



Lewes Astronomical Society

# August Newsletter 2025

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# LAS - Upcoming Events



## The UK Fireball Alliance and Fireballs Aotearoa

Talk by Jim Rowe FRAS  
3rd September 2025  
Lewes Subud Centre, BN7 2DS

Of 75,000 meteorites worldwide, only about 60 have accurate pre-impact orbits. This includes the UK's 2021 Winchcombe fall and New Zealand's 2024 Tekapo meteorite. Jim Rowe will explain why and how the twin organisations of UKFall and Fireballs Aotearoa are maximising the science done with fireballs, and how you can get involved.

Everyone is welcome. Non-members £4.



# LAS News

## Outreach Activity Updates -Dr Kate Land

We've rounded off a terrific year of outreach with some lovely community events.

In May, Paul Whitmarsh gave a talk to the residents of Claydon House, as part of their "Camping Under the Stars" week. Many of their residents are unable to get out to observe the night sky, but Paul brought the outside in, and took everyone on a magical tour of the Universe, using many of his own images of deep sky objects such as galaxies and nebulae. The Claydon House events coordinator Emma said "This was the high light of our week. Our residents ... were so enthralled, and were talking about it over supper and for days after. Paul was engaging and captivating, and we are so grateful for their time".



In June, we took the society's new Hydrogen-Alpha Solar Scope to Annan Primary School in Uckfield. One of the pupils had met us on the racecourse during a pop up solar observing event, and told us their school was doing a project about the sun. Jane Penny, Robert Massey, and Kate Land attended, taking the solar scope, Robert's traditional telescope with a filter, and some eclipse glasses. The kids (and teachers!) were absolutely engrossed in the telescopes - there were lots of "ooohs" and "aaahs" as they got sight of sun spots and solar prominences for the first time.

On a very hot day in June, Chris Taylor, Robert and Jane represented LAS at the Southover Primary School Summer Fair – a new kind of event for us. The team attracted lots of attention, and helped people observe the sun safely, for over 3 hours, on one of the hottest days of the year! Before then heading up to the downs for the LAS Summer Solstice Walk, led by Steve and Judith.

Next up, we're looking forward to attending the Landport Picnic On the Green, August 27th. And - as always - the society will be represented at the Herstmonceux Astronomy Festival, August 29th - 31st. Please reach out to Steve Ward if you want to help with the LAS stand at Herstmonceux. And, looking even further ahead, we'll be putting a team together to run a fabulous LAS stand at the Lewes STEM Fair, Saturday Nov 29th. Please do reach out if you want get involved!

As with a lot of our activities, these events were made possible by two grants we have received from the Lewes Town Council Community Grants Scheme, in 2023 and 2024, which allowed us to purchase a projector and a solar scope.



# LAS News

## LAS at the Harvey's Brewery Tour - Judith Pyett



On Friday 4th July, over 30 members and guests of the Lewes Astronomical Society gathered at Harvey's Brewery in Lewes for a guided tour of their historic premises. We were warmly welcomed by Miles Jenner, one of Harvey's directors, whose deep knowledge and enthusiasm for the brewing industry captivated us throughout the evening.

Harvey's is the oldest independent brewery in Sussex, a proud family business that has remained in the hands of John Harvey's descendants since 1790. Today, five members of the seventh and eighth generations continue that legacy.

Brewing is a craft as ancient as civilisation itself. Humans have been producing beer for millennia, with the oldest known recipe dating back 3,900 years—a Mesopotamian hymn to the Sumerian goddess Ninkasi, describing how to brew beer from barley.

Miles explained that, despite modern advances, the brewing process at Harvey's still honours many traditional methods. The brewery uses a blend of four local hops, local malted barley, a dash of crystal malt, and a unique strain of yeast that has been cultivated for over 60 years. The water—known in brewing as "liquor"—comes from an aquifer beneath the brewery, having filtered through the chalk of the South Downs for more than 30 years. This mineral-rich water, stored in a reservoir at the top of the brewery tower, contributes to the distinctive character of Harvey's beers. Even if another brewery used the same ingredients and recipe, the flavour would be noticeably different due to the unique properties of the liquor.

We also learned about the importance of copper in the brewing process, the influence of fermentation temperatures, the shape of the barrels, and the importance of the positioning of the tap.

Following the tour, we were treated to a generous tasting of several beers, poured straight from the kegs. We enjoyed these in the pleasant evening sunshine, rounding off a thoroughly enjoyable and informative visit.



