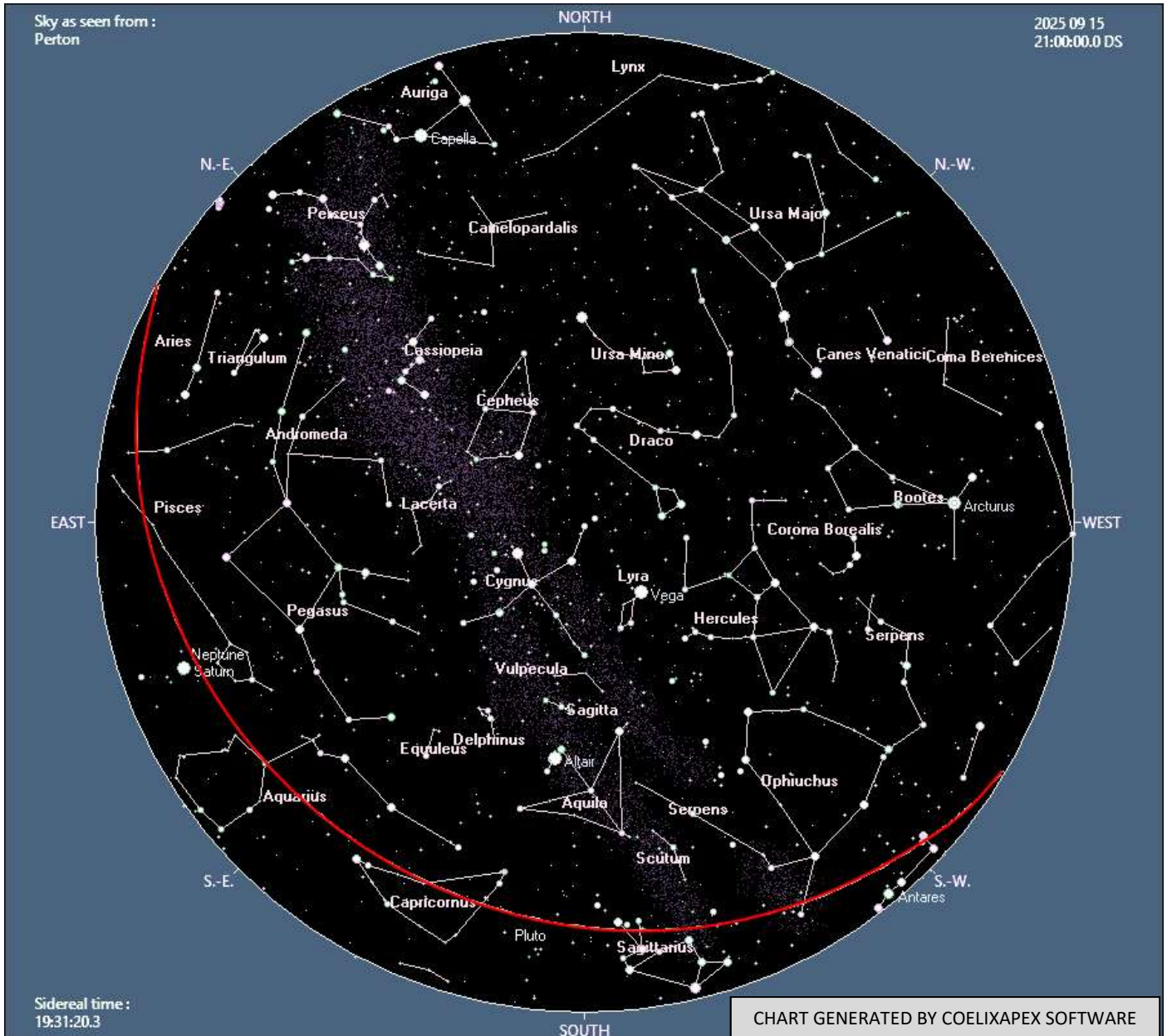
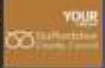


