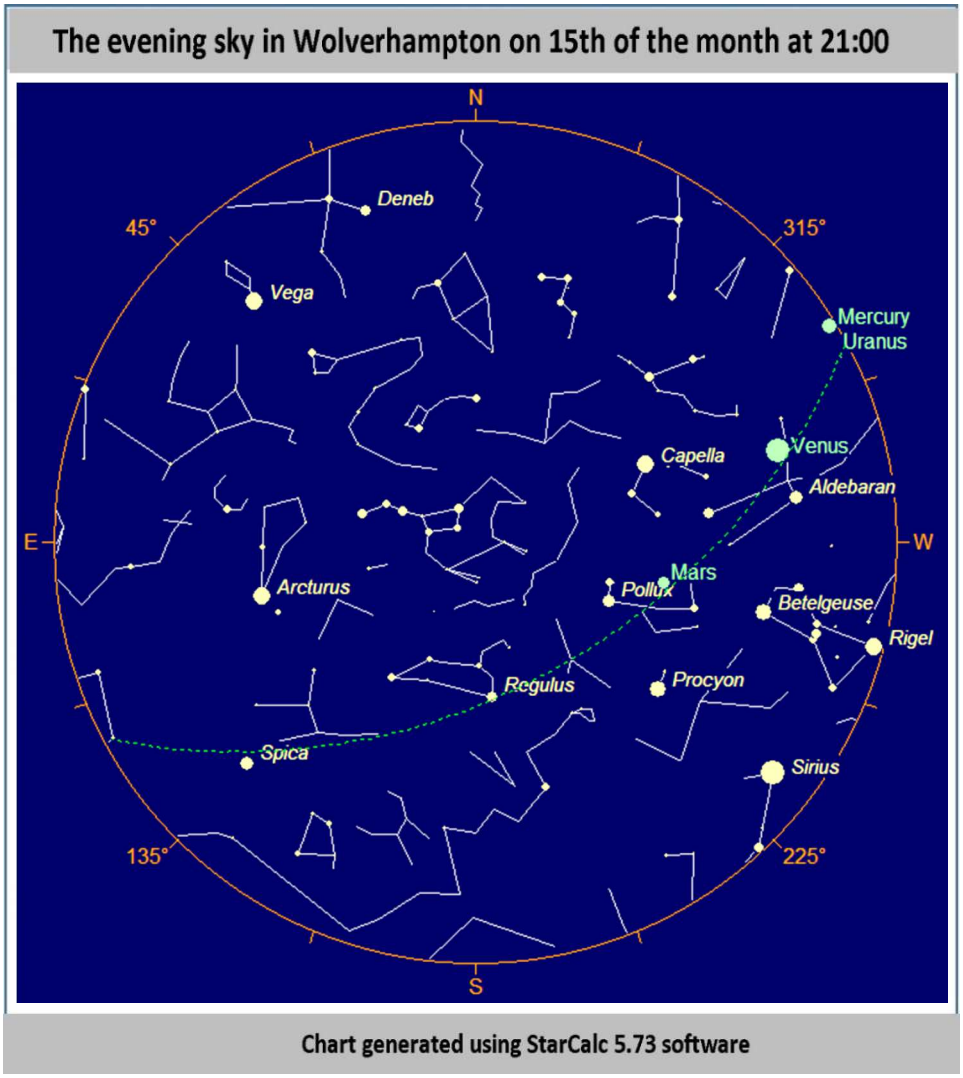
The Night Sky in April 2023

Monthly guide compiled by Doug Bickley

PERTON LIBRARY ASTRONOMY GROUP



Diary of events to look out for this month:

6	Full Moon
10	Venus below Pleiades M45 (evening)
11	Mercury at greatest eastern elongation
12	Venus close to Pleiades M45 (evening)
16	Moon below Saturn (morning twilight)
20	New Moon
20	Perton Astronomy Group meeting 7pm
21	Mercury below thin crescent Moon (evening twilight)
22	Lyrid meteor shower peak (favourable)
23	Crescent Moon close to Venus (evening twilight)
26	Moon and Mars in conjunction (evening)

THE MOON

Phases	
Full Moon	6 April
Third (last) quarter	13 April
New Moon	20 April
First quarter	27 April

[graphic generated by Coelix Apex software]

Full Moon is on 6 April and the April New Moon will be on 20 April. You may see this month's full Moon named the Pink Moon, after a species of early blooming wildflower. As always may I point out that these colloquial names originated in the US Farmers' Almanac, being said to have originated in Native American tribes. In other cultures, this moon is called the sprouting grass moon, the egg moon, and the fish moon.

