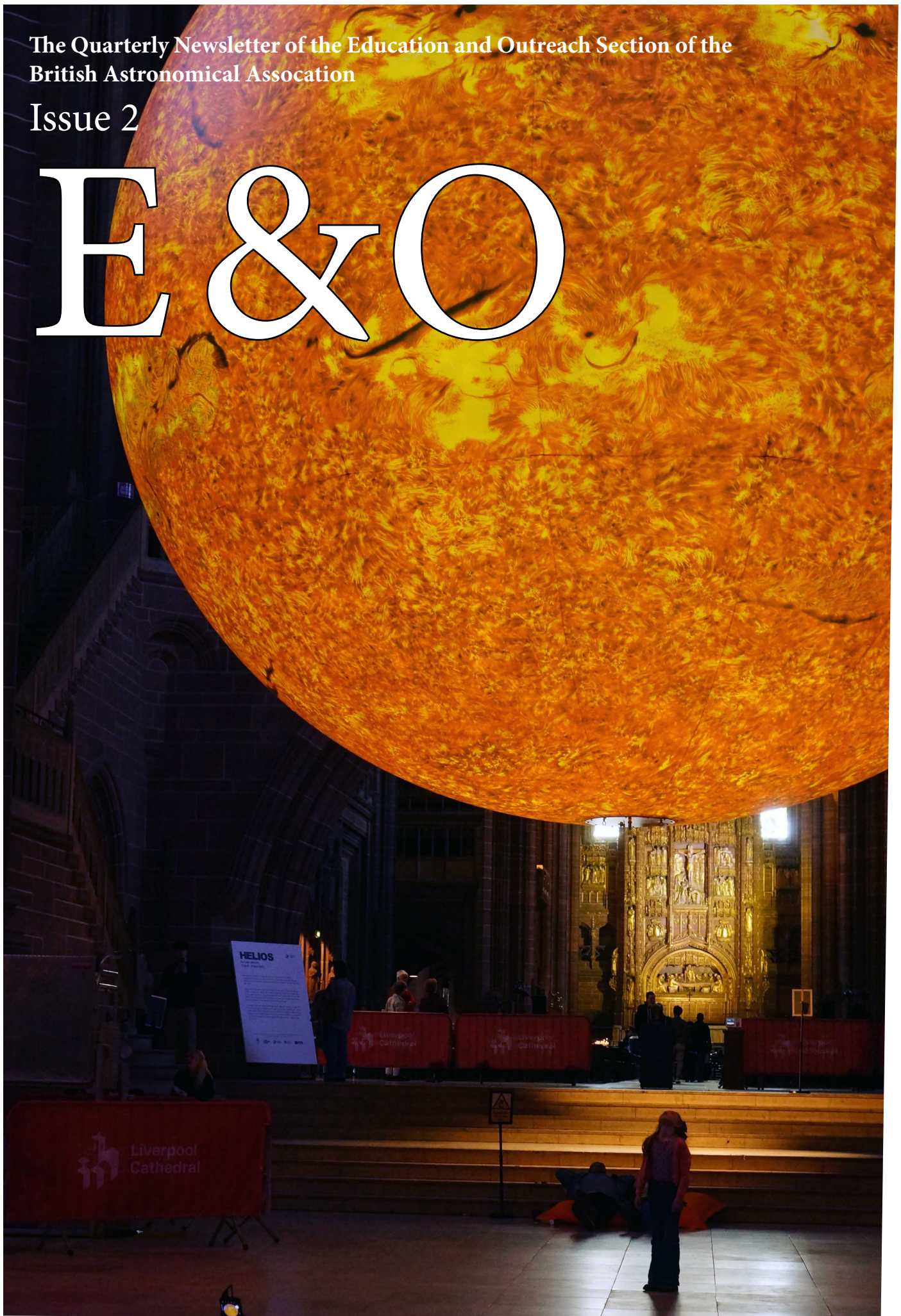


The Quarterly Newsletter of the Education and Outreach Section of the
British Astronomical Association

Issue 2

E & O



From the Editor

Alexandra Hart

Coming up in this edition of the newsletter we have an incredible selection of articles showcasing everything you have been doing this spring. Of course, the main astronomical attraction being the partial solar eclipse which gave the opportunity for so many of us to show the wonder of two celestial bodies aligning to so many people.

It has been wonderful reading what everyone has been up to and I urge you to keep sending them in to us, please e-mail EandO@britastro.org with newsletter in the title before 31st July 2025 to be included in the next edition. The newsletter not only helps us all find out about what each other are doing but also documents all our successes. If everyone wrote down a diary of the events they held, how many people came, stories about the day, and submitted them to the newsletter then this would be a fabulous record. So please, write up your diary of the events you are doing as you go along, then submit them before the next newsletter deadline. Then everyone can read all about the joy you are spreading and be motivated and encouraged to keep going. If you have any other articles you would like to write about e.g. how to guides, educational material, need to advertise an event, need volunteers for a event or anything else you think others could help or benefit from, please submit them to us.

