

# Federation of Astronomical Societies



[fedastro.org.uk](http://fedastro.org.uk)

Editor: Michael Bryce

# Newsletter

No 140: October 2024

*Note: The FAS Council Reserves the Right to publish articles, events and reports submitted to the FAS Newsletter*

## The Dumbbell Nebula



Image Credit: Eremis Maciulis

I used the ASI533mc pro Astro Camera at 40gain, eq35m motorised mount for guiding, skywatcher 120mm aperture 1000mm focal length and the Lenhance triple band pass filter. 3 hours of exposure with a 533 in Lithuanian bortle 2-1 skies. 1080 frames.

Eremis Maciulis is a member of Loughton Astronomical Society. [las-astro.org.uk](http://las-astro.org.uk)

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# Interim President's Spot: Dr Paul A Daniels

22 September 2024

**So, this is it... really really my final President's Spot! The FAS AGM will be on 13<sup>th</sup> October and, at that point, I shall be stepping back to allow someone else to take the reins. So, for my final PS let's have a bit of whimsy!**

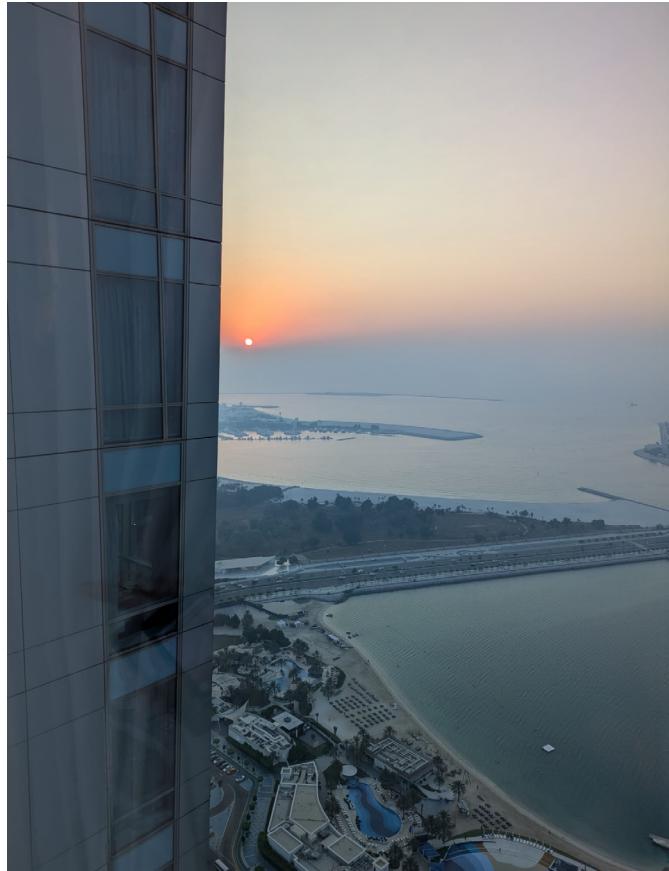
A week or two ago our Vice-President, Clare Lauwers, posted a message in a *WhatsApp* group used by the FAS Council. She was on holiday in Abu Dhabi, UAE, (about 25°N of the equator) and with the message came a photo of sunset from the 45<sup>th</sup> floor of her hotel (oxygen mask not included). That prompted our International Liaison Officer, Jenny Shipway, to ask “Do you get a later sunset from up there?” eliciting the retort “I am not doing the maths!”. Not surprising really – it’s difficult to use a calculator after several cocktails (or so I’m told)!

This, of course, was like a red rag to a bull for a maths nerd like me and I unflinchingly charged at this waving cape of a problem; [Ivan Petrovich Pavlov](#) would have been proud!

I started with the assumption that we were approaching the autumnal equinox so the Sun would be nearing the celestial equator. A latitude of 25°N means that at this time of year the Sun sets almost exactly in the West along a line inclined 25° south of the perpendicular to the horizon (effectively the angle the celestial equator makes with the perpendicular to the horizon at the West compass point).

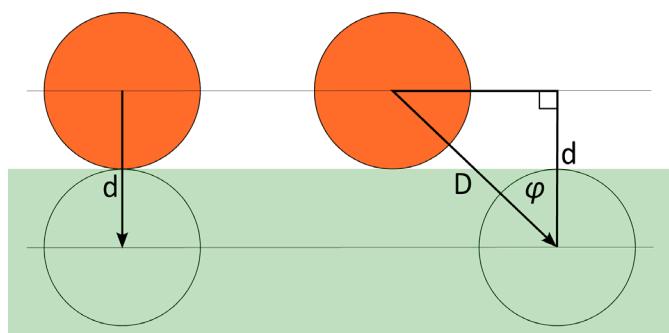
The Earth rotates 360° in 24 hours (1,440 minutes) which is equivalent to  $1440/360 = 4$  minutes *per* degree. The left-hand side of **figure 1** shows the Sun setting vertically and, on the right, at an angle  $\varphi$  to the perpendicular. For the Sun at an equinox (when it’s declination is zero), the angle  $\varphi$  is equal to the observer’s latitude. The Sun’s diameter,  $d$ , is about  $\frac{1}{2}^\circ$  so a vertically setting Sun just takes about 2 minutes (120 seconds) to set from first contact with the horizon to the disappearance of the last sliver of light. However, if the Sun is setting at an angle  $\varphi$  then it has to move a distance  $D$  and basic trigonometry gives  $d/D = \cosine(\varphi)$  or, rearranging,  $D = d \times \secant(\varphi)$  where, in this case,  $\varphi$  is 25° with  $\secant(\varphi) = 1.1034$ . The effect of the 25° offset angle, therefore, introduces about a 10% delay in the estimated setting time of the Sun’s disk, *i.e.* a total of 132 seconds.

