

Nene Valley Astronomical Society

Stargazer Newsletter

September 2025



The Cat's Paw Nebula



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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 1st September: Club Night Meeting

Monday 15th September: Guest Speaker Meeting - Paul Fellows FRAS - 'Seeking The Sun's Sisters'

Monday 6th October: Club Night Meeting

Monday 20th October: Simon Toogood – 'The Atmosphere Of Jupiter & Data From The Juno Mission'.

Society Observing Evenings

Take place on clear Friday evenings starting from Friday 27th September at Chelveston Village Hall from 8pm. As previously, to confirm that conditions will permit observing, please check either our X or Facebook feeds from 6pm on the evening.

Society Officers

Vice-Chair: Steve Williams Telephone: 07510 246928

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

Web Site / Stargazer Editor: Steve Williams e-mail: newsletter@neneastro.org.uk

Committee Member: Paul Jamison

15th September - Paul Fellows FRAS - 'Seeking The Sun's Sisters'

Our meeting on 15th September sees Paul Fellows visiting the society with a presentation entitled 'Seeking The Sun's Sisters'.

Paul has always had a keen interest in astronomy and leads public events at the University of Cambridge. He studied there as an undergraduate and specialized in Spectroscopy and later as a post graduate he worked on the development of home computers and the operating systems we know today.

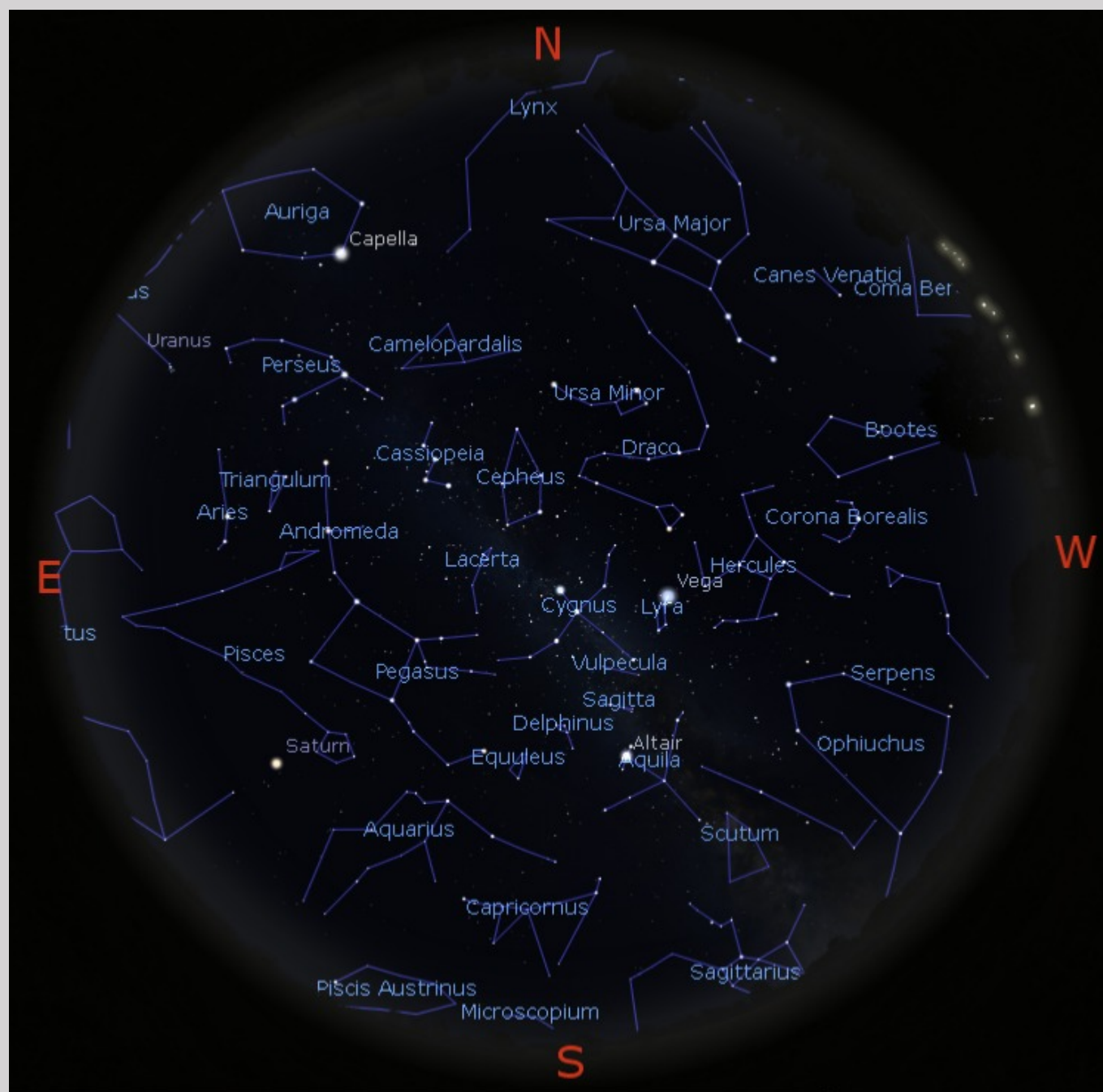
He pioneered Video streaming over the internet and twice won the Queen's Award for Technology.

