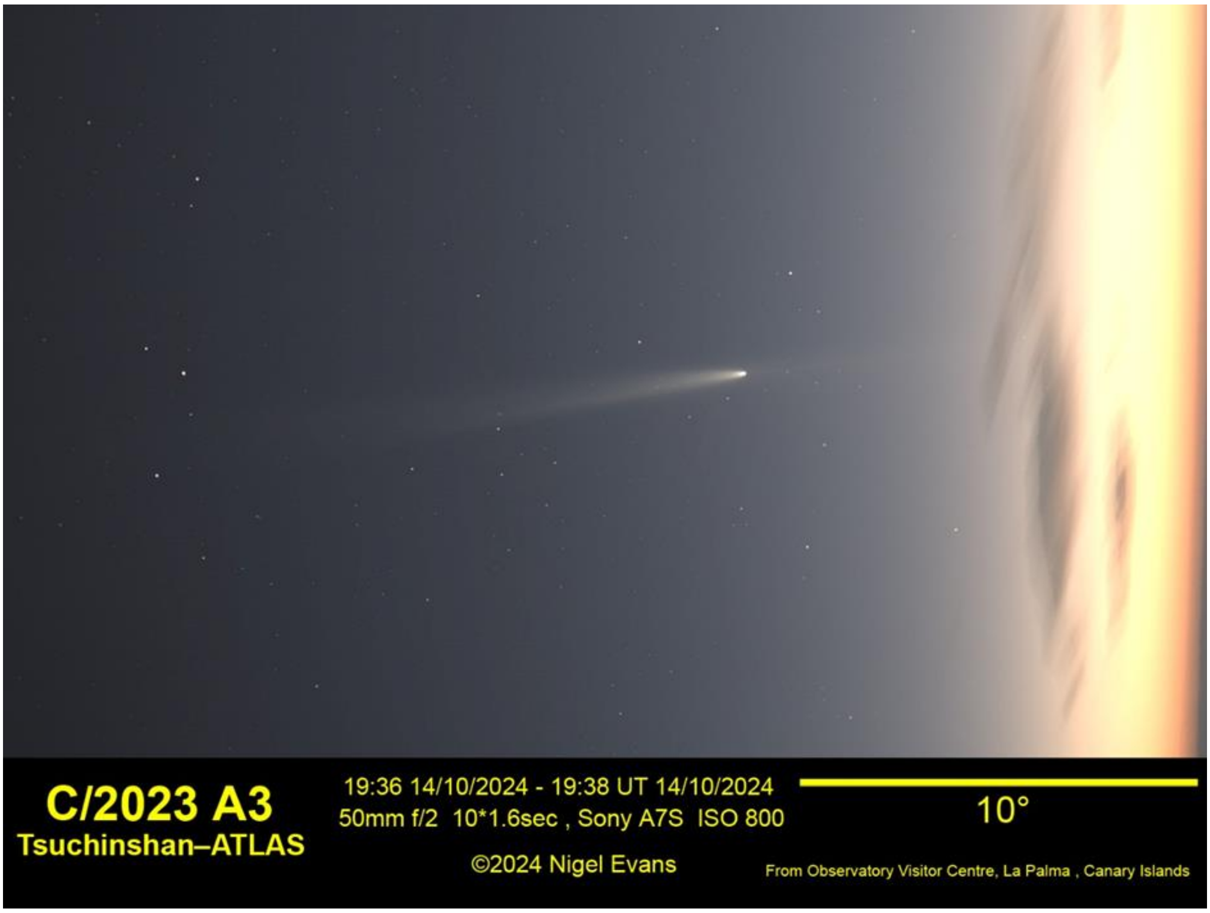
oasi.org.uk

No. 619 Registered Charity 271313 January 2025

OASI News

The newsletter of Orwell Astronomical Society (Ipswich)



Comet C/2023 A3 – Tshuchinshan-ATLAS from La Palma, October 14th 2024 by Nigel Evans

Contents

Society Notices

Dear Members,

Happy New Year! If the skies do finally clear, there are some fine sights to observe, with Jupiter riding high, just past opposition and Mars reaching opposition on January 15th. It would be great to hear of your observations.

Our AGM will be held at Newbourne on January 27th, prior to our regular meeting. All office bearers and committee posts are open to all members to stand for election. The sad loss of two of our committee members in the last two years has highlighted the fact that there is a need for members to consider stepping forward to fill posts, so our Society can continue to thrive.

If joining the committee is something that interests you, please could you inform Roy Gooding r.gooding908@btinternet.com or any committee member.

Thank you,

Andy Gibbs, Chairman.