PHENOMENA OF THE MONTH

(table generated using Coelix Apex software):

	Date	Hour	Description of the phenomenon
	yyyy mm dd	hh:mm	
1	2023 04 06	04:34	FULL MOON
2	2023 04 11	11:33	Close encounter between Venus and the Pleiades (topocentric dist. center to center = 2.6°)
3	2023 04 11	18:00	GREATEST EASTERN ELONGATION of Mercury (19.3°)
4	2023 04 11	22:08	CONJUNCTION between Jupiter and the Sun (geoc. dist. center to center = 1.1°)
5	2023 04 13	09:11	LAST QUARTER OF THE MOON
6	2023 04 16	02:22	Moon at perigee (geocentric dist. = 367968 km)
7	2023 04 17	13:00	Venus at its perihelion (distance to the Sun = 0.71844 AU)
8	2023 04 20	04:12	NEW MOON (annular-total eclipse of the Sun not visible in Perton)
9	2023 04 22	16:55	Meteor shower : Lyrids (18 meteors/hour at zenith; duration = 9.0 days)
10	2023 04 23	11:46	Close encounter between the Moon and Venus (topocentric dist. center to center = 0.7°)
11	2023 04 25	00:36	Close encounter between the Moon and M 35 (topocentric dist. center to center = 2.8°)
12	2023 04 27	21:20	FIRST QUARTER OF THE MOON
13	2023 04 28	06:43	Moon at apogee (geocentric dist. = 404299 km)
14	2023 04 29	20:41	Close encounter between the Moon and Regulus (topocentric dist. center to center = 3.8°)

THE SUN

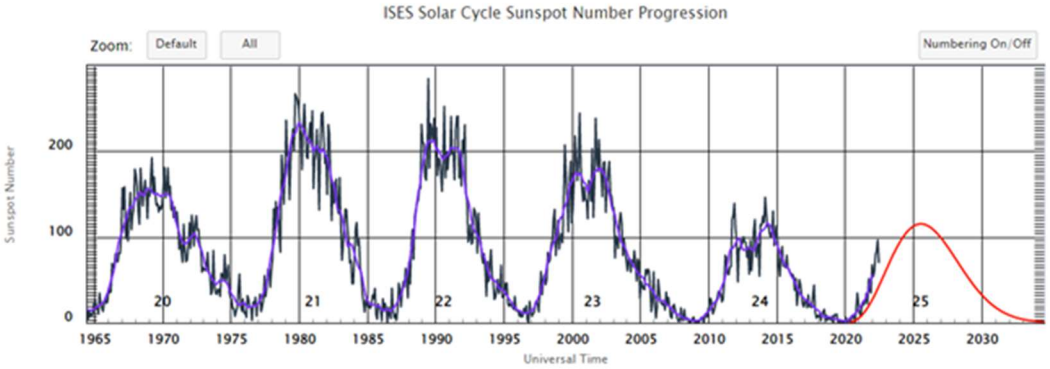
Chart of sunrise and sunset times in Wolverhampton:

Date		Sun		Astronomical Twilight		Nautical Twilight		Civil Twilight	
2023		Sunrise	Sunset	Start	End	Start	End	Start	End
Apr-01	Sat	6:42 AM	7:41 PM	4:40 AM	9:44 PM	5:26 AM	8:58 PM	6:08 AM	8:16 PM
Apr-08	Sat	6:26 AM	7:54 PM	4:19 AM	10:01 PM	5:07 AM	9:13 PM	5:51 AM	8:29 PM
Apr-15	Sat	6:10 AM	8:06 PM	3:57 AM	10:19 PM	4:48 AM	9:28 PM	5:34 AM	8:42 PM
Apr-22	Sat	5:55 AM	8:18 PM	3:33 AM	10:40 PM	4:29 AM	9:44 PM	5:17 AM	8:56 PM
Apr-29	Sat	5:40 AM	8:30 PM	3:07 AM	11:04 PM	4:11 AM	10:00 PM	5:01 AM	9:09 PM
Apr-30	Sun	5:38 AM	8:32 PM	3:03 AM	11:08 PM	4:08 AM	10:03 PM	4:59 AM	9:11 PM

I said last month that I'd write a bit about solar cycles.

The solar cycle is an approximately 11-year cycle of solar activity driven by the sun's magnetic field. We can see the pattern of these by the frequency and intensity of sunspots visible on the surface. The current cycle (solar cycle 25) began in December 2019 and activity is expected to build up until the predicted solar maximum in 2025. During a cycle minima the Suns surface may appear blank but at maxima sunspot activity is at its greatest. Sunspots are darker, cooler areas on the surface of the sun that arise due to disturbances in the sun's magnetic field.
Think of it like a heartbeat.

Here's a graph of recent sunspot activity from the European Space Agency:



If the Sun is 4.6 billion years old why are we only on cycle 25?

