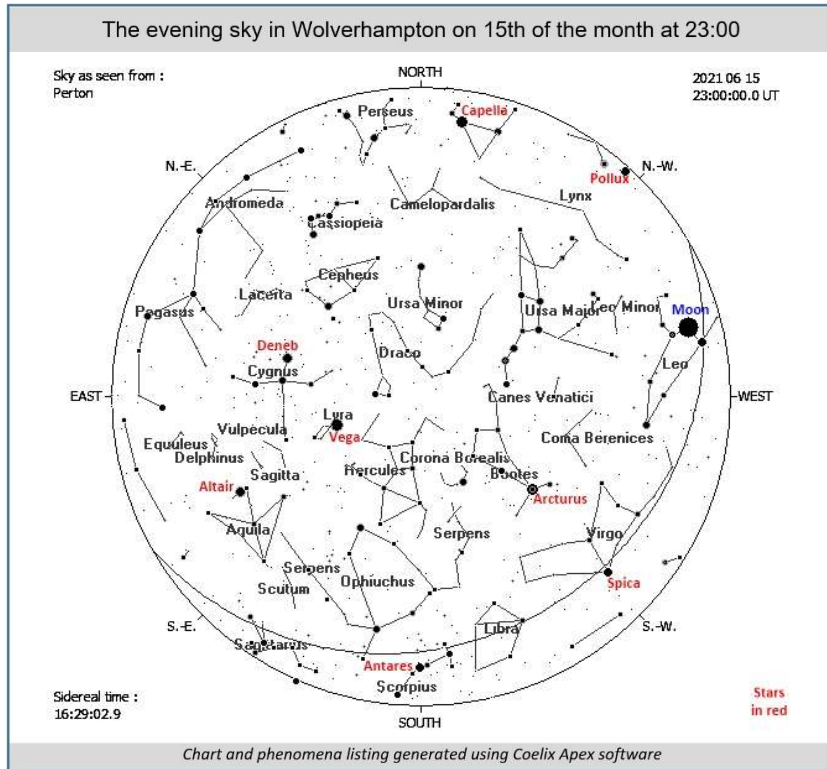


The Night Sky in June 2021

- a quick and easy guide



Monthly Guide Compiled
by Doug Bickley



MOON PHASES	
Third (last) quarter	2 June
New Moon	10 June
First quarter	18 June
Full Moon	24 June

Events this month to look out for:

- 1 Moon below right of Jupiter (morning)
- 10 Partial solar eclipse (see below)
- 10-13 Asteroid Vesta passes below Leo Triplet (evening)
- 11 Crescent Moon below right of Venus (evening twilight)
- 12 Crescent Moon close to Venus, Castor & Pollux with Mars above left (evening twilight)
- 13 Crescent Moon above Mars with M44 Beehive Cluster to left (evening twilight)
- 21 Summer Solstice – shortest night (04:32 BST)
- 23 Mars within M44 Beehive Cluster (evening twilight)
- 26 Bootid meteor shower peak (see below)
- 27 Moon below right of Saturn (morning)
- 29 Moon below Jupiter (evening)

Moon:

Full Moon is on the 24 June and you may see it described as the Strawberry Moon.

For centuries, cultures around the world have named the full moons by characteristics of the seasons in which they occur, these names, often derived from those used by Native American tribes, are poetically descriptive and evocative of the seasons. So June, in North America, the harvesting of strawberries in June gave that month's full moon its name. Europeans have dubbed it the Rose Moon, while other cultures named it the Hot Moon for the beginning of the summer heat.



Planets this month:

Jupiter is still in the SE in Aquarius. The king of the planets won't be visible until the early hours and then at a low altitude, but as the planet moves into a more night-time friendly position in the sky, you will be able to test your observation skills of the four Galilean moons, Io, Europa, Ganymede and Callisto. Also early on 1 June look for the waning gibbous Moon close to the planet.

Saturn is still in the SSE in Capricornus at a best altitude of about 18° as it has been for quite a while because it has been moving along the most southerly part of the ecliptic. As the year progresses things slowly improve. The planet reaches opposition on 2 August and during June is almost able to reach its peak altitude in what passes for a dark sky at this time of year. On 27 June a bright waning gibbous Moon sits southwest of the planet in the dawn twilight. A good viewing opportunity arise on 28 June when a waning gibbous phase Moon sits to the ESE and forms a downward pointing triangle with Jupiter and Saturn. If you can get really good steady viewing conditions, the planet's rings are currently well on view and it may be possible to see the shadow of the planet's globe on the rings. Also look out for the razor thin dark 'gap' between the bright A and B rings called the Cassini Division.

