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OASI News

The newsletter of Orwell Astronomical Society (Ipswich)

Solar image with sunspots – from Newbourne 23rd June 2025

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,

I hope that you have been enjoying the sunshine, hopefully it hasn't been too hot for you.

Hopefully, the fine weather will still be here on Saturday 19th July, for our Summer Picnic at Newbourne Village Hall. If it is Sunny, we will set up some solar telescopes to safely observe the Sun, which is still pretty active at the moment. We also hope to hold a quiz in the evening.

The picnic is open to all members of OASI and your families. I look forward to seeing you there.

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 Friday 12th September 2025 on Zoom. All members welcome.

New 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 July).

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 14th July 19:00 Newbourne Village Hall	Paul Whiting,	Newbourne meeting - beginners and new members welcome! 19:00: doors open and observing the Sun and Mercury if the sky is clear. Observing target for the month: Mercury.
Saturday 19th July 13.00-20:00 (possibly later) Newbourne Village Hall	Pete Richards	Summer picnic, open to all members of OASI and their guests. In case of bad weather, the picnic will be held inside the village hall. Weather permitting, there will be solar observing. Poster with more info .
Monday 21st July 20:00 Zoom	Paul Whiting,	Pre-recorded talk: Citizen Science and Radio Jove: the Science and Instrumentation for a Radio Exploration of Jupiter by Chuck Higgins. (Zoom login details are provided in an email to members.)
Monday 28th July 19:30 Newbourne Village Hall	Paul Whiting,	Newbourne meeting - beginners and new members welcome! Observing target for the month: Mercury. 19:30: doors open. 19:45: 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.

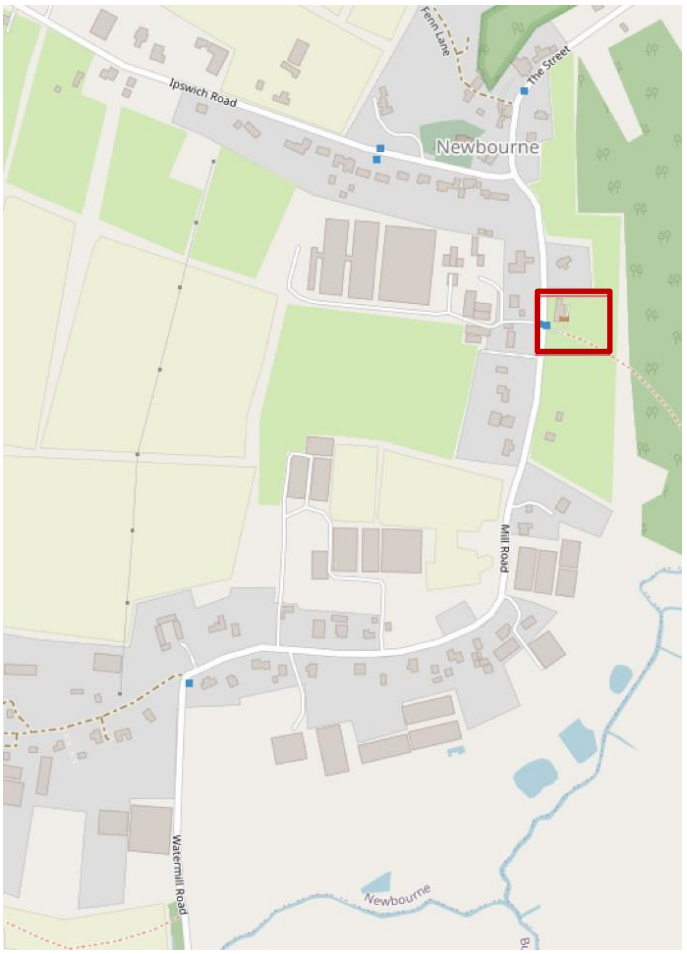
• Turn left at the end of the short corridor then immediately right.

• 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		
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.

Sun 24 Aug 2025 11:00-16:00 Bawdsey Radar Museum	Public access event. Observing the Sun safely. NB: This event is run by Bawdsey Radar.