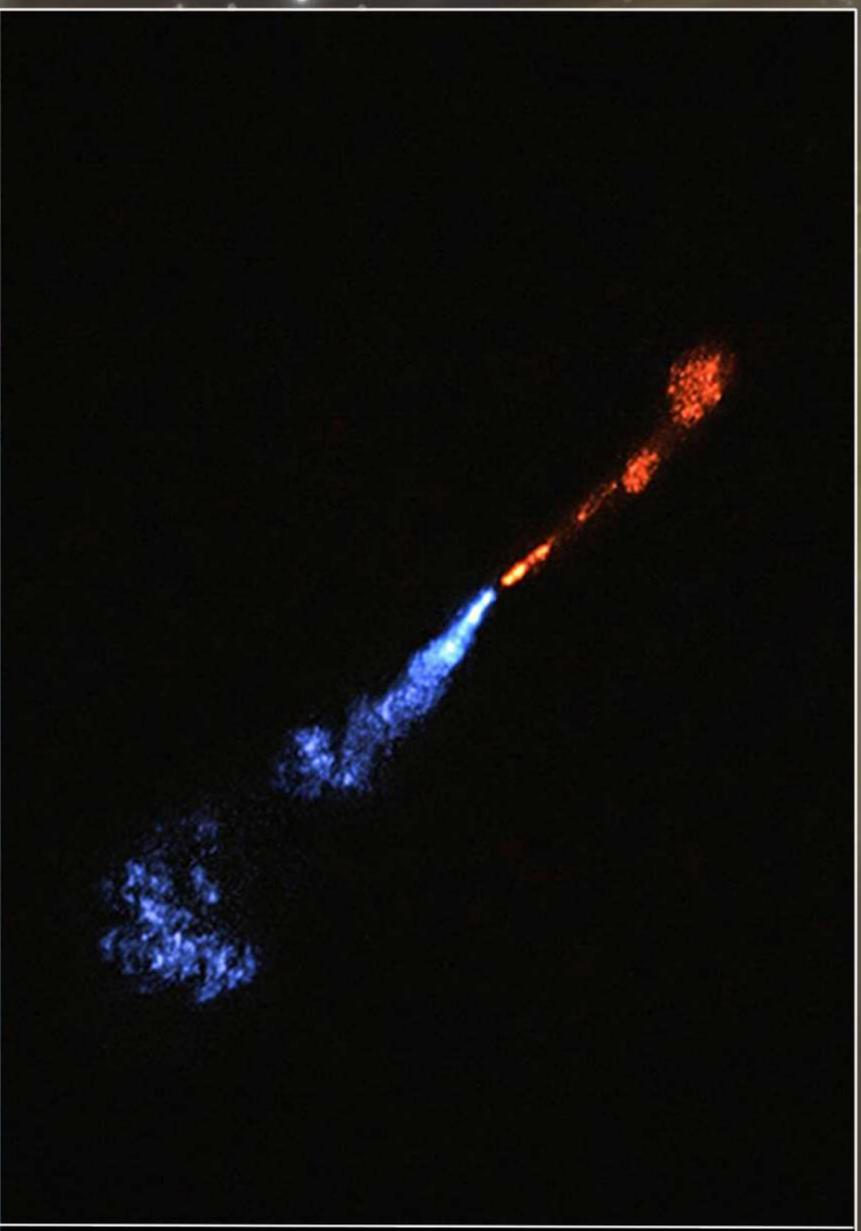
# Early Stages of Planet Formation Observed

A team of international astronomers have made a groundbreaking discovery, offering an unprecedented glimpse into the origins of solar systems such as our own. Using the Atacama Large Millimetre Array (ALMA) telescope in Chile, and the James Webb Space Telescope (JWST), researchers observed the earliest known stages of rocky planet formation around a young, sun-like star, HOPS-315, located about 1,300 light-years away in the Orion Nebula.

HOPS-315 is 100,000 to 200,000 years old and is what's known as a protostar; a very young star in the earliest phase of stellar evolution that is still gathering mass from the dense cloud of dust and gas within its parent nebula.

For the first time, scientists directly detected the first specks of solid material condensing out of the gas near to the star. These hot, crystalline minerals are also found in ancient meteorites from our own Solar System and are believed to be the first building blocks of planetesimals, the seeds of planets like Earth and Jupiter.