Committee 2025

Chairman	Andy Gibbs	Set overall agenda for OASI, Chair committee meetings, Press and publicity
Secretary	Roy Gooding	Outreach meetings (jointly with Chairman), observatory decoration
Treasurer	Paul Whiting	Finance, Supervision of applications for grants. Visits by outside groups, Observatory tours, public appreciation of astronomy, Outreach activities
Committee	James Appleton	Committee meeting minutes, Web site
	Martin Cook	Membership, Tomline refractor maintenance & user testing
	Matt Leeks	Safety & security
	Peter Richards	Lecture meetings
	Mike Whybray	Astronomy Workshops, Child protection officer, Orwell Park School Astronomy Club
	Andy Willshere	Librarian
	Adam Honeybell	Newsletter
	Paul Whiting	OASI @ Newbourne

Committee Meeting

The next Committee Meeting will be the AGM on Monday 27th January 2025 at Newbourne Village Hall at 7:00pm. All members welcome.

New members

No new members this month

Society Contact details

Website:	https://www.oasi.org.uk
Events:	https://www.oasi.org.uk/Events/Events.php
Email queries:	info@oasi.org.uk
Submissions for Newsletter:	news@oasi.org.uk
Members-only message board:	https://groups.io/g/OASI
Observatory (meeting nights only):	☎ 07960 083714

Social Media

For other astronomy news and astro pictures try our socials:

Facebook:	https://www.facebook.com/groups/445056098989371
YouTube:	https://www.youtube.com/@orwellastronomical425
WhatsApp:	There is a WhatsApp group. Please email to be added.

We'd like to use social media a little more, since it's a more direct and immediate way to interact with members and potential members. Feel free to post pictures, comments or interesting articles. The more it's used, the more other people will be inclined to use it as well.

Articles for OASI News

News, pictures and articles for this newsletter are always welcome.

Please send tables as separate files in one of these formats (Excel, .csv, OpenOffice)

If you don't feel up to writing a major article, perhaps you might write a short note for OASI News along the lines of "This month I have mostly been observing/constructing/mending/reading/etc."

Please send material for the OASI web site and newsletter e.g., observations, notices of events, general interest articles, to news@oasi.org.uk

The CLOSING date is the **15th** day of the month (i.e. 15th January).

The Newsletter archive is at www.oasi.org.uk/NL/NL_form.shtml

Authors, please note that your articles will be publicly available worldwide!

Reproducing articles from OASI News

If you plan to reproduce an article exactly as per OASI News then please contact the Editor – otherwise, as a matter of courtesy, please seek permission from and credit the original source/author. You may not reproduce articles for profit or other commercial purpose.

Meetings and events

We have regular meetings on the 2nd and 4th Monday of the month (usually) at **Newbourne Village Hall**, and every Wednesday at **Orwell Park**. Night sky observing will usually take place when the skies are clear. See website for more events.

Date, Time & Location	**Contact**	**Event**
Weekly, every Wednesday, from 20:00, Orwell Park Observatory, Nacton	Martin Cook	Observatory open (closed on 1st January)
Monday 6th January 20:00 Orwell Park Observatory	Paul Whiting,	Taster evening. Places **must** be booked in advance by email: tour@oasi.org.uk.
Monday 13th January 19:30 Newbourne Village Hall	Paul Whiting,	Newbourne meeting - beginners and new members welcome!
Monday 27th January 19:00 Newbourne Village Hall	Paul Whiting,	AGM followed by regular Newbourne meeting - beginners and new members welcome! 19:00 AGM, including election of committee and office bearers. All posts are open to all members to stand for election. All members are invited to attend. 20:00 Sky Notes by Bill Barton, FRAS.

OASI @ Orwell Park

There are regular meetings every Wednesday evening from 8pm. Access is controlled by a gate and a fob. The entrance is gate 2 is on Church Road, What3Words is **tour.fuse.banks**

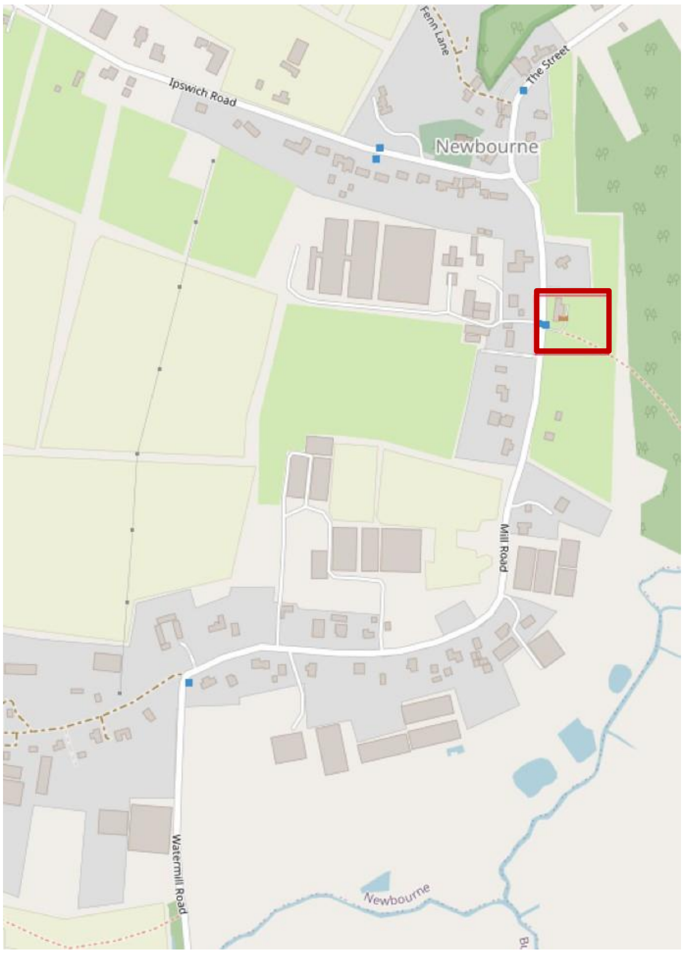
Access into the School Grounds and Observatory Tower

