



OASI News

The newsletter of Orwell Astronomical Society (Ipswich)



M27 The Dumbbell Nebula Battling against high cloud, so only 20 minutes of integration on M27. The only editing was an ai denoise via the Seestar app. Andy Gibbs.

Trustees:

Mr Neil Morley Mr David Payne Mr Bill Barton

Honorary President:

Dr Allan Chapman D. Phil MA FRAS

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Society Notices

Dear Members,

Our Open Evenings at Orwell Park Observatory are confirmed for Friday and Saturday 24th and 25th October. Thank you to everyone who has volunteered to help out on these dates. If the skies are clear it could get very busy, so we could still do with additional help for these evenings, especially on the Saturday. Our Open Evenings are our most important outreach event of the year, so if you can help in any way, please let myself or any Committee member know.

It has been great to see so many old and new members at our recent Newbourne meetings. The weather has allowed observing to place at the last couple of meetings and it was nice to see some telescopes in action.

I look forward to seeing you over the next month, clear skies!

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
	Andy Willshire	Librarian
	Adam Honeybell	Newsletter
	Paul Whiting	OASI @ Newbourne

Committee Meeting

The next Committee Meeting will be the Friday 28th November 2025 on Zoom. All members welcome.

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 October).

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
Monday 13th October 2025 20:00 Newbourne Village Hall	Paul Whiting, FRAS	Newbourne meeting - beginners and new members welcome! Observing target for the month: Cygnus. 19:30: doors open. 19:45: <i>Astro-news</i> by Paul Whiting, FRAS. NB: if the sky is clear, priority will be given to observing, and <i>Astro-News</i> will be postponed.
Monday 20th October 2025 20:00 Zoom	Paul Whiting, FRAS	Pre-recorded talk: <i>The Invisible Universe, from Supernova to Black Holes</i> by Matthew Bothwell. (Zoom login details are provided in an email to members.)
Friday 24 October 2025 19:30 Orwell Park Observatory	Andy Gibbs	Public access event. Open evening. Poster.
Saturday 25 Oct 2025 19:30 Orwell Park Observatory	Andy Gibbs	Public access event. Open evening. Poster.
Monday 27th October 2025 19:30 Newbourne Village Hall	Paul Whiting, FRAS	Newbourne meeting - beginners and new members welcome! Observing target for the month: Cygnus. 19:30: doors open. 19:45: <i>Sky Notes</i> by Bill Barton, FRAS.

