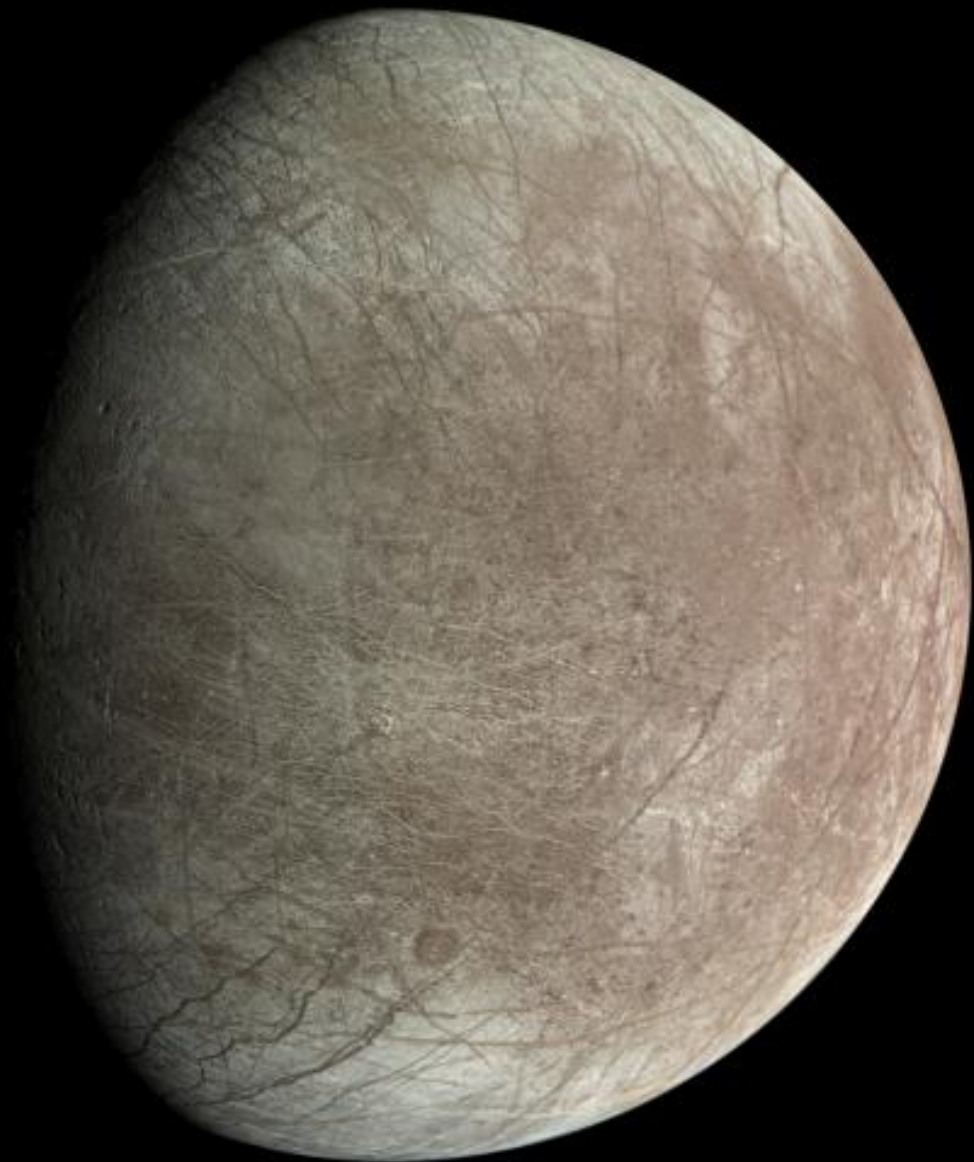




# Nene Valley Astronomical Society

## Stargazer Newsletter

October 2024



Images: NASA/JPL-Caltech/SwRI/MSSS 2022-09-29 Product ID: JNCE\_2022272\_45C00001\_V01, JNCE\_2022272\_45C00002\_V01, JNCE\_2022272\_45C00003\_V01, JNCE\_2022272\_45C00004\_V01 Image processing: Bjorn Johnson

### Jupiter's Moon Europa

Taken By NASA's Juno Spaceprobe



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Northamptonshire's Free To Join Astronomical Society



## Forthcoming Events

All meetings will be held at Chelveston Village Hall, Caldecott Road, Chelveston NN9 6AT and commence at 8pm. The door will be open from 7.45pm. Please use the double door at the rear of the building.