The route is as follows:

- Enter through gate 2 (gate 1 being the main gate) and park inside as per the attached map.
- Enter the school through the double black doors as indicated on the map. A key fob will be required to open the door.
- Continue straight through the next two sets of double doors.
- Turn left at the end of the short corridor then immediately right.
- Pass through the single door and on your left you will find the staircase leading to the observatory.
- On no account must you deviate from this route.

When leaving the observatory use the same route but in reverse. Please keep noise to a minimum as there are staff quarters nearby.

OASI @ Newbourne



newbourne@oasi.org.uk

We meet at Newbourne Village Hall, Mill Lane, IP12 4NP on the 2nd and 4th Mondays from 19:30.

What3Words **scars.atlas.printing**

Visitors are welcome but we do ask you to join the Society after two visits.

http://www.oasi.org.uk/OASI/Membership.php

Newbourne dates for 2025		
January	**13**	**27(S)**
February	**10**	**24(S)**
March	**10**	**24(S)**
April	**14**	**28(S)**
May	**05#**	**26(S)**
June	**09**	**23(S)**
July	**14**	**28**
August	**11**	**25**
September	**08**	**22**
October	**13**	**27**
November	**10**	**24**
December	**08**	**22**

We open up for all meetings at 7:30pm.

Astro News (A) / Sky Notes (S) at 7:45pm followed by any Talks (T), Workshops (W) and occasional Quiz (Q).

# indicates a change to the normal monthly pattern.

Forthcoming Outreach Programmes 2025

All members are welcome to come along and help out at these events – you don't need to be an expert in the subject, just some enthusiasm! Just respond to the email call for help prior to the event.

Please note that not all events are open to the public.

Saturday 8th February

BAA news, events & webinars

BAA: https://britastro.org/events/future-events

Events correct at time of publication, please go to website for latest information.

10 January 2025	RAZoom – Developing and deploying an instrument for measuring ionisation in the atmosphere	Radio Astronomy Section meeting on Zoom, link by request from Paul Hearn [paul@hearn.org.uk]
18 January 2025	BAA Meeting	We will be holding a meeting on Saturday 18th January 2023 from 14:30 to 18:00 at the Institute of P
25 January 2025	Society for Popular Astronomy Meeting	The Society for Popular Astronomy is holding a meeting on 25th January 2025, 14:00–17:30

The BAA Radio Astronomy Section

The BAA Radio Astronomy Section have been enjoying talks, seminars and tutorials via Zoom and these are available on the BAA YouTube channel https://www.youtube.com/user/britishastronomical/playlists.

The Night Sky in January 2025

Event times are for Orwell Park Observatory at 52.0096°N, 1.2305°E. Times are **GMT** unless otherwise stated.

Sun, Moon and planets

Sources: http://heavens-above.com/PlanetSummary.aspx http://heavens-above.com/moon.aspx

Object	Date	Rise	Set	Mag.	Notes
Sun ☉	1	08:03	15:54		
	31	07:36	16:41		
Phases	1	09:45	17:21		First Quarter : 06 January 23:56 Perigee : 08 January 00:02 Full Moon : 13 January 22:27 Apogee : 21 January 04:55 Last Quarter : 21 January 20:31 New Moon : 29 January 12:36
	31	08:45	19:22		
Mercury ☿	1	06:31	14:22	-0.3	
	31	07:40	15:47	-0.8	
Venus ♀	1	10:23	20:01	-4.2	
	31	08:55	20:59	-4.5	
Mars ♂	1	17:10	09:45	-1.2	
	31	14:06	07:18	-1.1	
Jupiter ♃	1	13:52	05:59	-2.6	
	31	11:47	03:52	-2.4	
Saturn ♄	1	10:56	21:31	1.1	
	31	09:03	19:50	1.1	
Uranus ♅	1	12:53	04:15	5.7	
	31	10:54	02:15	5.7	
Neptune ♆	1	11:13	22:46	7.9	
	31	09:16	20:52	7.9	

Occultations during January 2025

https://iota-es.de/moon/grazing_descrx101.html and
http://www.lunar-occultations.com/iota/bstar/bstar.htm

Observers are encouraged to download and install the Occult software program [Windows only] to generate predictions for their own particular site coordinates.