Mars is in the WNW in Gemini, its apparent size still decreasing thus making getting it too small for serious telescopic observation. This month we don't see true darkness and Mars can't really be seen against a dark sky and at mag +1.8 will be tricky to spot against a bright June evening twilight. On 13 June a waxing crescent Moon passes 2° north of the planet. Between the 22 and 24 June Mars will appear within M44 the Beehive Cluster which given good seeing conditions will be a great photo opportunity.

Venus is very low in the WNW in Cancer but is now an evening planet (so now the Evening Star), setting 1.5 hours after the Sun during the month. On 11 and 12 June a thin waxing crescent Moon lies near to the planet albeit at a very low altitude after sunset.

Mercury is in the ENE in Taurus at an extremely low altitude, so to most observers it may be out of view this month. It is heading back towards the Sun for inferior conjunction (which occurs on 11 June) following an excellent period of evening visibility for this tricky planet last month. On 1 June Mercury sets one hour after the Sun but is dim at mag +3.2 which will make it hard to spot against the bright evening twilight. After inferior conjunction it returns to the morning sky but still poorly positioned. On 30 June, at mag +1.1, the planet rises approximately one hour before the Sun, but visibility is compromised by low altitude.

Uranus and **Neptune** are not really visible this month.

Noctilucent Clouds (or NLC's):

NLCs are a delight for summer stargazers and can be seen from around mid-May to early August during the darkest part of a summer's night when the Sun is between 6 – 16 degrees below the horizon. They are clouds of icy dust that form at very high altitude on the edge of space, around 76–85km high, when temperatures and pressures in the upper atmosphere are just right. Because they are so high up, NLC's are illuminated by the Sun long after it has set for us at ground level, and we see them as blue-white swirls, curls and tendrils shining in the sky. That's what their name means – 'nocti' (night) 'lucent' (shining).



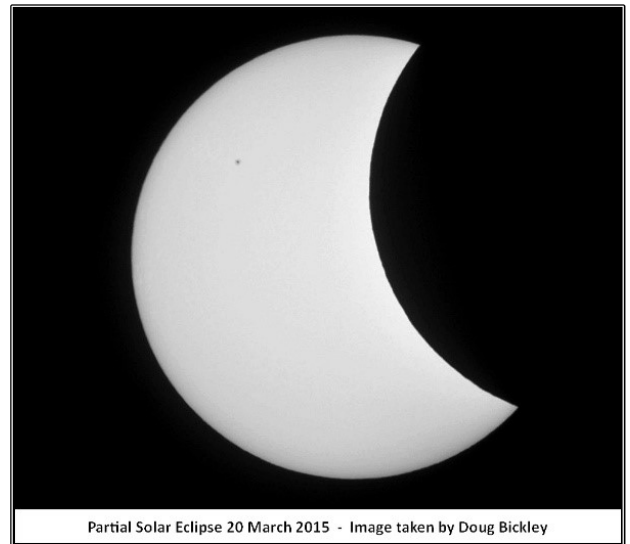
Partial Solar Eclipse 10 June:

A partial solar eclipse will be visible from the United Kingdom on the morning of the 10 June in the SSE. The Moon will pass in front of the Sun partially blocking it and depending on the observer's location it may cover the Sun's disc by as much as 30% at a maximum altitude of 53°. Whilst such events are quite common on astronomical timescales they are incredibly rare during a human's lifetime. Astronomers across the country will be eagerly anticipating good weather in the hope they might see it!

From Wolverhampton first contact is at 10:06 BST, the point of greatest eclipse at 11:12 BST when the eclipse magnitude reaches 35.5%, and last contact at 12:23 BST, bringing the event to a close.

Wolverhampton Astronomical Society has arranged a member's only viewing event on 10 June, and if you are a member you will have received details of this. I will give a short update for this in next month's sky guide including pictures if the weather is kind to us.

Partial eclipses are defined by one of two values; eclipse magnitude and obscuration. Eclipse magnitude defines how much of the Sun's diameter is covered by the disc of the Moon, while obscuration indicates how much of the Sun's disc area is covered as a percentage. If the Moon's disc reaches the centre of the Sun's disc, this would be described as a magnitude 50% eclipse. Halfway across the Sun, the Moon would hide 39.1% of the Sun's area, this being the eclipses obscuration value.



Viewing a partial eclipse can be dangerous if you don't know what you are doing, so be careful, your eyesight is precious.

For white light viewing, I usually use a solar safety filter such as a Baader AstroSolar film on a homemade mount, or a proprietary glass solar filter. These must covering the whole of the telescope or camera's aperture.



Don't forget to cap, filter or remove any attached finderscopes.

You can also use eclipse viewers:



Another alternative is a purpose made solar telescope:



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

Data taken from the Heavens Above website shows that there are no forecast visible passes during June but please recheck nearer your chosen day to get updates.