Now, what effect does the 45<sup>th</sup> floor altitude have? **Figure 2** shows the observer, **O**, at altitude  $h$  observing the setting Sun on the horizon which is at an angle,  $\Theta$ , depressed below the local horizontal. The radius of the (assumed spherical) Earth is  $R$  and the arc distance to the horizon along the Earth’s surface is  $\delta$ . It’s reasonable to hope that the building is upright and so at a right-angle to the local horizontal at **O**. The right-angle at the point where the line-of-sight to the Sun is tangent to the Earth’s surface means the angle  $\Theta$  is also the angle subtended at the centre of the Earth by the arc along the distance  $\delta$ .

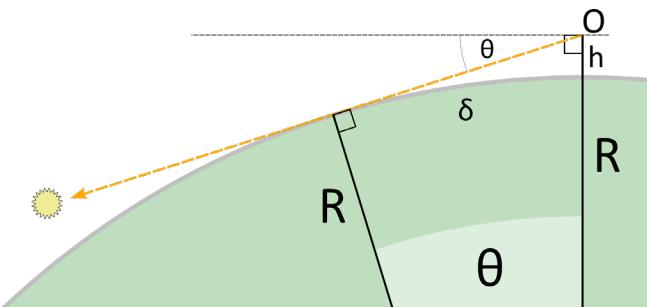


**Image Above:** Sunset from the 45th floor of the St Regis hotel, on the Corniche, Abu Dhabi.

**Image Credit:** Clare Lauwers  
(used with permission)



**Image Above:** Figure 1 shows the Sun setting vertically and, on the right, at an angle  $\varphi$  to the perpendicular. For the Sun at an equinox (when it’s declination is zero), the angle  $\varphi$  is equal to the observer’s latitude.



**Image Above:** Figure 2 shows the observer, **O**, at altitude **h** observing the setting Sun on the horizon which is at an angle,  $\Theta$ , depressed below the local horizontal. The radius of the (assumed spherical) Earth is **R** and the arc distance to the horizon along the Earth's surface is  $\delta$ . It's reasonable to hope that the building is upright and so at a right-angle to the local horizontal at **O**.

NB: The angle  $\Theta$  is also the additional rotation required by the Earth for the Sun to set as seen from **O** compared with as seen from the ground.

The world's tallest building, the [Burj Khalifa](#) in Dubai, UAE, has 163 floors and stands at 828 metres height which is just 0.013% of the Earth's radius,  $R = 6,371$  km; it's safe to say, therefore, that  $h \ll R$  for all buildings. Using Pythagoras' formula on the right-angled triangle between the Earth's centre, **O** and the tangent point on the horizon, we find that the straight-line distance between **O** and that tangent point is  $\sqrt{(R+h)^2 - R^2}$  which, for  $h \ll R$ , is approximately  $\sqrt{2Rh}$ . Since  $h \ll R$  we can also say that this straight-line distance is very approximately the same as the arc distance,  $\delta$ , which is equal to  $R\Theta$  where  $\Theta$  is in radians. So, we have  $R\Theta \approx \sqrt{2Rh}$  and, therefore,  $\Theta \approx \sqrt{2h/R}$ .

We know  $R$  but what about  $h$ , the altitude of the observer on the 45<sup>th</sup> floor? The average height of a floor in the Burj Khalifa is  $828/163 = 5.08$  metres. Since not all of that building's height is residential floors a more reasonable estimate for those floors might be nearer 4 metres (~13 feet) which allows plenty for a generous floor-to-ceiling height, service ducting and the concrete between floors. It wouldn't be unreasonable to estimate the altitude,  $h$ , of an observer on the 45<sup>th</sup> floor at **O** to be approximately 180 metres. Plugging this into our formula for  $\Theta$  we get that  $\Theta \approx 0.0075$  radians  $\approx 0.43^\circ$  so that the additional rotation of the Earth to achieve sunset compared with the ground is 1.72 minutes (at 4 minutes per degree) which, with the trigonometric multiplier of  $\sec(25^\circ)$  to account for a latitude of 25°N, rises to approximately 1.9 minutes (114 seconds).

There's a difference between the time of *geometric* sunset and *apparent* sunset due to refraction bending the sunlight over the horizon. There may be a very small difference between the amount of bending when seen from the ground and when seen from 180 metres due to differences in atmospheric density and temperature with altitude but these effects are likely to be small and so do not significantly change our estimate of 1.9 minutes.

If we were to cheat a little a lot we could also compare first-contact sunset on the ground with last-sliver sunset on the 45<sup>th</sup> floor to add the additional 132 seconds calculated above for a total of 246 seconds (just over 4 minutes).

For Muslims the time of sunset is important as it's used to mark the end of the day's fasting during the month of Ramadan. In [regard to the Burj Khalifa](#), "...Dubai cleric, Mohammed al-Qubaisi, has been quoted as saying that people living above the 80th floor should fast for an extra two minutes, while those on the 150th floor and higher should wait for three more minutes before eating or drinking." Similarly, a delay has to be observed for Muslims at altitude in mountainous areas.

