



OASI News

The newsletter of Orwell Astronomical Society (Ipswich)



The Lion Nebula

Photo by John Hughes

Trustees:

Mr Roy Adams Mr Neil Morley Mr David Payne

Honorary President:

Dr Allan Chapman D.Phil MA FRAS

Table of Contents

Society Notices.....	3
Access into the School Grounds and Observatory Tower.....	3
Areas out of Bounds.....	3
Committee Meeting.....	4
Welcome to new members.....	4
OASI and BAA Events.....	5
Meetings via Zoom.....	6
OASI @ Newbourne.....	6
Astronomy Workshops/Informal talks.....	7
Talk next year.....	7
Lectures – via Zoom.....	7
Atheneum Astro Society.....	7
LYRA Lowestoft & Yarmouth Regional Astronomers.....	7
DASH Astro.....	7
BAA news & webinars.....	8
The BAA Radio Astronomy Section.....	8
FEDASTRO: The Next GoSpaceWatch Online Lecture.....	8
Orion European Service Module – Europe’s Contribution to Artemis.....	8
The Night Sky in November 2022.....	9
Sun, Moon and planets.....	9
Occultations during November 2022.....	10
Meteor showers during November 2022.....	10
Visible ISS passes $\geq 15^\circ$ max altitude.....	10
Starlink passes.....	11
Astronomy on the radio.....	11
From the Interweb.....	12
Pillars of Creation.....	12
Discovery of extracts from a lost astronomical catalogue.....	13
HAARP to begin largest set of experiments at its new observatory.....	13
Powerful Gamma-ray burst made currents flow in the earth.....	13
Gresham Astronomy Lectures in 2022-3.....	13
Meteor Report for October.....	14
Station report for Kirton at end of October 2022.....	14
All-sky cameras.....	16
Radio detections.....	20
Library Notice.....	21
Partial Solar Eclipse on 25 October.....	22
The Andromeda Galaxy M31.....	27
The Lion Nebula.....	28
Jupiter and Saturn.....	29
Milky Way over Golden Bay Malta.....	30
Let’s Go and Find the Sun with HINODE (means: Sunrise).....	31
The OASI Millennium Telescope.....	33
Outreach event at Claydon.....	35
The impact of the DART spacecraft on Dimorphos.....	36
The Open Evening at OPS.....	37

Society Notices

Dear Members,

We use a Zoom Pro account for online meetings. If you would like to join in, please email Paul Whiting, treasurer@oasi.org.uk

I would like to wish everybody clear skies, stay safe and I hope to see you soon.

Andy Gibbs, Chairman

Society Contact details

Email queries: info@oasi.org.uk

Facebook: Orwell Astronomical

Twitter: @OASIPswich

YouTube:
<https://www.youtube.com/channel/UCHgxe3QAeRVWf7vkjKkCI2Q>

Members-only message board

<https://groups.io/g/OASI>

Observatory (meeting nights only)
07960 083714

**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

Access into the School Grounds and Observatory Tower

Please use the third gate into the school grounds by the gym.

Areas out of Bounds

Access to the Observatory is only via the black door at the foot of the Observatory tower, which leads to the staircase and thence to the spiral staircase up to the Observatory. If the black door is locked, please phone the observatory mobile during meeting hours. Kindly check/amend the number shown on your 2021 membership card.

Please do NOT explore other routes. When in doubt, ask or call the Observatory mobile.

Remember this is a school and straying into the main part of the school where the pupils reside would cause the society big problems and could see us losing the use of the observatory. Any member found to be anywhere other than the approved access route or the observatory area will face serious sanctions up to and including expulsion from OASI.

Please note that access time for all observatory member nights is after 20:15

Articles for OASI News

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

Please submit your articles in any of the following formats:–

Text: txt, rtf, rtf, doc, docx, odt, Pages, pdf

Spreadsheets: xls, xlsx, OpenOffice/LibreOffice, Numbers

Images: tiff, png, jpg

Please send tables as separate files in one of the above formats.

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."?

Newsletter archive 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.

Committee 2022

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 FRAS	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, Email distribution lists
	John Wainwright	Equipment curator
	Mike Whybray	Astronomy Workshops, Child protection officer, Orwell Park School Astronomy Club.
	Andy Wilshere	Librarian
	Avtar Nagra	OASI @ Newbourne
Assistants	Martin Richmond-Hardy	Newsletter, OASI @ Newbourne

Committee Meeting

The next Committee Meeting will be on Friday 2 December at 8:00pm via Zoom. All members welcome.
AGM: 21 January 2023, face-to-face (assuming no prevalence of Covid at the time).

Welcome to new members

Dr Dave King	Paul Patrick	Andy & Louise Wakefield	Hannah Houghton
Stacey Stephenson	Philip Welham	Janet Dewhurst	Mike Such
Caz Reynolds			

OASI and BAA Events

Please note that the listed events may change depending on the progress of the pandemic. For the latest event details, please see www.oasi.org.uk/Events/Events.php

There's a Google Calendar on the OASI web site with the latest dates (and corrections!).

If you want to easily add OASI Events to your own computer/phone/tablet calendar application click this button on the website Events page (bottom right of the calendar) or use this address to access this calendar from other calendar applications.



<https://calendar.google.com/calendar/ical/1jhs9db71ncki4sojo7092vfv%40group.calendar.google.com/public/basic.ics>

For other astronomy news and astro pictures try our

Twitter feed <https://twitter.com/OASlpswich>

Facebook page <https://www.facebook.com/pages/Orwell-Astronomical/158256464287623>

Date, Time & Location	Contact	Event
Weekly, every Wednesday, from 20:15	Martin Cook, Roy Gooding	Observatory open No meeting 7 Dec (OASI Christmas meal)
Tue 8 Nov 20:15 Orwell Park Observatory	Paul Whiting, FRAS treasurer@oasi.org.uk	Public access event. Observatory tour. \ Booking essential.
Monday 14 Nov 19:30 Newbourne Village Hall	Martin R-H newbourne@oasi.org.uk	OASI at Newbourne. Beginners welcome!
Thursday 17 Nov 20:00 Zoom	Martin Cook membership@oasi.org.uk	3rd Thursday Zoom meeting
Friday 18 Nov 20:00 Zoom and St Augustine's Community Hub, Bucklesham Road, Ipswich, IP3 8TJ.	Pete Richards lectures@oasi .	Lecture, <i>How Fast is the Universe Expanding?</i> by Dr Matt Bothwell, Public Astronomer at the Institute of Astronomy, Cambridge. Hybrid meeting: members of OASI can attend in person or via Zoom.
Monday 28 Nov 19:30 Newbourne Village Hall	Martin R-H newbourne@oasi.org.uk	OASI at Newbourne. Beginners welcome! Sky Notes
Fri 02 Dec 20:00 Zoom	Andy Gibbs chairman@oasi.org.uk	Committee meeting via Zoom. All members are invited to attend.
Tue 6 December5 Orwell Park Observatory	Paul Whiting, FRAS treasurer@oasi.org.uk	Public access event. Observatory tour. \ Booking essential.
Wed 7 December 20:00 Westerfield Swan	Roy Gooding secretary@oasi.org.uk	The Christmas Meal
Monday 12 Dec 19:30 Newbourne Village Hall	Martin R-H newbourne@oasi.org.uk	OASI at Newbourne