# The Night Sky in September 2025



*Monthly Guide*  
compiled by Doug Bickley

PERTON LIBRARY  
ASTRONOMY  
GROUP



**This month I've decided to trial a larger star chart**  
*(we will discuss this at the Perton Astronomy Group meeting)*

- The chart is based on location  $52.6^{\circ}$  N,  $2.2^{\circ}$  W (Perton, Wolverhampton) @ 21:00 on 15/09/2025
- We are looking SOUTH (as shown at the bottom of the chart) at the constellations Capricornus and Aquila
- 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 constellation Camelopardalis and up to Ursa Minor and Cassiopeia
- The red line is the ecliptic

## Events to look out for this month:

- 1 Venus below Beehive Cluster M44 (morning twilight)
- 1 Aurigid meteor shower peak (see below)
- 7 Full Moon
- 7 Total lunar eclipse (evening twilight)
- 8 Full Moon close to Neptune and Saturn
- 12 Moon occults Pleiades M45 (evening)
- 12 Moon above Uranus (evening)
- 16 Crescent Moon above Jupiter right of Castor and Pollux (morning)
- 17 Moon forms square with Pleiades M45, Aldebaran and Uranus (morning)
- 18 Crescent Moon below Beehive Cluster (morning)
- 18 Perton Library Astronomy Group meeting 7pm
- 19 Crescent Moon above Venus close to Regulus (morning twilight)
- 20 Crescent Moon below left of Venus (morning twilight)
- 21 Saturn at opposition – visible all night
- 21 New Moon
- 22 Autumn Equinox
- 23 Neptune at opposition – visible all night

## The phenomena of the month : September 2025

Times are given in daylight time 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 09 01	01:45	Close encounter between Venus and M 44 (topocentric dist. center to center = 1.4°)
2	2025 09 02	19:38	Maximum of the variable star delta Cephei
3	2025 09 03	02:04	Minimum of the variable star Algol (beta Persei)
4	2025 09 04	18:11	Minimum of the variable star beta Lyrae
5	2025 09 05	01:19	Maximum of the variable star eta Aquilae
6	2025 09 05	22:53	Minimum of the variable star Algol (beta Persei)
7	2025 09 07	19:09	FULL MOON (total eclipse of the Moon partly visible in Perton)
8	2025 09 07	22:08	Beginning of occultation of 90-phi Aqr (magn. = 4.22)
9	2025 09 07	23:13	End of occultation of 90-phi Aqr (magn. = 4.22)
10	2025 09 08	04:25	Maximum of the variable star delta Cephei
11	2025 09 08	19:42	Minimum of the variable star Algol (beta Persei)
12	2025 09 08	20:51	Close encounter between the Moon and Neptune (topocentric dist. center to center = 1.6°)
13	2025 09 10	05:23	Meteor shower : Sept. Perseids (5 meteors/hour at zenith; duration = 16.0 days)
14	2025 09 10	04:24	Maximum of the variable star zeta Gemini
15	2025 09 10	13:09	Moon at perigee (geocentric dist. = 364777 km)
16	2025 09 11	16:30	Minimum of the variable star Algol (beta Persei)
17	2025 09 12	03:43	Beginning of occultation of 48-epsilon Ari (magn. = 5.16)
18	2025 09 12	04:51	End of occultation of 48-epsilon Ari (magn. = 5.16)
19	2025 09 12	05:34	Maximum of the variable star eta Aquilae
20	2025 09 12	21:45	Beginning of occultation of 23 Tau, Merope, (magn. = 4.14)
21	2025 09 12	22:04	End of occultation of 17 Tau, Electra, (magn. = 3.72)
22	2025 09 12	22:09	Beginning of occultation of 25-eta Tau, Alcyone, (magn. = 2.85)
23	2025 09 12	22:23	Close encounter between the Moon and the Pleiades (topocentric dist. center to center = 0.0°)
24	2025 09 12	22:26	End of occultation of 23 Tau, Merope, (magn. = 4.14)
25	2025 09 12	22:48	Beginning of occultation of 28 Tau, Pleione, (magn. = 5.05)
26	2025 09 12	22:55	Beginning of occultation of 27 Tau, Atlas, (magn. = 3.62)
27	2025 09 12	22:56	End of occultation of 25-eta Tau, Alcyone, (magn. = 2.85)
28	2025 09 12	23:13	End of occultation of 27 Tau, Atlas, (magn. = 3.62)
29	2025 09 12	23:27	End of occultation of 28 Tau, Pleione, (magn. = 5.05)

