



## April 2023 EDITION

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### Editorial

The weather in March was not particularly favourable for observing. Undeterred, many members attempted, with some success, to view the 27 Mar arc of 5 planets (Mars, Uranus, Venus, Jupiter and Mercury) and the Moon. Most observed Mars, Moon and Venus, but Uranus was too dim to be seen with the naked eye, whilst Jupiter and Mercury were too low in the sky.

On 25/26 Mar a massive asteroid passed harmlessly by the Earth and, on the night of 23/24 Mar, the Aurora Borealis was photographed in the skies over Kent.

Light pollution due to satellites is in the news again. The number of satellites in LEO has more than doubled since 2019, when SpaceX launched the first "mega-constellation", Starlink. With more constellations planned, the already congested area below 2,000 km altitude will get more congested, increasing the risk of a collision between two orbiting objects, creating yet more debris.

Studies suggest that for the Vera Rubin Observatory, currently under construction in Chile, the darkest part of the night sky will become 7.5% brighter over the next decade, reducing the number of stars the observatory is able to see by around 7.5%. That would add nearly a year to the observatory's survey programme, at an estimated cost of around \$21.8 million.

Meanwhile, a recently launched huge satellite called BlueWalker 3 could be brighter than most of the objects in the night sky.

(<https://www.newscientist.com/article/2337336-huge-satellite-could-outshine-all-stars-and-planets-in-the-night-sky/>). Food for thought!!

John

## The Solar System April

**MERCURY:** begins the month having recently passed behind the Sun at superior solar conjunction. It will become visible around 19:53 BST, 8° above the W horizon, as dusk fades to darkness. It will then sink towards the horizon, setting 1 hour and 18 minutes after the Sun at 20:50. Becoming progressively more difficult to see, by the end of the month it will soon pass in front of the Sun at inferior solar conjunction. At this point, it will not be readily observable since it will be very close to the Sun, at a separation of only 3° from it.

**VENUS:** is emerging into the evening sky as it approaches greatest elongation E. It begins the month becoming visible around 19:53 BST, 27° above the W horizon, as dusk fades to darkness, and will then sink towards the horizon, setting 3 hours and 29 minutes after the Sun at 23:01. By the end of the month, it will become visible around 20:43 BST, 29° above the W horizon, as dusk fades to darkness, before sinking towards the horizon, setting at 00:20.

**MARS** is also currently an early evening object, and begins the month visible from around 20:19 BST, 57° above the SW horizon, as dusk fades to darkness. It will then sink towards the horizon, setting at 03:05. By the end of the month, it will become visible around 21:19 BST, 41° above the W horizon, as dusk fades to darkness, and will then sink towards the horizon, setting at 02:06.

**JUPITER:** begins the month soon to pass behind the Sun at solar conjunction, and is not observable, reaching its highest point in the sky during daytime and being no higher than 1° above the horizon at dusk. By the end of the month, having recently passed behind the Sun at solar conjunction, it remains not observable reaching its highest point in the sky during daytime and being 1° below the horizon at dawn.

**SATURN:** recently passed behind the Sun at solar conjunction. It begins the month not observable, reaching its highest point in the sky during daytime and being only just above the horizon at dawn. By the end of the month, although possibly observable, it will be difficult to see as it will reach its highest point in the sky during daytime and be no higher than 6° above the horizon at dawn.

**URANUS:** will soon pass behind the Sun at solar conjunction. At the beginning of the month, it will be difficult to see as it will reach its highest point in the sky during daytime and be no higher than 16° above the horizon at dusk. By the end of the month, it will be extremely difficult to see as it will be very close to the Sun, at a separation of only 9° from it.

**NEPTUNE:** recently passed behind the Sun at solar conjunction. It begins the month not readily observable since it will be very close to the Sun, at a separation of only 15° from it. By month's end, it remains very difficult to see, reaching its highest point in the sky during daytime and being 5° below the horizon at dawn.

### MOON PHASES:

|               |        |
|---------------|--------|
| First Quarter | 29 Mar |
| Full Moon     | 6 Apr  |
| Last Quarter  | 13 Apr |
| New Moon      | 20 Apr |
| First Quarter | 27 Apr |

### Notable Events:

Observation of some of these events may require a telescope, although some will be visible with the naked eye. More information with times at <https://in-the-sky.org>

### April

- 3 The Sombrero Galaxy is well placed
- 5 Messier 94 is well placed
- 9 Mercury at dichotomy  
Lunar occultation of Delta Scorpii
- 11 Mercury at highest altitude in evening sky  
Mercury at greatest elongation East
- 15 The Whirlpool Galaxy is well placed
- 16 Close approach of Moon and Saturn
- 19 Messier 3 is well placed
- 20 Hybrid solar eclipse \*  
136108 Haumea at opposition

- 23 Lyrid meteor shower 2023  
Close approach of Moon and Venus
- 24 Messier 101 is well placed
- 26 Close approach of Moon and Mars
- 28 Venus at highest altitude in evening sky
- 30 Asteroid 7 Iris at opposition

### May

- 5 Penumbral lunar eclipse (not visible from London)
- 6 η-Aquariid meteor shower 2023
- 7 Lunar occultation of Delta Scorpii
- 9 η-Lyrid meteor shower 2023
- 13 Messier 5 is well placed  
Close approach of the Moon and Saturn
- 14 Comet 237P/LINEAR passes perihelion
- 17 Lunar occultation of Jupiter
- 23 Close approach of the Moon and Venus
- 24 Close approach of the Moon and Mars
- 29 Mercury at greatest elongation west

\* A hybrid solar eclipse (see 20 April event) is a rare and strange phenomenon that combines a partial, annular, and total solar eclipse into one stunning event. These eclipses happen only about once a decade; the last one occurred on 3 November 2013.