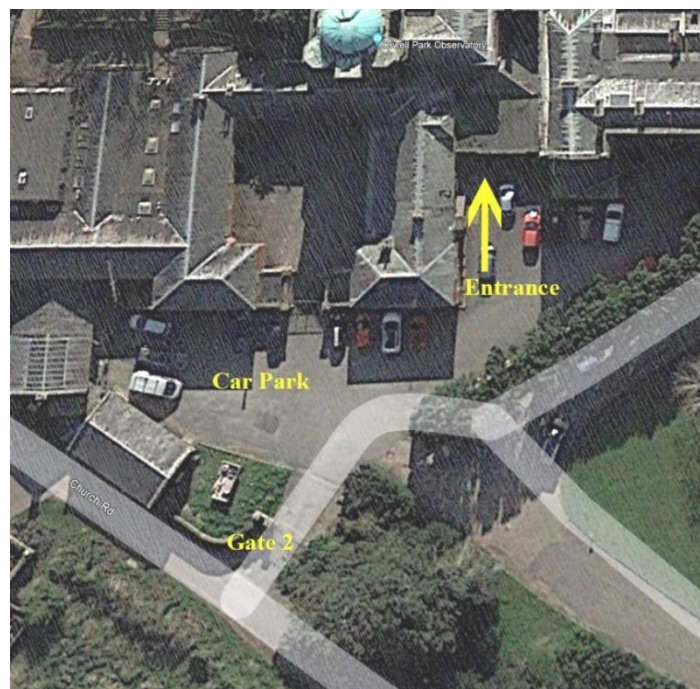
OASI @ Orwell Park

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

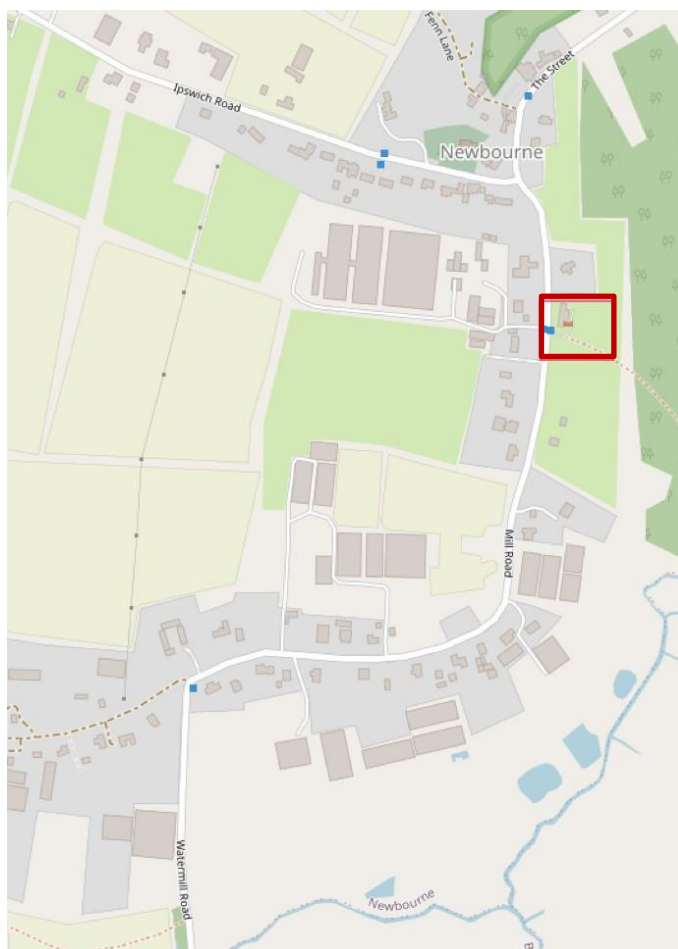
We meet at Newbourne Village Hall, Mill Lane, IP12 4NP
on the 2nd and 4th Mondays from 19:30.

What3Words [scars.atlas.printing](https://www.what3words.com/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		
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.

Friday 24 October 2025 19:30 Orwell Park Observatory	Andy Gibbs	Public access event. Open evening. Poster.
Saturday 25 Oct 2025 19:30 Orwell Park Observatory	Andy Gibbs	Public access event. Open evening. Poster.

BAA news, events & webinars

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

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

Nothing in October

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>.

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The Night Sky in October 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	05:56	17:32		
	31	06:49	16:28		
Moon ☾	1	15:40	23:15		Perigee : 08 October 12:39 Last Quarter : 13 October 18:13 New Moon : 21 October 12:25 Apogee : 23 October 23:31 First Quarter : 29 October 16:21
	31	14:36	-		
Mercury ☿	1	07:16	17:48	-0.4	
	31	09:24	16:56	-0.1	
Venus ♀	1	03:38	16:55	-3.8	
	31	05:12	16:00	-3.8	
Mars ♂	1	08:39	18:15	1.6	
	31	08:42	17:02	1.5	
Jupiter ♃	1	22:45	14:51	-2.0	
	31	21:00	13:01	-2.2	
Saturn ♄	1	17:24	04:52	0.7	
	31	15:22	02:43	0.9	
Uranus ♅	1	19:15	11:00	5.6	
	31	17:15	08:57	5.6	
Neptune ♆	1	17:21	05:11	7.8	
	31	15:22	03:09	7.8	

Occultations during October 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 October 2025

No significant showers in October. But there can always be the odd rogue if you keep looking long enough!

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	Brightness	Date of last reported observation	Angular separation from Sun (degrees)	Constellation
C/2025 A6 Lemmon	5.4	2025-Oct-11	54	Ursa Major
C/2025 R2 SWAN	5.9	2025-Oct-10	49	Ophiuchus
C/2025 K1 ATLAS	10.3	2025-Sep-25	11	Virgo
3I ATLAS	12.0	2025-Oct-02	15	Virgo
414P STEREO	12.6	2025-Sep-21	18	Crater
240P NEAT	13.6	2025-Oct-10	132	Taurus
C/2022 N2 PANSTARRS	14.1	2025-Oct-04	140	Taurus
C/2024 E1 Wierzbos	14.1	2025-Oct-03	54	Hercules
C/2014 UN271 Bernardinelli-Bernstein	14.9	2025-Oct-02	89	Mensa
C/2024 J3 ATLAS	15.2	2025-Oct-01	80	Scutum
C/2021 G2 Atlas	15.5	2025-Sep-19	40	Serpens
C/2024 T5 ATLAS	15.5	2025-Oct-02	120	Eridanus
217P LINEAR	15.8	2025-Oct-01	69	Cancer
47P Ashbrook-Jackson	15.8	2025-Oct-02	140	Aquarius
48P Johnson	15.8	2025-Oct-03	137	Taurus
C/2022 QE78 ATLAS	15.9	2025-Sep-29	66	Cancer

Visible ISS passes >30° max altitude for October 2025

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

Times are **GMT**.