Meetings via Zoom

To join, please first contact Paul Whiting, treasurer@oasi.org.uk – OASI members only. Be sure to install/update to the latest version of Zoom – there's no need to set up an account. Go to <https://zoom.us/join> and enter the meeting ID or personal link name. You will have received a link from the meeting organiser.

As well as for some lectures & talks, we meet via Zoom on the 3rd Thursday of every month at 8pm.

OASI @ Newbourne

Martin Richmond-Hardy
newbourne@oasi.org.uk

We meet at Newbourne Village Hall, Mill Lane, IPI2 4NP on the 2nd and 4th Mondays from 19:30.

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 2022

November	14	28 (A)
December	12	

Newbourne dates for 2023

January	9	23
February	13	27
March	13	27
April	10	24
May	1	22 note
June	12	26
July	10	24
August	14	28
September	11	25
October	9	23
November	13	27
December	11	

Note: Parish Council require the hall on 8 May (our usual date)

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

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

Stargazer's Guide

On the last meeting each month, at 19:45, Bill Barton FRAS will give a short presentation of what can be viewed in the following 4 weeks plus a reminder of OASI events. These will be available on our website.

Paul Whiting FRAS will give occasional Astro News briefings.



Astronomy Workshops/Informal talks

Contact Mike Whybray Monday meetings start at 7:30pm. Workshops / Talks start at 8pm

If you are a new OASI member, or haven't been to one of these informal workshops before, they are a mixture of events of different characters including beginners talks, interactive workshops, films, etc., suitable for all.

Do you have a subject you could workshop/talk? You could do a short one, or share the effort with a partner. Drop Mike Whybray a line! workshops@oasi.org.uk

Talk next year

John Barbrook joined our Thursday Zoom meeting last month.

He would like to present a 30 minute talk to members of OASI on the construction of his home built 150mm reflector, which he commenced at the age of 14!

John would also like to talk about his experiences of IDAS (Ipswich and District Astronomical Society – the precursor to OASI), which he joined at the age of 13 in 1948.

We hope that he can present this talk at one of our Newbourne meetings, possibly the second meeting in February, after Bill's Sky Notes.



Lectures – via Zoom

Contact: Peter Richards lectures@oasi.org.uk

The start time for all talks will be 8pm and, as usual, the talks will usually be held on a Friday evening. All meetings are currently via Zoom. Contact Paul Whiting if you can't find the details.

Athaneum Astro Society

www.3a.org.uk/index.htm

Meetings (<http://www.3a.org.uk/programme.htm>) at Wkepstead Community Centre, Bury Road, Wkepstead, Bury St Edmunds, IP29 4TA <http://www.3a.org.uk/contact.htm> .

LYRA Lowestoft & Yarmouth Regional Astronomers

For events please see <http://www.lyra-astro.co.uk/events/>

DASH Astro

Darsham And Surrounding Hamlets <http://dash-astro.co.uk>

Meetings are normally held at New Darsham Village Hall and all DASH Astro observing sessions will take place at Westleton Common. ASOG observing sessions and locations may be arranged at the time of observation. Unless stated all group meetings will take place from 7:30 pm. on Sundays.

Meetings <https://www.dash-astro.co.uk/Events>

BAA news & webinars

For full details of all meetings or cancellations, please go to <https://britastro.org/meetings/2022>.

The BAA Radio Astronomy Section

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

BAA RA Section Autumn programme 2022		
Nov. 4th. 19:30 GMT (19:30 UTC)	Unfortunately due to a health issue Prof Richer is unable to join us on Friday. Prof. Richer was to present the ALMA submillimetre array, I will now re-schedule this for next year.	However, we already have two 'local' presentations, (thanks Andrew and Mark). Andrew Thomas "On Geomagnetism" Mark Edwards "Sept. 9th - an interesting SID event".
Dec. 2nd. 19:30 GMT (19:30 UTC)	Dr. Emma Chapman Guest star: JWST Royal Society Dorothy Hodgkin fellow based at the University of Nottingham.	Christmas Lecture 'Exploring the Dark Ages of the Universe by Radio' The first stars ever! 400 million years after the big bang. This era has never been observed and constitutes over a billion-year gap in our knowledge.

FEDASTRO: The Next [GoSpaceWatch](#) Online Lecture

Orion European Service Module – Europe's Contribution to Artemis

by Siân Cleaver, Airbus Space, Bremen, Germany. Thursday 24th November at 20:00 GMT.

Open to all. Everyone Welcome. Tickets just £3.00 pp available from <https://orionesm.eventbrite.co.uk>

The Talk: NASA's Artemis programme will return astronauts to the Moon for the first time in 50 years and mark the start of a new era of human space exploration. Unlike the Apollo missions, the focus of the Artemis missions will be to create a more sustainable human presence on and around the Moon, and develop and demonstrate technologies that will prepare for future crewed missions to Mars.

The first Artemis mission is set to launch in November 2022 and will see an uncrewed 'Orion' spacecraft orbit around the Moon. Orion is powered by the European Service Module which, together with propulsion capabilities, provides the Orion spacecraft with everything needed to successfully sustain a human crew on lunar missions.

Siân will give an overview of the Artemis programme and Europe's contribution to it – the European Service Module (ESM). She will talk about the achievements so far, the work currently ongoing at Airbus Defence and Space, Bremen (the Prime contractor for Orion ESM) and where the Artemis programme is headed in the next 5 years.

The Speaker: Siân Cleaver is the Industrial Manager for the Orion European Service Module (ESM) programme at Airbus Defence and Space in Bremen, Germany. Previously located at the Airbus Stevenage site, Siân transferred to Bremen three years ago driven by her dream to work on human spaceflight missions. She is now responsible for ensuring the timely delivery of all equipment across all ESMs currently under development (ESMs 3 to 6) and also heavily involved with the proposals to secure contracts for future ESMs.

The Night Sky in November 2022

Martin RH

All event times (BST) are for the location of Orwell Park Observatory 52.0096°N, 1.2305°E.