Meteor showers during January 2025

After the Quadrantids, there won't be any notable showers until April, with the Lyrids.

Shower	Normal limits	Maximum	ZHR at Max	Notes
Quadrantids	26 December 12 January	4 January	120	Bluish- or yellowish-white meteors with fine trains

See also https://www.rmg.co.uk/stories/topics/meteor-shower-guide

For radio observation, use reflections from Graves Radar on 143.049MHz or the Brams transmitter in Belgium on

49.97MHz and UK GB3MBA on 50.408MHz https://www.ukmeteorbeacon.org/Home

See also https://www.popastro.com/main_spa1/meteor/radio-meteor-observing-2020/.

Comets

Source : https://heavens-above.com/Comets.aspx.
Comet C/2024 G3 Atlas is much brighter than last month, but it will be hard to spot from the UK before perihelion on 13th January. Afterwards (assuming it survives) it will be visible after sunset. It may make for a nice photo!

Comet	Brightness	Date of last reported observation	Angular separation from Sun	Constellation
C/2024 G3 ATLAS	4.9	2024-Dec-31	17°	Ophiuchus
C/2023 A3 Tsuchinshan-ATLAS	10.6	2024-Dec-31	32°	Aquila
C/2022 E2 ATLAS	12.9	2024-Dec-31	120°	Cassiopeia
29P Schwassmann-Wachmann 1	13.3	2024-Dec-31	130°	Leo
37P Forbes	13.9	2024-Dec-17	32°	Capricornus
C/2021 G2 Atlas	14.3	2024-Dec-28	53°	Libra
333P LINEAR	14.9	2024-Dec-28	76°	Cygnus
C/2022 QE78 ATLAS	15.3	2024-Dec-28	162°	Monoceros
C/2024 M1 ATLAS	15.4	2024-Dec-28	131°	Perseus
C/2017 K2 PANSTARRS	15.5	2024-Dec-28	165°	Taurus
43P Wolf-Harrington	15.5	2024-Dec-28	108°	Pisces
487P SidingSpring	15.6	2024-Dec-28	125°	Perseus
C/2021 S3 PANSTARRS	15.7	2024-Dec-28	65°	Cygnus
C/2024 B1 Lemmon	15.8	2024-Dec-26	50°	Hercules

Visible ISS passes >30º max altitude for January 2025

Source: http://heavens-above.com/PassSummary.aspx?satid=25544

Times are **GMT**.
Predictions are approximate (02/12/24) due to craft adjustments. Check the day before.
There are more passes than this, but they're below 30 degrees, so will be harder to spot unless you have good weather and can see the horizon. As with stella/planetary brightness, the more negative the magnitude, the brighter it is.

Date	Brightness (mag)	Start			Highest point			End			Pass type
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.	
17-Jan	-3.3	18:28:05	10°	SW	18:31:08	49°	S	18:31:08	49°	S	visible
18-Jan	-2.9	17:38:30	10°	SW	17:41:35	37°	SSE	17:43:24	20°	E	visible
19-Jan	-3.9	18:24:54	10°	WSW	18:28:13	73°	SSE	18:28:24	70°	SE	visible
20-Jan	-3.5	17:35:04	10°	WSW	17:38:20	59°	SSE	17:40:31	19°	E	visible
21-Jan	-3.9	18:21:37	10°	W	18:24:57	86°	S	18:25:24	64°	E	visible
22-Jan	-3.8	17:31:37	10°	WSW	17:34:56	80°	S	17:37:26	17°	E	visible
22-Jan	-2.1	19:08:13	10°	W	19:10:14	33°	W	19:10:14	33°	W	visible
23-Jan	-3.8	18:18:09	10°	W	18:21:29	82°	S	18:22:14	51°	ESE	visible
24-Jan	-3.8	17:28:02	10°	W	17:31:22	86°	S	17:34:14	13°	E	visible
24-Jan	-2.4	19:04:40	10°	W	19:07:02	37°	WSW	19:07:02	37°	WSW	visible
25-Jan	-3.5	18:14:29	10°	W	18:17:47	64°	SSW	18:19:02	34°	SE	visible
26-Jan	-3.7	17:24:15	10°	W	17:27:34	77°	S	17:30:54	10°	ESE	visible
26-Jan	-2.2	19:00:58	10°	W	19:03:52	30°	SSW	19:03:52	30°	SSW	visible
27-Jan	-2.7	18:10:36	10°	W	18:13:47	41°	SSW	18:15:57	17°	SE	visible
28-Jan	-3.1	17:20:15	10°	W	17:23:31	56°	SSW	17:26:47	10°	ESE	visible
30-Jan	-2.1	17:16:06	10°	W	17:19:09	34°	SSW	17:22:13	10°	SE	visible