**Monday 7th October:** Club Night Meeting

**Monday 21st October:** Guest Speaker Meeting – Dr. Neil Phillipson – ‘Mankind’s Next Giant Leap’

**Monday 4th November:** Club Night Meeting

**Monday 18th November:** Guest Speaker Meeting – Dr. Nick Hewitt- ‘The Most Important Astronomy Image Ever’

## Society Officers

**Vice-Chair: Steve Williams** Telephone: 07510 246928

**Secretary: Kevin Burton** e-mail: [events@neneastro.org.uk](mailto:events@neneastro.org.uk)

**Events Co-ordinator: John Wynn-Werninck**

**Membership: Paul Blackman** e-mail: [membership@neneastro.org.uk](mailto:membership@neneastro.org.uk)

**Treasurer: David Jones**

**Web Site / Stargazer Editor: Steve Williams** e-mail: [newsletter@neneastro.org.uk](mailto:newsletter@neneastro.org.uk)

**Committee Members: Malcolm Harrington & Paul Jamison**

### Cover Image:



Jupiter's moon Europa was captured by the JunoCam instrument aboard NASA's Juno spacecraft during the mission's close flyby on Sept. 29, 2022.

The picture is a composite of JunoCam's second, third, and fourth images taken during the flyby, as seen from the perspective of the fourth image. North is at the top. The resolution of images ranges from just over 0.5 to 2.5 miles per pixel (1 to 4 kilometers per pixel).

As with our Moon and Earth, one side of Europa always faces Jupiter, and that is the side of Europa visible here. Europa's surface is crisscrossed by fractures, ridges, and bands, which have erased terrain older than about 90 million years.

Citizen scientist Björn Jónsson processed the images to enhance the colour and contrast.

*Credit: NASA/JPL-Caltech/SwRI/MSSS*

## Nene Valley Night Sky Guide



Generated with Stellarium, the above chart shows how the night sky will look on October 1st at 10pm, October 15th at 9pm and October 31st at 8pm.

At the time of this month's chart, the 'traditional' summer constellations of Lyra, Cygnus and Aquila are still high up in the west (even more so earlier in the evening), giving a great opportunity to explore the wonders of these constellations against a dark sky. The Milky Way stretches high overhead, reaching its brightest through Cygnus and then down into Aquila.

The circumpolar constellation of Cassiopeia is now approaching the zenith, closely being pursued by Perseus, with the famed double star cluster being well placed for observation.

Towards the south are the fainter zodiacal constellations of Capricornus, Aquarius and Pisces. Aquarius is currently hosting the planet Saturn. But, there is a permanent Saturn resident in Aquarius in the form of the Saturn Nebula - an eighth magnitude planetary nebula. Discovered by William Herschel, a small telescope will enable you to track this nebula down.

**Steve Williams**

## Nene Valley Night Sky Guide

**New Moon:** 2nd October

**Full Moon:** 17th October

During the course of the month, the Moon occults various stars as it orbits around the Earth. October's brightest events are on 19th October when star HIP 17776 of magnitude 5.4 reappears at the dark limb at 20h 25m whilst on 21st October star 136 Tauri of magnitude 4.6 reappears at the dark limb at 20h 09m. When observing lunar occultations it is recommended to be observing at least five minutes before these times to account for any local variations.

**The Sun** remains at a very high level of activity with a number of sunspots and active areas visible. Despite the Sun's diminishing altitude in our sky, solar maximum is expected either late this year or at some point in 2025. As always, the usual solar observing precautions must be followed!