Times are GMT (UTC) which began on Sunday 31 October

Sun, Moon and planets

Sources:

<http://heavens-above.com/PlanetSummary.asp> <http://heavens-above.com/moon.aspx>

Object	Date	Rise	Set	Mag.	Notes
Sun	1	06:50	16:27		
	30	07:39	15:48		
Moon	1	14:27	22:46		First Quarter 01 November 06:37 Full Moon 08 November 11:02 Apogee 14 November 06:41
	30	13:12	23:25		Last Quarter 16 November 13:27 New Moon 23 November 22:57 Perigee 26 November 01:32
Mercury	1	06:23	16:17	-1.1	Superior conjunction 08 Nov
	30	09:00	16:07	-0.5	Aphelion 19 Nov
Venus	1	07:05	16:31	-3.8	
	30	08:36	16:10	-3.8	
Mars	1	18:32	11:10	-1.2	
	30	16:01	08:55	-1.8	
Jupiter	1	15:20	03:05	-2.7	
	30	13:24	01:07	-2.5	
Saturn	1	14:06	23:06	0.7	
	30	12:14	21:19	0.8	
Uranus	1	16:40	07:40	5.6	Opposition 09 Nov
	30	14:43	05:40	5.6	
Neptune	1	15:07	02:28	7.8	
	30	13:13	00:32	7.9	

Occultations during November 2022

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 November 2022

Source: BAA Handbook 2021 p26-27 and <https://in-the-sky.org/newsindex.php?feed=meteors>

Shower	Normal limits	Maximum	ZHR at Max	Notes
Orionids	2 Oct - 7 Nov	21-2 Octobe	20	Fast meteors, associated with Comet Halley, many with persistent trains. Broad maximum, with several sub-peaks. Good in 2006 and 2007. Very favourable.
Southern Taurids	10 Sep - 20 Nov	10-11 Oct	5	Very slow meteors. Double radiant, broad peak. Moonlight interferes.
Northern Taurids	20 Oct - 10 Dec	12-13 Nov	5	Very slow meteors. Unfavourable.
Leonids	6-30 Nov	18 Nov	15	Very fast meteors, many with persistent trains. Enhanced activity unlikely until late 2020s. Moonlight interferes.
α -Monocerotids	15-25 Nov	21 Nov	?	Occasional very short-lived outbursts, most ecently in 1995 and possibly in 2016. Very favourable

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

For radio observation, use reflections from Graves radar on 143.050MHz 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/.

Visible ISS passes $\geq 15^\circ$ max altitude

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

Times are BST. Predictions are approximate (31 Oct) due to craft adjustments. Check the day before.

Date	Bright-ness (mag)	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
01 Nov	-3.8	04:58:01	55°	W	04:58:40	82°	S	05:02:02	10°	E
02 Nov	-2.1	04:11:58	34°	E	04:11:58	34°	E	04:14:00	10°	E
02 Nov	-3.2	05:44:54	16°	W	05:47:17	47°	SSW	05:50:33	10°	SE
03 Nov	-3.7	04:58:51	54°	WSW	04:59:17	61°	SSW	05:02:36	10°	ESE
04 Nov	-1.9	04:12:48	29°	ESE	04:12:48	29°	ESE	04:14:34	10°	ESE
04 Nov	-2.4	05:45:44	16°	W	05:47:42	27°	SSW	05:50:35	10°	SSE
05 Nov	-3	04:59:42	36°	SSW	04:59:42	36°	SSW	05:02:49	10°	SE

Date	Bright -ness (mag)	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
06 Nov	-1.4	04:13:42	19°	SE	04:13:42	19°	SE	04:14:52	10°	SE
06 Nov	-1.6	05:46:38	12°	WSW	05:47:49	14°	SW	05:49:39	10°	S
07 Nov	-1.8	05:00:41	18°	SSW	05:00:41	18°	SSW	05:02:22	10°	SSE
19 Nov	-1.6	18:28:34	10°	SSW	18:29:51	19°	SSW	18:29:51	19°	SSW
20 Nov	-2.1	17:40:31	10°	SSW	17:43:03	20°	SE	17:43:21	20°	SE
21 Nov	-2.3	18:27:33	10°	SW	18:29:40	33°	SSW	18:29:40	33°	SSW
22 Nov	-2.9	17:39:07	10°	SW	17:42:12	36°	SSE	17:43:00	31°	ESE
23 Nov	-2.3	16:50:48	10°	SSW	16:53:39	26°	SSE	16:56:16	11°	E
23 Nov	-2.7	18:26:45	10°	WSW	18:29:09	44°	WSW	18:29:09	44°	WSW
24 Nov	-3.6	17:38:05	10°	WSW	17:41:23	60°	SSE	17:42:22	39°	ESE
25 Nov	-3.1	16:49:29	10°	SW	16:52:42	46°	SSE	16:55:32	13°	E
25 Nov	-2.7	18:25:57	10°	W	18:28:24	46°	W	18:28:24	46°	W
26 Nov	-3.8	17:37:11	10°	W	17:40:32	81°	S	17:41:32	42°	E
27 Nov	-3.6	16:48:24	10°	WSW	16:51:44	71°	SSE	16:54:39	13°	E
27 Nov	-2.7	18:25:05	10°	W	18:27:32	45°	W	18:27:32	45°	W
28 Nov	-3.9	17:36:14	10°	W	17:39:36	86°	S	17:40:38	41°	E
29 Nov	-3.8	16:47:22	10°	W	16:50:43	85°	S	16:53:44	12°	E
29 Nov	-2.7	18:24:04	10°	W	18:26:37	45°	WSW	18:26:37	45°	WSW
30 Nov	-3.7	17:35:10	10°	W	17:38:31	74°	S	17:39:45	35°	ESE

Starlink passes

<https://heavens-above.com/AllPassesFromLaunch.aspx>

For a dynamic 3-D display, see <https://heavens-above.com/StarLink.aspx>

Astronomy on the radio

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>

From the Interweb

Pillars of Creation

This latest image from the NASA/ESA/CSA James Webb Space Telescope shows an unprecedented view of the iconic Pillars of Creation – where new stars are forming within dense clouds of gas and dust



https://www.esa.int/Science_Exploration/Space_Science/Webb/Webb_takes_a_stunning_star-filled_portrait_of_the_Pillars_of_Creation

Canadian Space Agency NASA's James Webb Space Telescope Space Telescope Science Institute

Discovery of extracts from a lost astronomical catalogue

<https://www.cnrs.fr/en/discovery-extracts-lost-astronomical-catalogue>

Hipparchus' Star Catalogue is the earliest known attempt to accurately determine the position of fixed stars. Researchers have recently found fragments of this missing text in an old manuscript. They prove that Hipparchus' data were significantly more accurate than those of another catalogue composed centuries later.