### Collected Observations (and thoughts) – Gary Walker

#### The Venus-Jupiter Conjunction – 2 Mar

On the evening of 1 March, Venus and Jupiter reached their closest point together, so were in conjunction.

Predictably, the British weather was not good, as it was overcast all day. This situation perfectly sums up the lot of the amateur astronomer, as it's nearly always overcast on the closest nights of a conjunction! Even more frustrating was the fact that I knew that it was due to clear later in the evening, but probably not in time to see the conjunction.

Nonetheless, some breaks started appearing in the clouds by about 7pm, so I went over to the fields at the back of my house, where you

can get a much better view of the horizon. The planets would have disappeared behind the trees when viewed from my home.

I did manage to glimpse Venus and Jupiter, but only, literally, for seconds at a time. Irritatingly, although the weather was changing, as so often happens, the cloud cover started to break up, but the sky didn't really clear up until about an hour or two, later!

The two planets were in a straight North – South line, with Jupiter to the South of Venus.

However, the next evening, 2 March, was perfectly clear, and Jupiter and Venus made a stupendous sight in the early evening sky. As both are bright planets, they appeared like a pair of car headlights! This time, Jupiter was "below" Venus, so it was now West of Venus.

Unusually, for an astronomical event, the best views came with binoculars and the naked eye! The planets were a bit too widely separated to be especially good in the telescope, but I was able to just fit both planets in the same field of view, at 62X. They were about half a degree apart, which is about the same angular size as a Full Moon, or the Sun. Venus appeared obviously gibbous in phase, and Jupiter was larger in angular size than Venus.

Planetary conjunctions are of no scientific importance, (although they will send the astrologers wild!), but they can, like this one, appear beautiful and spectacular, especially if they are both bright planets!

#### **Patrick Moore – 4 Mar**

On 4 March 1923, exactly 100 years ago, our former Patron, Patrick Moore was born! He was to lead a long life of 89 years, and he started and led the Sky at Night programme from 1957 right up to the end of his life in 2012, a total of over 55 years. He was a member of the British Astronomical Association for even longer, 78 years in all!

His influence on amateur astronomers was great, starting many a new budding astronomer, both amateur and professional, on their careers. His enormous enthusiasm and machine gun delivery of speech made

him truly irresistible both on TV and at speeches he gave. He was a true British Eccentric in every way!

He was prominent in the Apollo Moon Landing coverage, which boosted his popularity still further.

He was also a prolific book writer, and from 1950 to 2012, a period of 62 years in all, he wrote over 200 books, not to mention others that he edited, or just wrote an introduction for.

I saw him, personally, at the London Astrofest, and at a few other venues, such as the Sir Harry Seacombe Theatre, in Sutton in 1988.

Bizarrely, in May 1995, years after I had left there, he visited my old school, Nork Park Secondary School (now known as the "Beacon") and gave a xylophone concert in the Main Hall! It was rather eerie seeing him at my old school in the Main Hall, and out in the Foyer, both of which I had been so familiar with, less than 20 years earlier.

As I stated, he was a former Patron of our Society and, in its earliest days, even gave a couple of lectures to it!

#### **The Northern Lights down South – 4 Mar**

Many people that I know have been asking me, "Did you see the Northern Lights"? which proves how prominent this unusual event was in the media, and how interested in it the general public were!

#### **Latest Observations – 18 Mar**

I have finally lost the comet, so it has obviously drastically faded since the end of February. I had been trying to see it, after having to wait for the Moon to get out of the way, and then, every night it was either overcast completely, or else there was always some annoying patchy cloud, often just in the vicinity of the comet! Also, I now only had a narrow window of observation, as it was located low in the SW at the beginning of darkness!

On 18 March, I was able to make an attempt to see it, and found that it had faded to such an extent that it was no longer visible. I have been observing it since 11 January, and

probably last saw it at the end of February, or in early March.

The weather was so cloudy in early March that it was even hard to observe the Sun. During the period 2-9 March, it was too cloudy to see it at all!

Mars has obviously shrunk in size and magnitude from its glory 3 months ago. By 18 March it was about the same magnitude as Aldebaran and Betelgeuse, which were still conveniently nearby. Until recently, of course, Mars had outshone them both!

By this date, Mars was only about 7' arcseconds in size, having lost about 10' arcseconds since Opposition!

I could not definitely see any features on it either, even though Syrtis Major, which is the

most prominent feature on Mars, was centrally placed at this time. I could, however, see the gibbous phase of Mars.