This isn't the whole story however as our Newsletter Editor, Michael Bryce, then chipped in on WhatsApp with "So would you make it in time to see the sunset twice? From the ground then from the 45th floor? Depending how fast the lifts go?" The Burj Khalifa lifts travel at up to  $10 \text{ ms}^{-1}$  so, even allowing for acceleration, deceleration, a slower lift and some frantic running in case sunset isn't visible from inside the lift, it should easily be possible for a lift to travel the 180 metres up to the 45<sup>th</sup> floor in time to see a second sunset!

The above whimsy shows two things: (a) that even back of the envelope calculations may be important to someone and that (b) some members of the FAS Council have too much time on their hands!

In closing, it just remains for me to remind you that the work done by the FAS depends on people volunteering their time. Those I've worked with over the last seven years have been committed to helping the FAS encourage the growth of amateur astronomy by supporting local societies and I'm sure that whoever takes over from me will inspire societies to grow their membership and to spread an interest in astronomy in their communities. As I said last month though, we need people, *preferably* with committee experience, to join the FAS Council to make these things happen and I hope that people will put themselves forward for the elections at the AGM. All posts are open (even those where a current Council member is standing for re-election).

It's been a pleasure and a privilege to guide the FAS over the past seven years and I wish you all great success in the future. That's all from me, stay safe and clear skies!

Paul

**PS:** Clare highly recommends the chocolate fondant in the hotel's Italian restaurant.

## A Note from the FAS

It has come to the attention of the FAS Council that the Newsletter is **not** being fully distributed by all our member societies to their individual society members.

A considerable amount of work is required to produce the newsletter, not only by your dedicated Editor but also by other members of the FAS Council, and all those who take the time to send content.

Societies are reminded that they have the ability to advertise their events and that all societies' individual members are entitled to a free copy of the newsletter.

Your Editor always includes the text "**please forward this email to your members**" at the top of the Newsletter distribution email.

Thank You



# Stratford-Upon-Avon Astronomical Society

The Stratford upon Avon Astronomical Society meet every 1<sup>st</sup> and 3<sup>rd</sup> Tuesdays at 8pm (doors open at 7.30pm) at Alderminster Village Hall. Everyone is welcome, especially beginners and those wanting to learn more. The first Tuesday is a Club Night, in October that will be on 1<sup>st</sup> October and the speaker on the third Tuesday, which is on 15<sup>th</sup> October 2024 is due to be Professor Michael Merrifield from the Nottingham University with a talk called '21st Century Telescopes'. Please note that the speakers usually start quite promptly at 8pm.

Each month one of our members, Adrian Wakeham, writes an article on aspects of astronomical observation. This month it is about Comets.

Comets are strange things, remnants from the creation of our solar system, 4½ billion years ago. They are often described as dirty snowballs with highly elliptical orbits around the sun.

They can be split into 2 types, short period comets, those are ones with orbits that take them out to the orbit of Jupiter. These include probably the most famous comet, Halley's comet, which has an 76 year orbit (which is next due in 2061). Some of these, however, can have orbits of less than 10 years.

Long period comets originate from the Kuiper belt (an area of material beyond the orbit of Neptune) and the Oort cloud (an area of material even further out on the edge of our Solar System). Their orbits tend to be measured in thousands or even tens of thousands of years. Some comets may only visit once and others can be visitors from interstellar space.

The brightness of comets can be difficult to predict, and others fail to negotiate the sun. Their tails always point away from the sun and occasionally they can have 2 tails.

The last naked eye comet occurred during lockdown, Comet NEOWISE C/20201-3 (catchy name!) There are great hopes this autumn for Comet Tsuchinshan -ATLAS, if it survives perihelion, and it should be visible in the north west of the sky, hopefully brightest in October.

Club nights offer more information on what to look out for each month and if it is clear we do some observing just outside the Village Hall, so please join us. There is no charge initially to come along and find out more, but if you do want to become a member then the fee is JUST £15 A YEAR and it's free if you are in full time education. For more details go to the website <http://www.astro.org.uk> or contact the Chair John Waller [john.waller@astro.org.uk](mailto:john.waller@astro.org.uk) or on 07703 192188.

Happy Observing!  
Adrian Wakeham

## SPACE ODDITIES

"If it's happening in space,  
it's happening on Space Oddities"



Space Oddities is a live, interactive panel discussion on the latest discoveries and hot topics in astronomy. Join our panel of professional and amateur astronomers each week as we explore the universe.