**Mercury** passes through Superior Conjunction at the end of last month and remains out of view for observation through October.

**Venus** can be glimpsed very low above the Western horizon straight after sunset. At magnitude -4 it will require a relatively clear horizon to spot.

**Mars** begins the month rising in the East just after 11pm. Residing in Gemini, best views will be had in the hours leading up to the onset of morning Twilight. At magnitude 0.5, Mars displays a 7.4 arc second disc size at the start of the month, growing to 9 arc seconds by the end of October as the planets distance from us continues to decrease ahead of its opposition next January.

**Jupiter** rises above the Eastern horizon by 9.30pm at the beginning of October. Situated against the stars of Taurus, Jupiter shines bright at magnitude -2.3. If you have a suitable telescope, then be sure to keep a look out for the various eclipses, occultations and transits of the Galilean satellites and Jupiter.

**Saturn** is now just passed opposition and rises in the south-east as evening twilight begins. At magnitude 0.6, Saturn can be found amongst the stars of Aquarius and transits the southern meridian at mid-night at the beginning of October. Through a telescope, Titan (Saturn's largest moon) can be seen around the 8th, 15th and 24th to either side of the planet.

**Uranus** can be found in the western part of Taurus, to the south of the Pleiades star cluster, rising by mid-evening. At magnitude 5.7, a pair of binoculars will be required.

**Neptune** passed opposition last month and is nicely placed for tracking down in the constellation of Pisces. At magnitude 7.8 a pair of binoculars or small telescope will be needed.

**Meteors** - the 'minor' meteor shower the October Camelopardalids have a short period of activity around the 5th to 6th October. Maximum is on 6th October, however it typically produces only a handful of meteors per hour at most. The radiant is however high in the sky and the Moon will not interfere. The October Camelopardalids have seen increases in activity, most recently in 2016, so it's worth keeping an eye out.

Our other meteor shower this month are the Orionids, active from 2nd October through to 7th November, reaching maximum on October 20th/21st with a respectable Zenithal Hourly Rate of 20. Unfortunately, the radiant does not rise until late evening and this year so does the waning gibbous Moon whose light will drown out all but the brightest Orionids.

The **International Space Station** has pre-dawn visible passes from 18th October onwards. No evening passes are visible this month.

## Comet C/2023 A3 Tshuchinshan-Atlas

The appearance of a bright comet in our sky is an event which is always eagerly anticipated and this month we could well see one.

Comet C/2023 A3 Tshuchinshan-Atlas was discovered back in January 2023 by the Tshuchinshan Observatory in China and independently by NASA's Asteroid Terrestrial Impact Last Alert System. Initial calculations predicted that the comet could become very bright, perhaps the 'comet of the century', although it is fair to say that these early predictions have now been scaled back. Having said that, Comet C/2023 A3 is currently predicted to reach magnitude 2 during the course of October, which is still brighter than most comets get to.

Comet C/2023 A3 passed through perihelion on the 27th September at a distance of 36 million miles from the Sun and reaches its closest point to the Earth on 12th October.

The comet has been observed from the Southern Hemisphere over the last few weeks and by the end of September had reached the third magnitude with a short tail. There was a short period at this time that C/2023 A3 was visible very low down in the pre-dawn sky from the UK, however for most of us the best time to observe this comet is going to come from around 12th October onwards when it will appear low above the western evening horizon.

On the evening of 12th October, C/2023 A3 will be visible above the star Spica in Virgo. It may be possible to see it clearly with the unaided eye or you might need to use binoculars. You will need to look around 7pm at around 5 degrees in altitude towards the West (a clear horizon will be needed!) The Moon at this stage will be about 70% full in Aquarius, so some moonlight interference can be expected.

Over the following few evenings, the comet will climb a little bit higher each evening, moving from Virgo into the neighbouring constellation of Serpens on 15th October and then into Ophiuchus on 20th October. By the 20th October, C/2023 A3 will lie some 25 degrees high at 7pm.