Predictions are approximate (07/04/25) 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	Start			Highest point			End		
	(mag)	Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
20 Oct	-2.7	05:02:53	16°	SW	05:05:14	39°	SSE	05:08:24	10°	E
21 Oct	-3.6	05:50:02	10°	WSW	05:53:24	76°	S	05:56:46	10°	E
22 Oct	-3.5	05:03:15	26°	WSW	05:04:58	64°	SSE	05:08:18	10°	E
23 Oct	-3.0	04:16:51	48°	SE	04:16:51	48°	SE	04:19:49	10°	E
23 Oct	-3.7	05:49:50	10°	W	05:53:12	86°	S	05:56:35	10°	E
24 Oct	-3.8	05:03:18	32°	W	05:04:42	83°	S	05:08:05	10°	E
25 Oct	-3.2	04:16:48	55°	ESE	04:16:48	55°	ESE	04:19:34	10°	E
25 Oct	-3.7	05:49:42	11°	W	05:52:55	79°	S	05:56:17	10°	ESE
26 Oct	-3.8	05:03:09	36°	W	05:04:24	85°	S	05:07:46	10°	E
27 Oct	-3.0	04:16:36	51°	E	04:16:36	51°	E	04:19:12	10°	E
27 Oct	-3.4	05:49:30	12°	W	05:52:31	56°	SSW	05:55:49	10°	ESE
28 Oct	-3.7	05:02:56	39°	W	05:03:59	69°	SSW	05:07:19	10°	ESE
29 Oct	-2.7	04:16:22	43°	ESE	04:16:22	43°	ESE	04:18:45	10°	ESE
29 Oct	-2.7	05:49:16	13°	W	05:51:55	33°	SSW	05:54:58	10°	SE
30 Oct	-3.3	05:02:43	38°	WSW	05:03:24	45°	SSW	05:06:37	10°	SE

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>

Neutrino. 2.1

A quick insight into the neutrino. A short article from the library

Andy Willshere

Recently, I was reading an article in which I noted that the elementary particle, the neutrino was the major player in this missive. A few years ago we published an article about this phenomenon in our journal, so I thought that I would use current news to update information about this copious but difficult to capture elementary particle.

From scientists to amateur astronomers we have an inherent interest in elementary particles. There is one in particular that speeds through the human body in great abundance. As many as a hundred trillion crash through us every second without we assume causing us any problems. They are generated in a myriad of places; the Sun, the Big Bang and supernovas are just a few examples. One of the biggest problems we have in our search for these little beasts is in detecting them, especially as they have no electric charge, but remain neutral, and have the smallest mass of all elementary particles, known today. This is the "*Ghost particle*".

So, what are neutrinos? Existence of them was assumed in 1930 by Wolfgang Pauli in his explanation of the energy spectrum of beta decay. They are an elementary particle that interacts using the weak subatomic force and gravity. They are classed as leptons and treated precisely the same as electrons when they come into contact with nuclear forces. Leptons are a collection of elementary particles that respond only to the electromagnetic, weak and gravitational force. As well as the electron and positron, a group also forms with both the muon and tau and their antiparticles, or antineutrinos. These are differentiated from neutrinos by having an opposite sign lepton number (quantum number) and a right-handed chirality. Radioactive decay is the main mechanism by which neutrinos are generated, with processes such as Beta decay and nuclear disintegration, being prime examples. Magnetic fields do not affect them whilst they travel about at almost the speed of light. Our Sun therefore provides most of the neutrinos perceived on Earth.

What use are neutrinos? Because of their speed and ability to pass through matter, potentially communications could be a major asset. Some research into using neutrinos for long range communication has already been started. They also show the ability to pass through objects such as black holes and neutron stars. Perhaps in the future using this capability a neutron observatory would be able to view parts of the galaxy at present obstructed. Neutrinos escape from collapsing stars before visible light and so a design for an early warning system for supernova could be initiated. This could be useful to investigate matter-antimatter asymmetry. It would also help in comprehending dark energy and dark matter and hopefully assist in discovering new fundamental particles. Perhaps the search for proton decay may allow for a relationship to provide a "Grand unified theory of Physics"; essentially the Holy Grail of physics.