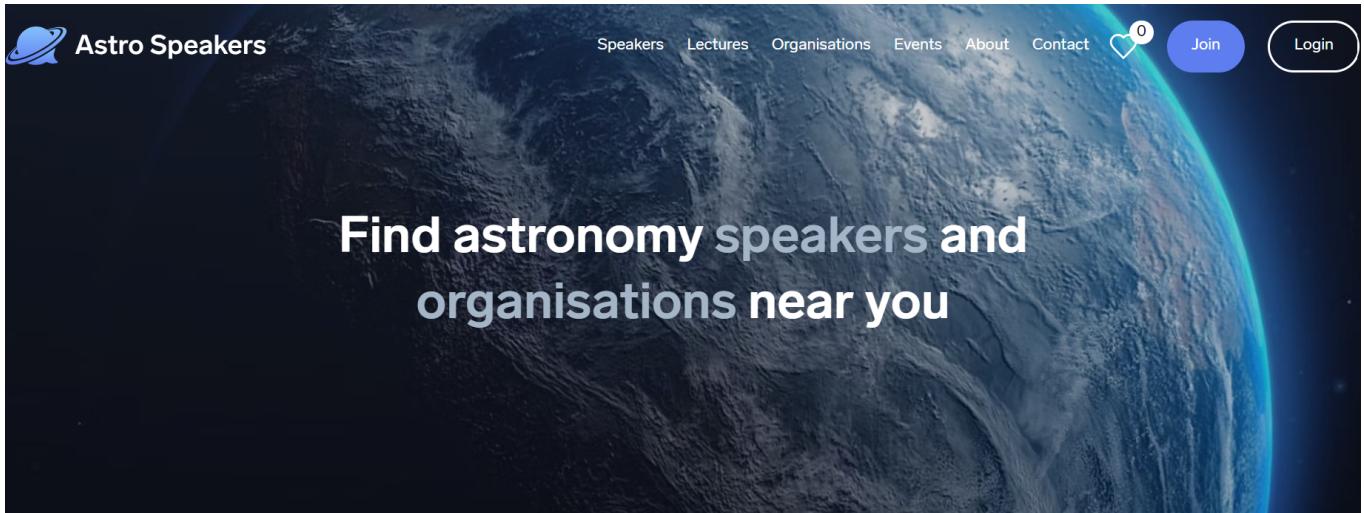
LIVE ON YOUTUBE  
TUESDAYS  
8pm UK, 3pm EDT

[youtube.com/@spaceodditieslive](https://youtube.com/@spaceodditieslive)  
[spaceodditieslive@gmail.com](mailto:spaceodditieslive@gmail.com)



# Astro Speakers have a new website – new opportunities

Graham Winstanley



The new website has been made possible by partnering with Go Stargazing. The Go Stargazing website is already a well-established source of information on astronomy events and lectures around the UK that is regularly used by astronomers and those with a general interest in the subject. Neill Sanders, the owner of [gostargazing.co.uk](http://gostargazing.co.uk), has generously funded the design of the new website and personally completed the development work to get it working. Astro Speakers and Go Stargazing are two not-for-profit ventures run solely for the benefit of the UK Astronomy community.

Astro Speakers was launched by Graham Winstanley and Glyn de Lacy in 2015, initially with the support of about a dozen speakers. Glyn prepared an attractive and functional site and it has proved popular for societies to fill their lecture programmes and with speakers seeking engagements. Glyn acknowledges that his web skills are outdated, and we have been seeking volunteers to help for some time. Thanks are due to Glyn for the huge number of hours spent on building and maintaining the old website.

Go Stargazing have been active in promoting opportunities for anyone to attend stargazing experiences around the country at dark sky sites or local society observatories. Through this activity they have been approached by organisations such as hotels, camping sites, etc to supply contacts able to deliver a stargazing experience. Around the country there are many amateur astronomers already doing this through local societies. Astro Speakers would like them to join on our website as it is an opportunity for you or your club to be paid for your outreach.

Astro Speakers is here to help anyone engaged in astronomy outreach to contact their target audience. Also let Go

Stargazing know when you are speaking or running an event.

Many well-known amateur and professional astronomers are already members of Astro Speakers and just a few of the positive comments received are:

“I am happy to make a donation. You do a terrific job and I have had some great opportunities (including national TV) on the back of your site.”

“This is an excellent idea, long overdue and just what is needed for astronomy outreach. There has been a real gap in trying to connect those interested in giving talks/presentations etc with those who are looking for volunteers. I would encourage all those who regularly give talks to the public, societies and schools to sign-up to this excellent website.” By a past President of the RAS.

Graham Winstanley is Secretary of Lincoln Astronomical Society and the current Treasurer of the British Astronomical Association.

Graham Winstanley  
Secretary, Astro Speakers  
[astrospeakers.org](http://astrospeakers.org)

# The 2024 Astronomy Festival

## The Observatory Science Centre, Herstmonceux

### Cath Adams



This year was the 20th Astronomy Festival held at the Observatory Science Centre in Herstmonceux, East Sussex.

I have visited this Astronomy Festival a number of times over the years, it is a personal favourite of mine, there is something very special about the festival, no doubt helped by the fact its venue is the former home of The Royal Greenwich Observatory.

The domes are a striking sight to see as you approach the Observatory Science Centre, they house some wonderful historic telescopes that visitors to the festival have the opportunity to look through.

There are six domes, although not all domes are open during daytime visits.

The Astronomy Festival this year was the 20th Astronomy Festival, the festival organisers made this year's event even more special with a fantastic line up of speakers and a packed programme of events. There were planetarium shows, family science shows, telescope talks, air

rocket making and launching as well as all the regular exhibits around the centre including the Discovery Park. On the evenings visitors were able to look through some of the telescopes in the domes and in the day time there were opportunities for Solar viewing in Dome A.

Local Astronomy Societies attended the festival and trade stands were there selling and demonstrating astronomy equipment to visitors, these included different solar telescopes outside the trade stands for visitors to view the Sun.