### More Southerly Aurora – 24 Mar

On the BBC News, it was reported that the Northern Lights were again visible down South on the night of 23 March, with several photos from Hampshire, and other places! The images showed red and green Auroras.

Unfortunately, I again didn't know about it, and, in any case, the weather has continued to be predominantly cloudy. As mentioned earlier, even observing the Sun has been difficult throughout March. As of 24 March 24, I have only been able to observe it on 10 days!

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## Object of the month – The Whirlpool Galaxy – Martin Howes

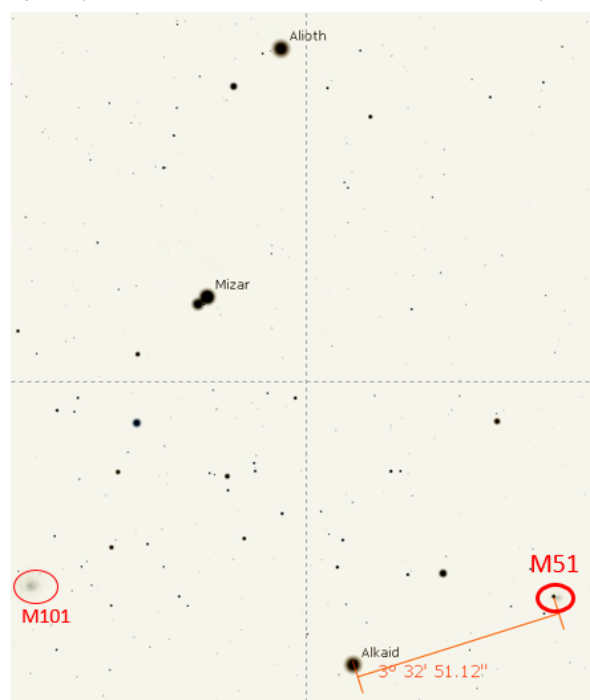
April is probably the last decent month of dark night skies until September – the clocks went forward to British Summer Time (BST) on Sunday the 26<sup>th</sup> of March. This means that on the 1<sup>st</sup> of April the Sun will be setting at about 7:30pm BST, with the sky not getting truly dark (end of astronomical twilight) until about 9:30pm. By the end of the month, however, astronomical darkness will not fall until about 10:45pm.

The summer month deep skies are known for their galaxies, principally in Leo, Virgo and Coma Berenices. There are, however, a few other notable galaxies to hunt out, and this month's object is the Whirlpool Galaxy, number 51 in Messier's catalogue (also less well known as NGC 5194).

This object is actually made up of two separate interacting galaxies, and so has separate designations for the smaller galaxy – M51a and NGC 5195.

M51 is in the constellation Canes Venatici. This is a relatively obscure constellation, however, M51 is actually very close to Ursa Major, and is about  $3\frac{1}{2}^\circ$  from the bottom star of the plough asterism, Alkaid (see the attached chart, taken from Stellarium). It is also in the same region of sky as another spectacular galaxy, M101, the pinwheel galaxy.

At magnitude 8.4 it is theoretically possible to see this as a faint smudge in binoculars, but a



dark sky site would be recommended, as it is likely to be hard to see through the light pollution of south London.

Although catalogued by Messier in 1773 it was Lord Rosse, using his 1.8 metre reflector, who identified the spiral nature of this galaxy in 1845. As galaxies hadn't been 'invented' at that date, it was simply known as a 'spiral nebula' and not confirmed as an object external to our own Milky Way until the 20<sup>th</sup> century.

The latest estimates put M51 at about 23 million light years away [NASA] – about 10 times further than the Andromeda galaxy, M31. It has reasonably large apparent size of 11 x 7 arcminutes (for reference, the Moon is about 30 arcminutes in diameter).



*Lord Rosse's sketch of M51 published in 1850  
[Creative Commons]*

The image below is made up of a composite of four separate sets of images taken over a few years apart using a combination of equipment, including a 102mm refractor and 127mm refractor; and a Canon 50D DSLR, ATIK 314L mono CCD camera and ZWO ASI294MC CMOS camera, with a little over two hours total exposure time.





## Important Note:

To allow sufficient time to compile Janus and place it on the EAS Website by the 1<sup>st</sup> of the month any submissions for publication are required at least 3 days before the end of the month. Any items received after this date will be held over until the following month.

### Up Next:

**NEXT MEETING: 8pm Friday 14 April –  
Nonsuch High School**

*EAS Secretary Peter Scott - A Spectrum of  
Telescopes: Observing across the  
Wavelengths.*

*Ron Canham or Ron Johnson will also give a  
presentation on the sky at night for the  
coming month.*

### **NEXT USER GROUP:**

*Suspended until further notice.*

### **NEXT DENBIES OBSERVING SESSION:**

*The next session, allowing for moon rise &  
set times and cloud conditions, should be  
sometime around the new moon on 20 April.*

*The precise date and timings of any session  
will be advised by email and WhatsApp a few  
days in advance.*

### **AD HOC OBSERVING AT WARREN FARM:**

*These will be at short notice when the  
weather is favourable. Please watch our  
WhatsApp feed for alerts*