

Nene Valley Astronomical Society

Stargazer Newsletter

November 2022

neneastro.org.uk



The Iconic Pillars of Creation are set off in a kaleidoscope of colour in NASA's James Webb Space Telescope's near-infrared-light view. The pillars look like arches and spires rising out of a desert landscape, but are filled with semi-transparent gas and dust, and ever changing. This is a region where young stars are forming – or have barely burst from their dusty cocoons as they continue to form.

Credits: NASA, ESA, CSA, STScI; Joseph DePasquale (STScI), Anton M. Koekemoer (STScI), Alyssa Pagan (STScI).



Follow The Nene Valley Astronomical Society on Twitter and like us on Facebook!

Northamptonshire's Free To Join Astronomical Society



Forthcoming Society Meetings

Monday 7th November



Club Night Meeting At Chelveston Village Hall, Caldecott Road, Chelveston NN9 6AT at 8pm. Admission: £3.

John Wynn-Werninck will present a talk on the Starlink Satellites and there will be the chance to share and discuss our recent astronomical observations.

Monday 21st November



'Star Trails & Their Meanings.' Mary McIntyre will be our guest speaker for the evening.

Chelveston Village Hall, Caldecott Road, Chelveston NN9 6AT at 8pm. Admission £5.

Monday 5th December



Club Night Meeting At Chelveston Village Hall, Caldecott Road, Chelveston NN9 6AT at 8pm. Admission: £3.

This evening we take a look around the stars of the current season and preview some events which you may like to look out for over the winter months.

Monday 19th December



Our traditional end of year quiz and social evening returns this year. Come and take part in this team based quiz - you may win a prize!

Chelveston Village Hall, Caldecott Road, Chelveston NN9 6AT at 8pm.

Society Officers

Chair: Peta Jellis e-mail: enquiries@neneastro.org.uk

Secretary: Kevin Burton e-mail: events@neneastro.org.uk

Events Co-ordinator: John Wynn-Werninck

Membership: Paul Blackman e-mail: membership@neneastro.org.uk

Treasurer: David Jones

Acting Web Site Editor: Steve Williams

Newsletter: Steve Williams e-mail: newsletter@neneastro.org.uk

Committee Member & Refreshments: Alec Parker

Facebook & Twitter: Steve Williams

Federation Of Astronomical Societies

As a member society of the Federation of Astronomical Societies, members of the Nene Valley Astronomical Society are warmly invited to attend this convention. Use the Promo Code below to secure the reduced price when booking.

FAS Convention 2022 Saturday 12th November

Women In Astronomy

Following our convention at the National Space Centre, and our online events, here is a chance to get together in-person with other astronomy enthusiasts.

Our Keynote Speaker is Dame Jocelyn Bell Burnell Professor of Astrophysics at the University of Oxford

Discoverer of Pulsars in the 1960s, and founder of the Bell Burnell Graduate Scholarship Fund.

Lectures:

Dame Jocelyn Bell Burnell

"Discovering Pulsars" and "The Bell Burnell Graduate Scholarship Fund"

Grace Burthom

A secondary school student

"A Young Person's Guide to the Universe"

Mary McIntyre FRAS

Amateur Astronomer and Astrophotographer:

"A History of Women in Astronomy — Part 1"

Dr Becky Smethurst

Astrophysicist, Science Communicator and Author:

"A History of Women in Astronomy — Part 2"

**The Martin Wood Lecture Theatre, Clarendon Laboratory,
Parks Road, Oxford OX1 3PU**

Doors open to attendees at 9:15am, with the programme running from 10am to 5pm.

We will be providing a sandwich lunch and drinks.

During the lunch break there will be time to visit the Museum of the History of Science or the Natural History Museum.

Tickets:	Adults	Family	Under-16 / Student
FAS Member Societies	£10.00	£20.00	£ 5.00
Public	£12.50	£25.00	£ 5.00

*Note that the event will **not** be live-streamed. **You need to be there!***

Places are limited, so for full details, and to book tickets, go **now** to
<https://fedastro.org.uk/fas/convention/>

Members of FAS societies - use promo code FASCON22

For Exhibitors or Society tables, write to meetings@fedastro.org.uk

Hubble Views



This peculiar portrait from the NASA/ESA Hubble Space Telescope showcases NGC 1999, a reflection nebula in the constellation Orion. NGC 1999 is around 1,350 light-years from Earth and lies near the Orion Nebula, the closest region of massive star formation to Earth. NGC 1999 itself is a relic of recent star formation – it is composed of debris left over from the formation of a newborn star.

