 09 22	15:32 FIRST QUARTER OF THE MOON
12	2023 09 23	02:50 AUTUMN EQUINOX
13	2023 09 23	14:00 Mercury at its perihelion (distance to the Sun = 0.30750 AU)
14	2023 09 24	17:32 Close encounter between the Moon and Pluto (topocentric dist. center to center = 3.4°)
15	2023 09 27	21:05 Moon at perigee (geocentric dist. = 359911 km)
16	2023 09 29	05:57 FULL MOON

International Space Station (ISS) forecast time for visible passes this month

Lots of visible passes from Wolverhampton this month including some really bright ones lasting a few minutes so they should be easily spotted.

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.
13-Sep	-1.2	00:07	21:22	10°	SSW	11°	21:22	11°	SSW
14-Sep	-1.9	01:58	20:34	10°	S	14°	20:36	14°	SE
14-Sep	-0.9	00:03	22:09	10°	SW	10°	22:09	10°	SW
15-Sep	-2.7	02:16	21:21	10°	SW	30°	21:23	30°	S
16-Sep	-2.6	04:10	20:33	10°	SSW	27°	20:37	21°	ESE
16-Sep	-1.5	01:06	22:09	10°	WSW	19°	22:10	19°	WSW
17-Sep	-3.6	03:08	21:20	10°	WSW	56°	21:23	56°	S
18-Sep	-3.4	04:59	20:32	10°	SW	45°	20:37	22°	E
18-Sep	-1.6	01:26	22:08	10°	W	23°	22:10	23°	W
19-Sep	-2.9	06:10	19:43	10°	SW	34°	19:49	10°	E
19-Sep	-3.9	03:20	21:19	10°	W	74°	21:23	74°	S
20-Sep	-3.8	05:08	20:31	10°	WSW	66°	20:36	24°	E
20-Sep	-1.5	01:23	22:08	10°	W	23°	22:09	23°	W
21-Sep	-3.5	06:35	19:42	10°	WSW	55°	19:49	10°	E
21-Sep	-3.8	03:12	21:19	10°	W	73°	21:22	73°	SW
22-Sep	-3.8	05:00	20:30	10°	W	77°	20:35	28°	E
22-Sep	-1.3	01:10	22:07	10°	W	20°	22:08	20°	W
23-Sep	-3.7	06:42	19:42	10°	WSW	73°	19:48	10°	E
23-Sep	-3.4	02:59	21:18	10°	W	57°	21:21	57°	SW
24-Sep	-3.8	04:46	20:30	10°	W	72°	20:34	32°	ESE
24-Sep	-1.0	00:50	22:06	10°	W	15°	22:07	15°	W
25-Sep	-3.7	06:33	19:41	10°	W	77°	19:47	11°	E
25-Sep	-2.7	02:43	21:18	10°	W	38°	21:20	38°	SW
26-Sep	-3.4	04:34	20:29	10°	W	53°	20:33	31°	SE
26-Sep	-0.6	00:14	22:06	10°	W	11°	22:06	11°	WSW
27-Sep	-3.5	06:27	19:40	10°	W	64°	19:46	12°	ESE
27-Sep	-1.9	02:23	21:17	10°	W	23°	21:19	23°	SW
28-Sep	-2.5	04:27	20:28	10°	W	32°	20:32	23°	SSE
29-Sep	-2.9	06:25	19:39	10°	W	43°	19:46	10°	SE
29-Sep	-1.1	01:38	21:17	10°	WSW	13°	21:18	13°	SW
30-Sep	-1.5	04:16	20:27	10°	W	18°	20:32	13°	S

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



Android:
ISS Detector Satellite Tracker



iOS:
ISS Spotter

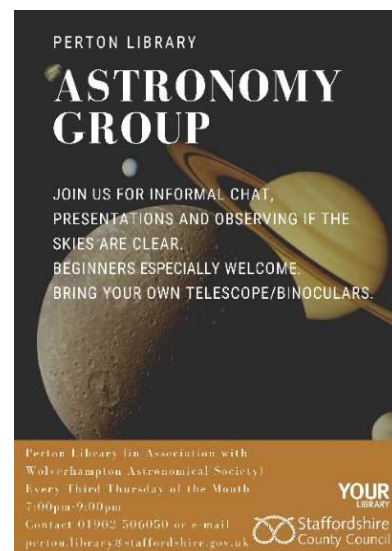
PERTON LIBRARY ASTRONOMY GROUP

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.

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 already well planned and here is a taster:

Date	Speaker	Title of Talk
11/09/23	President.	'David Harris' Lecture
25/09/23	Keaton Stone	Adventures in Space and Telly
09/10/23	AGM	Phil Barnard – Science Fact or Science Fiction
23/10/23	Richard Goodrich	Comet Madness
06/11/23	TBC	
20/11/23	Martin Griffiths	To be decided by Council
04/12/23	Gary Palmer	Astro Imaging
08/01/24	Steve Barrett	End Of Everything
22/01/23	Mark McIntyre	Meteors
05/02/24	Paul Money	To be decided by Council
19/02/24	Dr Megan Aro	
04/03/24	Paul Pope Lecture	TBC (Chris Lintott?)
18/03/24	Steve Tonkin	Right Light At Night
15/04/24	Damian Hardwick	Sir Bernard Lovell & His Telescope
13/05/24	John Thatcher	JWST
10/06/24	Members Evening	Members talks or discussion tables



The host location for our new 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.

The Wolvas 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 (see website).

Lectures in person or online will only be available to paid-up members of Wolverhampton Astronomical Society.

Watch out for updates

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