Bill Barton's Radio Broadcast

ICRFM (Ipswich Community Radio) 105.7 MHz at about 08:25 in the morning of the first Wednesday of each month. I aim to cover what there is to see in the sky and then a little bit on something topical. ICRFM is also available to listen to over the Internet and there is a listen again option on their website. http://www.icrfm.com

Artificial Intelligence and Astronomy

A short article from the OASI library.
Andy Willshere

About a year ago an article about artificial intelligence and quantum computers appeared in the OASI magazine. It was suggested that A.I. and quantum computers were the way for the future. The former as a technology that is rapidly changing and will probably influence the future of all human life, the latter controlling the speed of resolution.

I thought that as A.I. has become a construct for time ahead, perhaps a short article that demonstrated some aspects of how astronomy and A.I. were symbiotic, would be interesting.

How intelligent can A.I. get? Can we program cognition? Manufacturing a fully intelligent A.I. system with a procedural memory is perhaps well into the future, especially when you consider the complexity of the human brain, with its cells and chemicals. Sentience can refer to the capability to experience for example, feelings, emotions, irritation and inquisitiveness. However, an A.I. designing another A.I. may get closer than we think, although to become sentient could be a step too far.

In order to fulfil our A.I. wishes, we require, much faster computational ability. Today this would entail the coupling of many super fast computers together, which would probably not be fast enough. We now arrive at the quantum computer, which is still partially in its theoretical stage, but advancements in this science are becoming rapid.

Today's astronomy supplies vast sets of data that require analysis. These data sets originate from for example, ground-based observatories, space telescopes, photography and other astronomical methods. Any raw data analysis performed solely by humans is inherently slow, especially as many analytic processes have to be performed to reach the final answer. It is here that A.I. is furnishing now and will into the future, computational interpretation of huge amounts of intricate data. Automation techniques provided by A.I. will allow scientists more time to understand complex issues. One of these techniques is spectral analysis, which measures the electromagnetic spectrum of the data acquired. From the analysis obtained, scientists can research the structure, temperature and physical characteristics of astronomical bodies relative to their spectral signatures.

Another of these analytic techniques is time-domain. This is the study of how astronomical objects alter with time. This method is used mainly with variable objects situated past the Solar System, such as pulsating stars, supernova and active galactic nuclei. These changes over time could be due to activity or modifications in the astronomical subject itself.

For the data obtained from just these few techniques, human evaluation multiplied by technological restrictions would simply take far too long and therefore A.I. algorithms and computers are essential to rapidly evaluate the mass, complexity and diversity of data.

Over recent years the role of A.I. in astronomy has grown notably, transforming the speed of analysis and interpretation of immense quantities of data. Two specific A.I. algorithms that perform a critical function of analysing time –series data, spectra and images are identified as 'machine learning' and 'deep learning'. These two are sometimes linked with neural networks. The difference between the two depends upon how the algorithms learn. Machine learning permits the machine to learn independently from past data, allowing it over a period to gain more accuracy and by definition more efficiency. Deep learning is a sub-group of machine learning that centres on using neural networks. It is able to execute tasks such as categorize, grade and regression analysis.

Neural networks are comprised of arrangements of artificial neurons which are occasionally described as perceptrons,(discovered 1958), which is a classifier that analyses input values and then outputs the specific class the input belongs to. A classifier arranges classes according to communal characteristics. The inputs are vetted by an activation function, which will decide just like the brain's neurons whether to fire or not. In the case of the perceptrons the output is a binary 0 or 1, which is simplified as true or false. Perceptrons, like neurons are capable of learning from examples, and thus increasing their ability to upgrade precision. During the period between 1960 t0 1970 they were used in solving uncomplicated puzzles, but with development from the 1980's algorithms with multi-layer neural networks became very useful in machine learning.

What benefits will A.I. provide.:

- Automation.
- Decrease human error.
- Execute repetitive work.
- Precise and rapid.
- Assuming a power source, A.I. is always accessible.
- Swiftly analyze massive amounts of data.
- Depending upon algorithm, can analyse different types of data, from mathematical to pictorial.
- Assist in discovering exoplanets, and predict cosmic events.
- As A.I. technology is advancing, its use in astronomy will become more universal allowing scientists to make many enlightening discoveries and a much deeper comprehension of our universe.

References:

AI to aid future exoplanet hunt | Space

Discovering exoplanets using Artificial Intelligence

Analysis: How AI is helping astronomers study the universe | PBS News

(PDF) AI-Assisted Astronomical Data Analysis Unveiling Patterns and Phenomena in the Universe.