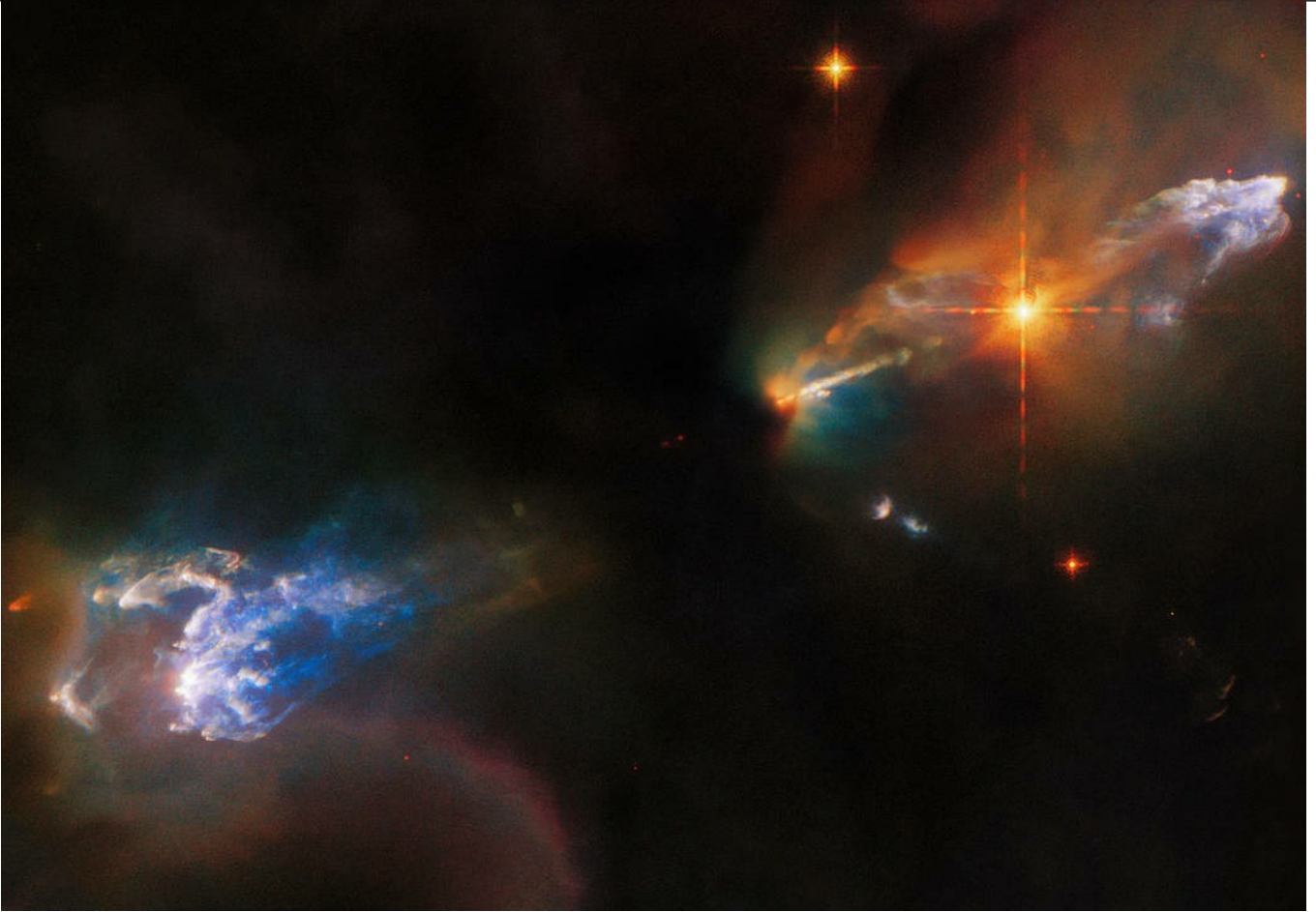
Just like fog curling around a streetlamp, reflection nebulae like NGC 1999 shine by the light from an embedded source. In the case of NGC 1999, this source is the aforementioned newborn star V380 Orionis, which is visible at the center of this image. The most notable aspect of NGC 1999's appearance, however, is the conspicuous hole in its center, which resembles an inky black keyhole of cosmic proportions.