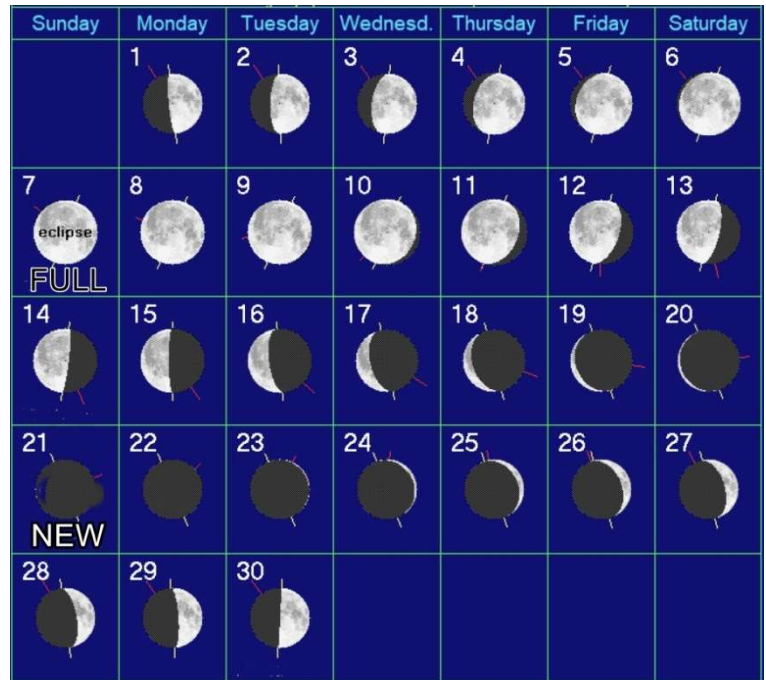
# THE MOON

## Lunar Phases this month

Full Moon is on 7 September.

There is a total lunar eclipse on 7 September visible in Wolverhampton (see below). The total lunar eclipse is sometimes called a blood moon, as the Moon turns red.

New Moon is on 21 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. Before the days when we had electric lights the farmers depended on the Moon's light to harvest their crops late into the night, and this was useful in the days before and after the Full Moon. The Harvest Moon was also be called the Corn Moon or Barley Moon.

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

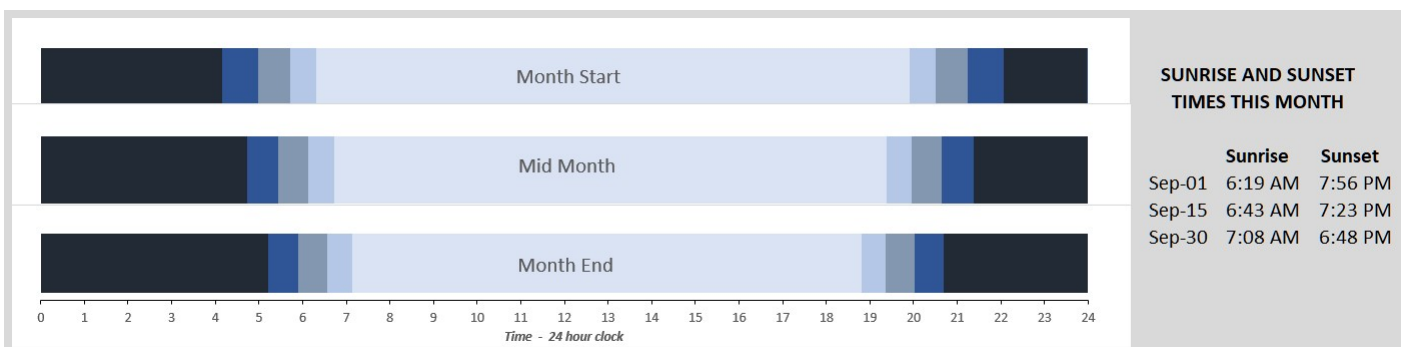
You'll find some information about this on the Royal Museum Greenwich website:

<https://www.rmg.co.uk/stories/topics/what-are-names-full-moons-throughout-year>

On 7 September the Moon will pass through the Earth's shadow between 17:27 and 20:56 BST, creating a total lunar eclipse. It will be difficult to see from Wolverhampton since the Moon will rise partway through the eclipse, the combination of a very low moon and the total eclipse phase will make the moon so dim that it will be extremely difficult to view until moon gets higher in the sky or the total phase ends.

# 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	

## PLANETS THIS MONTH

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

Planetrise/Planetset, Mon, 15 Sep 2025				
Planet	Rise	Set	Meridian	Comment
<b>Mercury</b>	Mon 06:48	Mon 19:34	Mon 13:12	Extremely difficult to see
<b>Venus</b>	Mon 03:58	Mon 18:39	Mon 11:19	Fairly good visibility
<b>Mars</b>	Mon 09:52	Mon 20:15	Mon 15:04	Difficult to see
<b>Jupiter</b>	Mon 00:47	Mon 17:08	Mon 08:58	Fairly good visibility
<b>Saturn</b>	Mon 19:39	Tue 07:16	Tue 01:27	Perfect visibility
<b>Uranus</b>	Sun 21:29	Mon 13:26	Mon 05:28	Average visibility
<b>Neptune</b>	Mon 19:35	Tue 07:31	Tue 01:33	Slightly difficult to see

*Data from timeanddate.com*

The days are getting shorter, and the autumn equinox is on 22 September, when day and night hours are roughly equal. Time to start observing, and we still have fairly mild nights.

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

**Mercury** is in Leo in the ENE at a maximum altitude  $5.5^\circ$ , shining at mag -1.6 and a morning planet. Superior conjunction is on 13 September and after this it will be poorly positioned for observing.

**Venus** is in the SSW in Leo at a maximum altitude of  $45^\circ$ , shining at mag -3.8 and still a morning planet. On 1 September it is close to the Beehive Cluster (M44) and on 19 September it will be occulted by a thin crescent Moon at midday which given clear skies will be worth trying to see, the planet disappears to the left side of the Moon and reappears an hour later.

**Mars** will be moving into the area where it is near the Sun in the sky so that its apparent brightness decreases, making it very faint or difficult to see.

**Jupiter** is in Gemini in the SE at a maximum altitude of  $50^\circ$ , shining at mag. -2.0 by month end as observing improves. On the morning of 16 September it is close to a 30%-lit waning crescent Moon.

**Saturn** is still in the S in Pisces at a maximum altitude of  $35^\circ$ , shining at mag +0.2 and reaching opposition on 21 September. On 8 September, it will be close to a 98%-lit waning gibbous Moon in the evening. The tilt angle of the rings is still reducing to less than  $2^\circ$  at month end, but this gives opportunities to see Saturn's largest moon Titan. Currently, Saturn and Neptune remain close to one another in the sky. We mustn't forget how far away Saturn is – currently 1.3 billion km, or 800 million miles, and its light takes over an hour to reach us.

**Uranus** is in the S in Taurus, shining at mag. +5.8 at a maximum altitude of  $57^\circ$  by month end. At the start of the month it will lie just below the Pleiades.

