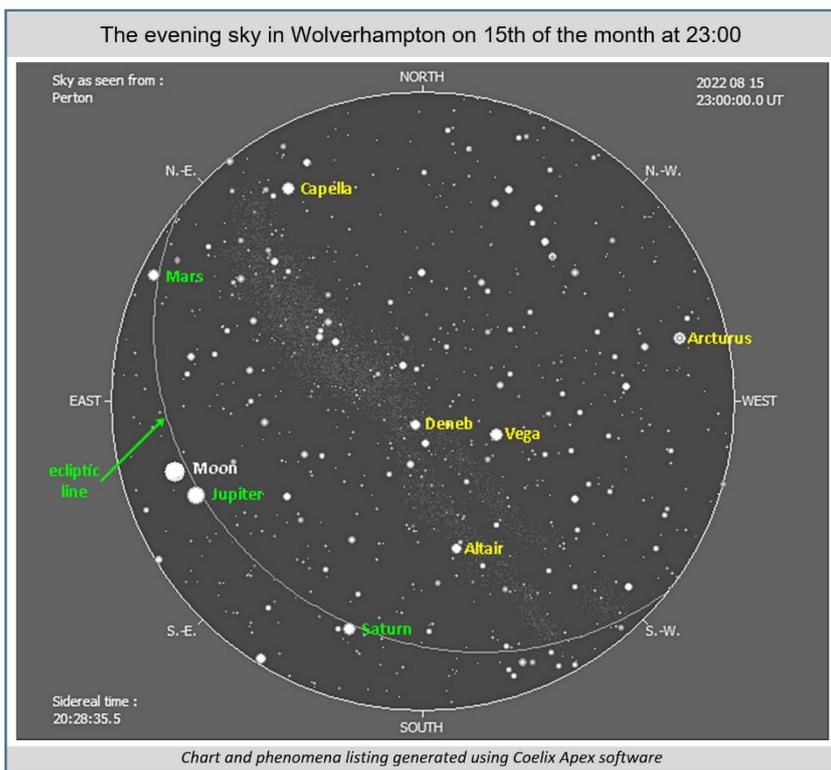


The Night Sky in September 2022

- a quick and easy guide



Monthly Guide
Compiled
by Doug Bickley

MOON PHASES	
First quarter	3 Sept
Full Moon	10 Sept
Third (last) quarter	17 Sept
New Moon	25 Sept

Space Diary

Events this month to look out for:

- 1 Aurigid meteor shower peak (see below) (morning)
- 3 Moon close to Antares (evening twilight)
- 5 Venus close to Regulus (morning twilight)
- 8 Moon below left of Saturn (evening)
- 10 Full Moon (Harvest Moon)
- 10 Moon rises below Neptune, Jupiter to left (evening)
- 11 Moon below left of Jupiter (evening)
- 15 Moon below Pleiades M45 (late evening)
- 15 PLAG meeting at Perton Library (7pm)
- 16 Neptune at opposition
- 16 Moon above Mars, Aldebaran to right (late evening)
- 21 Crescent Moon in Cancer above Beehive Cluster M44 (morning)
- 23 Autumn Equinox - end of summer and beginning of autumn
- 23 Crescent Moon above Regulus
- 24 Slim crescent Moon above Venus (morning twilight)
- 25 New Moon
- 26 Jupiter at opposition
- 30 Crescent Moon close to Antares (evening twilight)

Moon

New moon is on 25 September and the Full Moon is on the 10 September.

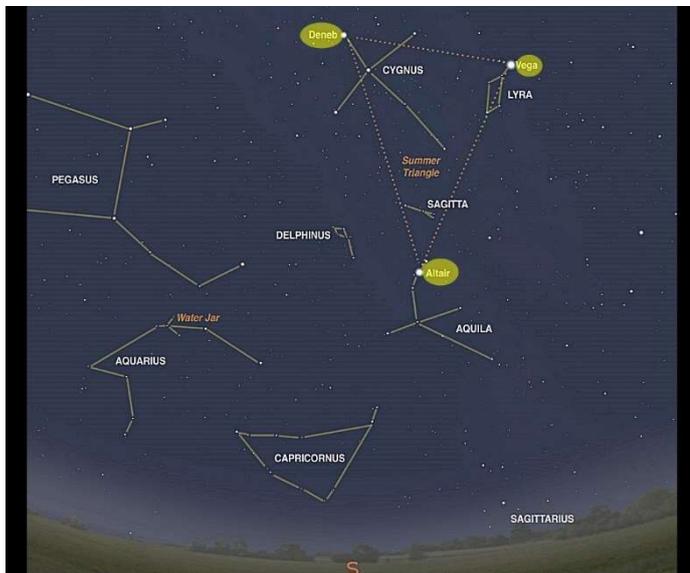
September's full moon is sometimes called the Harvest Moon as it is the nearest full moon to the autumnal equinox. Another name is the full corn moon or the barley moon, so called because this is when crops are gathered at the end of the summer season. At this time, the Moon appears particularly bright and rises early, letting farmers continue harvesting into the night.