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 July or August

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.

Astronomical Heritage Committee

Our very own Bill Barton is now a committee member for the Astronomical Heritage Committee. Appointment is for three years, then an option of a further three years.

Astronomical Heritage Committee

2025 Members

- Dr Rebekah Higgitt (Chair)
- Bill Barton (Society for the History of Astronomy representative)
- Professor Michael Burton
- Dr Daniel Belteki
- Dr Amanda Chadburn
- Mark Hurn

Ex officio members:

- Sian Prosser (Librarian and Archivist, secretary)
- Ian Russell (Executive Director)
- Professor Mark Lester (Senior Secretary)
- Dr Lee Macdonald (Chair of the Library Committee)

The Night Sky in July 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	03:40	20:18		
	31	04:16	19:46		
Moon ☾	1	10:47	23:10		Apogee : 05 July 02:29 Full Moon : 10 July 20:37 Last Quarter : 18 July 00:38 Perigee : 20 July 13:55 New Moon : 24 July 19:11
	31	12:06	21:47		
Mercury ☿	1	05:59	21:33	0.4	
	31	04:50	19:06	4.8	
Venus ♀	1	01:24	16:25	-4.0	
	31	01:14	17:22	-3.9	
Mars ♂	1	09:05	22:44	1.5	
	31	08:51	21:13	1.6	
Jupiter ♃	1	03:24	19:48	-1.7	
	31	01:57	18:17	-1.8	
Saturn ♄	1	23:31	11:17	1.0	
	31	21:33	09:18	0.8	
Uranus ♅	1	01:17	16:54	5.8	
	31	23:18	15:02	5.8	
Neptune ♆	1	23:25	11:22	7.9	
	31	21:27	09:23	7.8	

Occultations during July 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 July 2025

No significant meteor showers visible in July

Name	Date of Maximum	Normal Limits	Possible hourly rate	Description
Alpha Capricornids	30 July	3 July-15 Aug	5	Yellow slow fireballs
Delta Aquariids	30 July	12 July-23 Aug	25	Steady stream of meteors over several days but a low rate per hour
Perseids	12 August	17 July-24 Aug	150	Many bright fast meteors with trains. Associated with Comet Swift-Tuttle (1737, 1862, 1992)

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	Constellation
217P LINEAR	12.9	2025-Jun-26	32°	Orion
C/2021 G2 Atlas	13.6	2025-Jul-03	117°	Libra
29P Schwassmann-Wachmann 1	13.6	2025-Jun-27	44°	Leo
C/2014 UN271 Bernardinelli-Bernstein	14.2	2025-Jun-29	92°	Dorado
C/2022 N2 PANSTARRS	15	2025-Jul-03	62°	Aries
C/2025 K1 ATLAS	15.4	2025-Jul-05	120°	Pegasus
C/2022 E2 ATLAS	15.4	2025-Jul-05	66°	Perseus
C/2024 J3 ATLAS	15.7	2025-Jul-04	175°	Sagittarius
496P Hill	15.7	2025-Jun-17	44°	Leo
C/2023 C2 ATLAS	15.9	2025-Jul-05	87°	Andromeda