More precise understanding of dark energy achieved using AI | UCL Astrophysics Group - UCL – University College London

John Wainwright

John joined the Orwell Astronomical Society in 2006, in 2008 he joined the Committee as Equipment Curator. Since joining, John has attended meetings at Orwell Park Observatory and Newbourne Village Hall, it was very rare for him to miss a meeting and this would only happen if he was away on a cruising holiday with friends.

John was especially helpful to new members, struggling to set up and use new telescopes, willing to share his knowledge and technical skills. If required, he always seemed to be able to produce a tool or spare part from his vast inventory!

John was an enthusiastic member of our outreach team, again, it was very rare for him to not to attend an event. He was prepared for every eventuality, his car loaded to the maximum, with astronomical equipment packed into every nook and cranny!

At our open weekends at Orwell Park Observatory, John would invariably be located on the sports field, with one one of his massive Dobsonian telescopes, in his words “Open Field Observing”. He would also ensure that volunteers were supplied with walkie talkies, and also brought along safety lighting.

John liked his gadgets, he had a vast stock of computer equipment, always had the latest smartphone and I was always fascinated by his enormous watch. He also was a keen amateur radio enthusiast and I can remember him hunting for bargains at the Radio Rally in Kirton.

At our Wednesday meetings at Orwell Park, we would hear the clock tower striking 10 O’Clock, or as John would say “Pub O’Clock”. This was the signal to adjourn our meeting and head to a nearby pub. Sometimes, when the skies were cloudy, “Pub O’Clock” would invariably occur a little earlier! John was partial to a glass of San Miguel and we are going to miss the discount card that he used at the Thrasher Pub.

John will be missed by all members of Orwell Astronomical Society, his friendly face and willingness to give up his free time to help others will not be forgotten.

Christmas Anagram fun

Answers

Andy Wilshere

Each of the following questions has a one-word answer.

Take the first letter of each answer and unscramble it, to give an eight-letter word.

A clue to help: the word can be defined as “a layer of loose rock and dust on the surface of a planet”.

1. Lengthening of wavelengths of spectral lines. **Redshift**.
2. An elementary particle 1/200 the mass of a proton. **Electron**.
3. An attractive force exerted between two or more objects that have mass. **Gravity**.
4. A regular repeating path that one object in space takes around another. **Orbit**.
5. Quantity of emitting light. **Luminosity**.
6. Electromagnetic radiation with wavelength longer than that of visible light. **Infrared**.
7. Doughnut shaped object like an ‘O’ ring. **Torus**.
8. Surname of the astronomer who established the existence of galaxies. **Hubble**.

The first letter when unscrambled using the clue will give the word **REGOLITH**.

Questions for January 2025.

1. Which is the different set of numbers?
    A. 723,144
    B. 835,256
    C. 945,400
    D. 546,225
2. Which letter group fits at **???**

    DRQ, GRM, JRI, MRE, **???**

    A. PRQ
    B. PRA
    C. GRE
    D. AGI
    E. ORA

Observing a comet from La Palma

A trip to see C/2023 A3 (Tsuchinshan–ATLAS) from La Palma, October 2024 - Nigel Evans

Introduction

On occasion we, Nick James (Comet Director BAA) and I swan off sometime in the summer to La Palma (29°N) in the Canaries to see the stars, lugging a load of cameras, tripods, drives etc. We hire a rural house on the western side and have the option of seeing the sky from there, or sometimes go up the mountain at 2000m+, close to the observatories (but the observatory complex is off-limits at night)

In 2023 our visit coincided with the passage of C/2023 P1 Comet Nishimura. We also discovered that you can get a pass to use the Observatory Visitor Centre Car Park at night. We never actually saw the comet in the twilight, but the capabilities of modern digital camera revealed it. At that time comet C/2023 A3 (Tsuchinshan–ATLAS) had been discovered and it had the potential to become a prominent object in the sky in October 2024. Comets are notoriously unreliable (remember C/1973 E1 Comet Kohoutek?), but we decided to come out to see it.

By the end of September 2024 the reports from the southern hemisphere revealed an exceptional comet, with it possibly being a daylight comet on October 9. We had chosen to go out for the nights October 11 to 16 inclusive. The Moon would be close to full, but there is nothing that could be done about that. We applied for a (free) pass beforehand to use the Visitor Centre car park for these dates.

There are direct flights to La Palma with TUI but they are only weekly. Daily flights are via Madrid. On the evening of 10th there was an aurora alert, but I had to ignore it as all my big cameras were packed and I was leaving the house at 1:30 am for LHR. At that time my sky cameras showed plenty of activity.

Toys

I chose to take 3 Sony A7S cameras, for a Megrez 90 (FL~450mm), a 100mm f/2 objective, a 50mm f/1.8 objective, a GoPro and a couple of sidereal drives.

October 11th

Comet altitude at sunset – 10.9°. Elongation 11.3° Sets 53 minutes later. Venus 19.0°. Moon 9.0 d

We arrived in Santa Cruz de La Palma at 14:30, then had to collect luggage, collect the hire car, go to the shops for food, then journey to the Visitors Centre directly – we did not have time to go to the house and unpack stuff.