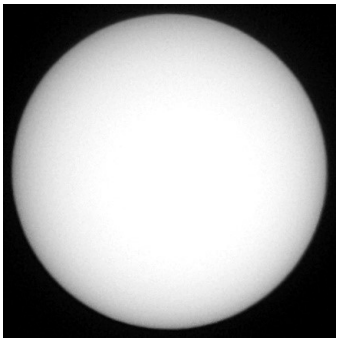
Measurements only started in 1755 by Rudolf Wolf a Swiss mathematician and astronomer.

Does it all matter?

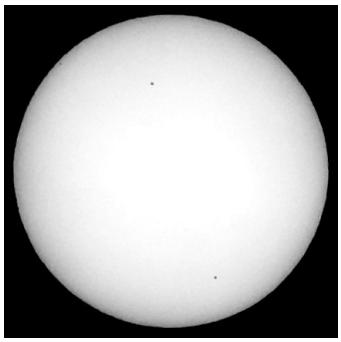
One spectacular side-effect of increased solar activity during the solar cycle is increased opportunities to see auroras (e.g. Northern Lights). Heightened solar activity poses a risk to satellites, spacecraft and even spacewalking astronauts due to increased radiation exposure. Here on Earth, large geomagnetic storms that solar activity triggers could interfere with high-frequency radio communications and GPS systems.

Images taken by the author showing increase in activity *(may not show up too well in these pictures)*:

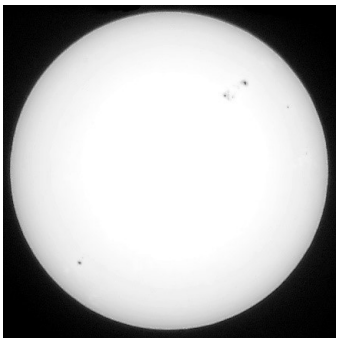
2016 no sunspots



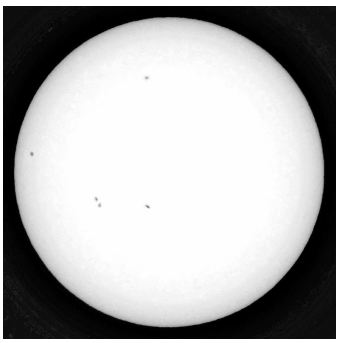
2021 just a couple



2022 more visible



23 / 02 / 2023 more visible



GENERAL OBSERVING

April is still a good month for observations, and refer to this guide for some of the things happening.

If you're looking for one particular night to head to a dark sky location, mark your calendar for the night of 22-23 April when (weather permitting of course) you can enjoy the first major meteor shower of the year.

Let's hope those notorious 'April Showers' stay far away!

PLANETS THIS MONTH

Here is the usual run down of planetary movements for the month of April.
Not a great month for planetary observations.

Mercury is in the NW in Aries with a maximum altitude of 10° and is an evening object. It starts the month fairly bright with a good chance of spotting it, but dims over the course of the month. By 11 April it is at greatest eastern elongation and evening altitude at sunset. On 21 April a thin crescent Moon appears just to the W and Uranus is also close. After this the planet drops into the twilight and will be lost from view, with inferior conjunction occurring on 1 May.

Venus is in the WNW in Taurus at a maximum altitude of 24°, still a dominant feature in our skies. The planet is heading towards greatest eastern elongation (the greatest separation from ythe Sun will be on 4 June). On 10 April, mag. -3.9 Venus is just 2.7° south of the Pleiades M45 open cluster and at around 22:00 BST the pair are around 16° above the WNW horizon – a good opportunity for observation and photography, so look out for this pairing, Venus does not set until midnight. On 22 and 23 April Venus is joined by a thin waxing crescent Moon which will be a nice sight while you are out Lyrid spotting.

Mars will move to Gemini in the WSW at a maximum altitude of 47° and shining at mag. +1.0 Mars will be an evening object, not setting until the early hours. The planet is moving away from us but is still a naked eye target.

Jupiter is in conjunction with the Sun on 11 April and will not be visible this month.

Saturn is again a morning object just above the horizon, and observations will be difficult with it being poorly placed in the morning sky.

Uranus is still in the W in Aires but its maximum altitude is only 13°, too low to observe properly as astronomical darkness falls. On 1 April the planet will be only 11° above the W horizon as darkness falls but a week later it will be close to the horizon a so difficult to see against a brightening twilight sky.