Researchers from the CNRS, Sorbonne Université and Tyndale House (affiliated with the University of Cambridge) have recently found fragments of the Star Catalogue composed by the Greek astronomer Hipparchus during the 2nd century BC. These texts, which had been erased from a manuscript during the medieval period in order to reuse the pages, were uncovered using multispectral imaging technologies. The study of these extracts, published in the Journal for the History of Astronomy on October 18, 2022, sheds new light on astronomy in antiquity.

HAARP to begin largest set of experiments at its new observatory

<https://www.gi.alaska.edu/news/haarp-begin-largest-set-experiments-its-new-observatory>

Bouncing a signal off the moon.

Learning more about a mysterious polar light.

Sending a beam to Jupiter.

Those are just some of the 13 experiments for a packed 10 days of science beginning Wednesday at the High-frequency Active Auroral Research Program. The University of Alaska Fairbanks operates the facility located near Gakona.

Powerful Gamma-ray burst made currents flow in the earth

Astronomers have never seen anything like it. On Oct. 9, 2022, Earth-orbiting satellites detected the strongest gamma-ray burst (GRB) in modern history: GRB221009A. How strong was it? It caused electrical currents to flow through the surface of our planet. Dr. Andrew Klekociuk in Tasmania recorded the effect using an [Earth Probe Antenna](#):

Source: <https://spaceweather.com/>

Gresham Astronomy Lectures in 2022-3

[Cosmic Conclusions](#)

Professor Katherine Blundell

This series includes lectures on the end of our Sun, Massive Stars and the Universe.

<https://www.gresham.ac.uk/watch-now/series/cosmic-conclusions>

[The End of Our Sun](#)

David Game College, Wednesday, 2 Nov 2022 - 18:00/ Online/ Watch Later – Ticketed, free

<https://www.gresham.ac.uk/whats-on/end-sun>

[The End of Massive Stars](#)

Tbc City of London, Wednesday, 18 Jan 2023 - 18:00/ Online/ Watch Later – Ticketed, free

<https://www.gresham.ac.uk/whats-on/end-stars>

[The End of Life on Earth](#)

Tbc City of London, Wednesday, 29 Mar 2023 - 18:00/ Online/ Watch Later – Ticketed, free

<https://www.gresham.ac.uk/whats-on/end-life>

The End of the Universe

Tbc City of London, Wednesday, 31 May 2023 - 18:00/ Online/ Watch Later – Ticketed, free

<https://www.gresham.ac.uk/whats-on/end-universe>

Meteor Report for October

Martin Richmond-Hardy



UK007W (pointing NE) mounted above UK0056 (N) is now working and the pruning has been done

Station report for Kirton at end of October 2022

During this period, 2823 single station detections were collected by cameras in Kirton. including 1975 sporadics. 689 of the detections matched with other stations. Orbit and trajectory solutions were calculated for these matches. The brightest ten confirmed matches are shown below.

Note: the following data are released by UKMON under the CC BY 4.0 license, so if you are using the data whether for scientific or other purposes, you must reference this web site <https://archive.ukmeteornetwork.co.uk/index.html> and UKMON in your work.

Due to processing issues at UKMON I have extracted the data from the daily reports.

DateTime	Mag nitu de	Shower	Name of shower	Observing Stations
20221007_032800.754_UK	-2.6	ACL	alpha-Camelopardalids	Tackley Tackley YeovilMarsh Wilcot Kirton Nettleham
20221027_051706.306_UK	-2.4	spo	sporadic	Kirton StLeonards Kirton
20221003_022714.282_UK	-2.3	EGE	epsilon Geminids	Eastbourne Kirton Nettleham EastCramlington
20221020_230338.923_UK	-2.3	ORI	Orionids	Eastbourne Kirton Nettleham Sturton Peldon Costessey
20221020_230339.593_UK	-2.3	spo	sporadic	Kirton Sturton
20221028_000316.792_UK	-2.2	STS	s-Taurids	Gretna Kirton Royston
20221011_042906.984_UK	-2.3	spo	sporadic	Eastbourne Wilcot Tackley Searby Blakeney Mathon Bexley Eastbourne Coventry StLeonards Pickworth Sturton Peldon Kirton

DateTime	Magnitude	Shower	Name of shower	Observing Stations
20221017_194352.213_UK	-2.2	spo	sporadic	Tackley Mathon Searby Hawick Kirton Nettleham Stretton
20221018_225129.095_UK	-2.1	spo	sporadic	Searby Gretna Kirton Sturton Peldon Kirton Costessey
20221011_045016.764_UK	-1.9	NTA	Northern Taurids	Eastbourne Wilcot Tackley Searby Blakeney Strood Kirton Royston Coventry StLeonards Pickworth Sturton Kirton



[20221007_032800.754_UK](#) Taken by UK0056

The latest meteor news can be found here <https://www.meteornews.net/category/news/>

There are now 176 cameras in the network, which are requiring a lot of data processing to create the daily and station reports for UKMON.