"Astronomers have been waiting for this kind of evidence," said lead researcher Melissa McClure of Leiden University. "We're seeing rocky planet formation as it begins—something we've never been able to do before."



This image provided by the European Southern Observatory on Tuesday, July 15, 2025, shows jets of silicon monoxide blowing away from the baby star HOPS-315.  
Credit: ALMA(ESO/NAOJ/NRAO)/M. McClure et al. via AP



This image provided by the European Southern Observatory on Tuesday, July 15, 2025, shows HOPS-315, a baby star where astronomers have observed evidence for the earliest stages of planet formation.  
Credit: ALMA(ESO/NAOJ/NRAO)/M. McClure et al. via AP

The mineral signatures were spotted within a region of the disk comparable to our solar system's asteroid belt. Co-author Logan Francis noted the striking similarity: "We're seeing these minerals in the same location in this system as where we find them in asteroids here."

Until now, scientists had only seen solid planets or planetesimals at later stages of development. This discovery not only confirms theories about planet formation but also suggests these early processes could be common in other star systems.

"This system is like a time machine," said Purdue University's Merel van 't Hoff. "It offers a rare window into the very beginnings of what might become a planetary system like ours."

While it's too early to say how many planets HOPS-315 might form, its massive gas disk could potentially give rise to multiple worlds over the next million years.

# Interstellar Comet Speeds Through Solar System

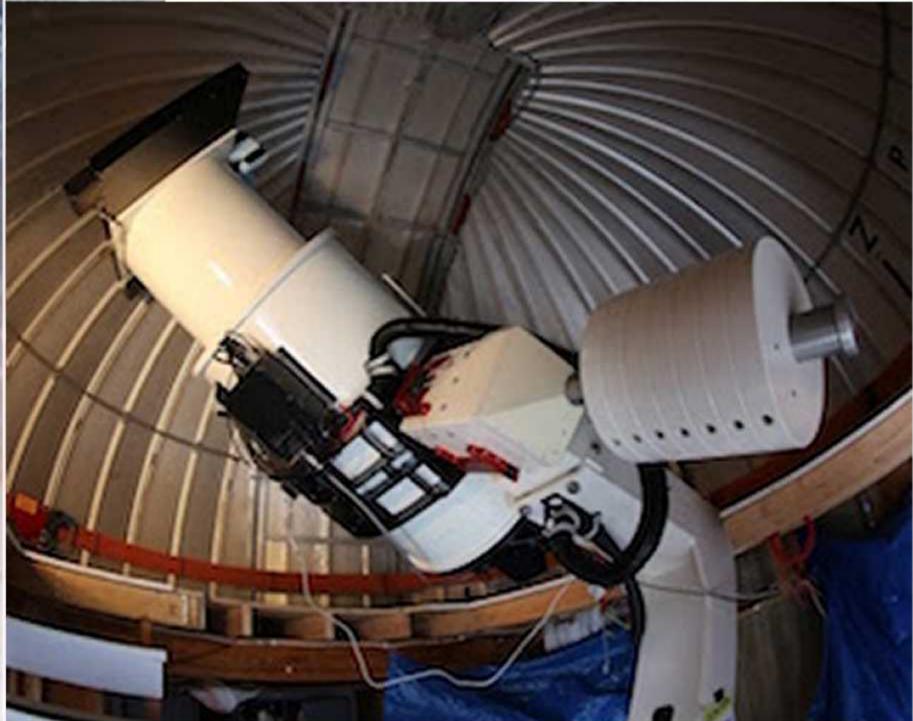
## Part 1: ATLAS and the First Interstellar Objects

The Asteroid Terrestrial-impact Last Alert System (ATLAS) was developed by the University of Hawai'i and funded by NASA. It consists of four 50cm telescopes; two based in Hawaii; one in Chile; and one in South Africa, each equipped with a wide-field, high-resolution CCD camera. Together, these telescopes scan the entire night sky every night, looking to detect moving objects, particularly those which pose a hazard to Earth.

To date, ATLAS has discovered over 700 near-Earth asteroids and 66 comets, all of which had originated within our Solar System. This allows researchers to build a picture of how these objects may impact the Earth in the future and also grants them material to study the composition and origins of our Solar System.

While these asteroids and comets provide us with exciting data about the workings of our Solar System, a few interstellar visitors have been discovered in recent years; 1I/Oumuamua in 2017, and 2I/Borisov in 2019.