Sunset was about 19:45 can we arrived some 2 hours beforehand. When we spoke with the security guard he advised us that the forecast was for strong winds, both today and tomorrow. A couple of other brits turned up – Steve Knight and Nicky Fleet from Newbury Astro. Indeed we were they only 4 people for the all 6 nights who had passes. The night-time pass is not well advertised.

Tonight, the sky was reassuringly clear – with one exception. Towards the setting sun was a large block of cloud approaching from the direction of the Sun at a height higher than us.

As the sun set there was a rather spectacular show of light and dark cast on the clouds we could see, by clouds further away that we could not see – but I hadn't come here to see that!

Did I see the comet? No. Did I photograph it? No. Part of the issue was that I knew the comet's position relative to sunset (directly above) – the position of which I could not determine as I could not see sunset.

Steve had a selection of toys – the one that caught my eye was the Seestar. That evening he was able to align it, point it towards the comet *and* then photograph it through the clouds. Not a great shot but it counts!

October 12th

Comet altitude at sunset – 15.1°. Elongation 15.9° Sets 72 minutes later. Venus 19.1°. Moon 10.0d

We already had the forecast of wind. When we got to the top of the mountain it was totally cloudy. Then it started to rain. With no let-up in sight we all called it a day and were back at base just after sunset.

October 13th

Comet altitude at sunset – 19.5°. Elongation 20.5°. Sets 93 minutes later. Venus 19.3°. Moon 11.0d

Back up to the top of the mountain. It was sunny but there was a lot of high altitude cirrus about. As the sun was setting sundogs were visible – and the cloud was not going away. At one point only Venus and the Moon were detectable. Finally we saw it through breaks in the clouds about 45 minutes after sunset. There several layers of cloud moving around. I don't think we saw the entire comet cloud-free.

O for a cloud-free view! But we had seen it! And it was bright!

We could set up in the same spot each night. By now the comet had set and the sky did clear somewhat. This was an opportunity of seeing where Polaris was, relative to features of the visitor centre building. This would help get rough alignment before sunset

October 14th

Comet altitude at sunset – 23.8°. Elongation 25.0°.Sets 113 minutes later. Venus 19.4°. Moon 11.0d

This was the day that the Earth would pass through the plane of the comet. Depending on the geometry of the comet's orbit it is occasionally possible to see a phenomenon called the 'anti-tail' pointing *towards* the Sun. It is purely an optical effect, caused by the old tail curving away from the sun but to us appearing nearer to the sun. The most famous comet to show this (often seen in books) was C/1956 R1 Arend-Roland.

Even though the comet was now in the evening sky, there was the possibility that, with clear skies, it might be possible to see the anti-tail curl sufficiently far round that it would still be possible to see it in the morning sky. We decided to go round the other side of the island to catch the dawn and maybe, just maybe, see the anti-tail in the twilight.

We checked the GTC (10m Gran Telescopio Canarias) webcam before setting off – clear overhead but cloudier lower down. An hour later we stood on the eastern side of the island - clear overhead but cloudier lower down! We wanted clear skies on the eastern horizon – it wasn't going to happen, so we returned home.

This evening looked the best yet! The main cloud deck was below us and a few wispy ones above us that moved quickly – and no wind. The lesson of yesterday regarding initial polar alignment was put into practice, but when it was dark enough I forgot to check them! But it was good enough. Eventually we picked the comet up and followed it down to the (cloudy) horizon. One of my cameras locked up, then it got resolved. Once all were running the main issue was not to overexpose the background in the twilight sky. Meanwhile Nick could see the anti-tail in his camera – I have to confess I did not realise how prominent it would be so changed the framing on one of my cameras.

We were elated with what we had seen. It was not as bright as yesterday. We also decided that we couldn't be bothered to get up at 5:00 am tomorrow to come over to the other side of the island to look for the anti-tail.

October 15th

Comet altitude at sunset – 27.8°. Elongation 29.2°. Sets 132 minutes later. Venus 19.5°. Moon 12.0d

Woke up this morning to find that Mike Harlow had posted the SOHO LASCO C3 image on the BAA images page showing the anti-tail crossing the field-of-view. That's nearly 25° away!

In the afternoon it started to rain and it continued. We checked the GTC camera and it was raining there. We stayed put.

October 16th

Comet altitude at sunset – 31.4°. Elongation 32.9° Sets 150 minutes later. Venus 19.7°. Moon 13.0d

This was our last night in La Palma and decided that we would go up the mountain one last time, unless the forecast was 'guaranteeing' rain.

It wasn't looking good when we arrived – we could not see the observatories or even the Sun. But a clearing on the western horizon was forming. There were two layers of cloud above us, one swift and one slow. At times we could see Venus and Arcturus, but not the Moon behind us. The Megrez was not put out but the other cameras were. We did capture the comet emerging from the clouds and fast moving clouds did interrupt our view. Now definitely fading.