[graphic generated by Coelix Apex software]

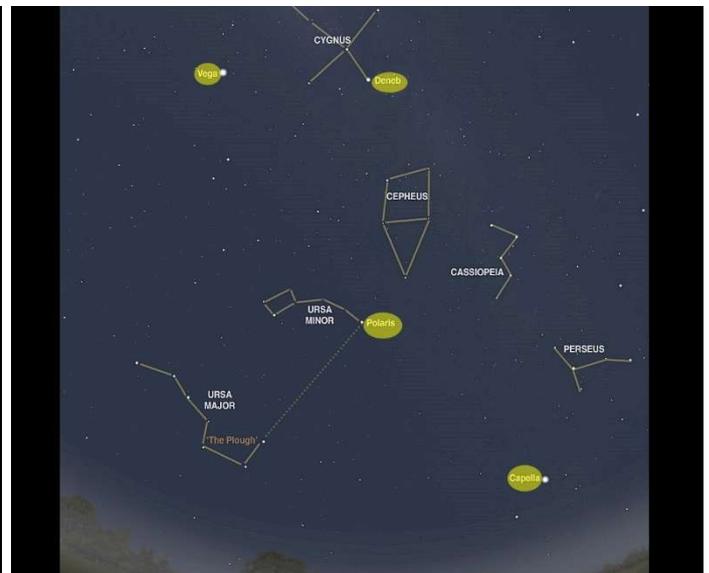
Sunday	Monday	Tuesday	Wednesd.	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10 FULL
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25 NEW	26	27	28	29	30	

September night sky

September is a good month for stargazing, skies are starting to get darker and there are many constellations, asterisms and planets to be seen.



Looking South



Looking North

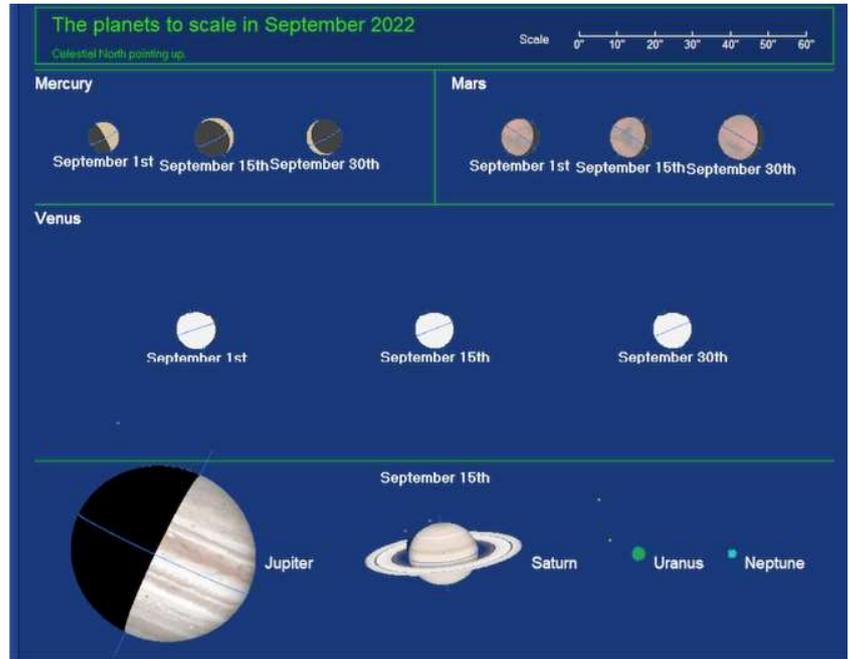
Three bright stars dominate as shown last month, in a triangle covering a large part of the southern sky, and this asterism is known as the Summer Triangle, the stars in question being Vega, the brightest, almost overhead; Deneb, to its left (east), not quite as bright; and Altair.

Of the constellations shown some are easier to spot and learn than others. In the south look to the left of Vega to see the constellation of Lyra made up of four stars. Not all the constellations have bright star signposts but using a planisphere, or using apps on your phone or computer (Stellarium is good and free) you can find them. Looking north however everyone know the shape of Ursa Major (the Plough, Big Dipper in the US and many other names across the world).