By studying the gases and ices of interstellar objects we can compare the building blocks of other planetary systems to our own, learn how common certain types of materials are across the Milky Way, search for clues on the origins of life, determine the effects of interstellar space on materials over time, and improve early detection to help us prepare for future rare events or threats.



ATLAS 2 on Maunaloa. Credit: C. Messier



1I/Oumuamua was discovered in October 2017 by Pan-STARRS in Hawaii and caused quite a stir within the astronomical community. Its eerie cigar shape captured the imaginations of the public and our eccentric guest remains a source of intrigue and mystery. [Click here](#) for a more detailed explanation of Oumuamua's discovery.

The above image is an artist's impression. Credit: dottedhippo



2I/Borisov was the second interstellar object to be discovered, and the first confirmed interstellar comet. It was discovered by Crimean amateur astronomer, Gennady Broisov in 2019. [Click here](#) for more information on this little explosive comet. Pictured above by Hubble.

Image Credit: NASA, ESA and D. Jewitt (UCLA)

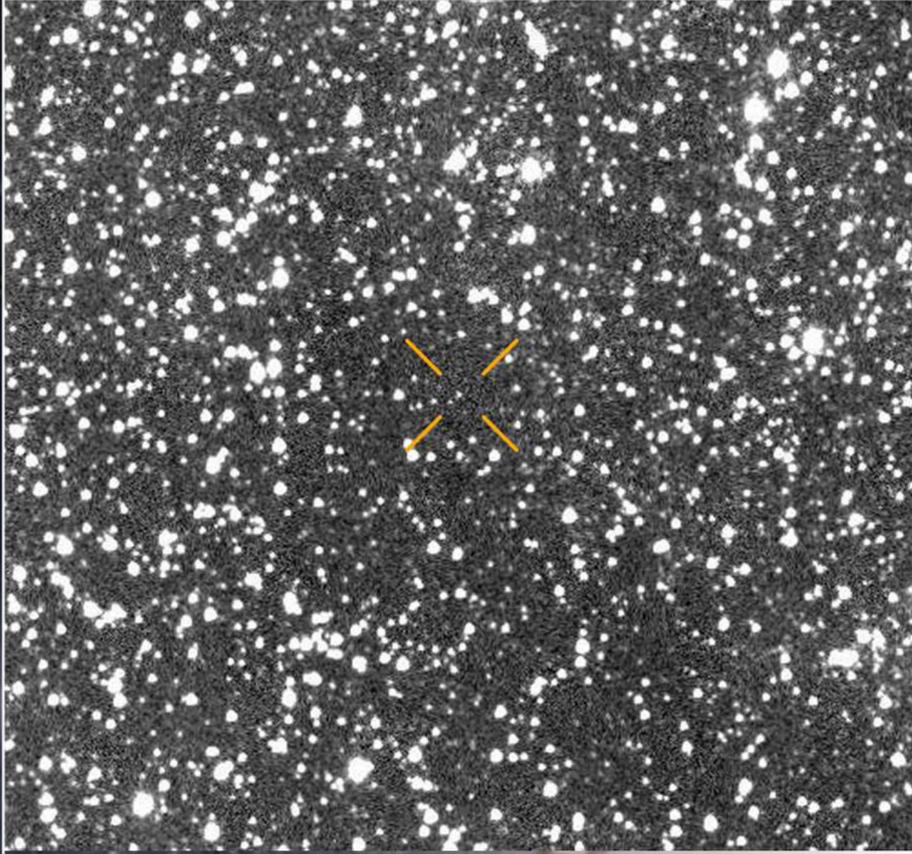
Astronomers are able to distinguish between objects that have originated from our own system and these interstellar visitors by tracking their trajectory and velocity. Oumuamua was found to be travelling at speed of 85,700 mph as it rocketed through the orbits of Mars, Jupiter and Saturn, shooting out of our Solar System towards the constellation Pegasus. Borisov is travelling even faster at a speed of 110,000 mph, coming just short of Mars' orbit and now moving away from the Sun towards interstellar space. Both Oumuamua and Borisov are moving too quickly through the Solar System to be captured by our Sun's gravity, although their trajectories have been deflected as they pass by.



