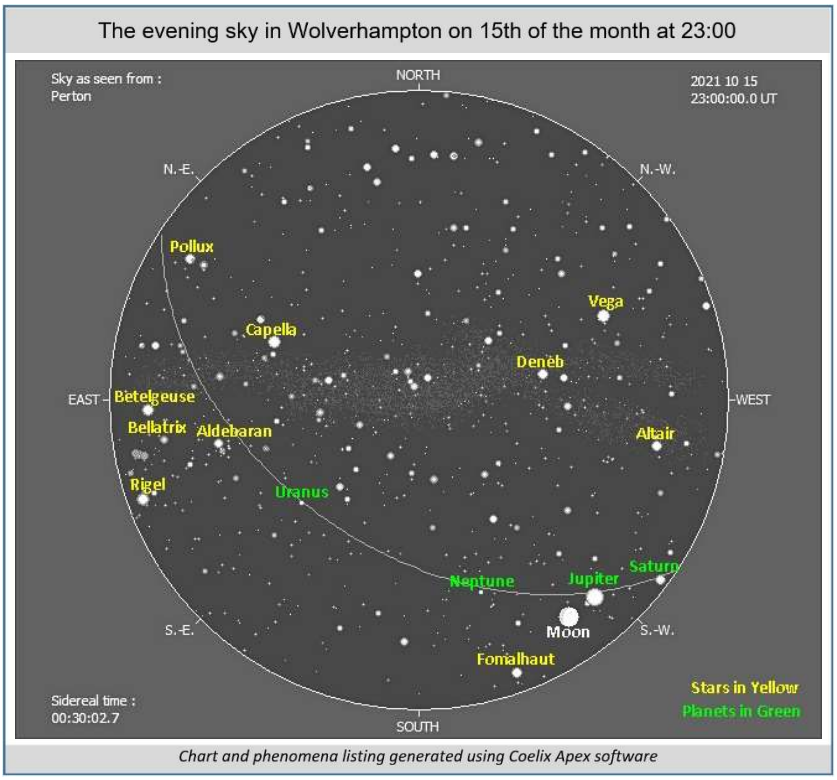
The Night Sky in October 2021

- a quick and easy guide

(short version this month due to holidays)



Perton Library Astronomy Group

Monthly Guide Compiled by Doug Bickley

MOON PHASES	
New Moon	6 Oct
First quarter	13 Oct
Full Moon	20 Oct
Third (last) quarter	28 Oct

Events this month to look out for:

3	Crescent Moon above Regulus (morning)
8	Draconid meteor shower peak (evening, favourable)
9	Crescent Moon above Venus and right of Antares (evening twilight
10	Venus, crescent Moon and Antares form a triangle (evening twilight)
13	First quarter Moon below left of Saturn (evening)
21	Orionid meteor shower peak (unfavourable)
22	Moon below right of Pleiades M45 (evening)
23	Moon above Hyades and Aldebaran (evening)
28	Last quarter Moon near Beehive Cluster (morning)
22	Autumnal Equinox
25	Moon below Pleiades cluster M45 (evening)
31	Moon left of Regulus (morning)
31	British Summer Time ends

Moon:

Full Moon is on the 20 October.

Full Moon in October is the Hunter's Moon. This in folklore is the preferred month to hunt summer-fattened deer and fox unable to hide in bare fields.

Like the September harvest moon, the hunter's moon is also particularly bright and long in the sky, giving hunters the opportunity to stalk prey at night. Other names include the Travel Moon and the Dying Grass Moon.

Planets this month:

Here is the usual run down of planetary movements for October:

Saturn is still in the South in Capricornus and is a good observing target along with Jupiter. On 1 October, Saturn reaches an altitude of 18°, its highest point, due South around 21:00 BST. Whilst this is fairly low it is an improvement over recent years. A waxing gibbous Moon passes South of Saturn on 13 and 14 October. By the end of the month, Saturn will still reach its highest point in relative darkness, although at this time of year there won't be complete astronomical darkness.

Mars is in conjunction with the Sun on 8 October and is not visible this month.