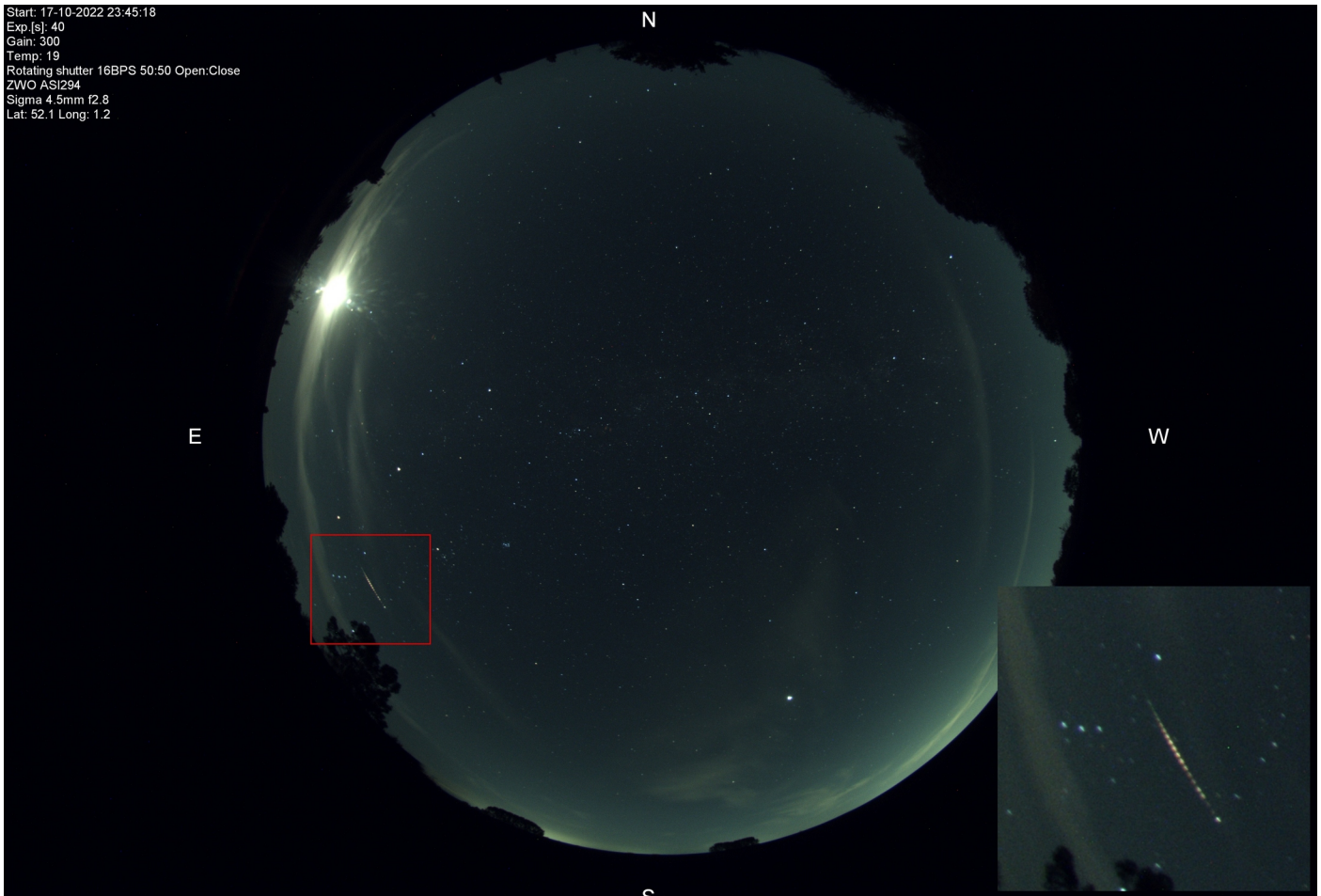
All-sky cameras

James Appleton & Alan Smith

Just a quick note on a recent observation by a couple of the OASI all-sky cameras.

At 23:45 on 17 October there was a fireball in Orion. It created a lovely trail with an orange hue and left remnants which could be traced in images (with strong contrast boost) for approximately 6 minutes.

Images attached as follows.



By Alan Smith: All-sky 234518 – 234558 UT.

Alan Smith: Remnants of the trail

ZWOASI294 with Sigma 4.5mm f2.8 lens.





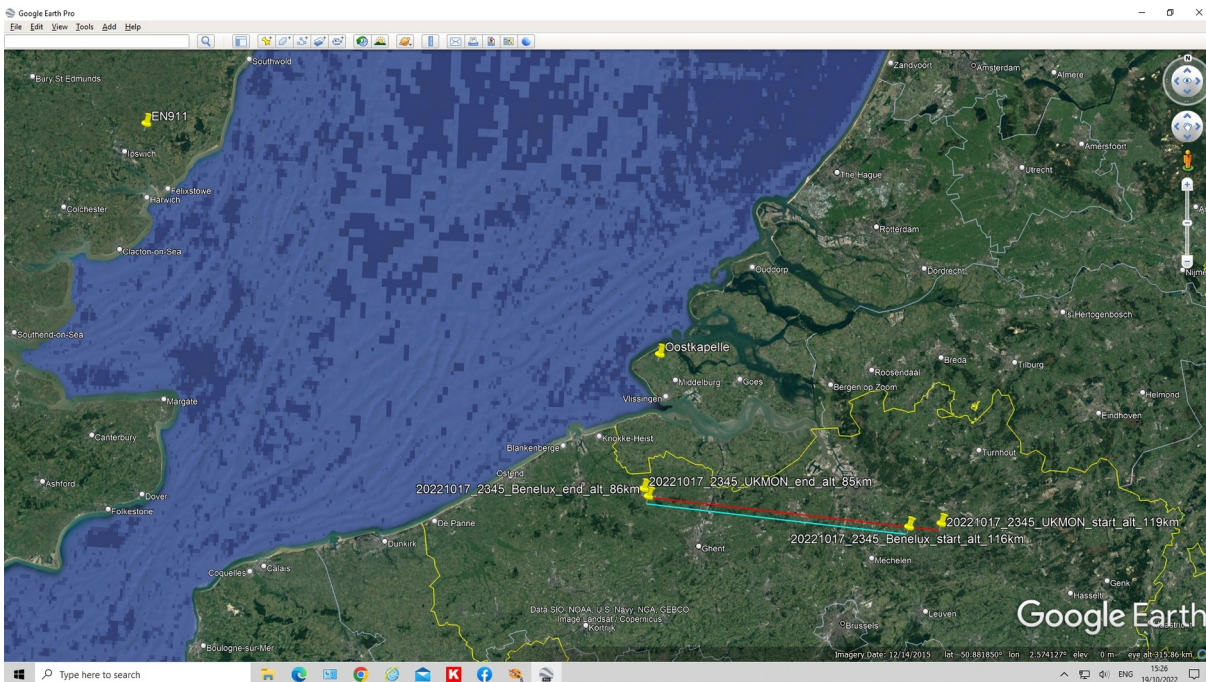
James Appleton: All-sky 234513 – 234543 UT

ZWO ASI178mc with Fujinon fish-eye lens, CF2.7HA-L1, 1:1.8, 2.7mm.