# Interstellar Comet Speeds Through Solar System

## Part 2: A New Visitor

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This picture shows the observations of comet 3I/ATLAS when it was discovered on July 1, 2025. The NASA-funded ATLAS survey telescope in Chile first reported that the comet originated from interstellar space.  
Credit: ATLAS/University of Hawaii/NASA

Now, a new interstellar comet has entered the scene. 3I/ATLAS, observed by the ATLAS telescope in Chile, was first discovered on 1st July 2025 and confirmed to be an interstellar object on the 2nd. It was discovered that the newly operational Vera C. Rubin Observatory unknowingly captured 3I/ATLAS during testing in late June, providing the earliest and highest-resolution images so far.

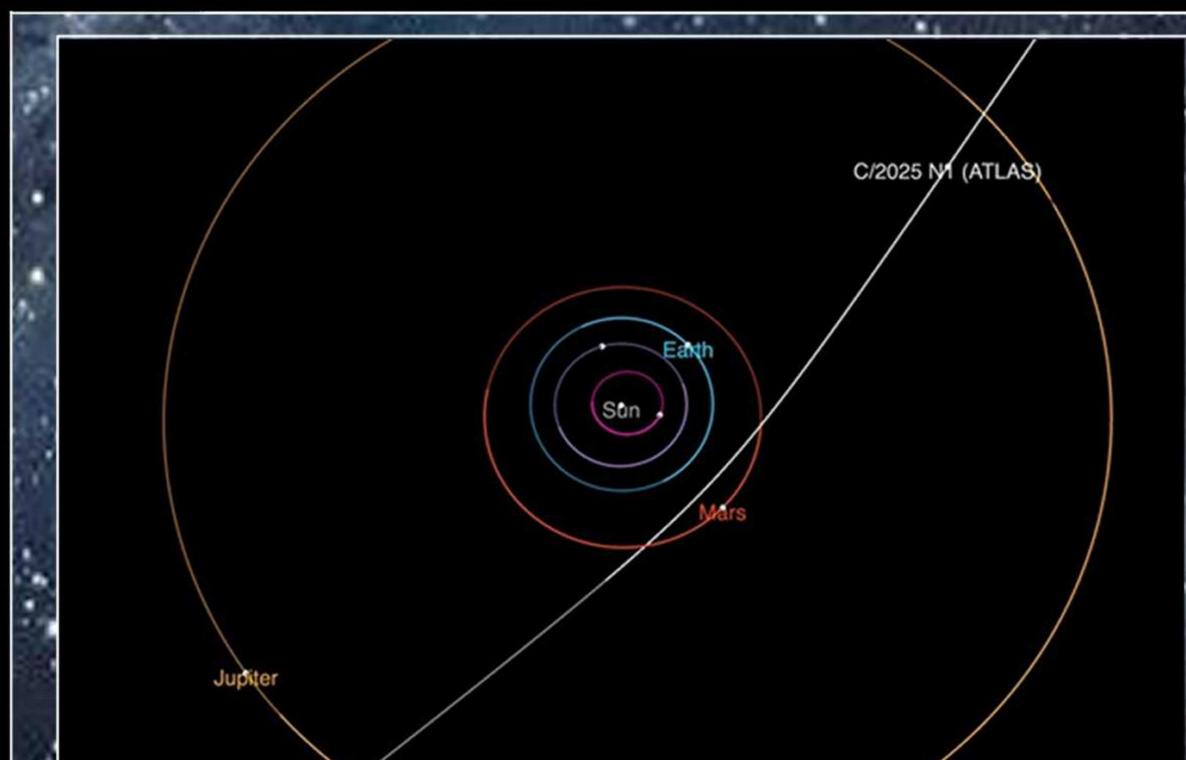
These images displayed an enveloping fuzzy cloud of gas and dust around its icy nucleus, known as a coma, helping to identify 3I/ATLAS as a comet. As it nears the Sun and heats up, this coma will expand and solar winds will push the dust and gas away, causing them to stream off into space and form the tail of the comet.

An initial size estimate suggests that the comet is between 10-20km wide, meaning it could be larger than Oumuamua and Borisov. It's break-neck speed has it hurtling through space at 134,000 mph, making it the fastest interstellar object yet observed. Estimates also suggest that the comet may be 7-11 billion years old, meaning that it may even be older than the Solar System itself.

3I/ATLAS is following a hyperbolic trajectory, confirming that it is not bound to the Sun, and will exit the Solar System after its closest approach (known as the perihelion) in late October 2025. At this point, the comet will pass behind the Sun, reappearing on the other side by early December 2025. It poses no threat to Earth as it will remain far away, with its closest approach at 170 million miles. The best time for observing the comet will come in September, and then again in December once it reappears.