Planets this month

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

Things are getting better for observers, Saturn moves into opposition on 14 August, its face will be fully illuminated by the Sun, and it will be at its brightest. Neptune and Jupiter do the same on 16 September and 26 September respectively. These moments are potentially great opportunities for astrophotography, but it may be worth trying your techniques out on Saturn first, because Neptune will be a real challenge.



Jupiter is in the S at a maximum altitude of 37° in Pisces. It will reach opposition on 26 September and this will be the time when it appears brightest and largest for this period of observation. The planet will reach an impressive mag. -2.8 as it moves from Cetus into Pisces through the month. A bright full Moon lies near to Jupiter on the nights of 10 and 11 September which may be a photo opportunity if you have clear skies. As they rise above the eastern horizon in early evening on 11 September, Jupiter and the moon will appear a little over 3° apart.

Saturn is still in the S in Capricornus at a maximum altitude of 21° and following opposition on 14 August remains well placed all month, dropping in brightness only slightly from mag. +0.4 on 1 September to mag. +0.6 by the end of the month. A bright waxing gibbous Moon sits nearby on the nights of 7/8 and 8/9 September. This should be a good month for observations of Saturn.

Mars is still in Taurus at a maximum altitude of 59° in the S. There will be some observation possibilities as the Red Planet shows some changes as it approaches opposition on 8 December. On 1 September, shining at mag. -0.1, it is located just north of the Hyades open cluster. Through a telescope it will be visible given clear skies at mag. -0.6 between the horns of Taurus the Bull by month's end. On the morning of 17 September a waning gibbous Moon will be just 3° north of Mars.

Venus is in the ENE in Leo at a maximum altitude of only 7° . Shining at mag. -3.8 on 1 September, Venus can be seen rising above the ENE horizon 90 minutes before the Sun. Telescopically it isn't a good target and it gets worse as the month progresses.

Mercury is still low at a maximum altitude of only 5° in the E in Virgo. The planet's position in the evening sky is poor at the start of September, appearing dim and setting shortly after sunset. Inferior conjunction is on 23 September. Mercury then re-emerges into the morning sky and becomes easier to see. By month's end it will shine at mag. +1.8 rising 70 minutes before the Sun.

Uranus is in Aires in the S at a maximum altitude of 54° . Still a morning planet it will be easily visible given clear dark skies. You will see a greenish mag. +5.7 disc through a medium sized telescope.

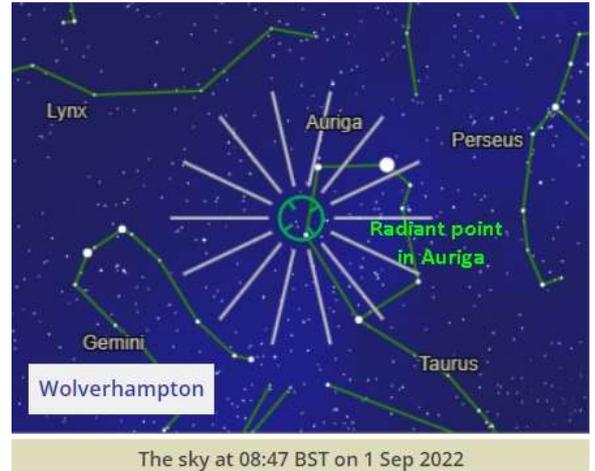
Neptune is in the S in Aquarius at a maximum altitude of 34° , and reaches opposition on 16 September. It's a long way from Earth and you will need good binoculars at least to spot the mag. +7.8 planet.

Meteor Showers – Aurigids

The Aurigid meteor shower is active from 28 August to 5 September, producing its peak rate of meteors around 10:00 BST on 1 September 2022. The parent body responsible for creating the Aurigid shower has been identified as comet C/1911 N1 (Kiess).

This is not one of the best meteor showers and at its peak the theoretical maximum rate is around 6 meteors per hour (ZHR), in practise much less. However we'll include it here for completeness.