The speaker line up this year included Gary Walker from Pulsar Observatories who gave the first talk of the festival entitled Twenty Festivals... How It all began.

Other speakers included Behnoor Bandi, Nik Szymanek, Dr Eva-Maria Mueller, Prof Jay Farihi, Prof Stephen Wilkins, Namrah Habib, Jenifer Millard and Pete Lawrence who gave an excellent talk about the Aurora.

Sadly, I didn't make it to all the talks myself but I very much enjoyed the ones I did get to see.

**Image Above:** The distinctive green domes of the Observatory Science Centre

**Image Below:** Image taken from Dome A and shows Dome D (Centre), Dome E (Right) and Dome F (Left).





**Image Above:** These images are of Dome A which houses The Thompson 30 inch Reflector, the telescope was constructed by Sir Howard Grubb of Dublin and presented to the Royal Greenwich Observatory by Sir Henry Thompson in 1896.

**More images overleaf...**

## The Future of The Observatory Science Centre

As some of you are hopefully already aware the future of the Observatory Science Centre at its current location is in doubt, which will put the future of the Astronomy Festival in doubt too. Here are some details from one of the administrators of the Save Herstmonceux Observatory group that is running on Facebook.

The Observatory Science Centre is an educational charity which has called the Grade II listed, former home of the Royal Greenwich Observatory at Herstmonceux, East Sussex, home for the last 30 years. The Canadian landlords, Queen's University, who also own Herstmonceux Castle, are not renewing the Science Centre's lease, so come the end of the 2026 season the Science Centre will be homeless.

Over the years the science centre have worked tirelessly to fund and restore the site and the telescopes back to their former glory. The restoration of the site has enabled astronomy enthusiasts the unique opportunity to observe the night sky through the historic telescopes, which they would not be able to have anywhere else in the UK. With many people attending

viewing evenings and their annual astronomy festival each year. The centre is a major venue for exhibitions, lectures and educational programmes. The renovated telescopes provide a unique setting for the general public, schools, colleges, and brownie and scout groups to learn about science, space and the world around them. Inspiring a new generation of scientists.

Whilst the Science Centre is in search for a new site to continue operations beyond 2026, they should not have to leave the Observatory site at all and the historic site should be preserved for future generations as a great educational tool of significant historical importance.

We have therefore started a petition (which is now over 7,500 signatures) for someone to step in and prevent the Observatory Science Centre from having to leave the Observatory site and help us make clear to Queen's University that the domes and telescopes must be preserved for public access, and used, as part of Britain's and Astronomy's heritage.

**Cath Adams**

## The petition can be found at: <https://www.change.org/SavetheOSC>

For updates on the campaign follow us on social media:

Instagram - [https://www.instagram.com/saveherstmonceuxobservatory?igsh=ejdkaTlnempoNzA3&utm\\_source=qr](https://www.instagram.com/saveherstmonceuxobservatory?igsh=ejdkaTlnempoNzA3&utm_source=qr)

Facebook - <https://www.facebook.com/share/g/jCAgkswb4GL3xsw1/?mibextid=K35XfP>

X - <https://x.com/herstmonceuxObs?t=AxwhyYukzUay3rtBnQ4asA&s=09>



**Image Left:** On the Sunday this year I saw some wonderful Solar Flares and Sunspots through these scopes, one of the scopes is shown here.



**Images left and below:** These images are of Dome E which houses The Thompson 26-inch Refracting Telescope, this telescope is the twelfth largest refracting telescope in the world and the second largest in Great Britain. Between 1897 and 1988 it was used to take 60,000 photographs of the night sky.



**Image Right:** The Stormtroopers were at the festival again this year, always a great photo opportunity!

This image is of star trails over Dome C, I took the image at last year's Astronomy Festival.

As well as the star trails you can see plane trails going through this image and some satellites too.

Dome C houses the 34-inch Hewitt Camera. The Hewitt camera was designed by Joseph Hewitt in the 1950s, its original use was in tracking 'Blue Streak,' a British ballistic missile which was under development at the time.

Note - Dome C is not open to the public but the dome may be accessed on some Open Evenings when the 16-inch Meade telescope is in use.

***All images in this article are  
by Cath Adams***

**Cath Adams is President  
of Wolverhampton  
Astronomical Society  
and Council Member/  
Merchandise Manager for  
the Society for Popular  
Astronomy**





# Mexborough & Swinton Astronomical Society

## Forthcoming Meetings

Our meetings are every Thursday at Mexborough Church Hall, S64 0ER. All of our weekly meetings are broadcast via Zoom as well as "live" in the meeting hall.

Tickets available at

<https://www.eventbrite.co.uk/manage/collections/814679/events>

## Meeting Programme October/November 2024

**17 October**

Ingrid Pelisoli: "Stellar binaries: how company can change the life of a star"

**24 October**

John Leach: "Me & My SeeStar"

**31 October**

Anke Ardern-Arentsen: "Galactic Archaeology with the oldest stars in the Milky Way"

**7 November**

Anjali Piette: "What's the weather like on alien planets?"