In 2005 he was elected Fellow of the Institute of Engineering and this year was awarded a BEM for services to the public understanding of science and technology. He is the Chairman of the Cambridge Astronomical Association.

Since 2016 he has been an astronomy lecturer on the Queen Mary 2, other cruise ships and many societies and clubs such as ours!

Cover Image: James Webb Space Telescope Image Of The Cat's Paw Nebula

Nene Valley Night Sky Guide



Generated with Stellarium, the above chart shows how the night sky will look on September 1st at 11pm, September 15th at 10pm and September 30th at 9pm.

As the heart of our Milky Way galaxy in Sagittarius descends below the south-western horizon, the September evening sky offers us the chance to observe the stars of late summer/early Autumn during (hopefully) relatively mild sessions. Deneb, a powerhouse of a star, lies more or less directly overhead at the time of our chart, the Milky Way stretching away from either side. To the west of Deneb is Vega, the brightest star in the small constellation of Lyra. Lyra is home to the famous ring nebula Messier 57, a ninth magnitude object and one of the brighter examples of a planetary nebula.

Ursa Major lies low to the north-west, however this does mean that constellations on the opposite side of the celestial north pole are on the rise in the north-east including Cassiopeia (home to a number of open star clusters) and Perseus (with the famed double cluster and the variable star Algol). Andromeda and Pegasus are high in the south-west, whilst below is the faint zodiacal constellation of Pisces along with the creamy glow of Saturn.

Steve Williams

Nene Valley Night Sky Guide

Full Moon: 7th September

New Moon: 21st September

Total Lunar Eclipse A totally eclipsed Moon will rise in the early evening sky on 7th September. Sadly it will already be past mid-totality when it rises, however it will still offer a spectacular sight in the East-South-East. Rising at around 7.45pm, you may be best to use a pair of binoculars to get the best view and then watch over the course of next hour or so as the Moon emerges from the Earth's shadow. The eclipse ends shortly before 9pm.

The Sun was showing a significant amount of activity at the end of August with a considerable number of sunspot groups visible through safe white light solar filters. If the weather permits, it will be well worthwhile following this activity into early September. Keep up to date of current solar activity at spaceweather.com

Mercury can be found low in the eastern dawn twilight at the start of the month. An unobstructed horizon in this direction will be important. Mercury starts the month at magnitude -1.2 rising at around 5am, but quickly loses altitude during the first week of the month before disappearing from view.

Venus is a morning sky object, rising at 3.15am at the start of the month. A brilliant magnitude -3.8, our neighbouring world lies amongst the stars of Cancer, passing near the open star cluster M44 at the beginning of the month. A daylight occultation of Venus by the Moon occurs on the 19th September, however this can be a tricky observation to make as the Moon lies less than 30 degrees from the Sun. Venus will disappear behind the Moon at 12h 54m, reappearing at 14h 14m.

Mars is now lost from view until mid-2026.

Jupiter is now a dominant force in the morning sky amongst the stars of Gemini. Rising at 1.30am at the start of the month at magnitude -2, it is best viewed at it's highest, shortly before the onset of morning twilight. The waning crescent Moon passes to the North of Jupiter on the morning of 16th September.

Saturn reaches opposition on 21st September when it will lie due south on the meridian. Saturn is in Pisces at magnitude 0.7. The ring system is slowly starting to open back up to our line of sight, but still makes for a relatively unusual view at present. The Moon lies to the North of the planet on 9th September.

Uranus is an early morning object for binocular observers and can be located in the constellation of Taurus.

Neptune also reaches opposition this month, on 23rd September in Pisces. At magnitude 8, a small telescope will reveal the tiny disc of this distant world.

Meteors - there are no major meteor showers visible this month however the sporadic (or background) rate is usually at it's highest at this time of year. Meteor watches on moonless nights are likely to give the best results.

Aurora - it is possible that with the strong solar activity, that we may get some more auroral displays this Autumn, therefore keep an eye towards the North and you could get lucky!

The **International Space Station** can be seen in the morning sky during the first week of the month and thereafter passes switch to the evening sky.