Coming up in this newsletter we have:

- ▶ **Welcome from the Section Director**
 - Section Online Get Together
 - Work Experience Pilot Project
 - Grant Funding Opportunity - Royal Astronomical Society Education & Outreach Small Grants Scheme
 - Back to Basics – Cardiff 7th June 2025
 - Institute of Physics Outreach and Communicators Conference
- ▶ **Partial Eclipse Special**
 - A Day to Remember: Hosting the 2025 Solar Eclipse at Blackheath Common, London
 - 29th March 2025 Solar Eclipse from Juvisy, Paris France
 - Partial Solar Eclipse in the UK: A Celestial Event and a Charitable Cause
 - Pop-up Parkrun Partial Eclipse Event
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- ▶ **Sungazing on The Green**
- ▶ **Helping with the National Astronomy Week Live Feed YouTube video Sessions**
- ▶ **Science Collaboration across the Pennines**

Welcome from the Section Director



Helen Usher

I'm delighted to welcome you to our second section newsletter. Thank you for the positive feedback we received on our first edition – it was very encouraging. Thanks again go to Alexandra for her editing work, and to those who have provided articles and information

for inclusion. Please keep them coming, and also let us know what else you'd like us to include in future editions.

It has been a busy few months since the last newsletter. We held our first Section informal online get together on 3rd April 2025. It was great to put some faces to names, get to know a bit about each other and what we do, and particularly share what we'd been up to for the partial eclipse (including seeing Andy Devey's wonderful high resolution time lapse of the event where we could clearly see the edges of the lunar mountains as the Moon traversed in front of the Sun).

Section Online Get Together

The next Section get together via Zoom will be **19:30 BST Thursday 3rd July 2025**, we look forward to seeing you again, so remember to add it to your diary. Join the Section mailing list to get the Zoom link which will be issued nearer the time.

Work Experience Pilot Project

There's also been an exciting development in our education work. At Astrofest in February we were chatting to a few A level students who were enquiring about opportunities for work experience or volunteering with the BAA. The students said they were required to undertake one week of work experience or volunteering in July, but they had tried but failed to find any astronomy-related opportunities. We thought this might be a good opportunity to link with keen students, so decided to work up a proposal for a small pilot for a virtual work experience week (for a maximum of a dozen students). We consulted with teachers, educators and BAA Section Directors and officers before putting together a proposal for consideration by Council at its March meeting. We're pleased to say they supported it.

Since then, we've been working through the details. The plan is to give students an online experience of the research process, including presenting findings in research publications. They will attend their school, but link with us online. There will be presentations, workshops and worked examples, along with time for them to progress the research themselves (but with access to advice and guidance via a Slack group). The BAA Papers' Secretary and Journal Editor are closely involved to provide advice, guidance and feedback, to ensure the outputs reach the required standard for publication. We've been working closely with the Solar Section to devise a suitable research project – sunspots, the solar cycle and solar rotation. Students will work on archive data, but also (weather permitting) make their own observations, analyse them and submit to the solar section. We already have a few people who have volunteered to be available as mentors during the week, and to help develop and test resources, but more people would spread the time commitment needed. If you would like to get involved, please contact us. The resources developed will be useful for not just the week but the longer term too.

The students we spoke to at Astrofest are excited about the opportunity and it has already resulted in some engagement – they helped Sri at the partial eclipse event at Blackheath. We hope this is the start of a long-term involvement with the BAA.

Grant Funding Opportunity - Royal Astronomical Society Education & Outreach Small Grants Scheme

<https://ras.ac.uk/awards-and-grants/outreach/education-outreach-small-grants-scheme>

RAS supports small projects for public outreach and schools' education including public events, training workshops, broadcasting or podcasting, and development of educational material. Support is for the development of projects rather than funding routine ongoing activities.

The types of projects funded are those which promote greater interest in and understanding of astronomy; are of interest to the wider community and, in particular, young people in astronomy; have a wide reach, impact and/or lasting legacy; are innovative; and cost-effective.

The maximum E&O grant that can be applied for is £5,000 and at most one award per year will be made to any one person/organisation. Projects need to demonstrate matched funding, or support in kind, to cover some costs. Staff costs and capital expenditure are not generally eligible unless it can be

demonstrated that these are critical to the success of the project and do not normally constitute more than 50% of the grant awarded.

To apply:

Applications are assessed twice a year; the deadlines for these grants rounds are **20th February** and **20th August**. Applications will be reviewed shortly afterwards, and awards announced within three months.