**14 November**

Kris Hudson-Lee: "The Winter Sky"

**21 November**

Meg Schwamb: "The View of the Centaur Region Through Wide-Field Surveys"

**28 November**

James Lees: "Why We Stargaze: The Motivations and Methods from Pre-History to Today"

Meetings held at St John's Church Hall, 58A Church St,  
Mexborough S64 0ER

Web site: [www.msas.org.uk](http://www.msas.org.uk)

# Mid-Kent Astronomical Society



## Forthcoming Meetings

### 11 October

#### Will Joyce - The Origin of the Moon

Lunar exploration is once again at the forefront of space exploration, but many questions about the Moon remain unresolved. This discussion presents recent scientific results and key highlights that have influenced our current knowledge of the Moon, and discusses a number of traditional and more radical modern theories about its origin and early evolution.

### 25 October

#### Simon Dawes - The Exoclock Project

Once considered an impossible task for amateur astronomers, it is now feasible to not only detect planets around other stars, but for the observations to have scientific value. We will go on a tour of the most successful detection methods and what we can learn about these planetary systems before landing on how you too could become part of the this exciting revolution in amateur astronomy.

### 8 November

#### Gavin Lacey – Solar Imaging for Different Budgets

Gavin will talk about the range of telescopes and cameras that are available to suit a range of budgets.

### 29 November

#### Jonny Pierce - Radio Astronomy: Past, Present & Future.

The story of radio astronomy from past to present is a particularly captivating tale of technological and scientific progress. In this talk, Jonny Pierce will explain how radio astronomy techniques have developed over the past century, highlighting some of the important telescopes and key scientific results that have been produced along the way. He will also introduce some of the future plans for radio astronomy, including the advancements that will be provided by the next major development: the Square Kilometre Array (SKA) telescope.

Please visit our website: [www.midkentastro.org.uk/events](http://www.midkentastro.org.uk/events)

Meetings are held at Bredhurst Village Hall from 8:00 pm

Bredhurst Village Hall, Hurstwood Road, Bredhurst, Gillingham, Kent ME7 3JZ

Dave Merrill  
Press Secretary  
Mid-Kent Astronomical Society

## Readers Images



### Full Moon 16-08-24

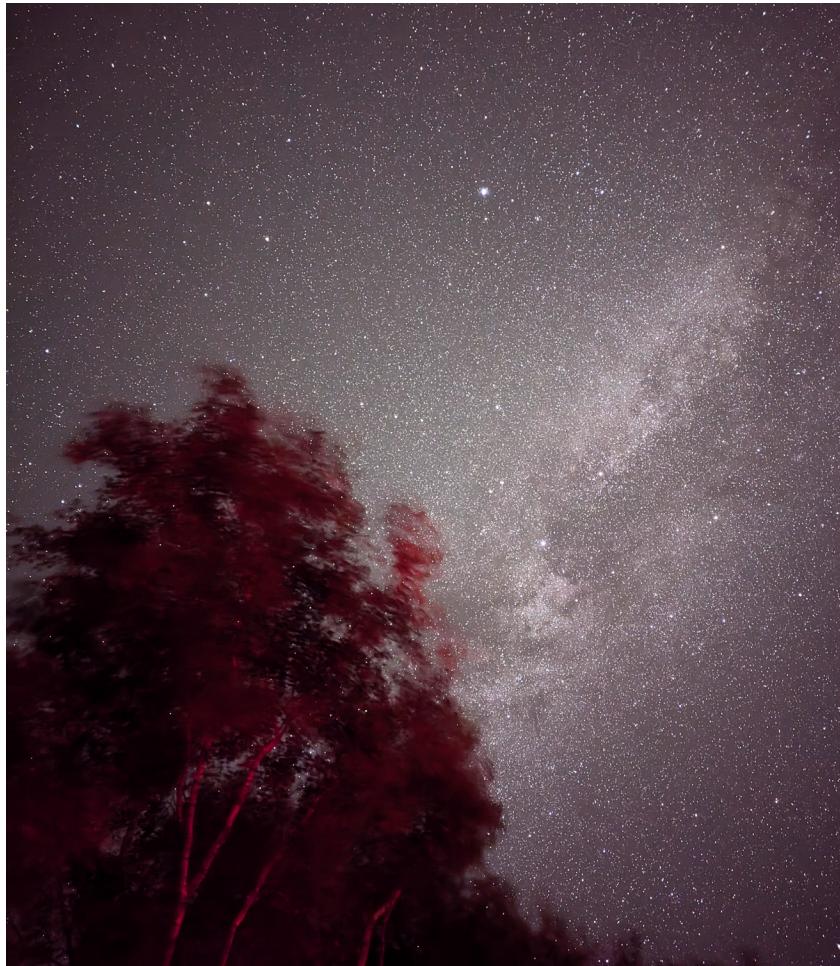
**Michael Bryce**

Nikon Z7 Mirrorless with Tamron 70 - 300mm lens  
at 300mm Tripod

Then slightly processed in Photoshop with levels,  
contrast and heavily cropped!

Moon is very small in a Full Frame camera even at  
300mm.

Member of  
Carolian Astronomy Society  
Bromsgrove Astronomical Society



### The Milky Way

**Clare Lauwereys**

Taken on a Google Pixel 7a mobile phone using it's  
astrophotography mode

Pixels have a setting called Night Sight. That will do a  
3 second exposure by default but you need to keep  
the phone steady.

If you put it on a tripod in night site mode it will  
detect the stars and then do a five minute exposure.  
And it has an astro button in the editing section to  
bring out more details.