Visible ISS passes >30º max altitude for July 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.
07-Jul	-3.9	00:01:47	10°	WSW	00:05:08	78°	S	00:08:30	10°	E
07-Jul	-3.9	01:38:28	10°	W	01:41:50	75°	S	01:45:11	10°	ESE
07-Jul	-3.9	23:13:02	10°	WSW	23:16:23	67°	SSE	23:19:43	10°	E
08-Jul	-3.9	00:49:42	10°	W	00:53:04	83°	S	00:56:26	10°	E
08-Jul	-3.3	02:26:28	10°	W	02:29:38	38°	SSW	02:32:46	10°	SE
08-Jul	-3.7	22:24:22	10°	WSW	22:27:38	53°	SSE	22:30:56	10°	E
09-Jul	-3.9	00:00:55	10°	W	00:04:17	86°	S	00:07:39	10°	E
09-Jul	-3.7	01:37:39	10°	W	01:40:56	51°	SSW	01:44:11	10°	SE
09-Jul	-3.4	21:35:45	10°	SW	21:38:55	40°	SSE	21:42:05	10°	E
09-Jul	-3.9	23:12:07	10°	W	23:15:29	84°	S	23:18:50	10°	E
10-Jul	-3.9	00:48:50	10°	W	00:52:10	65°	SSW	00:55:30	10°	ESE
10-Jul	-3.9	22:23:19	10°	WSW	22:26:41	76°	S	22:30:02	10°	E
11-Jul	-3.9	00:00:01	10°	W	00:03:22	77°	S	00:06:44	10°	ESE
11-Jul	-3.8	21:34:34	10°	WSW	21:37:52	64°	SSE	21:41:12	10°	E
11-Jul	-3.9	23:11:12	10°	W	23:14:33	84°	S	23:17:55	10°	E
12-Jul	-3.4	00:47:56	10°	W	00:51:07	40°	SSW	00:52:04	32°	SSE
12-Jul	-3.9	22:22:21	10°	W	22:25:43	86°	S	22:29:04	10°	E
12-Jul	-3.7	23:59:04	10°	W	00:02:21	53°	SSW	00:03:22	36°	SE
13-Jul	-3.8	21:33:30	10°	W	21:36:51	83°	S	21:40:13	10°	E
13-Jul	-3.9	23:10:12	10°	W	23:13:33	67°	SSW	23:15:21	24°	ESE
14-Jul	-3.9	22:21:20	10°	W	22:24:42	78°	S	22:27:37	13°	ESE
15-Jul	-3.8	21:32:27	10°	W	21:35:48	85°	S	21:39:10	10°	E
15-Jul	-3.4	23:09:11	10°	W	23:12:24	43°	SSW	23:12:49	40°	S
16-Jul	-3.7	22:20:15	10°	W	22:23:33	56°	SSW	22:25:16	25°	SE
17-Jul	-3.8	21:31:20	10°	W	21:34:40	70°	SSW	21:37:47	12°	ESE
18-Jul	-3.8	20:42:25	10°	W	20:45:45	80°	S	20:49:07	10°	E
18-Jul	-2.9	22:19:11	10°	W	22:22:15	34°	SSW	22:23:10	28°	S
19-Jul	-3.3	21:30:11	10°	W	21:33:25	46°	SSW	21:35:45	17°	SE
22-Jul	-2.8	20:40:00	10°	W	20:43:07	36°	SSW	20:46:13	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

Puzzle for June 2025. Answer.

1. Most dense giant planet. Neptune.
2. Star Queen nebula. Eagle nebula.
3. Heisenbergs indeterminary principle. Uncertainty principle.
4. Elementary particle with negative electric charge and spin of ½. Tau particle.
5. Statistical average of speeds of a group of molecules. Root mean square (rms).
6. Second smallest of the Galilean moons. Io.
7. Collapsed core of a massive supergiant star. Neutron star.
8. In theory it is a vast cloud of icy planetesimals surrounding the Sun, Planets and the Kuiper Belt objects. Oort cloud.

Letters obtained N.E.U.T.R.I.N.O.

Take the first letter of each answer and unscramble the eight letters.

The answer moves in an elementary way very quickly.

Question for July.

S = 6851

G = 323

L = 1713

K = 1315

What does P = ?

The Europa Clipper: Exploring Jupiter's Icy Moon Europa.

A short article from the library.

Andy Willshere

On October 14th 2024 at 12:06 EDT the Europa Clipper was propelled into space from launch complex 39A at NASA Kennedy Space Centre aboard a Falcon Heavy rocket system. Its main goal is to investigate whether below the surface of Jupiter's icy moon Europa, life could and even may have existed. Distance that the craft will travel is 2.9 *10 ^{9} km, although the distance from Earth to Jupiter is only about 770 *10 ^{6} km. The extra kilometres are gained by using gravity slingshots around both the Earth and Mars to add speed. Mars on 1st March 2025 and Earth, 3rd December 2026. This will take until the year 2030 before it arrives in the locale and be operational, performing scientific investigations for about four years. These investigations will fulfil the expedition's three main objectives:

a. Understand what components make up the ice platform, and the properties of the ocean below it.
b. To investigate the surface composition of the moon.
c. Europa's geological content.

