The Night Sky in April 2021
- a quick and easy guide

The evening sky in Wolverhampton on 15th of the month at 23:00

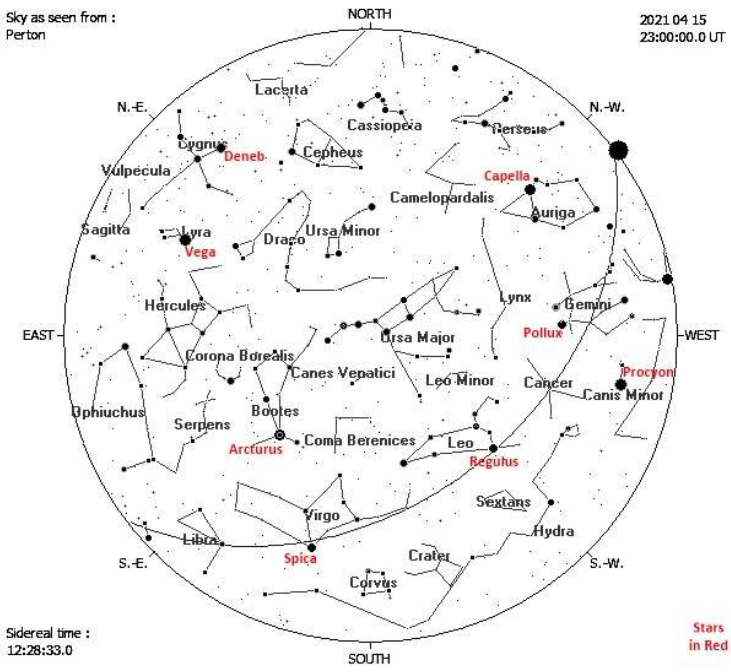


Chart and phenomena listing generated using Coelix Apex software

Perton Library Astronomy Group

Monthly Guide Compiled by Doug Bickley

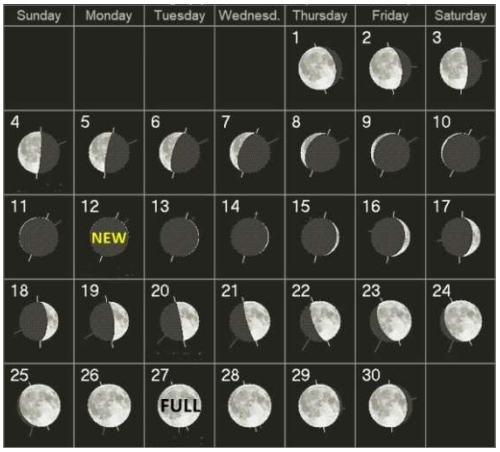
MOON PHASES	
Third (last) quarter	4 Apr
New Moon	12 Apr
First quarter	20 Apr
Full Moon	27 Apr

Events this month to look out for:

6 Crescent Moon below Saturn (morning twilight)
7 Moon below Jupiter (morning twilight)
14 Crescent Moon below Pleiades M45 (evening twilight)
15 Crescent Moon between Pleiades M45 and Hyades (evening twilight)
17 Moon above left of Mars (evening)
20 First quarter Moon above Beehive Cluster M44 (evening)
22 Lyrid Meteor Shower peak (unfavourable due to Moon, early morning)
26 Mars above open cluster M35 (evening)
27 Mercury above Venus (evening twilight)
27 Super Full Moon (see below)

Moon

Full Moon is on 27 April, this phase occurring 03:31 UT. Moon phases this month are shown in this graphic:



generated using CoelixApex software

The April full moon is called amongst other names the Pink Moon, and this will also be a Super Full Moon. This occurs when the Moon is near its closest approach to Earth.

The Pink Moon is so called by Northern Native Americans after a species of early blooming wildflower. For our quizzers in other cultures this moon is called the sprouting grass moon, the egg moon, and the fish moon. Take your pick!!