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

Meteor Showers:

The June Bootid meteor shower will be active from 22 June to 2 July, producing its peak rate of meteors around 27 June. However this shower is notoriously unpredictable.

Over this period from Wolverhampton the shower's radiant point in the constellation of Bootes is circumpolar, which means it is always above the horizon and the shower will be active throughout the night. The radiant point culminates (is highest in the sky) before nightfall – at around 22:00 BST – and so the shower is likely produce its best displays soon after dusk, when the radiant point is still as high as possible. Of course at the moment there is no astronomical darkness so the meteor trails will be fainter. The almost full Moon will also not be helpful.



Generated using Stellarium software

Good luck and as always let us know if you have any success.

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

	Date	Hour	Description of the phenomenon
	yyyy mm dd	hh:mm	
1	2021 06 01	09:30	Close encounter between the Moon and Jupiter (topocentric dist. center to center = 4.8°)
2	2021 06 02	03:24	LAST QUARTER OF THE MOON
3	2021 06 03	02:40	Close encounter between the Moon and Neptune (topocentric dist. center to center = 4.9°)
4	2021 06 04	06:18	Close encounter between Venus and M 35 (topocentric dist. center to center = 0.1°)
5	2021 06 07	05:07	Close encounter between the Moon and Uranus (topocentric dist. center to center = 2.7°)
6	2021 06 07	22:27	Moon at apogee (geocentric dist. = 406228 km)
7	2021 06 09	21:00	Mercury at its aphelion (distance to the Sun = 0.46670 AU)
8	2021 06 10	06:53	NEW MOON (annular eclipse of the Sun not visible in Perton)
9	2021 06 10	21:13	INFERIOR CONJUNCTION of Mercury with the Sun (geoc. dist. center to center = 3.1°)
10	2021 06 12	01:32	Close encounter between the Moon and Venus (topocentric dist. center to center = 0.7°)
11	2021 06 12	14:00	Venus at its perihelion (distance to the Sun = 0.71842 AU)
12	2021 06 13	17:59	Close encounter between the Moon and Mars (topocentric dist. center to center = 2.0°)
13	2021 06 17	23:54	FIRST QUARTER OF THE MOON
14	2021 06 21	17:35	Close encounter between Venus and Pollux (topocentric dist. center to center = 5.2°)
15	2021 06 23	05:58	Moon at perigee (geocentric dist. = 359956 km)
16	2021 06 23	11:58	Close encounter between Mars and M 44 (topocentric dist. center to center = 0.3°)
17	2021 06 24	14:40	FULL MOON
18	2021 06 26	00:00	Meteor shower : June Bootids (duration = 11.0 days)
19	2021 06 26	04:52	Close encounter between the Moon and Pluto (topocentric dist. center to center = 2.8°)
20	2021 06 27	08:06	Close encounter between the Moon and Saturn (topocentric dist. center to center = 4.3°)
21	2021 06 28	16:07	Close encounter between the Moon and Jupiter (topocentric dist. center to center = 5.0°)
22	2021 06 30	09:38	Close encounter between the Moon and Neptune (topocentric dist. center to center = 4.4°)

WOLVERHAMPTON ASTRONOMICAL SOCIETY LECTURES

- Given the current situation regarding the coronavirus in the UK, and following the current Government advice to avoid all unnecessary social interaction for the foreseeable future, we have put on hold our usual face to face meetings. But the good news is that we haven't cancelled events but simply moved them online, so we can continue to bring you great talks in your own home!
- We continue to try and bring you some of the best speakers around and we have an exciting line up for the coming season.

It has been decided that 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.

Here is a taster for upcoming lectures (all starting at 7.30pm on YouTube followed by Zoom Q&A).

I would also encourage you as a member to join in our informal Monday evening talks on Zoom where we can all share our tips and tricks. These evenings have proved popular with beginners who need specific advice, and at the moment is the nearest thing to face to face that we can offer.

This is the last lecture for the 2020/21 season:

14 June

Paul Money – Why Are There No Green Stars?

However we are busy planning for the 2021/21 season of lectures.

As well as some talks from members, our speakers will include:

Dr Steve Barrett – Liverpool University
Dr Julian Onions – Nottingham University
Alexander Binks – Keele University
Professor Ian Morison

We have regular Monday evening chat nights on Zoom throughout the year.

These are becoming popular with our members, the first 30 minutes is always for beginners to ask questions and during this time we always give basic astronomy advice sometimes, sometimes with a short talk. Invitations to these sessions are emailed to members.

We will also be trying to arrange some observation sessions (Covid rules compliant), for example for the 10 June partial eclipse.

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.