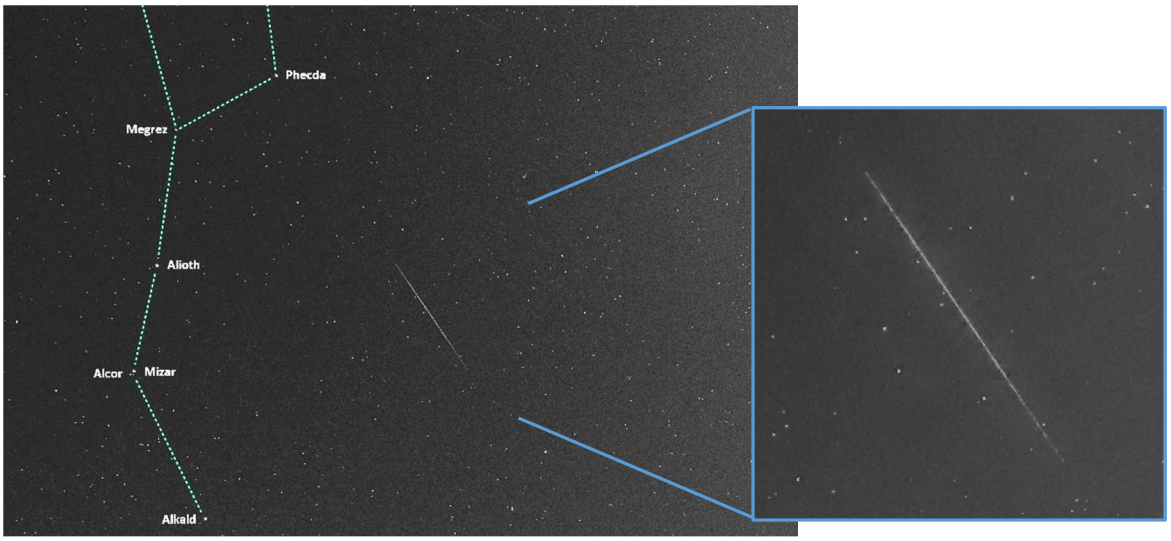
Neptune is not visible this month. A morning planet, it will be lost in the April dawn twilight.

METEOR SHOWERS

LYRIDS

The Lyrid meteor shower will be active this year between 14-30 April and will peak on the night of 22-23 April. Over this period, there will be a chance of seeing meteors whenever the shower's radiant point is above the horizon. Despite their name, look for them from the radiant point in the constellation Hercules. From Wolverhampton, the shower will be active throughout the hours of darkness. The Lyrids are not a particularly prolific shower with an estimate of perhaps 17 meteors per hour (ZHR). The meteor shower is 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 BCE.

Lyrid meteor captured by the author last year near to Ursa Major:



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

There a couple of evening passes forecast this month but this table shows all visible passes.

Date	Mag	Transit time	Start			High point	End		
			Time	Alt.degs.	Az.		Time	Alt.degs.	Az.
01-Apr	-1.7	05:18	20:19	10°	W	22°	20:24	10°	SSE
03-Apr	-0.9	02:08	20:20	10°	WSW	11°	20:22	10°	SSW
26-Apr	-1.6	04:45	04:56	10°	S	18°	05:00	10°	E
27-Apr	-1.3	03:04	04:08	10°	SSE	13°	04:11	10°	ESE
28-Apr	-2.6	06:03	04:53	10°	SW	32°	04:59	10°	E
29-Apr	-2.2	04:17	04:06	17°	S	23°	04:10	10°	E
30-Apr	-1.8	02:13	03:18	17°	SE	17°	03:21	10°	ESE
30-Apr	-3.4	06:32	04:51	10°	WSW	52°	04:58	10°	E

As always check the Heavens-Above website particularly if you want to track passes during the night, or use one of the excellent apps.
[source: https://www.heavens-above.com/]

Android:
ISS Detector Satellite Tracker

IOS:
ISS Spotter

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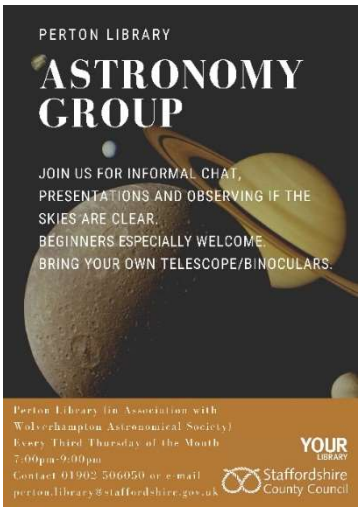

The group meets on the third Thursday of every month of the year at Perton Library (WV6 7QU or on what3words the entrance is ///saints.empty.stands), from 7pm to 9pm. No subscription, no need to book, all free, just drop in at any time during the evening.

The group is a relaxed and friendly gathering with the occasional talk.

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

The 2022/23 lecture season is now well under way. Talks are now be in person where possible, 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. Details are available on the Wolvas website.

Live lectures will be supplemented by the occasional online lecture, please keep an eye on our social media pages and the website for announcements.

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 preferably by bank transfer (see website).

Here is a list of speakers coming up:

17/04/23	Short talks by members	Various topics
15/05/23	Kevin Kilburn	The Magnetic Sun
12/06/23	Dr Julian Onions	Black Holes

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) pages for the latest updates and news.