October 17th

The journey home. We had checked in yesterday. I have to say that the Iberia website is rather painful to use. We check in to both legs of the journey, Santa Cruz de La Palma to Madrid with Iberia Express, and Madrid to London with BA.

I prefer a window seat and, when flying back to London LHR, always try to get a right-hand seat as I am always amazed by the view over the City of London, come day or night.

On the Iberia part of the journey I could see our proposed seats but I could not change them, while for the BA part I did not even get the opportunity – the seats were just dealt out. Hmm, a left hand window on the way back to London. However Nick saw an 'opportunity'. We will leave Madrid after sunset and fly north. So would it be possible to see out of the window and the comet over the western horizon. Interesting!

So, we took what we needed as hand luggage. We both took:

a camera(!) with the 50mm lens, to be used full aperture, high ISO and hand-held

A thick coat to cover up the window against reflections from inside the plane

Some black tape to stick the coat to the walls of the plane

When the seat belt signs came off we raced to try our luck.

We did not see it as such, but we did get some rather rubbishy photos. Another first!

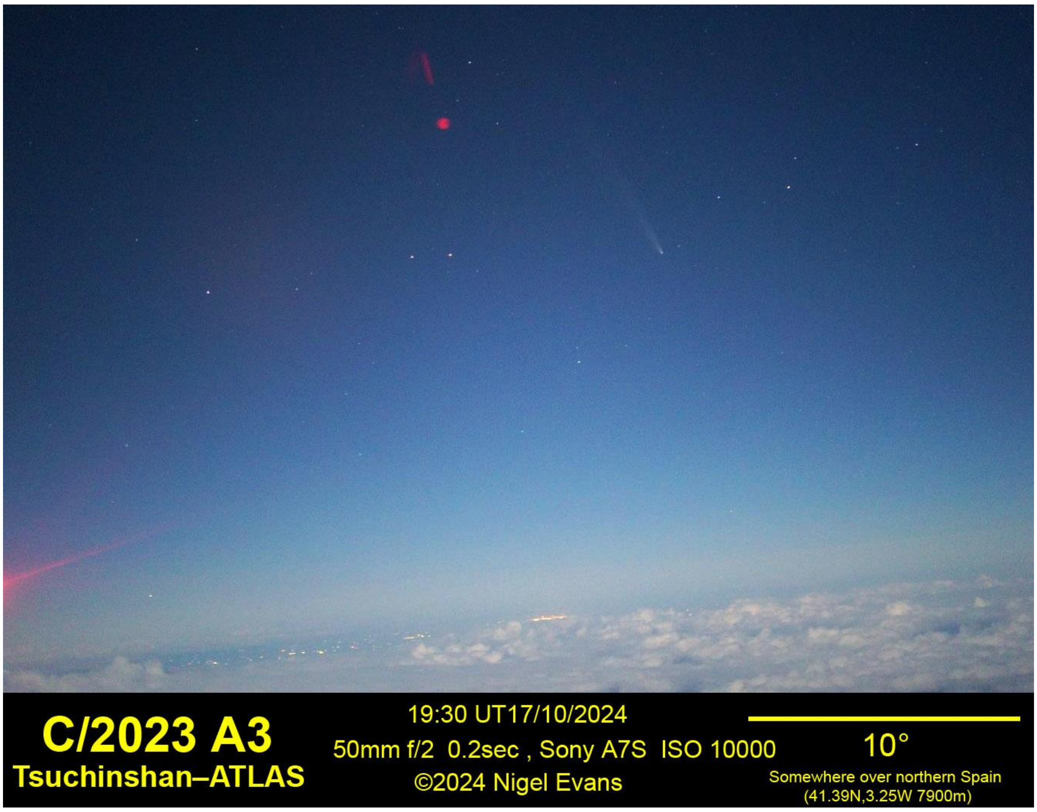
So where are the photos? A few are here but there will be more on the website here. On some the twilight background has been removed to reveal more detail in the comet.

In the twilight…

With the background removed the anti-tail is clearly visible

The anti-tail is to the right, but in the comet is the *shadow* of the anti-tail (i.e. edge-on the tail is optically thick)

The comet, and the anti-tail, in a GoPro!



From a plane! No clouds!

Members observations

Paul Whiting

Taking advantage of the clear skies last night, despite the full-ish Moon, I had a go at some nebulae in Cassiopeia.

NGC281 (the so-called Pacman Nebula), 30 minutes stacking
IC63 (the Ghost Nebula), 23 minutes stacking – could have done with much more, but the clouds rolled in.

Both images sharpened with Microsoft Photo Editor.

Andy Gibbs

I have imaged IC405 The Flaming Star Nebula in Auriga with a ZWO SeeStar S50. I saved 360 fits files for stacking and processing in Affinity Photo 2