# Loughton Astronomical Society

**The Loughton Astronomical Society is the home of all things astronomical in West Essex. Guests are always welcome; just drop in to one of our Thursday meetings.**

## **Thursday 17 October**

**Malcolm Zack and Jonathan Daniels**

Autumn Skies - A view of what can be seen in the night sky with binoculars and telescopes.

## **Thursday 31 October**

**LAS Members leading Public Observing**

Join the LAS looking at the night sky through telescopes and binoculars.

Scope doctor: bring your own scope to get the best out of it. Alternative programme if cloudy.

## **Thursday 8 November**

**AstroKyds Junior Section**

AstroKyds is the Junior section of the LAS. 6:30pm at St Mary's Church Hall

Astrokyds is a group for young astronomers (6 - 14 years) run by some of the LAS members. Activities include simple experiments, audience participation, demonstrations, show and tell, quizzes, mythology of the constellations and, if clear, some real observing. We ask that a parent or carer stays with the child. See <https://las-astro.org.uk/astrokyds.html>

## **Thursday 14 November**

**Professor Ruth Gregory**

Beyond Einstein and Modifying Gravity

Speaker's website <https://www.kcl.ac.uk/people/ruth-gregory>

## **Thursday 28 November**

**LAS Members leading Public Observing**

Join the LAS looking at the night sky through telescopes and binoculars.

Scope doctor: bring your own scope to get the best out of it. Alternative programme if cloudy.

## **Thursday 12 December**

**Malcolm Zack and Jonathan Daniels**

Winter Skies - A view of what can be seen in the night sky with binoculars and telescopes.

## **Thursday 13 December**

**AstroKyds Junior Section**

AstroKyds is the Junior section of the LAS - a gentle Christmas Quiz. 6:30pm at St Mary's Church Hall

Astrokyds is a group for young astronomers (6 - 14 years) run by some of the LAS members. Activities include simple experiments, audience participation, demonstrations, show and tell, quizzes, mythology of the constellations and, if clear, some real observing. We ask that a parent or carer stays with the child.

**The Loughton Astronomical Society is the home of all things astronomical in West Essex. Guests are always welcome; just drop in to one of our Thursday meetings.**

**Please visit: [las-astro.org.uk](https://las-astro.org.uk)**

# John Wheatley's Lost Telescope

## Re-Discovered!

Martin Boddy

North Norfolk Astronomy Society



*Image Left: Since John's death in 1888 the refractor seen in this photograph seemed to be lost. Now the telescope fully restored.*

### John Wheatley

This is the story of an extraordinary man, a master craftsman and a passionate amateur astronomer. The more you learn about him the more you have to admire him. Born in **Earith** in 1812 into a large poor family, one of seven children and following a limited education at the local Dame School, he became an apprenticed carpenter for seven years, then in 1829 he moved to **Bluntisham** to become the village carpenter, where he stayed for the rest of his life. In 1835 he married Elizabeth Mehew from Bluntisham, but never had children.

He had always been interested in natural history, and at the age of 25 his passion for astronomy was kindled after reading Thomas Dick's "Celestial Scenery" and later "The Solar System".

To see more he needed a telescope and taught himself to grind lenses from the bottoms of glass tumblers, simply mounted on a stick. With an aperture of 1 inch and a focal length of 6 feet.

He moved on to reflecting telescopes which at that time used polished speculum for the mirrors (an alloy of copper, tin and silver). After several failed attempts at the local foundry, he decided to build his own foundry, where he produced an 18 inch mirror. The mirror and telescope base can be seen in the **St Ives museum**.

Moving on to 1865 and quality achromatic glasses were becoming available in larger sizes, now was the time for him to concentrate on producing a refractor, of which he made several. He was corresponding with John Herschel and William Lassell, where he would have gained the knowledge

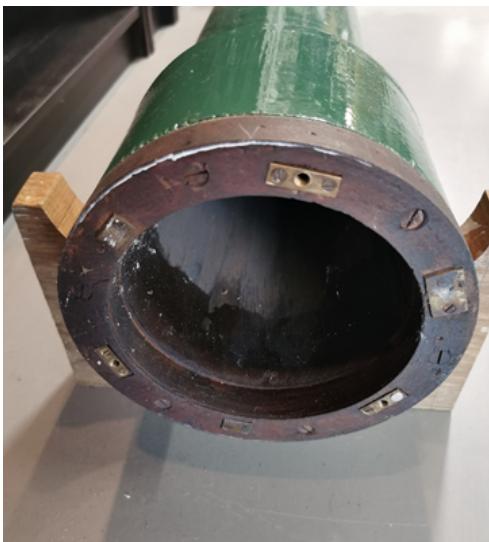
of modern optics! He made several, and at one stage had the fourth largest telescope in existence at that time.

But in 1989 David Jackson an optical technician at Cambridge observatory moved to Bluntisham. Soon after a village member approached David, telling him that he had one of John Wheatley's telescopes in his garage, prior to that it had been in a barn. David was asked if he would like it and this is where our story starts.

The telescope was in a sorry state and David decided on conservation. He assessed the optics, consisting of a six inch Fraunhofer type achromatic doublet around F14. Impressive due to the fact that Wheatley had little formal education. The telescope tube is made from long wooden strips planed convex on the outside and concave on the inner side, glued together and bound with brass rings similar to a wooden barrel. The two inch focuser was manufactured by Troughton and Simm's of London. The Telescope was cleaned with some repair to the strapping. The wood was treated and repainted matching the colour to a flake of the original paint. David went to John's old house asking the present owners if they had any records about John, and surprisingly they had found the above photograph in the loft.