Back to Basics – Cardiff 7th June 2025

Our next Back to Basics beginner-friendly event is taking place on Saturday 7th June hosted by the Astronomy Department of Cardiff University. We've got some great speakers lined up, and time for hands-on activities and chatting too. Full details and a link for booking are here <https://britastro.org/event/b2b2025-cardiff>. See also the poster on the back page for you to copy or print if you want to spread the word.

Institute of Physics Outreach and Communicators Conference

The Institute of Physics Outreach and Communicators Conference is back for its fourth year. This free event is taking place on Wednesday 19th November 2025, at the IoP HQ in London and also available to watch live online.

This event brings together people from across the spectrum of science communication and public engagement to discuss their work, network, and help spread best practice. There will be workshops and talks as well as the option to present your own short talk or poster.

You can find the website for registration and abstract submission here:

<https://iop.eventsair.com/caoc2025>

You can also see last year's event to get a feel for this years here:

<https://iop.eventsair.com/pc2024/programme>

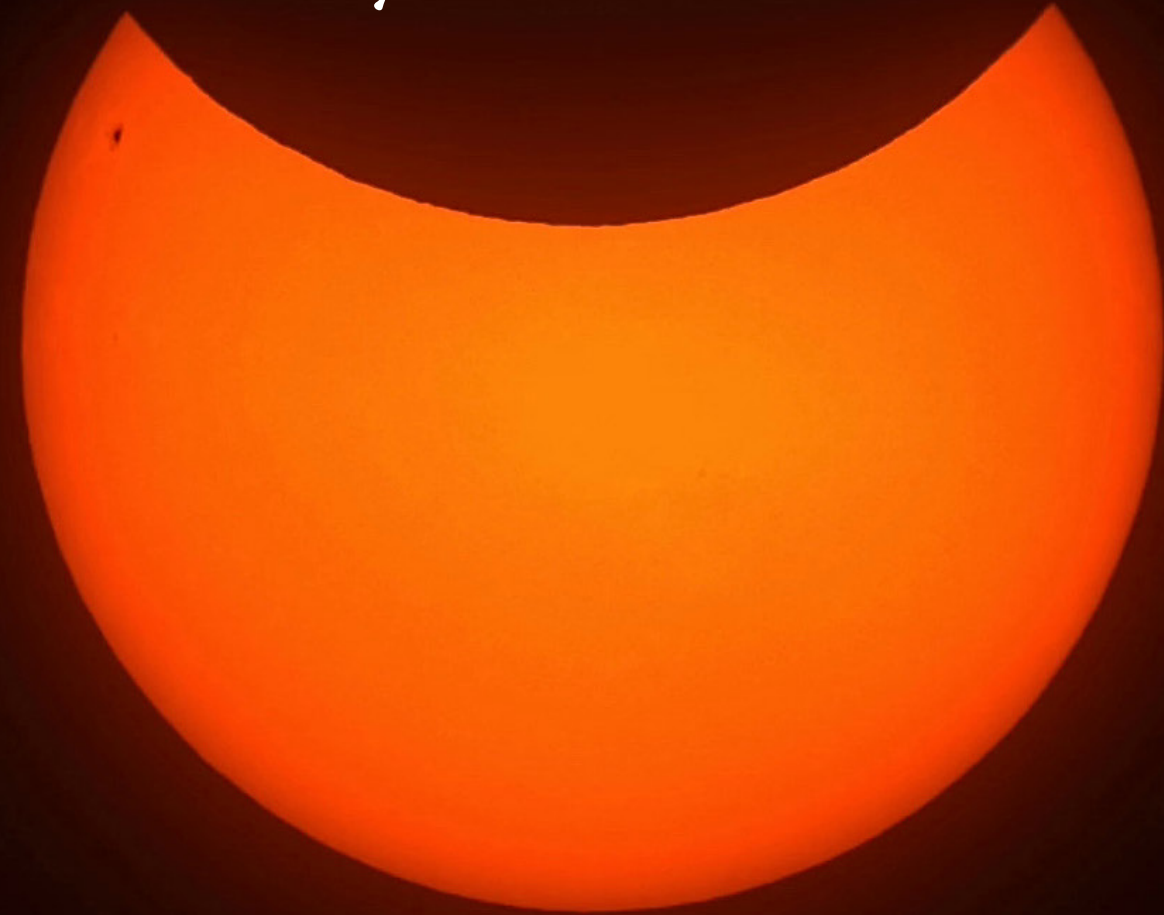
This event is physics focused but not physics limited and we invite anyone with an interest in outreach and communication to attend and participate. This year our theme is 'Outside the Classroom' and we particularly encourage submissions which help fit this theme.

Whilst this is a free (in-person) event, spaces in the venue are limited and we have been fully booked at the previous two events so we recommend reserving your space as soon as you can.