**James Appleton:
Remnants of the trail**



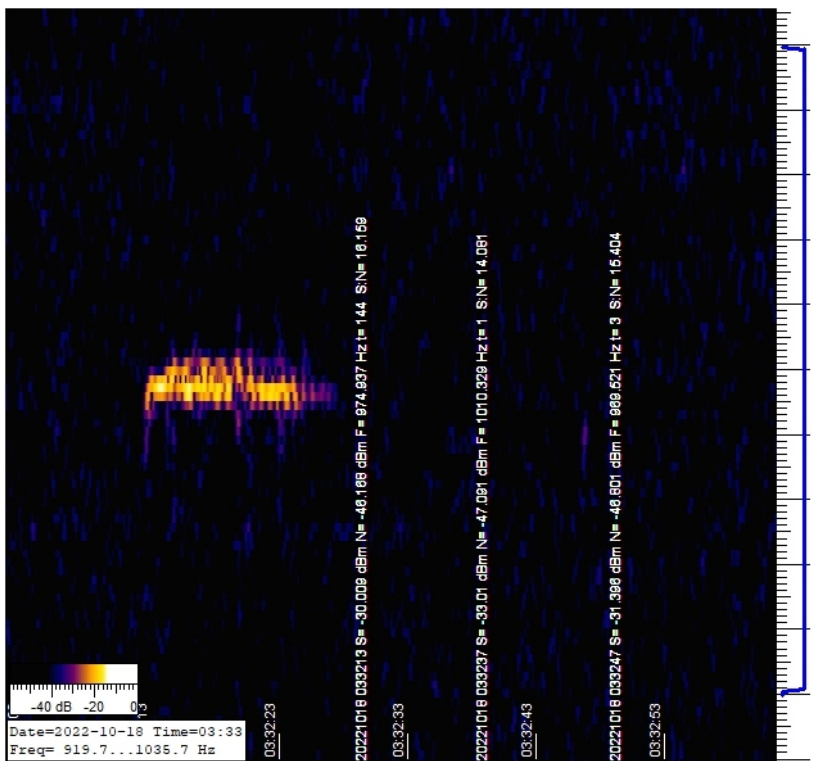
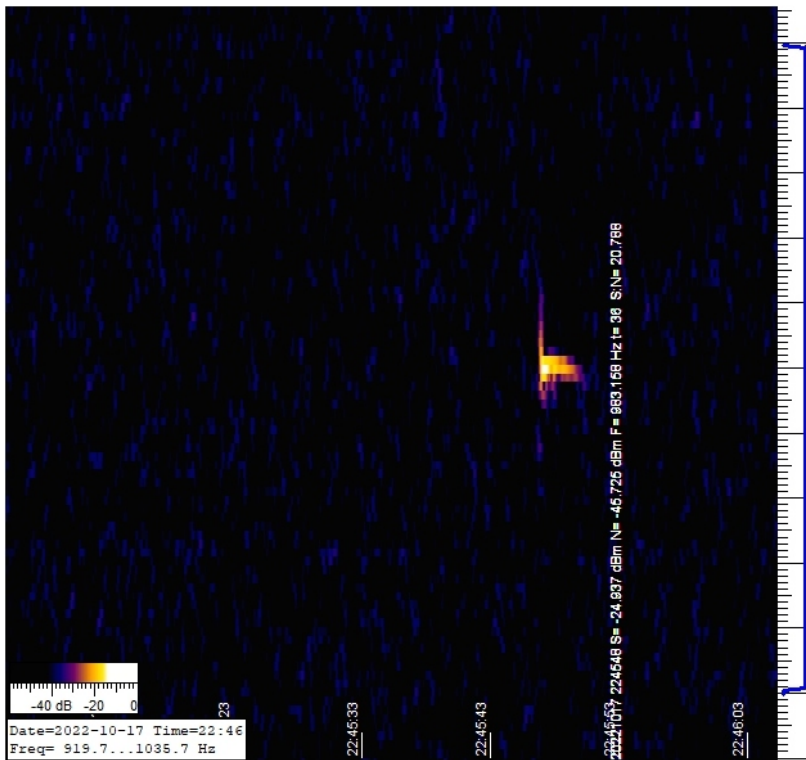
**UKMON and DMS
estimates of the trajectory.**



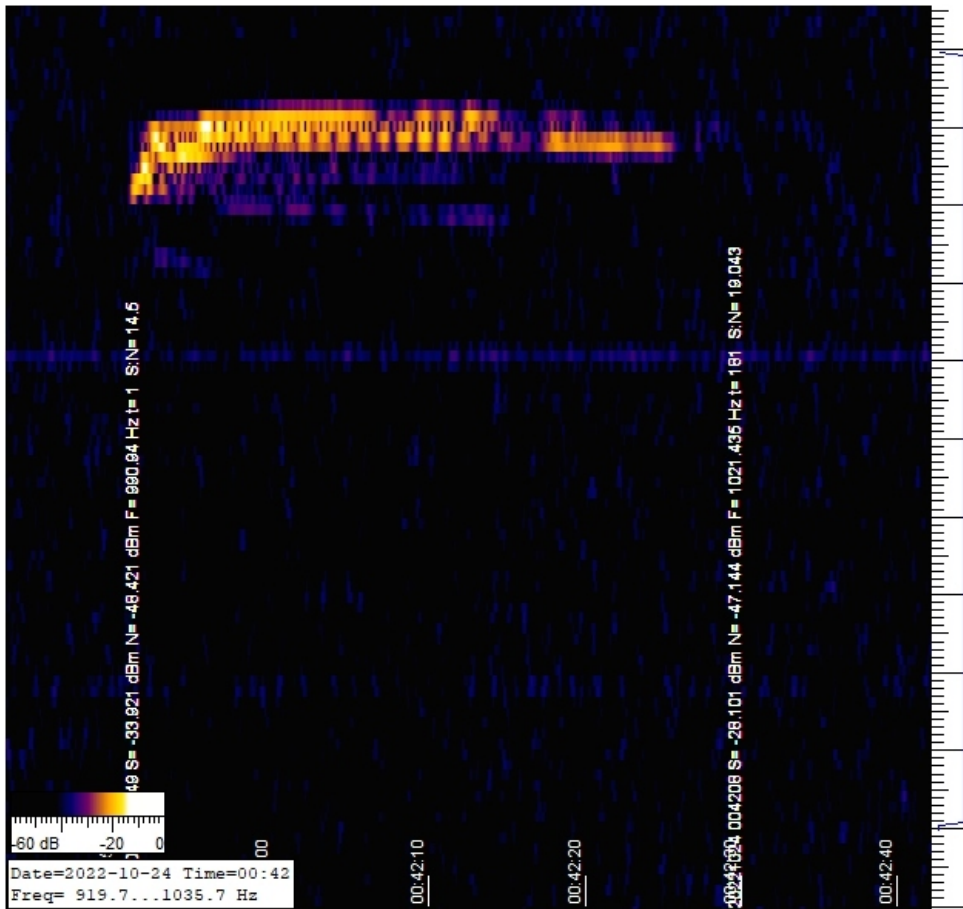
Radio detections

Chris Albins has been detecting some meteor scatter echoes.

On 17 October the radio saw two reflections of the Graves radar off meteor trails



Plus a long one on 24 Oct:



20221024
004149 south.

Library Notice.

If any OASI member has any Astronomy, Maths or Science books that are gathering dust in some far corner of your house, and you feel that donating them to clear some space would be a good idea –then cogitate no longer.