Even with the Full Moon on 17th October, it is hoped that the comet will still be readily visible and by the time we get to 21st October, the Moon does not rise until 7.45pm, so a small window of dark sky will be available, which will grow still further by each passing night.

As anyone involved in astronomy knows, predicting how bright and how visible to the naked eye a comet gets is extremely difficult to do. C/2023 A3 is very unlikely to be as prominent as Hale-Bopp back in 1997, but hopefully it will be readily visible in our sky - clear skies permitting, of course!



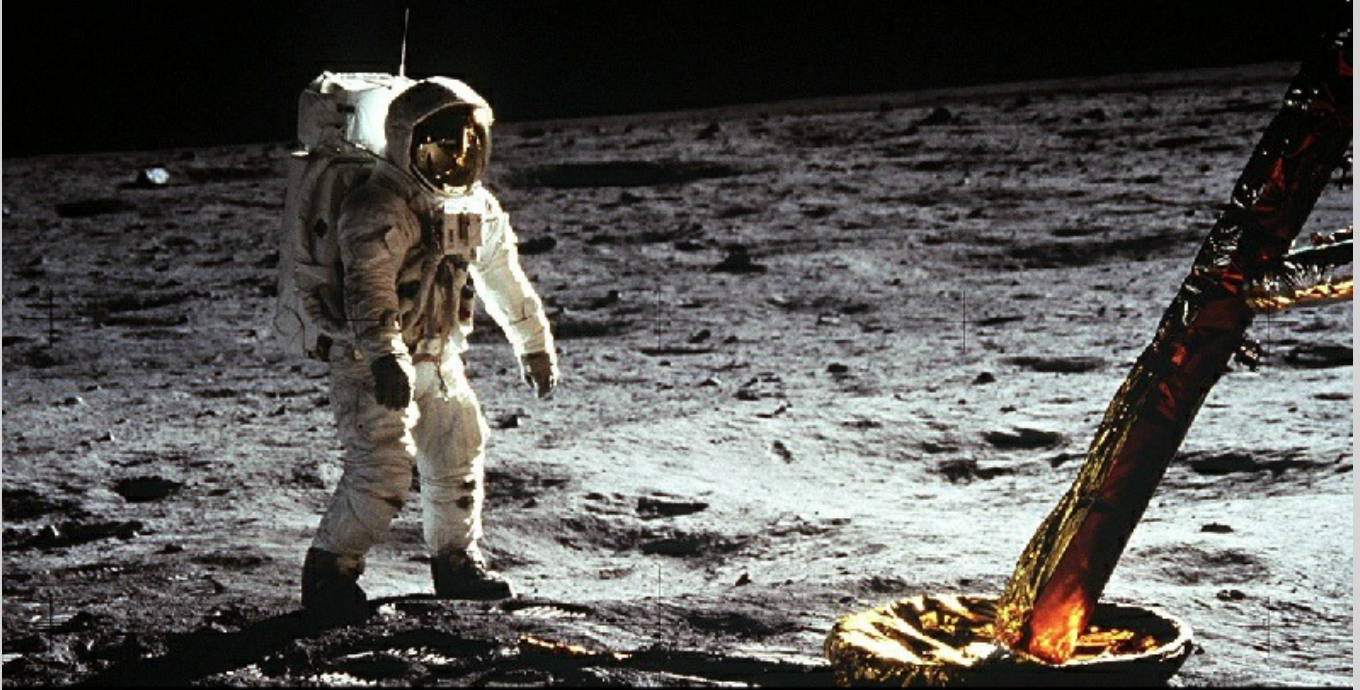
**Nene Valley  
Astronomical  
Society**

**Monday 21st October**

**Chelveston Village Hall,  
Caldecott Road, Chelveston  
NN9 6AT At 8pm**

**Guest Speaker - Dr. Neil Phillipson**

**'Mankind's Next Giant Leap'**



**[www.neneastro.org.uk](http://www.neneastro.org.uk)**

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