If you have any questions about this event feel free to get in touch at jamesdoesscience@gmail.com □

Partial Eclipse Special

Saturday 29th March 2025



A Day to Remember: Hosting the 2025 Solar Eclipse at Blackheath Common, London

Srilakshmi Ramakrishnan

On Saturday 29th March 2025, we had the incredible opportunity to witness a partial solar eclipse right here in London. The skies were clear, the atmosphere was electric, and our community came together to share in this rare celestial event.

Perfect Conditions for Skywatching

The eclipse began around 10:07 AM and reached its peak at 11:03 AM, with approximately 30% of the Sun obscured by the Moon. The weather couldn't have been better—clear blue skies provided the

perfect backdrop for observing this astronomical phenomenon.

Engaging the Community with Hands-On Astronomy

We set up our observation station at Blackheath Common, equipped with a Seestar S50 smart telescope to capture a time-lapse of the eclipse. Additionally, we used a Coronado Personal Solar Telescope (PST) mounted on a Sky-Watcher SolarQuest automatic tracker, kindly loaned to us by First Light Optics. This setup allowed attendees to safely view the Sun's activity

in real-time. To ensure everyone could participate safely, we distributed solar viewing glasses. As the event unfolded, more than 200 people—families, students, and curious passersby—joined us, turning the day into an impromptu community gathering.



Inspiring the Next Generation of Astronomers

We were thrilled to have two enthusiastic A-level students from Coopers School, James B. and Eremis, assist us during the event. Their passion for astronomy was evident as they engaged with attendees, answered questions, and helped operate the equipment. Their involvement added a dynamic energy to the event and served as an inspiration for younger participants.

A Shared Experience Under the Sun

In addition to the hands-on experience, we distributed copies of The Little Book of the Sun, provided by the Science and Technology Facilities Council (STFC). This resource offered attendees further insights into solar phenomena and complemented the live observations.

The 2025 solar eclipse at Blackheath Common was more than just an astronomical event; it was a celebration of community, curiosity, and the wonders of the universe. We're grateful to everyone who joined us and look forward to hosting more events that bring science and people together. □



29th March 2025 Solar Eclipse from Juvisy, Paris France



Mike Frost

Some outreach for the partial solar eclipse took place outside the UK by the BAA's sister organisation, the Société Astronomique Française (SAF). I visited Paris over the last week-end in March for a joint conference of the SAF and the UK-based Society for the History of Astronomy (SHA).

Of course, there was a solar eclipse on the morning of Saturday 29th March. To see this, we visited the observatory at Juvisy, 20 km south of Paris. This observatory used to belong to Camille Flammarion (1842-1925), the astronomer and science writer who founded the SAF, and the observatory is now owned and run by the SAF. The grounds were open to the public on eclipse day and there were a number of telescopes set up on the lawns, for people to enjoy the eclipse.



Also, the eclipse could be seen through Flammarion's 24cm diameter refracting telescope (built by Denis Albert Bardou, but now with a modern lens) in the observatory on the roof. Telescope operator Stephane projected the eclipse onto a screen for us to enjoy.



And once the eclipse had finished, SHA and SAF members enjoyed a picnic on the lawn of the observatory. Great day! □

Partial Solar Eclipse in the UK: A Celestial Event and a Charitable Cause



Neill Sanders

On 29th March, 2025, a partial solar eclipse graced the skies of the UK, offering a stunning opportunity for stargazers and science enthusiasts. To encourage as many people as possible to enjoy this spectacle, Neill Sanders from Go Stargazing arranged for solar glasses to be shipped from the USA to the UK, with welcome help from First Light Optics. This collaborative effort not only ensured safety for viewers but also aimed to make the experience accessible to a wider audience.

This collaboration resulted in 59,750 pairs of solar glasses being distributed to various organisations, including astronomy societies, observatories, and community groups across the UK. This initiative underscored the significance of outreach in

astronomy, allowing more people to safely observe the celestial event. In addition to promoting safe viewing, the project successfully raised £6,500 to support the charity Astronomers Without Borders and their mission to provide solar glasses to people worldwide.

The collaboration showcased the power of community in astronomy and highlighted the many outreach and public viewing events across the UK. As audiences gathered to witness the partial eclipse, many not only enjoyed the spectacle of the skies but also deepened their appreciation for the shared experience. This remarkable initiative highlighted how a celestial event could unite individuals for both wonder and a worthy cause. □

Pop-up Parkrun Partial Eclipse Event

Helen Usher

Every Saturday my husband joins over 200 people at our local parkrun, Penallta, South Wales. It starts at 9:00am and, given the range of running ability, finishes any time from 9:15 to 10:00.