The Museum at St Ives were approached, but did not want the telescope. So David stored it in his garage and it moved with him some years later to Norfolk.

Sadly David passed away in 2020, he had been a very active member in the North Norfolk Astronomy Society and prior to his death he passed the telescope to us for safe keeping.



**Image Left:** Showing the state of the optics, prior to restoration.



**Image Right:** The wooden tube rubbed down and ready for painting.  
Ready for painting



**Image Left:** Optics cleaned and collimated by ES Reid.



**Image Right:** The Troughton and Simms brass focuser.



We realised that this telescope needed to be preserved in a location where it could be seen and admired, our observatory not being ideal.

So forward to the next chapter, we approached Ian Knight at Altair Astro. He has a passion for old telescopes (and new) having quite a collection. He agreed to have it and display it in the shop for all to see. I delivered it one afternoon and a couple of hours later I got a message saying "I love this telescope". From that point Ian set about a complete restoration, stripping the telescope down. All of the brass work was repaired and polished. The wooden tube was cleaned and repainted, again keeping the original colour. The Optics were dirty and being cemented together needed separating to clean internally. This was a specialist job which was undertaken by optical expert Es Reid. He did a fabulous job, rebuilding the doublet and re-collimating it.

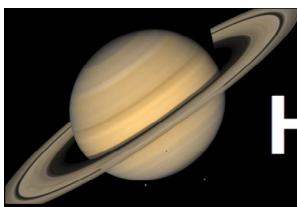
He commented just how good the optics are considering that they were hand ground.

Finally Ian had some wooden brackets made to display it in the showroom. As you can see the telescope looks stunning, and having the old photograph showing it in John Wheatley's garden makes it even more interesting.

John Wheatley was extremely talented, but not being wealthy, if he wanted something he would make it. From telescopes to musical instruments his other passion (he was also a talented musician). He played an important part in building the Blutisham Meeting house and Sunday school. He ran the village Sunday school, and the children would have had access to his world of music and astronomy. His carvings can still be seen to this day.

He never made any great discoveries, but was able to confirm to the astronomical world a variety of celestial objects discovered in his time.

**Martin Boddy**  
North Norfolk Astronomy Society



# Hertford **Astronomy Group**

## **2024-25 Programme (subject to change)**

### **Wednesday 13 November**

Robert Connon Smith: So Simple a thing as a Star

### **Wednesday 11 December**

Jill Stuart: The governance of the "Final Frontier"

### **Wednesday 8 January**

Martin Lewis: Planetary Imaging at the Edge

### **Wednesday 12 February**

Quentin Stanley: The Art of (Computer) Modelling

### **Wednesday 12 March**

Mike Foulkes: Eclipses

### **Wednesday 9 April**

David Southwood: A Decade as an ESA Director

### **Wednesday 14 May**

Jerry Stone: AGM followed by Is Pluto a Planet? - 15 years since New Horizons flyby.

### **Wednesday 11 June**

Kevin Fong: Living on the Moon

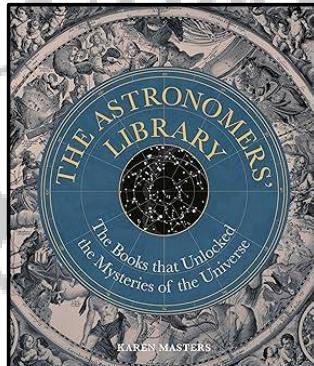
**Unless otherwise stated, meetings are held at:**

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More details at: [hertsastro.org.uk](http://hertsastro.org.uk)

# Society for the History of Astronomy

## Online Zoom® Webinar “The Astronomers’ Library”



**Karen Masters, Professor of Astronomy and Physics,  
Haverford College, Philadelphia, USA.**

*Karen Masters is a Professor of Astronomy and Physics at Haverford College, a small research-active undergraduate-only University in the outskirts of Philadelphia. In her research Prof. Masters seeks to use large surveys (both in optical and radio wavelengths; including notably Galaxy Zoo and the Sloan Digital Sky Survey) to understand how galaxies in our Universe form and evolve. The Astronomers' Library is Prof. Masters' third popular science book for Quarto; the other two are 30-Second Universe, and 30-Second Space Travel (both co-authored with Charles Liu).*

*The Astronomers' Library, part of the Liber Historica series from Quarto Publishing is a beautifully illustrated collection of some of the most interesting astronomy books from the past 800 years. With books collected into sections on Star Atlases, Maps of other Worlds, Astronomy and Culture, Cosmology, and books used in Teaching of Astronomy, as well as a section on modern books, The Astronomers' Library is a fun and beautifully illustrated tour across the history of astronomy (and astrology) publishing, across Europe and beyond. In this talk, the author, Prof. Masters will provide a guided tour through some of these books.*

**Wednesday, 16<sup>th</sup> October 2024 at 8pm (BST)**

*Zoom link details will be made available to SHA members near to date.*

*Please contact:- [meetings@shastro.org.uk](mailto:meetings@shastro.org.uk)*

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Quarto Publishing.*



**The Society for the History of Astronomy**



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# CAPCOM

## Magazine

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Edited and produced by Michael Bryce

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