How can we identify them and find their origin? This has been a major problem for decades, and several methods have been considered.

- i. Cowans and Reines, two scientists at Los Alamos, New Mexico in 1956, used two containers which they filled with a total of 200 litres of water and 40 kg of cadmium chloride. Antineutrino reactions with protons in the water created positrons and neutrons. Scintillation detectors observed pairs of photons, which after a few nanoseconds a positron annihilation episode occurred producing neutrons. Currently a much larger detector called the KamLAND continues to use comparable techniques to study neutrino fluctuations. It is situated about 1km in a mine underground near Kamioka-cho in Japan. The apparatus contains 1kton of ultra-pure liquid scintillator, which doubles as both neutrino detecting environment and objective.

- ii. Ring-imaging Cherenkov detectors first developed in the 1980's, identify electrical subatomic particles travelling through a water and ice medium, which is surrounded by light sensitive photomultiplier tubes. The incident neutrino produced can indicate energy and direction.
- iii. In 1996, AMANDA (Antarctic Muon and Neutrino Detector Array) project was put into operation and continued for nine years until it was absorbed within its successor the IceCube neutrino observatory. These functioned at the Amundsen-Scott South Pole base. IceCube stretches down 1500m into the ice of the South Pole, and is the first gigaton neutrino monitor constructed. It is a collaborative investigation of international scientists.

The latest endeavour to capture this evasive particle is being run by Fermilab (Fermi National Accelerator Laboratory) whose home address is Batavia, Illinois and is a United States Department of Energy National laboratory, specializing in particle physics

In an abandoned gold mine in Lead, close to Deadwood, South Dakota the new DUNE (Deep Underground Neutrino Experiment) project is being built. The basic idea is that one end at Fermilab will transmit neutrinos 1300 km through the Earth's mantle to Sandford Undergroud Research facility 1.5 kilometre into the Earth, at the other end, where a much larger detector is in situ. The particles travel in straight lines at almost the speed of light, whilst not being affected by electric or magnetic fields. This will take 4.34 m sec. Dune's beamline has the 'Long Baseline Neutrino Facility' and a 2.4 MW proton beam accelerator to produce neutrinos by various decay factors. The near detector is at the Fermilab site 600 m from the production of the neutrinos. It is divided into several subdetectors that are placed side by side, one of which is situated directly along the neutrino beam axis, for monitoring purposes. At this point, with the beam of neutrinos being close to their source, it will be very intense, and it is hoped that it will record approximately 50 interactions each pulse per second. The far detector at Sandford consists of 70 kilotons of liquid argon underground. Approximately 800,000 tons of rock will have been excavated to make way for this chamber.

Many neutrino experiments have shown that they possess the ability to oscillate when travelling. This means that the neutrino type or flavour at the beginning of the journey may change as they travel through space into a different one. Neutrinos are divided into three flavours: electron neutrinos, tau neutrinos and muon neutrinos. The rate of oscillation is contingent upon neutrino mass differences, distance travelled and energy levels. Oscillations therefore could suggest that at least two of the particles could have non - zero mass. Neutrinos and antineutrinos may provide information about their dissimilarities and therefore evidence of broken symmetry [CP violation]. (CP- symmetry assumes that if a particle is substituted with its antiparticle, the laws of physics should remain the same.) .which may demonstrate that they are accountable for the extensiveness of matter in the universe. To find out what is happening to the neutrino flavour is to fire them down a measured track, detecting the flavour at both ends. Large detectors will then analyse the types of patterns produced by neutrinos over the 1300 km and how neutrinos interact at each end of the track, investigating if new subatomic particles have been generated. This is what the DUNE experiment will be doing, with a staff of approximately 2,000 people from various countries. DUNE's near detector had its first 2*2 prototype detector placed into its cryostat in October 2023.

By unlocking the neutrinos secrets, we may be able to further comprehend the cosmos and perhaps allow physicists to analyse and re-write the Standard Model of science.

References:

[Deep Underground Neutrino Experiment](#)

[Neutrino beam – DUNE at LBNF](#)

[Deep Underground Neutrino Experiment - Wikipedia](#)

[DUNE at LBNF](#)