Given the timing of the partial eclipse on 29th March, starting at 10:00, I thought it would be fun to set up alongside the parkrun car park and make the most of the passing trade. We handed out flyers the week before, at parkrun and the local school, advertising the fact we'd have lots of ways to watch the eclipse safely, including free solar glasses.

I took along my Hydrogen alpha (Ha) solar scope, which I set up side-by-side with a small refractor with a 'sun funnel' in it. The sun funnel is my favourite piece of equipment for solar eclipses as it allows many people to simultaneously watch the eclipse develop, very safely. It is a very simple projection method, and the instructions are available on the NASA website <https://eclipse2017.nasa.gov/make-sun-funnel>. It also proved a very effective 'finder' for the Ha telescope allowing me to easily monitor pointing accuracy so ensuring the Sun would be in the eyepiece for viewers.

For once the Welsh weather cooperated (well,



mostly!). We had lots of viewing even before the eclipse started, with both the solar glasses and the Ha telescope. Lots of excitement! Then we watched as the first tiny notch was taken out of the Sun, and then as the eclipse grew.

Also, we set up a Seestar and invited people to connect with their phones in Seestar guest mode. This allowed them to see the images of the Sun on their own phones, and take screen shots to keep as a record and to share. This was very popular, and is certainly something I'd do again. (I'd encourage people to download the app at home before the event next time as the app is quite big to download on mobile data). One attendee made the screenshots into a little animation and shared on her social media.

We had plenty of free solar glasses to give away thanks to Go Stargazing, Astronomers Without Borders and First Light Optics. The glasses, along with 'I've seen a partial solar eclipse' stickers, and some explanatory leaflets and booklets we'd produced, all went down very well with people of all ages.

Over the 2-hour period we had around 75 people visit, including lots of families. One parent said she'd seen an eclipse as a child in Slovenia and wanted to give her own children the experience too.

At the following week's parkrun my husband said many people came over to say how much they had enjoyed the eclipse viewing. One reported that her 5-year-old daughter had taken the glasses, booklet and sticker in to school for show and tell.

I think we've whetted lots of appetites for the much greater eclipse next year – we get around a 93% eclipse

on the 12th August 2026. Let the planning begin!



Solar funnel in action at Penallta Parkrun. ☐

Members Outreach Log

Many of our E&O army spread the love of looking up this quarter from a range of different places from towpaths to formal talks at astronomy societies and local scouts. Here is a look at what everyone has been up to:

Adam Fairhead

On 19th February 2025 in Tunbridge Wells to the Wadhurst and Tunbridge Wells Astronomical Society I gave a talk entitled 'Introduction to Cosmology'. More information and cosmological education resources and the talk can be found here:

<https://wtwastro.co.uk/cosmology-corner/>

<https://drive.google.com/file/d/16L0HLe8ze0QdZXCjfgl0C7MWwxOawAZo/view?usp=sharing>

Also, I found myself unwittingly doing a bit of towpath astronomy, as you call it, last week (early March 2025) when I took my portable 3-inch refractor down the road to get a horizon view of Mercury, and was able to show it to a couple of people on their way to the pub.

Sheridan Williams

The Open University astronomy club has hosted the following events this year, with everyone able to observe through the 15inch Meade telescope.

- 5 December 2024 Wood End Scouts 18 people
- 10 December 2024 Saints Scout Group 10 people
- 23 January 2025 OU staff 30 people
- 5 February 2025 Flitwick Falcons 25 people
- 6 February 2025 Flitwick Foxes 25 people
- 27 February 2025 Broughton Cubs 24 people
- 3 March 2025 1st Walton Scouts + 2 families
- 6 March 2025 1st Wing cubs 28 people
- 10 March 2025 OU staff 25 people

Alexandra Hart

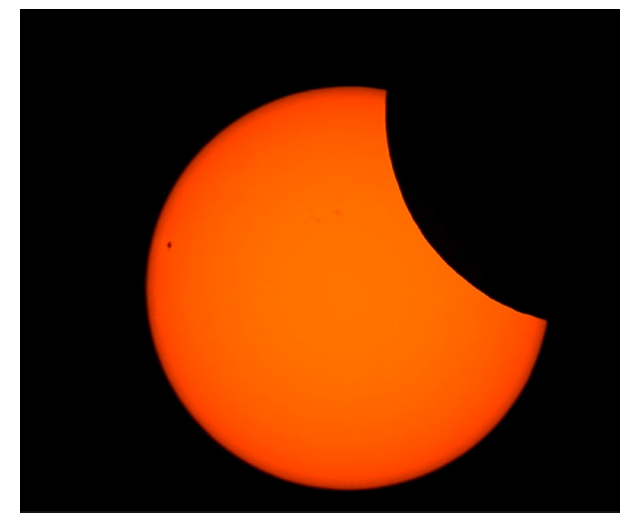
Towpath tales, on Sunday 9th March 2025 at Church Minshull on the Middlewich branch of the Shropshire Union canal 2 ladies, then one gentleman looked at the Sun and enjoyed the views of the chromosphere through the Coronado PST and chatted all about the upcoming partial eclipse.