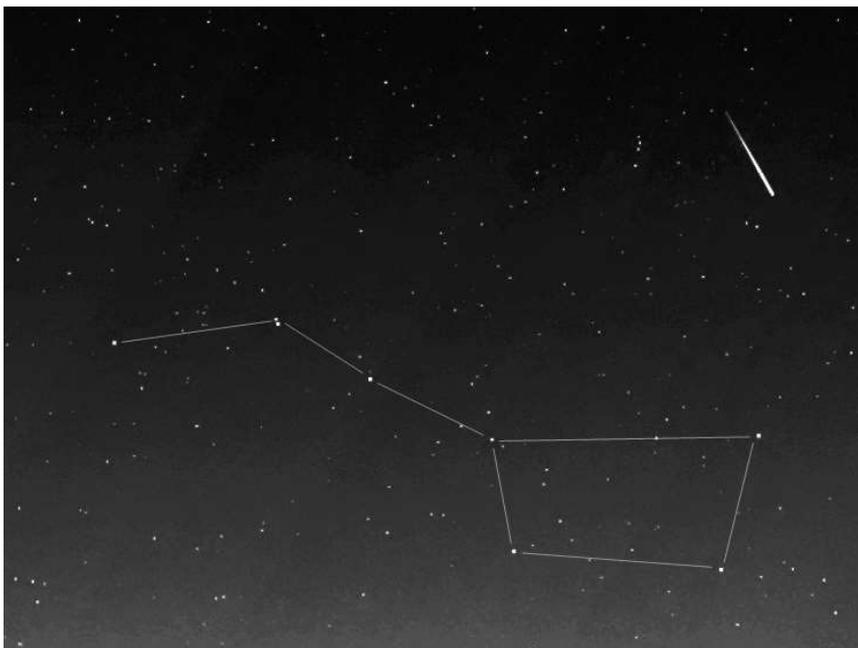
From Wolverhampton the radiant point is circumpolar (which means it is always above the horizon and the shower will be active throughout the night) and the best displays might be seen before dawn on 1 September when the radiant point is highest. The Moon, in Virgo, will be around first quarter phase at the shower's peak, presenting minimal interference.



Last month Wolverhampton Astronomical Society organised a meteor watch event for the Perseid meteor shower. This was well attended, 18 members at various times, and fairly successful with over 20 meteors seen albeit a low full moon blocked out some of the fainter ones.



Early arrivals at the meteor watch event



Here is a capture by the author, a fireball Perseid meteor close to Ursa Major.



Meteor captured by Cath Adams using mobile phone

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

A good number of visible passes this month. As always check the up to date data from the Heavens-Above website or one of the excellent apps shown.

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

Date	Mag	Transit time	Start			High point	End		
			Time	Alt.degs.	Az.		Time	Alt.degs.	Az.
15-Sep	-1.8	01:10	21:03	10°	SSW	16°	21:04	16°	S
16-Sep	-1.8	02:48	20:15	10°	S	14°	20:18	13°	ESE
16-Sep	-1.5	00:59	21:50	10°	SW	18°	21:51	18°	SW
17-Sep	-3.1	03:05	21:01	10°	SW	35°	21:04	35°	SSE
18-Sep	-2.5	04:52	20:12	10°	SSW	26°	20:17	15°	E
18-Sep	-2.2	01:51	21:48	10°	WSW	30°	21:50	30°	WSW
19-Sep	-3.6	03:49	20:59	10°	WSW	55°	21:03	48°	SE
20-Sep	-3.3	05:38	20:11	10°	SW	43°	20:16	16°	E
20-Sep	-2.4	02:06	21:47	10°	W	35°	21:49	35°	WSW
21-Sep	-3.8	03:58	20:58	10°	WSW	73°	21:02	54°	ESE
22-Sep	-3.7	05:46	20:09	10°	WSW	64°	20:15	17°	E
22-Sep	-2.2	02:01	21:46	10°	W	33°	21:48	33°	W
23-Sep	-3.9	03:50	20:57	10°	W	77°	21:01	61°	ESE
24-Sep	-3.8	05:39	20:08	10°	W	77°	20:13	19°	E
24-Sep	-1.9	01:49	21:44	10°	W	28°	21:46	28°	W
25-Sep	-3.8	03:38	20:55	10°	W	65°	20:59	60°	SSE
26-Sep	-3.7	05:28	20:06	10°	W	73°	20:12	21°	ESE
26-Sep	-1.5	01:33	21:43	10°	W	22°	21:45	22°	WSW
27-Sep	-3.2	03:26	20:54	10°	W	44°	20:57	43°	S
28-Sep	-3.4	05:21	20:05	10°	W	56°	20:10	21°	ESE
28-Sep	-1.1	01:06	21:42	10°	W	15°	21:43	15°	WSW
29-Sep	-3.5	06:42	19:16	10°	W	67°	19:23	10°	ESE
29-Sep	-2.2	03:15	20:53	10°	W	26°	20:56	26°	SSW
30-Sep	-2.6	05:19	20:04	10°	W	36°	20:09	16°	SE