For the best view of the Supermoon find an open area and watch as the Moon rises above the horizon just after 21:00 at which point it will appear it's biggest and take on a golden hue! (it's really not pink at all).

By the way did you know that the word 'month' takes its root from the Moon? A month was originally defined to be either 29 or 30 days, roughly equal to the 29.5-day cycle of the lunar phases. Some of our calendar months were later padded out with extra days so that 12 months would make up one complete 365-day solar year.

Planets this month:

Generally April is not a great month for planet observations.

Jupiter is the ESE in Aquarius at an extremely low (5°) altitude. In April it will be visible in the morning, rising an hour before the Sun and remains a morning planet throughout the month but will be difficult to spot unless you have a very low horizon.

Saturn is in the SE in Capricornus at mag +0.7 and as Jupiter will be a morning planet with a low (5°) altitude. At month end its altitude gets to 13° but only in dawn twilight.

Mars is the West in Taurus and has a decent altitude of 40° but it is now past its best with brightness dropping as the month progresses. It is also getting lower as darkness falls; its rapid apparent eastward motion will keep it visible for a while longer but observing any surface detail will be tricky.

Venus is in the WNW in Aries, visible in the evening twilight but even at the end of the month still very low in the sky. Keep the faith because as the year goes on there will be some better opportunities to see the planet, with particularly as it meets the crescent Moon.

Mercury is in the WNW in Aries at a low altitude of 13°, setting 80 minutes after the Sun. It reaches superior conjunction on 19 April, marking its transition from a morning to an evening planet. In the later stages of April the planet increases in elevation after sunset. Mercury and Venus are close together from April 25 onwards and if you have a low horizon and good visibility it may be may be worth trying to see them (Mercury mag -1.1 and Venus mag -3.8).

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

International Space Station (ISS) forecast time for evening passes visible this month
Data taken from the Heavens Above website, please recheck nearer the chosen day to get updates.
[source: https://www.heavens-above.com/]

The ISS disappears from our skies for much of this month and the passes available are all at inconvenient times, but here they are anyway:

Date	Mag	Transit time	Start			High point	End		
			Time	Alt.degs.	Az.		Time	Alt.degs.	Az.
01-Apr	-1.8	04:14	21:16	10°	W	20°	21:20	15°	S
02-Apr	-2.1	05:52	20:28	10°	W	28°	20:34	10°	SSE
03-Apr	-0.8	00:15	21:20	10°	SW	10°	21:20	10°	SW
04-Apr	-1.1	03:55	20:31	10°	WSW	15°	20:35	10°	S
28-Apr	-1.3	04:05	04:47	10°	S	15°	04:51	10°	ESE
29-Apr	-1.1	01:16	04:01	10°	SSE	10°	04:02	10°	SE
30-Apr	-2.3	05:56	04:48	10°	SSW	28°	04:54	10°	E

Lyrid Meteor Shower

There is one shower this month, the Lyrids, associated with long-period Comet C/1861 G1 Thatcher. It is the oldest recorded meteor shower still visible today, and was first recorded in 687 BC. The peak is forecast to be at 13:00 UTC on 22 April, and will be best observed on the nights of 21/22 and 22/23 April, with a Zenithal Hourly Rate of normally about 18 meteors per hour. Unfortunately this year the Moon will be bright in the night sky, which won't help, so if you can wait until the Moon sets you will have a better chance of spotting a meteor.