Members Observations

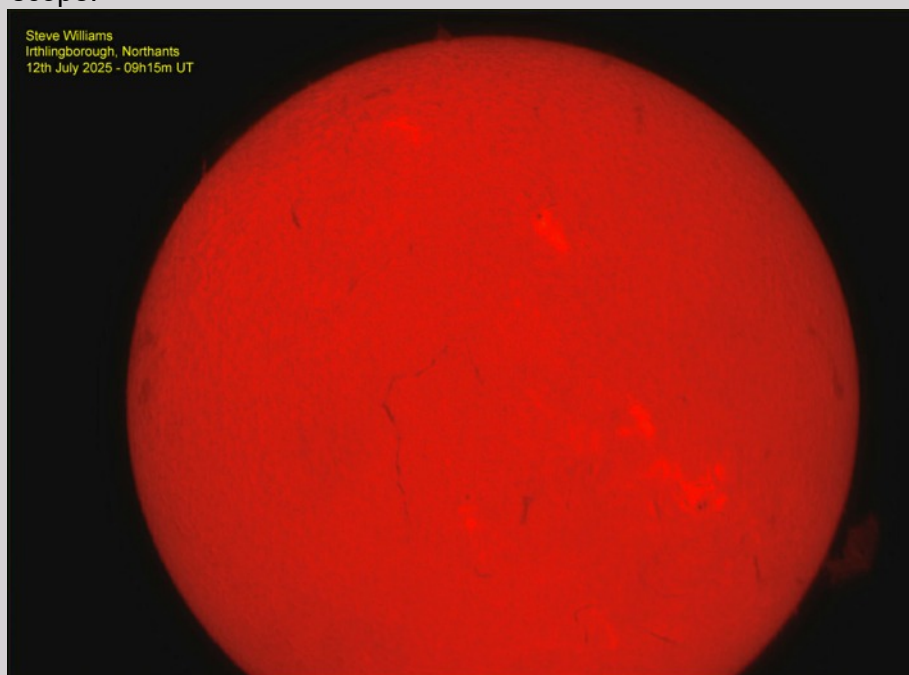
We encourage members to share their observations through the Stargazer Newsletter. Images, sketches or even a description of an observing experience are all welcome. These can be emailed to newsletter@neneastro.org.uk



The above two images were obtained by David Bryant through an 8" Newtonian and ZWO 071 MC Pro Camera. Processing in Siril and Graxpert.

To the left is the spiral galaxy M101 in Ursa Major - 20 X 3 minute exposures whilst to the right are M65 and M66 in Leo - 80 x 3 minute exposures (four hour total integration).

Below - A Hydrogen-Alpha view of the Sun taken on 12th July 2025 by Steve Williams using an Acuter Phoenix 40 solar scope.



Hubble Views



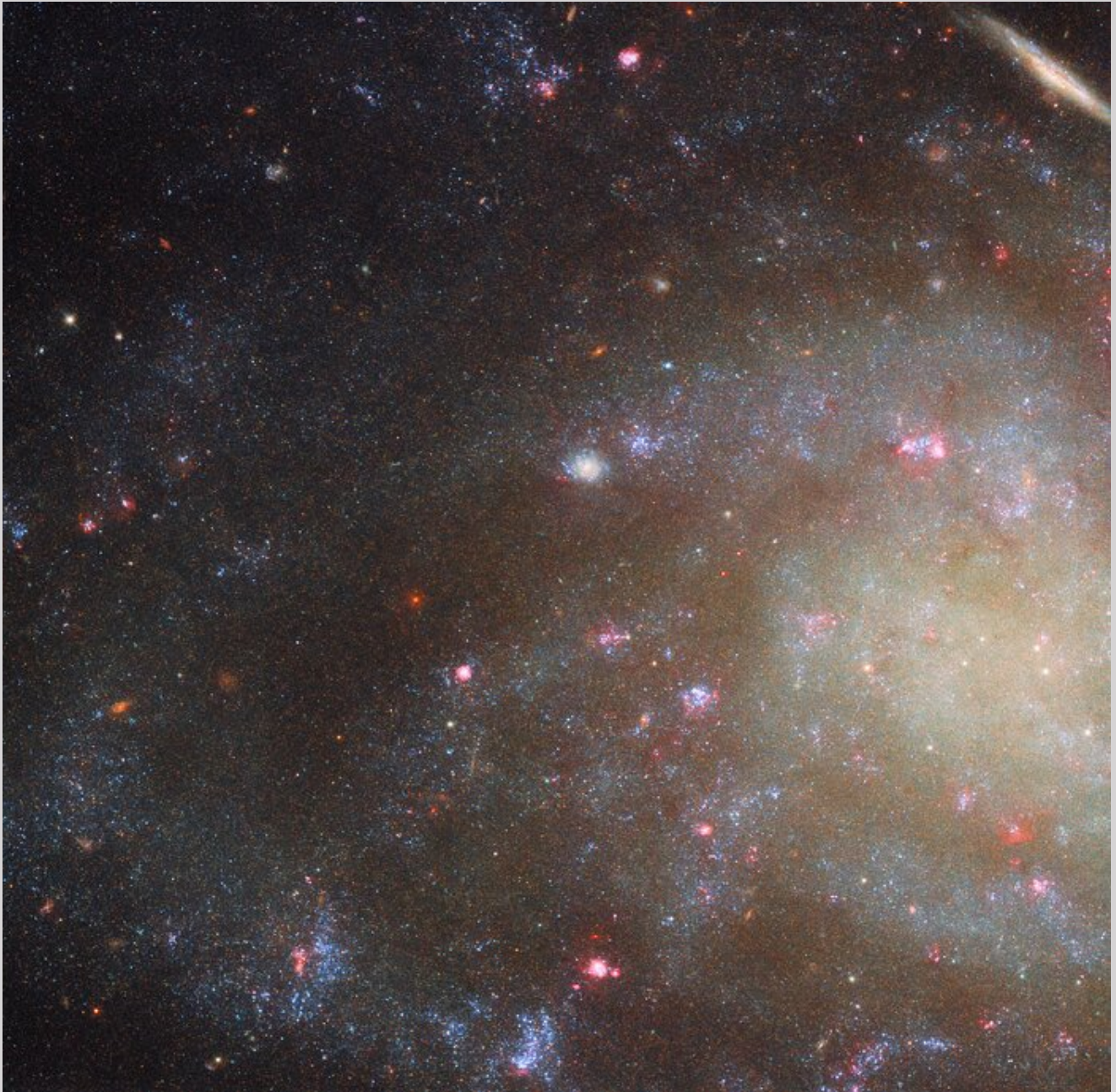
This Hubble picture captures incredible details in the dusty clouds in a star-forming region called the Tarantula Nebula. What's possibly the most amazing aspect of this detailed image is that this nebula isn't even in our galaxy. Instead, it's in the Large Magellanic Cloud, a dwarf galaxy that is located about 160 000 light-years away in the constellations Dorado and Mensa.