Saturday 29th March 2025 at Beeston Castle on the Shropshire Union canal near The Shady pub 2 couples out walking their dogs saw the eclipse via the SeeStar S50 through very cloudy skies.



Mark Hardaker

The partial solar eclipse was seen by everyone of the Fordingbridge Astronomers in the New Forest on Saturday 29th March 2025 using their SeeStar S50 <https://www.fordingbridgeastro.org.uk/> Click this link to see their timelapse video of the eclipse they made from the images <https://drive.google.com/file/d/12hUZwjp1RuWVjqpomndiFr7Vnc69Q2rs/view?usp=sharing> ☐



Sungazing on The Green

Nic Spencer

I was delighted to have led my first planned solar outreach session on Sunday 6th April, 2025 between 11am and 1pm. Until now, I've just left it to chance that anyone passing by our garden has been welcome to have a look through my telescopes. I wanted to be sure that I was sufficiently well informed about what I was doing, and what I was seeing, in order to be able to explain it to someone else, before I planned anything. Also, I wanted to be able to deal with any questions which might arise with confidence. When I eventually got my head around the fact that I'm a solar imager as opposed to a solar physicist, I just went for it! My only regret is not having planned outreach earlier!

When I knew the forecast 'should be good', I put an invitation on the village noticeboard and also the village private Facebook page. I had no idea whether anyone would show up. I was absolutely thrilled when 25 people attended during the two-hour session. We saw prominences galore in hydrogen alpha through my Coronado PST on a Sky-Watcher SolarQuest tracking mount. My kind friend let me borrow her SeeStar S50 so we enjoyed a great view of many

sunspots. My dad is very creative and he built a DIY solar projector from instructions I found on the Sky at Night website which was a very popular discussion point. He made a range of different types of sundials which attendees enjoyed seeing too. I had put a file together which showcased some of my best images in G Band, Calcium K and hydrogen alpha to help me to explain the features of the photosphere and lower/upper chromosphere. I included images of the aurora and a variety of solargraphs which gave a broader idea of why I am so interested in the sun. People picked it up and looked at it very thoroughly. I deliberately didn't add any captions to the photographs as I just wanted them to get a sense of the features of the sun. People asked me a range of questions about my images and I was glad to explain more. I enjoyed the communication and interaction and hope they did too. I did notice that a handful of older people turned up and sat on the bench which wraps around the tree on our village green enjoying a chat about what they'd seen. So it created a pleasant community get together as well. One exclaimed, 'The only thing we were short of was a brew and a slice o' cake!' I'm glad that the

event was therefore somehow greater than the sum of its parts.

The event was far more successful than I had imagined. My planning paid off and the session ran smoothly. The weather was wonderful and the sky stayed clear throughout. I was a nurse for 15 years and of that time, I was a senior lecturer at the University of York for 5 years where I completed a Master's in Education. Then I had a change of career and worked as a Primary School Teacher for 10 years. Therefore, I'm no stranger to demonstrating and explaining. It was simply my knowledge of the Sun in which I lacked confidence. I'd had my solar books out revising the language and features of the Sun in different wavelengths, so I was as prepared as I could be. There were two questions which I wasn't prepared for. One was 'How big is the sun?' from a young child. I replied, 'That's a brilliant question, I'm not exactly sure of the numbers. But I can tell you it's HUGE! See those 'flames' that are on the edge of the Sun? Well, each of those are about two Earths high.' She just carried on staring into the eyepiece and let out a long, awestruck 'Wow!' I've since found out that the Sun has a diameter of 1.4 million kilometres. The other question I didn't anticipate was my view on whether God or the Big

Bang created the universe. I remained neutral and turned the question around and listened carefully to the reply and that seemed to be acceptable. I later picked up on a common misconception where people were confusing prominences with flares. Luckily I had images of both of these features in my file so I was able to help clarify the misunderstanding.

Finally, it's not everyone who can claim that Walter Maunder's great grandson and Annie Maunder's step great grandson, Andrew, attended their solar outreach session... but he did! The Maunder Minimum will ring a bell for a number of you. That's him in the photograph enjoying a look through the Coronado PST. By an extraordinary coincidence he lives over the road from us. When he learned of my fascination with the Sun, he kindly invited me to look through photographs and equipment that belonged to them, including the camera which Annie will have taken abroad to chase solar eclipses.