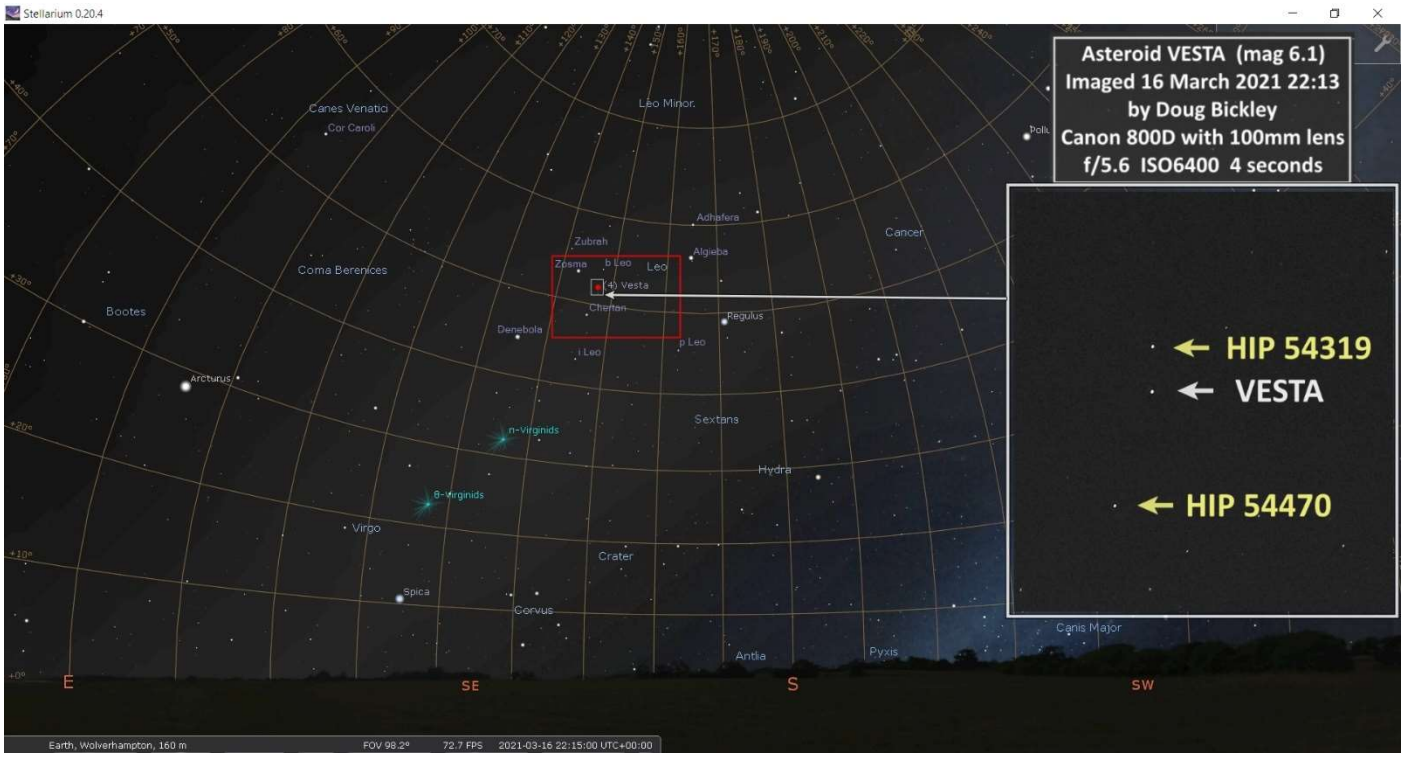
You don't need a telescope or binoculars to see a meteor shower, in fact they would be counterproductive. Just find a nice dark sky, get yourself a comfortable chair, wrap up warm and have some patience. The radiant is in Lyra but Lyrid meteors will be visible all across the sky.

Meteors are small chucks of debris left in the wake of certain celestial objects, like asteroids or comets. When the Earth passes through this trail of material, it scoops up a number of these pieces which fall into the atmosphere, moving extremely fast (over 100,000mph) so that their surfaces rapidly heat up to as high as 1600°C. These glowing objects are visible as a short-lived streaks of light in the sky. Very occasionally a handful get through the atmosphere and the remnant left on the ground is called a meteorite.

Asteroid Vesta

Update on last month - I hope some of you managed to image this asteroid. Below is a greatly enlarged section of an image taken on 16 March. The asteroid will still be visible for the whole of April at an altitude of about 45° in the constellation Leo but between 21 and 25 the Moon may hamper observations.