In order to perform its mission, the spacecraft will perform multiple flybys acquiring data as it passes (~ 50). It may get to within 25km of the surface on some of the flybys. By doing this, it will scan nearly the total area of the icy moon.

The spacecraft is one of the largest NASA has initiated for a planetary expedition. The craft is about 4.7 m in height, 3m wide and 4m deep, and with its arrays fully opened it will span about 30.5m. It has a weight of 5,800 kg at launch. It is powered by two sizeable solar arrays 14.2m long and 4.1m high. These large arrays are required as the distance from the Sun to Jupiter is more than five times the Sun - Earth distance, so large solar panels are necessary to power the scientific equipment. Its propulsion module is housed in an aluminium cylinder 3m by 1.5, which holds the crafts 24 engines. This system carries approximately 2700 kg of monomethyl hydrazine and dinitrogen tetroxide propellant of which 60% to 70% will be used in the 6-8 hours Jupiter orbit insertion burn.

Picture credit: science.nasa.gov

Europa Clipper Multimedia. Europa Clipper condensed.

One of the main problems is radiation from Jupiter's magnetic field. To alleviate this, a titanium and aluminium thick walled vault was fitted. It was first used on the Juno spacecraft to slow down the degeneration of the electric components, by high - energy particles.

The spacecraft has been specifically designed for Europa's surface atmosphere and its sub-surface ocean.

- Radar for Ice Penetration (REASON): Radar waves are used to pierce Europa's icy structure, identifying the thickness of the ice and structures.
- Spectrometers (MASPEX and MISE): Used to analyse the moon's surface structure, specifically organic molecules that may reveal conditions for life. Spectrographic analysis of Ultraviolet light will help understand the composition of Europa's atmospheric gases (plumes) and surface materials.
- Europa Thermal Emission Imaging System(E-THEMIS): Establish areas of current geological activity, by measuring surface temperatures.
- Magnetometer (ICEMAG): magnetic field analyser.
- Imaging Systems (EIS and SUDA): High -resolution cameras for surface scanning.
- Plasma Instrument for Magnetic Sounding (PIMS).

All the instruments have been designed to work synergistically.

Gravity assists have to be performed at the correct angle and timing to build up energy required in this case to get to Jupiter. Although these days calculating spacecraft gravity assists has become much easier, it still requires all the ducks to line up. The geometry has to be exact. Mission controllers will have implemented three trajectory correction manoeuvres (TCM) of the Europa Clipper in order for the Mars assist to occur. Overall it is expected that around 200 TCM will be executed throughout the mission. Whilst the spacecraft is flying close to Mars, it gives the controllers time to test two of the onboard science instruments. They will be able to calibrate the thermal imager and test the radar instrument. Control of this mission is by the 'Jet Propulsion Laboratory' California Institute of Technology

Normal transmission of data to Earth is usually a major factor. Most instruments can acquire data faster than it can be transmitted. However if flybys are part of the mission, the lead up time to each operation can be used to transmit data. The Europa Clipper will in fact orbit Jupiter and flyby Europa up to 44 times, at altitudes ranging from 25km to 2700km over the 3-5 year operational period. Each flyby will cover a specific part of Europa, obtaining a global topographic survey. Gravity assists will be employed around Europa, Ganymede and Callisto to change trajectories.

By investigating Europa and acquiring data, the information may be extrapolated to other icy, ocean bearing moons in the solar system, such as Enceladus. Perhaps it may provide information to allow landers to directly sample material. Maybe this project may give an answer to the question " Is there anybody out there", with an affirmative response.