All in all, I had a wonderful time. I intend to take 'Sungazing on The Green' to more village greens in North Yorkshire. If you're tempted to do any astronomy outreach, be bold...just go for it! □

Helping with the National Astronomy Week Live Feed YouTube Video Sessions

Andy Devey

During the first week in February 2025, I had the opportunity to participate in the live feed Zoom sessions for National Astronomy week from my observatory in south east Spain located about 15 km north west of the coastal town of Mojácar. My location offers a higher probability of cloud free nights and at a latitude of 37.2 degrees north, the ecliptic plane being much higher than in the UK normally allows for favourable seeing conditions. I have a home-built observatory that is basically a 2.4 m cube mounted on rails that can be quickly pushed back and allow use of my pier mounted cluster of telescopes. I have an EQ8 mount supporting a Takahashi TOA 130 refractor and two Coronado SM 90 telescopes. The Coronado's are Hydrogen-alpha (double stacked) and Calcium-K versions. The mount supports a sighting LASER and a 60 mm guide telescope and camera.

Normally I concentrate on solar activity and specialise in high-resolution time-lapse photography



A view from Wednesday 5th February 2025.



to present the large and small-scale solar phenomena.

I was able to help with four of the nine one-hour sessions that included Saturday 1st February, Monday 3rd February, Wednesday 5th February and Friday the 7th February. Unfortunately, I was clouded out on the 3rd February and presented my Plan B PowerPoint. Over the sessions I provided live feed and some commentary on Venus, Saturn, Jupiter, Mars and two

tours across the Moon. I was using a Player one Saturn M mono camera via the SharpCap operating program. In one session we streamed a live Lunar image from my telescope combined with David Arditti's expert commentary into the hosts session which worked really well as did all of the one-hour presentations. □



A screen shot from the 1st February 2025 event.

<https://www.youtube.com/@NationalAstronomyWeek>

Science Collaboration across the Pennines

Philip Jennings & Stuart Green

Students studying Physics with Astrophysics at the University of York must observe the Sun as part of their degree. But unlike a university syllabus, imaging the Sun doesn't work to time...it depends on the weather, and access to the equipment.

Philip Jennings of the University of York and editor of the BAA Journal, and Stuart Green, an astrophotographer in Lancashire, describe their collaboration that helps students complete their solar observations experiment assignment, whatever the weather.

Philip explains, "when I was a second-year astrophysics undergraduate at the University of York in 2016, perhaps my favourite coursework project was a two-week experiment entitled 'Solar Observations'. True, the timing was not ideal – solar activity was then very quiet, so peering into the small hydrogen-alpha Coronado Personal Solar Telescope housed at the University's Astrocampus revealed the subject of our upcoming 20-page assignment to be an almost featureless orange disc. But nonetheless, as a BAA Solar Section member, encouraged and inspired by its Director, Lyn Smith, I was thrilled by the opportunity to



A rare clear-skied day at the University of York's Astrocampus. The Lunt telescopes are housed in the roll-off roof observatory, at left. (Photograph by Jessie Taylor)

turn my attention to our nearest star."

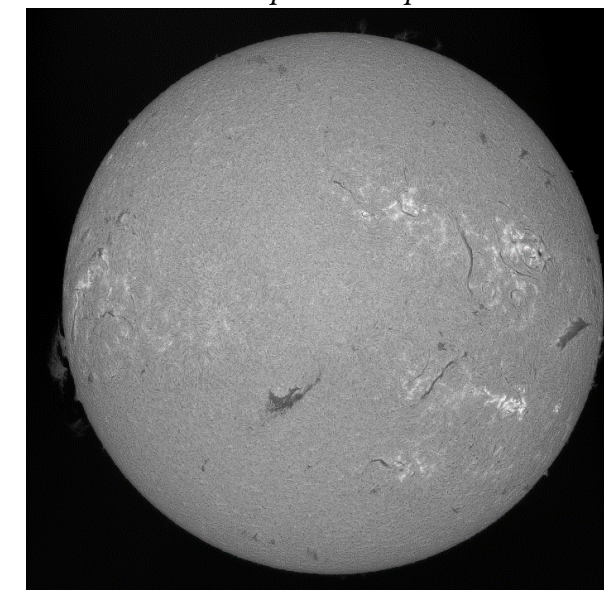
After graduating in 2018, Philip kept up his links with the University by working there as a graduate teaching assistant, with the solar observations experiment inevitably becoming his specialism. He goes on to explain, "As years went by, solar activity improved and so did the telescopes, which were upgraded to 80-mm Lunt instruments. The students could now capture a much greater diversity of features, from sunspots and prominences/filaments, to plage, faculae and supergranulation. Working individually to acquire, stack and process their own images, the students could use these to investigate the size of any features present, and explore their evolution over hours or days."