Contact the library via Andy Willshire, and, hopefully, a method of transportation can be devised.

Partial Solar Eclipse on 25 October

Source: <https://www.timeanddate.com/eclipse/in/uk/felixstowe>

Max View in Felixstowe

Global Event: Partial Solar Eclipse

Local Type: Partial Solar Eclipse, in Felixstowe

Began: Tue, 25 Oct 2022, 10:07

Maximum: Tue, 25 Oct 2022, 11:00 0.285 Magnitude

Ended: Tue, 25 Oct 2022, 11:55

Duration: 1 hour, 47 minutes

Bill Barton

Today I used my Carl Zeiss Telementor instrument to observe the partial solar eclipse. This telescope has a 63mm OG of 840mm focal length. I used a 25mm Huygens eyepiece, so x33 magnification.



The solar image was taken at 11:00 BST and two groups of sunspots were on the disc.

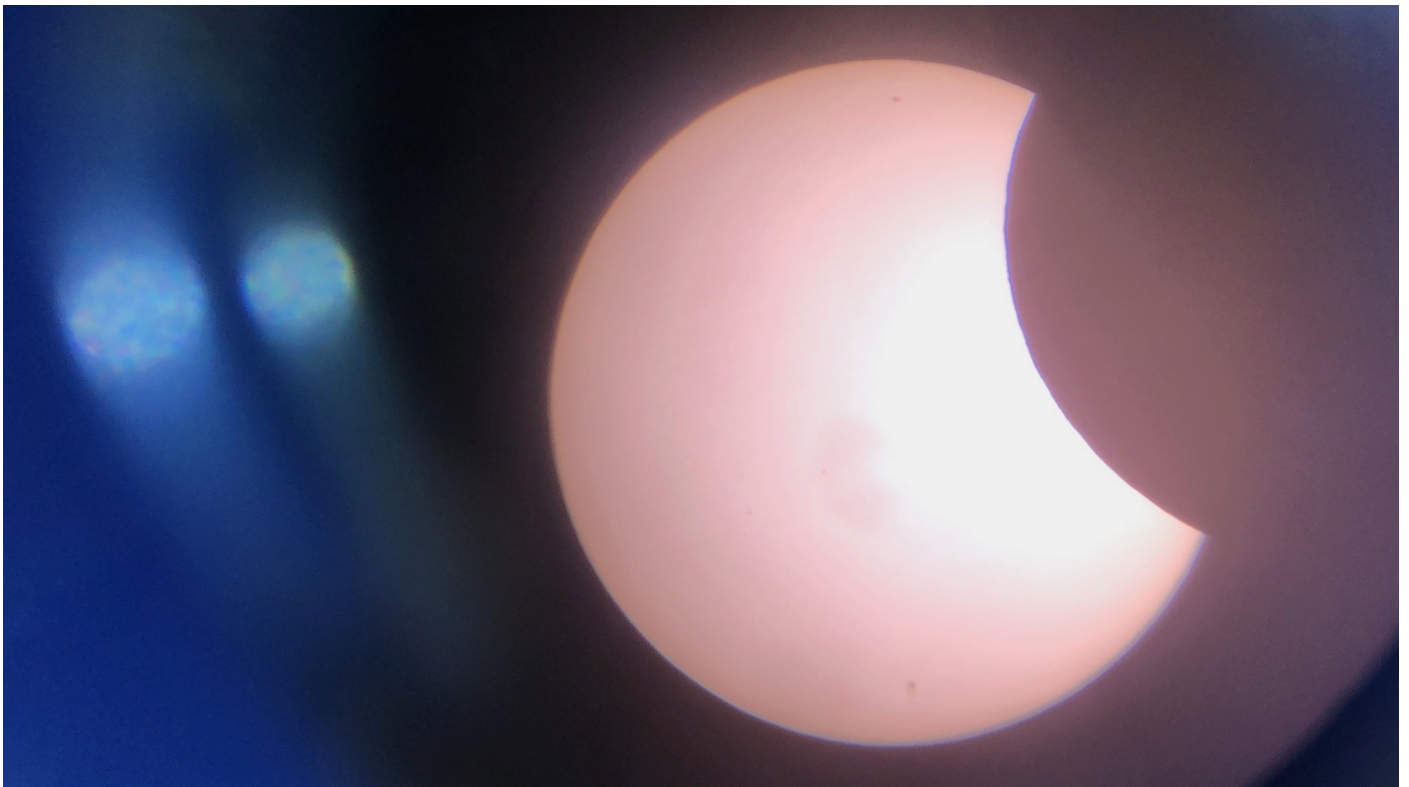
Carl Baldwin

Too much cloud in the wrong place for me this morning (the sun was clear at 10:00 and again now ...) but a colleague of mine living in St Petersburg was out with binoculars. The max there was 67%.