Venus is in the SSW in Ophiuchus but its relative position is poor, remaining low after sunset all month, so observing will not be good. On 1 October Venus sets one hour after the Sun, and by month end that increases to nearly an hour and a half. A 14% lit waxing crescent Moon will be 20° away from the planet on 9 October.

Mercury is in the ESE in Virgo at a low altitude of 7° and probably won't be visible at the start of the month as it sets at almost the same time as the Sun. First sighting is likely to be on 18 October, when the planet shines at mag +0.9 and rises 90 minutes before the Sun.

Uranus is the South in Aries at mag 5.7 and is approaching opposition, when the Earth passes between it and the Sun, placing the planet opposite the Sun in our sky. A planet at opposition is closest to Earth in its orbit and brighter, also rising when the sun sets, and so visible all night. However for Uranus because it is so far away this doesn't have a great effect.

Neptune is still in the South in Aquarius and an altitude of 30° and at mag 7.8 isn't an impossible target by any means during October, larger instruments and clear skies should pick out the light blue disc.

Jupiter is in the South in Capricornus, high in the early evening sky at around 22° during October so ideal for observing. A waxing gibbous Moon sits near the planet on the evenings of 14 and 15 October.

Jupiter has a total of 79 known moons including four largest known as the Galilean moons. The latter were discovered by Italian astronomer Galileo Galilei in 1610 hence their generic name. He originally named them numerically but they are now called Io, Europa, Ganymede and Callisto.

Try to see them on different night because their positions around the planet change dramatically. If you are lucky and have the right equipment you may see one of the moons transiting the planet.

Meteor Showers:

The Draconid meteor shower hits its peak between October 8 and 9. Also known as the Giacobinids, the Draconids belongs to periodic comet 21P/Giacobini-Zinner. The shower tends to be less active than others and it is uncommon to see more than five meteors per hour.

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

There are only a few evening passes this month, although there are some in the early morning not shown below.
Visit the Heavens Above website to check on forecast passes during the month.
[source: https://www.heavens-above.com/]

Date	Mag	Transit time	Start			High point	End		
			Time	Alt.degs.	Az.		Time	Alt.degs.	Az.
01-Oct	-3.3	06:39	19:21	10°	W	57°	19:28	10°	ESE
01-Oct	-1.7	02:45	20:58	10°	W	20°	21:01	19°	SSW
02-Oct	-2.0	04:53	20:11	10°	W	26°	20:16	16°	SSE
03-Oct	-2.4	06:14	19:24	10°	W	35°	19:30	10°	SE
04-Oct	-1.0	03:33	20:15	10°	WSW	14°	20:18	10°	S
05-Oct	-1.3	04:56	19:27	10°	W	19°	19:32	10°	SSE

Phenomena of the month of October *(generated using Coelix Apex software)*:

	Date	Hour	Description of the phenomenon
	yyyy mm dd	hh:mm	
1	2021 10 01	23:59	Close encounter between Mercury and Spica (topocentric dist. center to center = 1.5°)
2	2021 10 03	00:00	Venus at its aphelion (distance to the Sun = 0.72823 AU)
3	2021 10 06	11:05	NEW MOON
4	2021 10 08	04:05	CONJUNCTION between Mars and the Sun (geoc. dist. center to center = 0.6°)
5	2021 10 08	17:28	Moon at perigee (geocentric dist. = 363386 km)
6	2021 10 08	18:30	Meteor shower : Draconids (10 meteors/hour at zenith; duration = 4.0 days)
7	2021 10 09	16:19	INFERIOR CONJUNCTION of Mercury with the Sun (geoc. dist. center to center = 1.9°)
8	2021 10 09	20:24	Close encounter between the Moon and Venus (topocentric dist. center to center = 1.8°)
9	2021 10 10	00:00	Meteor shower : S. Taurids (5 meteors/hour at zenith; duration = 71.0 days)
10	2021 10 13	03:25	FIRST QUARTER OF THE MOON
11	2021 10 13	09:33	Close encounter between the Moon and Pluto (topocentric dist. center to center = 3.0°)
12	2021 10 14	08:07	Close encounter between the Moon and Saturn (topocentric dist. center to center = 4.3°)
13	2021 10 15	11:46	Close encounter between the Moon and Jupiter (topocentric dist. center to center = 4.6°)
14	2021 10 16	20:06	Close encounter between Venus and Antares (topocentric dist. center to center = 1.4°)
15	2021 10 17	16:42	Close encounter between the Moon and Neptune (topocentric dist. center to center = 4.6°)
16	2021 10 18	00:00	Meteor shower : Epsilon Geminids (3 meteors/hour at zenith; duration = 13.0 days)
17	2021 10 20	00:00	Mercury at its perihelion (distance to the Sun = 0.30750 AU)
18	2021 10 20	14:57	FULL MOON
19	2021 10 21	00:00	Meteor shower : Orionids (20 meteors/hour at zenith; duration = 36.0 days)
20	2021 10 21	23:17	Close encounter between the Moon and Uranus (topocentric dist. center to center = 1.9°)
21	2021 10 24	02:14	Close encounter between the Moon and Aldebaran (topocentric dist. center to center = 5.8°)
22	2021 10 24	15:30	Moon at apogee (geocentric dist. = 405615 km)
23	2021 10 25	06:00	GREATEST WESTERN ELONGATION of Mercury (18.3°)
24	2021 10 26	00:13	Close encounter between the Moon and M 35 (topocentric dist. center to center = 1.2°)
25	2021 10 28	20:05	LAST QUARTER OF THE MOON
26	2021 10 29	12:00	GREATEST EASTERN ELONGATION of Venus (46.9°)

PERTON LIBRARY ASTRONOMY GROUP (PLAG)

The first PLAG physical meeting since March 2020 was held on Thursday 16 September.

We had a couple of short talks and a chat. I showed some pictures of Wolvas outside observation meetings that we had managed to hold within Covid guidelines and images of observing targets that I had taken during that period. Steve Wootton also showed some images including the Sagittarius constellation taken just with a DSLR and tracking mount which astonishingly clearly showed galaxies and nebulae that you would normally expect to see using a telescope.

The October meeting on Thursday 21 at the library will be about online sites and mobile apps that you can use for astronomy. Numbers may again have to be limited so contact the library and tell them you are interested in attending.

WOLVERHAMPTON ASTRONOMICAL SOCIETY LECTURES

We are continuing with our programme of online lectures and will supplement these with "in person" meetings for astronomical events, so keep an eye on our social media for announcements. We also have regular Monday evening chat nights on Zoom throughout the year, 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 will be only £10 per annum and you can sign up now our website www.wolvas.org.uk

Lectures 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 and we have an exciting line up for the coming season. Our programme of speakers for next season 2021/22 has almost been filled.

Lectures for the 2021/22 season:

13/09/21	Dr Steve Barrett	The ABC of Galaxy Evolution
27/09/21	Steve Wootton	The David Harris Lecture
11/10/21	AGM then short talk by member Adam Foster	My Astronomy Journey
25/10/21	Prof Ian Morison	Wonders of the Southern Sky
08/11/21	Martin Braddock	Perseverance Rewards the Brave – Mars exploration & beyond
22/11/21	Alex Binks	Young Stars in our Backyard
06/12/21	Georgia Pulford	A Brief Geological History of Time
10/01/22	Prof Rene Breton	*Talk to be decided*
24/01/22	Dr Julian Onions	Crazy Interstellar Rockets
07/02/22	Steve Clifton	Astrophotography Then and Now
21/02/22	Mike Frost	Against the Odds – A Patagonian Eclipse
07/03/22	*# not booked yet #*	Annual free public Paul Pope Lecture
21/03/22	Pete Williamson	The Moons of our Solar System
11/04/22	Paul Fellows	Fire & Ice – the Volcanic Worlds of the Solar System
16/05/22	Damian Hardwick	The Life of Albert Einstein
13/06/22	Katrin Raynor-Evans	Exploring Astronomy & Space through Philately

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.