But in 2020, this well-practiced annual observing programme was brought to a grinding halt. York was home to the first confirmed UK case of COVID-19, and the ensuing lockdowns left many students self-isolating, or unable to live on campus. With observations at the Astrocampus now an impossibility, how could the students complete their work?

Fortunately, the BAA came to the rescue. Philip continues, "I contacted Lyn Smith, who put a notice in the Solar Section Newsletter asking for a volunteer to collect images for the students to use in lieu of their own. The request was swiftly answered by Dr Stuart Green in Preston, who sent me all the images and metadata we needed."

Stuart's images, captured using similar equipment to that at the Astrocampus, were of such a great help

that they quickly became a permanent and essential fixture of the experiment. Since the vagaries of the UK weather frequently prevent students from capturing their own images, the sample data is often in demand. Philip explains, "The new images that Stuart sends every year – always of stunning quality, and often eliciting gasps from students and staff – form a growing archive of data, dramatically showing the change in activity levels since 2020. Of course, the students are expected to faithfully acknowledge and reference Stuart in their marked write-up of the experiment, so every year Stuart is cited in up to ~50 reports."



Full disk image of the Sun created by Dr Stuart Green from nine panes stitched together as a mosaic.



Stuart's Lunt 60 solar telescope fitted with additional filters to create a triple stacked narrowband scope to capture full disk images of the Sun at 656.28 nm.

As an amateur astrophotographer specialising in imaging our nearest star, the Sun, Stuart states, "I was thrilled when asked by Philip to help students at the University of York with their annual undergraduate solar physics project."

Stuart operates a range of solar telescopes from his garden in Lancashire. These cover most of the visible spectrum from 393.40 nm (calcium II K) to 656.28 nm (hydrogen alpha) at a range of focal lengths that allow him to capture images up close to survey sunspots, active regions, filaments and prominences on the solar disk, or to capture full disk images of the entire Sun.

He continues, "The request was for me to provide full disk images, or at least segments of a full disk that I use to create composite mosaics, to assist the students. For this I used my triple stacked Lunt 60 solar telescope to isolate an ultra-narrow slice of the red part of the solar spectrum forming the hydrogen-alpha Fraunhofer line at 656.28 nm. Fitted with a $\times 2.7$ Barlow and a Basler acA2440-75um camera, this arrangement provided high-quality images suited to the requirements. All camera operating parameters were recorded and provided along with the respective images, so that an appropriately detailed analysis could be performed by the students."

Stuart and Philip are not the only BAA connections to the experiment. Philip explains, "The second week in the students' programme of work sees them investigate the Sun's differential rotation, by measuring daily sunspot positions using data from the Solar Dynamics Observatory, calculating their longitude for each day, and hence deriving rotation rates for different latitudes on the solar surface. To transform from Cartesian to heliographic coordinates, they must know the value of the heliographic latitude of the centre of the disc, or B_0 , at the time of each observation. Fortunately, the Solar

Section's Assistant Director, Peter Meadows, has written a very handy free program called Helio Viewer which provides this, and this is used by every student to give them satisfying straight-line graphs of longitude versus time, the slope of which gives the sunspot rotation period."

"It is wonderful to see the BAA, through the amazing work of Stuart and Peter, perform an essential role in supporting an observing programme that inspires and trains the astronomers of the future. Through assisting the students and marking their work, I see first-hand the excitement they take in carrying out original research using Stuart's data, and I expect a good number have been inspired to continue observing the Sun in years to come."



The University of York campus, with the Physics Building at right. (John Robinson, CC BY 2.0) □

If you have any outreach or events you wish to share (no matter how small or large) in the next issue of E&O newsletter, please e-mail EandO@britastro.org with newsletter in the title before 31st July 2025.



ASTRONOMY BACK TO BASICS

**Have an interest in Space and Astronomy?
Want to know more?**

The British Astronomical Association (BAA), Cardiff Astronomical Society (CAS) and the Society for Popular Astronomy (SPA) have come together to bring you a fantastic opportunity to explore the basics of astronomy

Topics include:

- Observing the night sky
- Introduction to astrophotography
- Choosing binoculars and telescopes
- Ways of getting involved without a telescope

Lots of hands-on activities:

- Observe the Sun (weather permitting!)
- Hold actual pieces of the Moon and Mars
- Try out different telescopes
- Chat to our experts
- Astronomy retailers
- Free raffle

Saturday 7th June 2025 (9:30 for 10 am to 5pm)
Cardiff University School of Physics and Astronomy
Trevithick Building, The Parade, Cardiff



TICKETS:

Members of BAA, CAS and SPA	£8
Non-member adults	£10
Under 18s accompanied by an adult	£5

Prices include refreshments but not lunch

BOOKINGS:

Online: britastro.org/events

Phone: 0207 734 4145 (BAA Office)

Design: poweredtemplate.com