Android:
ISS Detector Satellite Tracker



IOS:
ISS Spotter

Phenomena of the month of September (table generated using Coelix Apex software):

	Date	Hour	Description of the phenomenon
	yyyy mm dd	hh:mm	
1	2022 09 01	09:00	Meteor shower : Alpha Aurigids (6 meteors/hour at zenith; duration = 8.0 days)
2	2022 09 03	18:08	FIRST QUARTER OF THE MOON
3	2022 09 05	06:27	Close encounter between Venus and Regulus (topocentric dist. center to center = 0.7°)
4	2022 09 06	23:02	Close encounter between the Moon and Pluto (topocentric dist. center to center = 3.5°)
5	2022 09 07	17:46	Close encounter between Mars and Aldebaran (topocentric dist. center to center = 4.3°)
6	2022 09 07	18:17	Moon at perigee (geocentric dist. = 364492 km)
7	2022 09 10	01:59	Meteor shower : Sept. Perseids (5 meteors/hour at zenith; duration = 16.0 days)
8	2022 09 10	09:59	FULL MOON
9	2022 09 10	21:41	Close encounter between the Moon and Neptune (topocentric dist. center to center = 3.6°)
10	2022 09 14	21:56	Close encounter between the Moon and Uranus (topocentric dist. center to center = 0.1°)
11	2022 09 16	22:50	Close encounter between the Moon and Mars (topocentric dist. center to center = 2.8°)
12	2022 09 17	21:52	LAST QUARTER OF THE MOON
13	2022 09 19	14:44	Moon at apogee (geocentric dist. = 404556 km)
14	2022 09 23	01:04	AUTUMN EQUINOX
15	2022 09 23	06:50	INFERIOR CONJUNCTION of Mercury with the Sun (geoc. dist. center to center = 2.9°)
16	2022 09 25	21:54	NEW MOON

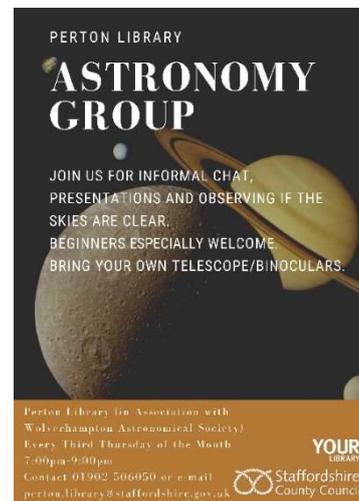
Times are given in UT for Perton

PERTON LIBRARY ASTRONOMY GROUP (PLAG)

The group meets on the third Thursday of every month of the year at Perton 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. Following on from the July meeting, last month we discussed the Perseid meteor shower with examples images and how to distinguish meteors from satellite trails etc. and a discussion on basic image processing.

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

After a very successful season of online lectures we are now planning for the 2022/23 season and have already booked speakers. Talks will now be in person probably also streamed to our YouTube channel, and we may combine this with a hybrid streamed service. Links to anything online will only be available to paid-up members.

The host location for our new live talks will be the University of Wolverhampton in the city centre. Access and facilities are excellent and car parking adjacent. We will send full details later.

Live lectures will be supplemented by the occasional online lecture, please keep an eye on our social media pages and the website for announcements. We will maintain Monday evening chat nights on Zoom, with again the first 30 minutes for beginners to ask questions. In these sessions we give basic astronomy advice and swap tips, sometimes with a short talk.

Invitations to all talks are emailed to members. For the coming year 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 by bank transfer or other means (see website).

The 2022/23 season begins in September, here is a taster for the next programme of speakers:

12/09/22	Andrew Gascoyne	Solar Physics - The Coronal Heating Problem.....Solved?
26/09/22	Steve Wootton	'David Harris' Lecture - Planning an Observation Night
10/10/22	Phil Barnard	(after the AGM) The Linscott Telescope
24/10/22	Gary Poyner	An Introduction to Variable Star Observing
07/11/22	Prof.Don Pollacco	The PLATO Mission - The Habitable Zone Explorer
21/11/22	Dr Jonathan Smoker	TBA
05/12/22	Mary McIntyre FRAS	A History of Women in Astronomy
09/01/23	Steve Warbis	Messier's objects and how they map the Milky Way
06/02/23	Martin Lunn	Astronomy in the Mediterranean
20/02/23	Andrew Newsam	TBC

Lectures in person or online will only be available to paid-up members of Wolverhampton Astronomical Society. We continue to try and bring you some of the best speakers around.

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>) accounts for the latest updates and news.