The two stars marked HIP are numbered from the Hipparcos star catalogue. Many stars are referred to simply by catalogue numbers if they don't have well-known names. The Hipparcos and Tycho catalogues are the primary products of the European Space Agency's astrometric mission, Hipparcos. This satellite operated for four years from November 1989 to March 1993.



basic sky view generated using Stellarium

Finding your way around the night sky

I talked last month about finding your way around and the importance of starting to recognise well known constellations to use them as a road map to navigate your way round the sky. Don't be too daunted, when you learn just a few constellations it is surprising how everything else tends to start to fall into place – and after a couple of months practice you will start to gain a very satisfying working knowledge of the night sky and start to identify the northern sky star patterns.

A great target to find is Polaris – the Pole Star… Polaris is the one star that (nearly) doesn't move. If you extend the Earth's axis of spin into space it points very close to where Polaris is in the sky. As the Earth rotates Polaris appears to stay where it is, and all other things in the sky appear to rotate (rise & set) around this point in the sky.
Finding Polaris is vital in setting up your telescope.

The classic method to find Polaris is to use two stars in the Big Dipper, Dubhe and Merak, as "pointers". These two stars form the right-hand end of the "bowl" or "dipper" part of Ursa Major. Drawing an imaginary line in your mind from these two stars will point you straight to Polaris. Practice on a clear night – you won't see the lines in the sky of course!

sky view on 15 April generated using Stellarium software

Phenomena of the month of April:

	Date	Hour	Description of the phenomenon
	yyyy mm dd	hh:mm	
1	2021 04 04	05:34	Opposition of the asteroid 9 Metis with the Sun (dist. to the Sun = 2.500 AU; magn. = 9.5)
2	2021 04 04	10:02	LAST QUARTER OF THE MOON
3	2021 04 05	07:30	Close encounter between the Moon and Pluto (topocentric dist. center to center = 3.1°)
4	2021 04 06	11:59	Close encounter between the Moon and Saturn (topocentric dist. center to center = 4.5°)
5	2021 04 07	11:59	Close encounter between the Moon and Jupiter (topocentric dist. center to center = 4.9°)
6	2021 04 09	16:12	Close encounter between the Moon and Neptune (topocentric dist. center to center = 4.4°)
7	2021 04 12	02:31	NEW MOON
8	2021 04 13	15:09	Close encounter between the Moon and Uranus (topocentric dist. center to center = 2.8°)
9	2021 04 14	17:47	Moon at apogee (geocentric dist. = 406119 km)
10	2021 04 17	11:27	Close encounter between the Moon and Mars (topocentric dist. center to center = 0.8°)
11	2021 04 18	00:54	Close encounter between the Moon and M 35 (topocentric dist. center to center = 0.2°)
12	2021 04 19	01:48	SUPERIOR CONJUNCTION of Mercury with the Sun (geoc. dist. center to center = 0.6°)
13	2021 04 20	06:59	FIRST QUARTER OF THE MOON
14	2021 04 20	20:51	Close encounter between the Moon and M 44 (topocentric dist. center to center = 2.2°)
15	2021 04 22	07:05	Meteor shower : Lyrids (18 meteors/hour at zenith; duration = 9.0 days)
16	2021 04 27	03:31	FULL MOON
17	2021 04 27	06:36	Close encounter between Mars and M 35 (topocentric dist. center to center = 0.5°)
18	2021 04 27	15:24	Moon at perigee (geocentric dist. = 357378 km)
19	2021 04 30	19:54	CONJUNCTION between Uranus and the Sun (geoc. dist. center to center = 0.4°)

generated using CoelixApex software

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.

22 March
Tracey Snelus – Aurora: The Greatest Light Show On Earth

12 April
Paul Fellows – Children of Another Sun

17 May
Damian Hardwick – Inventor, Investigator and Innovator: The life of Sir John Herschel

14 June
Paul Money – Why Are There No Green Stars?

This is the end of our 2020/21 lecture programme.

However we are busy planning for the next 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

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.