This image was created from archival Wide Field Planetary Camera 2 observations that date from shortly after Servicing Mission 3A in 1999. At the time, astronomers believed that the dark patch in NGC 1999 was something called a Bok globule – a dense, cold cloud of gas, molecules, and cosmic dust that blots out background light. However, follow-up observations using a collection of telescopes, including ESA's Herschel Space Observatory, revealed that the dark patch is actually an empty region of space. The origin of this unexplained rift in the heart of NGC 1999 remains unknown.

Text credit: European Space Agency (ESA)

Image credit: ESA/Hubble & NASA, ESO, K. Noll

Hubble Views



The lives of newborn stars are tempestuous, as this image of the Herbig-Haro objects HH 1 and HH 2 from the NASA/ESA Hubble Space Telescope depicts. Both objects are in the constellation Orion and lie around 1,250 light-years from Earth. HH 1 is the luminous cloud above the bright star in the upper right of this image, and HH 2 is the cloud in the bottom left. While both Herbig-Haro objects are visible, the young star system responsible for their creation is lurking out of sight, swaddled in the thick clouds of dust at the center of this image. However, an outflow of gas from one of these stars is streaming out from the central dark cloud and is visible as a bright jet. Astronomers once thought the bright star between that jet and the HH 1 cloud was the source of these jets, but it is an unrelated double star that formed nearby.

Herbig-Haro objects are glowing clumps found around some newborn stars. They form when jets of gas thrown outwards from these young stars collide with surrounding gas and dust at incredibly high speeds. In 2002, Hubble observations revealed that parts of HH 1 are moving at more than 248 miles (400 kilometers) per second!

Hubble's Wide Field Camera 3 captured this turbulent stellar nursery using 11 different filters at infrared, visible, and ultraviolet wavelengths. Each of these filters is sensitive to just a small slice of the electromagnetic spectrum, and they allow astronomers to pinpoint interesting processes that emit light at specific wavelengths.

In the case of HH 1 and 2, two groups of astronomers requested Hubble observations for two different studies. The first delved into the structure and motion of the Herbig-Haro objects visible in this image, giving astronomers a better understanding of the physical processes occurring when outflows from young stars collide with surrounding gas and dust. The second study investigated the outflows themselves to lay the groundwork for future observations with the NASA/ESA/CSA James Webb Space Telescope. Webb, with its ability to peer past the clouds of dust enveloping young stars, will revolutionize the study of outflows from young stars.

Text credit: European Space Agency (ESA)

Image credit: ESA/Hubble & NASA, B. Reipurth, B. Nisini

Nene Valley Night Sky - November 2022



Generated using Stellarium (Stellarium.org), the above star chart shows how the evening night sky will look on November 1st at 10pm, November 15th at 9pm and November 30th at 8pm.

Jupiter and Mars continue to dominate the evening sky, whilst Saturn disappears towards the south-western horizon. The famed constellation of Orion emerges back into the mid-evening sky, beckoning the long stargazing nights of winter.

Passing overhead at the time of our chart is the queen of the sky, Cassiopeia. Easily recognised by the five main stars making up a W shape, the constellation is backdropped by the Milky Way, bringing us the opportunity to explore this constellations open star cluster, many of which can be sighted through a pair of binoculars. The brightest Messier object is M52 which consists of 100 stars and is notable for an orange hued star near the clusters edge. Also of note is Caldwell 13, the ET or Owl cluster, a magnitude 6 open cluster discovered by William Herschel.