**Neptune** is still in the S in Pisces at a maximum altitude of  $36^\circ$ , shining at mag. +7.8 and reaching opposition on 23 September, close to Saturn.

## SEPTEMBER OBSERVING

September is a great month for stargazing with so many constellations and objects on view, the nights are getting darker but are by and large comfortably warm.

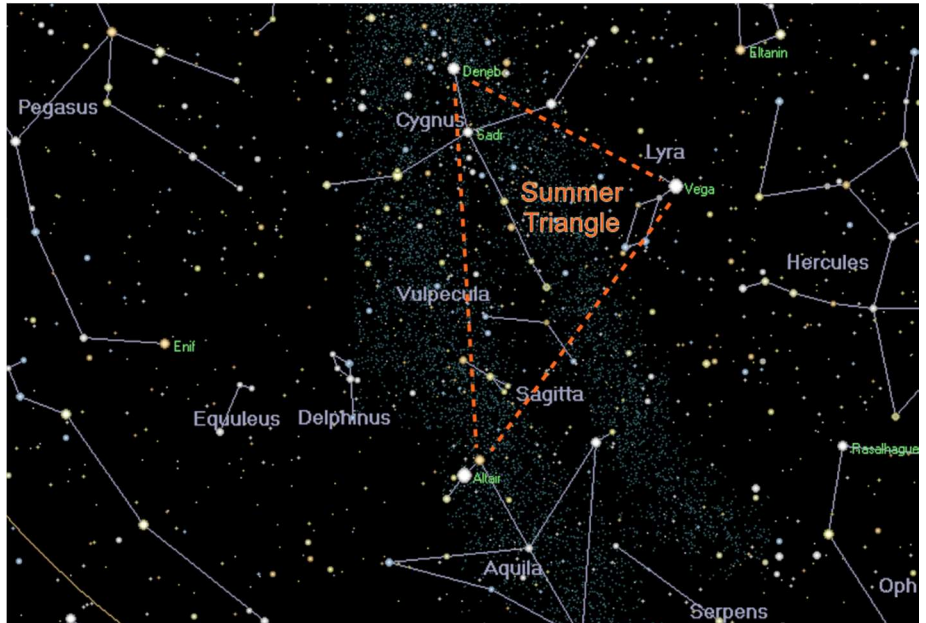
**Looking south**, three bright stars dominate, in a triangle covering a large part of the southern sky known as the Summer Triangle.

The three stars marking this are:

Vega, the brightest, almost overhead;