Early observations have revealed a rare sunward-facing tail, which could possibly be caused by slow-moving dust or unusual rotation. The comet is likely composed of ice, which will help scientists to study its chemical make-up, and JWST and the Hubble Space Telescope are expected to help analyse its gas emissions, structure, and behaviour as it enters perihelion.

The Southern Astrophysical Research Telescope, the Gemini Observatory, and the Very Large Telescope are all now being used to study 3I/ATLAS, and there will hopefully be plenty more data available on its make-up and possible origins over the next few months, before it fires out of our Solar System in the direction of the constellation Sagittarius.



This diagram shows the trajectory of interstellar comet 3I/ATLAS as it passes through the solar system. It will make its closest approach to the Sun in October.

Credit: NASA/JPL-Caltech

# Hubble Captures Barred Spiral Galaxy



Hubble snapped this picture of the spiral galaxy UGC 11397, in the constellation Lyra. Although it appears to be average at first glance, this galaxy holds a supermassive black hole containing 174 million times the mass of our Sun. Thick clouds of dust hide much of the energetic activity emanating from the black hole. UGC 11397's black hole was revealed through its bright X-ray emission, which pierces the surrounding dust. Astronomers have classified the galaxy as a Type 2 Seyfert galaxy.

Credit: ESA/Hubble & NASA, M. J. Koss, A. J. Barth

# Happy Birthday JWST!



The Cat's Paw Nebula in all its glory, as revealed by the JWST on its third anniversary of science operations. The telescope was launched on 11th July 2022.

Credit: NASA, ESA, CSA, STScI

# Hubble Observes Orion

NASA's Hubble Space Telescope captured a bright variable star, V 372 Orionis, and its companion in this festive image in this image released on Jan. 27, 2023. The pair lie in the Orion Nebula, a colossal region of star formation roughly 1,450 light-years from Earth.



# August Star Map

The chart depicts how the night sky will appear at 11pm at the start of August, 10pm in mid-August, and 9pm at the end of August. The position and phase of the Moon are given for the 4th, 8th and 11th August.

The peak of the Perseid meteor shower, where "shooting stars" appear as debris from Comet Swift-Tuttle burns up in the atmosphere, occurs over the 12th – 13th August. This year the Moon is only a few days past full, and its light will blot out the fainter meteors, though the remaining ones will be bright and often colourful.

If you watch from 45 minutes after sunset, you may also see Earth grazers, where the meteor skims the top of the atmosphere, leaving a long trail across the sky. The Perseids are active for the first three weeks of August, so keep looking up for these cosmic fireworks.

Saturn returns to the evening sky, rising as the Sun sets. At the moment, its rings are almost edge on, but it nonetheless remains a beautiful sight through a small telescope.

Low in the south lies the constellation of Sagittarius, which looks like a teapot. If you have binoculars, find the spout of the teapot and move up by about the same height as the spout, you may be able to see what looks like steam, but are clouds of gas and dust or nebulae.

These were recently imaged in exquisite detail by the new Vera C. Rubin telescope. Sagittarius is in the direction of the heart of the Milky Way, our galaxy, and far beyond those nebulae is the supermassive black hole that marks its core.



Words by Paul Whitmarsh  
Star map by Sarah Carson

# LAS Gallery

Barnard 86 and Open Cluster NG6520  
Captured with the SeeStar S50 at 3h3m40s of 20" exposures



By Paul Whitmarsh

# LAS Gallery

Sunspots  
Captured on July 3rd via Solarscope



Credit: Robert Massey



# Adverts

Ever thought of volunteering for LAS? We're looking for members who are willing to contribute to the monthly newsletter.

At the LAS, we are very much for encouraging the growth of community, and this means providing open discussion and promoting the voices of our valued members.

We believe that a newsletter should be about more than just news. Your contribution could be about any topic within astronomy that you find interesting, such as a closer look at a news topic that has caught your attention, or advice for other members on how to buy the right telescope and begin their stargazing adventures.

If you're interested in making a monthly, one-off, or an "every now and then" contribution, please contact Sarah at [sarah.carson@lewesas.org.uk](mailto:sarah.carson@lewesas.org.uk), or speak to us in person at one of our events or monthly meetings.