Towards the west, we find the constellations of Altair, Lyra and Cygnus now descending towards the horizon, whilst the south west consists of the zodiacal constellations of Capricornus and Aquarius. The southern part of the sky is dominated by Pegasus, whilst winding it's way from the southern meridian towards the south east is the faint constellation of Cetus; a sea monster in Greek mythology. Cetus does lie along the galactic plane so is a good hunting ground for some of the lesser viewed galaxies. Messier 77 is a ninth magnitude face on spiral galaxy near the star Delta Ceti, whilst there is a selection of fainter NGC classified galaxies to choose from. Cetus is also home to Caldwell 56, an eighth magnitude planetary nebula, sometimes referred to as the Pac-Man nebula,

Round towards the north-east, we find Auriga, Ursa Major and Gemini, the latter having just cleared above the horizon.

Nene Valley Night Sky - November 2022

Full Moon: 8th November

New Moon: 23rd November

The Sun: As we move through November and the Sun sinks ever lower in the daytime sky, opportunities for solar observing are also decreasing. Quite a number of sunspots were observable during the first half of October, however at the time of writing (third week of October) only a handful of very small spots are visible. This variation in sunspot visibility is not unusual and it is only a matter of time before larger groups again become observable.

Mercury: After it's fine appearance in the morning sky last month, is lost in the solar glare this month and is not available for observation. The planet passes through Superior Conjunction on 8th November.

Venus remains lost in the solar glare this month and is not available for observation. Our neighbouring world will however be back on view in the evening sky from next month.

Mars is now racing towards it's date with opposition next month and is finely placed for observation through November. Placed against the backdrop of stars of the eastern part of Taurus, the planet spends November retrograding (moving westwards) against the stellar background. At magnitude -1, the planet is an excellent sight through a telescope, the martian disc size increasing from 15 to 17 arc seconds through the month, enabling the sighting and imaging of numerous surface features. Our Moon passes to the left of Mars on the night of 11th November.



The Moon joins Mars amongst the stars of Taurus on the night of 11th November

Image generated by Stellarium

Nene Valley Night Sky - November 2022

Jupiter remains on view throughout the evening. At magnitude -2.6, the planet passed opposition back at the end of September. Amongst the stars of Pisces, Jupiter is at it's highest (due south) at around 8.15pm mid-November, offering those who prefer not to stay up late, the chance to observe the planet at a good altitude for a number of hours. Mid-November sees Jupiter set just after 2am. The waxing gibbous Moon passes directly below Jupiter on the night of 4th November.

Saturn is now rapidly reaching the end of it's current evening sky apparition. To get the best views, you need to focus on Saturn as the evening twilight fades as the ringed world will be highest as it crosses the southern meridian just before 6pm mid-November. At magnitude 0.7, Saturn remains visible against the stars of Capricornus. As the evening wears on, Saturn will descend towards the south-west, setting at 11pm at the start of November and by 9.30pm at months end. The Moon will lie beneath Saturn on the evening of 1st November.



The Moon meets Saturn on the evening of 1st November. Stellarium generated image.

Uranus can be found to the left of Jupiter amongst the stars of the constellation of Aries. Uranus is at prime viewing this month and reaches opposition on 9th November. At magnitude 5.6, this distant world presents a small (sub four arc second) distinct greenish disc when viewed through a small telescope.

Neptune can be found amongst the stars of Aquarius and nicely placed for viewing in the evening sky. At magnitude 7.9, the planet presents a disc size of just over half that of Uranus through a telescope. Nevertheless, you will see that Neptune appears with a blueish hue. Mid-month, Neptune has set in the south-west by around 1.30am.

November sees a low level of activity with the **Taurid meteor shower**. The southern stream of the Taurids remains active through until around the third week, with the northern stream active throughout the month and reaching it's maximum on 12th-13th November. Slow moving, bright meteors, are likely to be seen, so keep an eye out during moonless periods.

Our other meteor shower this month are the **Leonids**. Associated with Comet Temple-Tuttle, these are very fast moving meteors, best observed around the night of maximum of 17th/18th November. Unfortunately this year the thick crescent Moon rises within Leo and so the meteors will likely suffer with interference from it's light. Under dark skies normally, a patient Leonid observer might expect to see a dozen or so meteors per hour.

The **International Space Station** can be seen in the morning sky for the first week of the month, with evening sky passes commencing from the third week. Use one of the many apps available for timing predictions.

Steve Williams