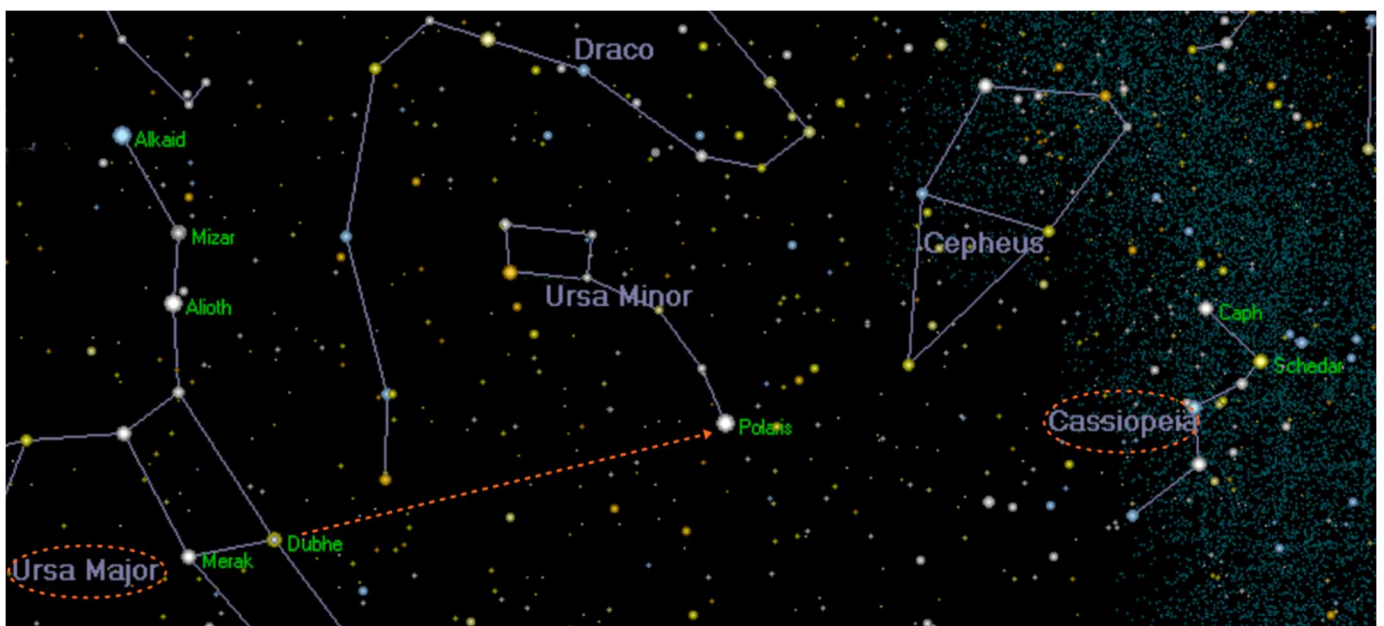
Deneb, to its left (east), not quite as bright;

and Altair, in mid sky below.



- Starting with Vega, find little quadrilateral of stars making up the body of Lyra.
- Now find Deneb, and see if you see the giant cross shape - the Northern Cross - or its official name, Cygnus, the Swan, which has Deneb at its tail and the faint double star, Albireo, at its head.
- Altair is in the constellation of Aquila, the Eagle.

**Looking north**, the Plough asterism – Ursa Major - is down over to the north-west. Follow its two right-hand stars upward and move a little towards the W-shape of Cassiopeia and you come to the Pole Star, Polaris. This is the pivot point of the whole sky, and it remains in almost the same spot the whole year round.



# International Space Station (ISS)



A few facts:

- The space station has been continuously occupied since November 2000
- It travels at a speed of five miles per second, orbiting Earth about every 90 minutes
- In 24 hours, the space station makes 16 orbits of Earth, traveling through 16 sunrises and sunsets
- The solar array wingspan (356 feet, 109 meters) is longer than the world's largest passenger aircraft, the Airbus A380 (262 feet, 80 metres)