The Large Magellanic Cloud is the largest of the dozens of small satellite galaxies that orbit the Milky Way. The Tarantula Nebula is the largest and brightest star-forming region not just in the Large Magellanic Cloud, but in the entire group of nearby galaxies to which the Milky Way belongs.

The Tarantula Nebula is home to the most massive stars known, some of which are roughly 200 times as massive as our Sun. The scene pictured here is located away from the centre of the nebula, where there is a super star cluster called R136, but very close to a rare type of star called a Wolf-Rayet star. Wolf-Rayet stars are massive stars that have lost their outer shell of hydrogen and are extremely hot and luminous, powering dense and furious stellar winds.

This nebula is a frequent target for Hubble, whose multiwavelength capabilities are critical for capturing sculptural details in the nebula's dusty clouds. The data used to create this image come from an observing programme called Scylla, named for a multi-headed sea monster from the Greek myth of Ulysses. The Scylla programme was designed to complement another Hubble observing programme called ULLYSES (Ultraviolet Legacy Library of Young Stars as Essential Standards). ULLYSES targets massive young stars in the Small and Large Magellanic Clouds, while Scylla investigates the structures of gas and dust that surround these stars.

Credit: ESA/Hubble & NASA, C. Murray



This NASA/ESA Hubble Space Telescope Picture zooms in on the teathery spiral arms of the galaxy NGC 45, which lies just 22 million light-years away in the constellation Cetus (The Whale).

The data used to create this portrait were drawn from two complementary observing programmes. The first took a broad view of 50 nearby galaxies, leveraging Hubble's ability to observe light from the ultraviolet to the near-infrared in order to study star formation in these galaxies. The second programme examined many of the same nearby galaxies as the first, narrowing in on a particular wavelength of red light called H-alpha. Star-forming nebulae are powerful producers of H-alpha light, and several of these regions can be identified across NGC 45 by their bright pink-red colour.

These observing programmes aimed to study star formation in galaxies of different sizes, structures, and degrees of isolation — and NGC 45 makes for a particularly interesting target. Though it may appear to be a regular spiral galaxy, NGC 45 is actually a remarkable type called a low surface brightness galaxy.

Low surface brightness galaxies are fainter than the night sky itself, making them incredibly difficult to detect. They appear unexpectedly faint because they have relatively few stars for the amount of gas and dark matter they carry. In the decades since the first low surface brightness galaxy was serendipitously discovered in 1986, researchers have learned that 30–60% of all galaxies may fall into this category. Studying these hard-to-detect galaxies is key to understanding how galaxies form and evolve, and Hubble's sensitive instruments are equal to the task.

Credit: ESA/Hubble & NASA, D. Calzetti, R. Chandar