References:

Europa Clipper - NASA Science

NASA's Europa Clipper Mission Launches From Kennedy Space Centre (Highlights) | NASA Jet Propulsion Laboratory (JPL)

Europa Clipper - Wikipedia

Short's World – A visit to Cambridge (UK), 11th June 2025, Part 1

Hi again. Without reaching the heights (both literally and metaphorically) of my last offering covering my trip to Mauna Kea on Hawaii, I recently was part of a tour to Cambridge with the Institute of Physics and thought this may offer interest to some, if not all, members of the Society. The trip targets were twofold, starting with a visit to the Whipple Museum. The second target site? Well, you'll have to wait until my next "Short's World" input (and no it's not the Cambridge Observatory in Madingley Road).

The Whipple Museum.

The current museum is housed in what was originally the Cambridge "Free School" (later the Perse School). The building was completed in 1628 and, whilst going through a variety of uses through the ages, it became host to the museum in 1956 following the purchase by the Dept of History of Science of Cambridge University. The museum itself was founded in 1944 following the donation of Robert Whipple's collection of some 1000 pieces of scientific measuring equipment. He was clearly an avid collector and Managing Director of the Cambridge Scientific Instrument Co. In time the museum grew to house a range of equipment once used by various departments of Cambridge University. Clearly the review of the whole museum would fill many pages, so I've picked out a few items of astronomical interest.

Starting our "tour" with telescopes but ignoring the 5" Refractor (1910) up front and centre, behind this is the first item added to the Whipple collection, a "5-draw" (5 sections to draw out) refractor from Italy circa 1750. Further back we come to a fine large reflecting telescope (9" aperture) made by William Herschel in circa 1790 at the request of King George III (Note: optics by William Hershel, woodwork by the King's cabinet maker). Originally given (by the King) to the Duke of Marlborough for his Observatory at Blenheim Palace, it was eventually donated to the Whipple collection in 1944. One final, and unusual item in the collection was an 1860 umbrella for the man about town, containing a telescope, thermometer, spyglass, microscope and sundial!

The museum had on show a couple of Orrerys, clearly constructed for the wealthy and astronomically discerning classes. Both were built in the 18th century, indeed pre-March 1781, as no Uranus was included in the mechanism.

On the 2nd floor, which included a representation of a 19th Century "Victorian Parlour" for the scientific minded gentlemen (and perhaps even a lady).

At the rear of the parlour, a collection of globes was presented. Globes covering a number of the planets were included but of particular interest (to me at least) were the several globes of the planet Mars, made in circa 1890 – 1920, replicating the maps generated by the astronomer Percival Lowell, who believed he had sighted a global network of Martian canals (I have a smaller version at home for what it's worth).

Overall, the museum houses a treasure trove of scientific equipment, some linked to the major pillars of science in the 18th and 19th centuries. Personally, I found it to be of great interest overall, although I appreciate some may find the very number and nature of the items overpowering (or underwhelming!).

If you are ever in Cambridge, I strongly recommend a visit for a few minutes or few hours. It's free (donation welcome) and the staff offer tremendous help and support.

P.S. If ever in the centre of Cambridge, look out for the Eagle Pub on Bene't Street (yes, it is spelt that way). This 14th century hostelry includes a (locally) famous "RAF bar" with insignia of local squadrons from both world wars to the current day and, from a science viewpoint, was the oft-frequented venue for the two scientists, Francis Crick and James Watson who, on the 28th Feb 1953 walked into the bar and stated, "We have discovered the secret of life". This refers of course to their discovery of the double helix structure of DNA.

Apologies perhaps that this addition is rather of general science interest but look out for the second part of my Cambridge trip. This, I promise you, will hold a more direct and specific interest for astronomers.

That's all for now folks…

Members Observations

Please send your pictures to news@oasi.org.uk, with any relevant information.

Neil Morley

The attached Seestar S50 image is the open star cluster NGC 457 within the constellation Cassiopeia. A one minute stacked exposure comprising six ten-second frames. The cluster was discovered by William Herschel in August 1780 using a 6.2 inch reflecting telescope.