## Forecast time for all visible passes this month

Date	Mag	Transit time	Start			High point	End		
			Time	Alt.degs.	Az		Time	Alt.degs.	Az
09-Sep	-1.4	00:18	21:07	10°	S	11°	21:07	11°	S
10-Sep	-1.6	00:50	20:20	10°	SE	10°	20:21	10°	SE
10-Sep	-1.5	00:49	21:53	10°	SW	16°	21:54	16°	SW
11-Sep	-2.8	02:58	21:04	10°	SSW	27°	21:07	27°	SSE
12-Sep	-2.2	04:44	20:15	10°	SSW	20°	20:20	11°	E
12-Sep	-2.6	02:08	21:51	10°	WSW	34°	21:53	34°	SW
13-Sep	-3.4	04:07	21:01	10°	SW	45°	21:05	35°	ESE
13-Sep	-1.0	00:33	22:38	10°	W	14°	22:38	14°	W
14-Sep	-3.0	05:54	20:12	10°	SW	34°	20:18	11°	E
14-Sep	-3.1	02:33	21:48	10°	WSW	48°	21:51	48°	WSW
15-Sep	-3.8	04:27	20:59	10°	WSW	65°	21:03	36°	E
15-Sep	-1.0	00:42	22:36	10°	W	15°	22:36	15°	W
16-Sep	-3.5	06:14	20:10	10°	WSW	54°	20:16	12°	E
16-Sep	-3.1	02:34	21:46	10°	W	49°	21:49	49°	WSW
17-Sep	-3.9	04:24	20:57	10°	W	77°	21:01	40°	E
17-Sep	-0.9	00:36	22:33	10°	W	14°	22:34	14°	W
18-Sep	-3.8	06:12	20:07	10°	WSW	72°	20:13	13°	E
18-Sep	-2.8	02:24	21:44	10°	W	42°	21:46	42°	WSW
19-Sep	-3.8	04:14	20:54	10°	W	73°	20:58	44°	ESE
19-Sep	-0.7	00:19	22:31	10°	W	12°	22:31	12°	W
20-Sep	-3.8	06:02	20:05	10°	W	77°	20:11	15°	E
20-Sep	-2.3	02:11	21:41	10°	W	32°	21:44	32°	WSW
21-Sep	-3.5	04:02	20:52	10°	W	55°	20:56	42°	SSE
22-Sep	-3.6	05:54	20:02	10°	W	66°	20:08	16°	ESE
22-Sep	-1.8	01:54	21:39	10°	W	22°	21:41	22°	WSW
23-Sep	-2.7	03:53	20:49	10°	W	35°	20:53	30°	S
24-Sep	-3.1	05:52	20:00	10°	W	46°	20:06	14°	SE
24-Sep	-1.1	01:15	21:37	10°	WSW	14°	21:38	14°	SW
25-Sep	-1.8	03:43	20:47	10°	W	20°	20:51	17°	S
26-Sep	-2.2	05:50	19:57	10°	W	28°	20:03	10°	SSE
27-Sep	-0.9	01:44	20:46	10°	WSW	11°	20:47	10°	SSW
28-Sep	-1.2	04:17	19:55	10°	WSW	16°	19:59	10°	S

You can also install these apps to check for passes

**Android:**  
ISS Detector  
Satellite Tracker



**iOS:**  
ISS Spotter



All visible evening passes are shown.

Check the Heavens-Above website for this and the latest forecasts.

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

## METEOR SHOWERS

The **Aurigid meteor shower** 2025 in the UK will be active from August 28 to September 5, with its peak on September 1. From Wolverhampton, the radiant of the shower will appear at a peak altitude of  $60^\circ$  above the horizon, and is circumpolar, so visible all night. This is not one of the best meteor showers and at its peak the theoretical maximum rate is around 5 meteors per hour based on viewing from a dark sky site, so in practise less than this, but we'll include it here for completeness.

And of course there is always the chance of seeing the odd sporadic meteor.



**Last month Wolverhampton Astronomical Society organised a meteor watch event for the Perseid meteor shower.**

This was well attended by 16 members and fairly successful with several meteors seen visually, luckily a low full moon didn't interfere too much.

The author took around 450 images and captured several meteors.

This wide field picture is a composite of several images showing Perseids close to Ursa Major:



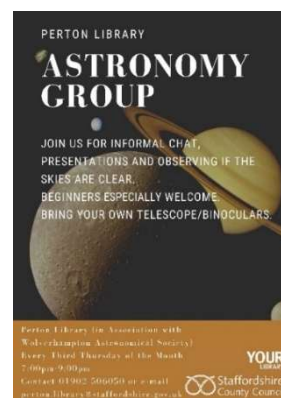
## PERTON LIBRARY ASTRONOMY GROUP

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 ///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](http://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:

08-Sep-25	Dr Andrew Gascoyne (W'ton University)	Dark Spots, Bright Stories: the History of Sunspots
22-Sep-25	David Harris memorial lecture	
06-Oct-25	AGM + Short Talk - Steve Wootton	Short Talk - Constellations
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	Juno Mission (live from Colorado)
16-Mar-26	Simon Banton	The Astronomy of Stonehenge
13-Apr-26	Linda Manas	Trigonometry in astronomy: measuring the Earth and Moon

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.