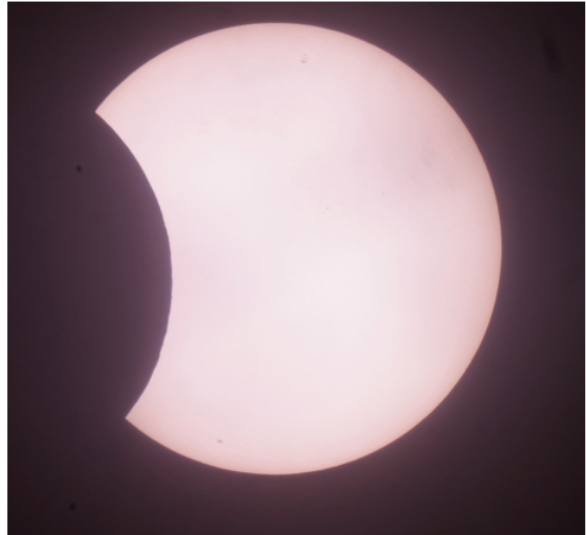
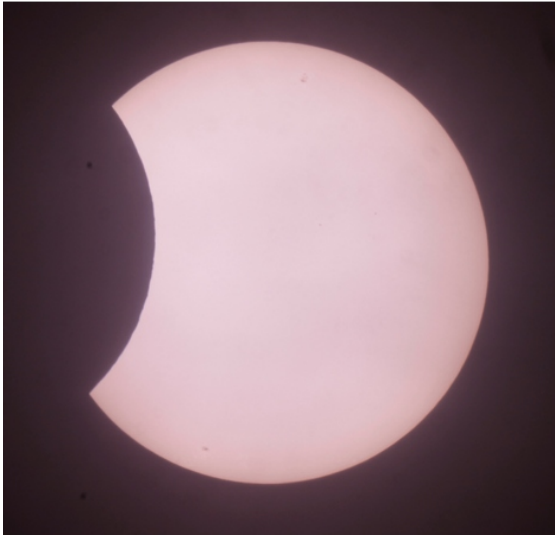
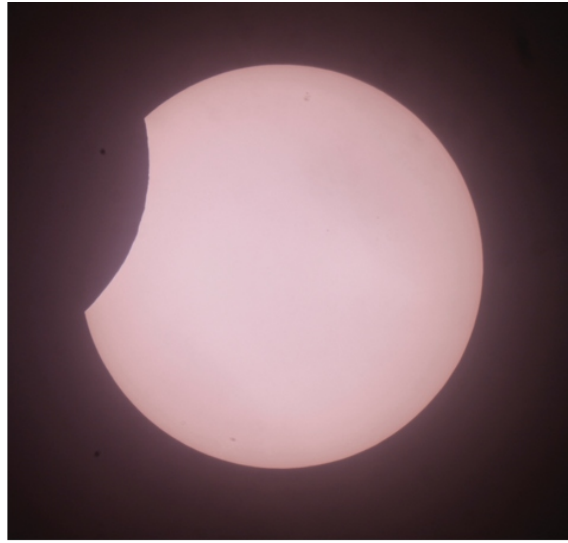
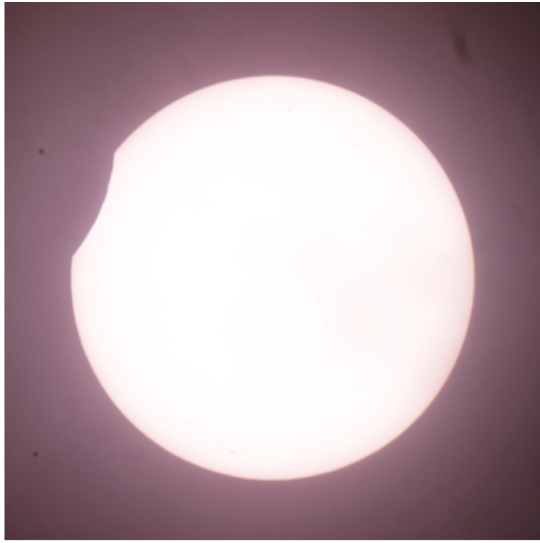
Mike Whybray

My effort is aesthetically nice but technically not so great.
Taken with iPhone 8 through eyepiece of 114mm Newtonian.



Martin R-H

Pictures from Kirton using Skywatcher 200 Newtonian fitted with Bader white light filter and Canon EOS500D camera. ISO100, 1/100s. IR block removed which results in a pink colour.



Neil Short

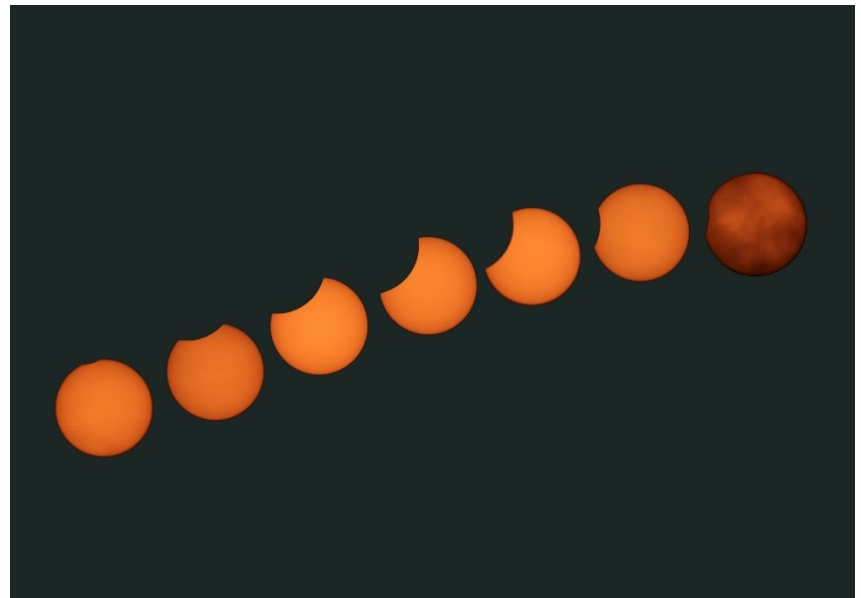
The Partial Eclipse of the Sun – 25th Oct 2022

Every Tuesday, when possible, I look to indulge in my “other” passion, archaeology. At present I am part of the archaeology team at Fordham near Colchester where we are excavating a roman site. On this Tuesday morning however, my wishes turned to the sky and not the ground in the hope of a clear day to observe the latest partial eclipse of the sun. With thanks to an appropriate deity, I was rewarded with a lovely blue-sky morning but with warnings of increasing cloud cover later.

Having gained “permission” to go somewhat AWOL from the archaeology I set up my camera and just had time to catch the start of the eclipse (just before 10:00a.m.). Surprisingly none of the other team members present were even aware of the event but on a regular occasion throughout the eclipse cycle were delighted to look through a viewing filter I had brought with me.

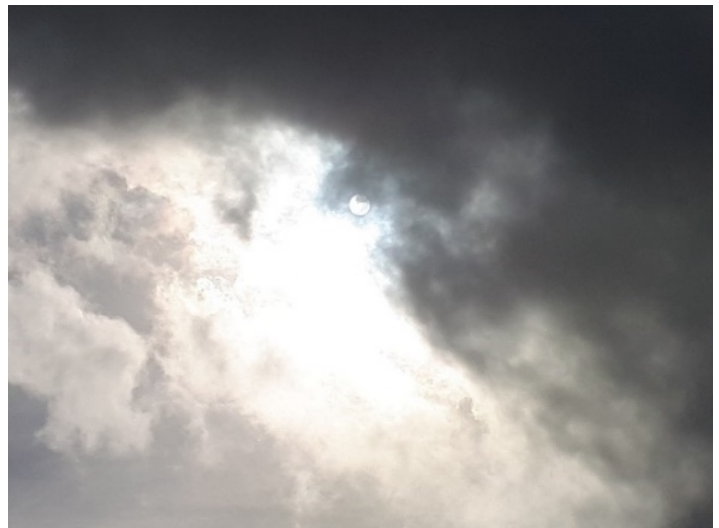


As the maximum eclipse came and went my concern re cloud cover began to increase significantly. Dark clouds approached and arrived from the west just as I was to complete the photo-cycle (as the last image in my montage below shows). Seconds after the image capture the filtered camera image went black. On using my phone camera, I caught a last shot of a full sun-disc as the dark cloud rolled in.



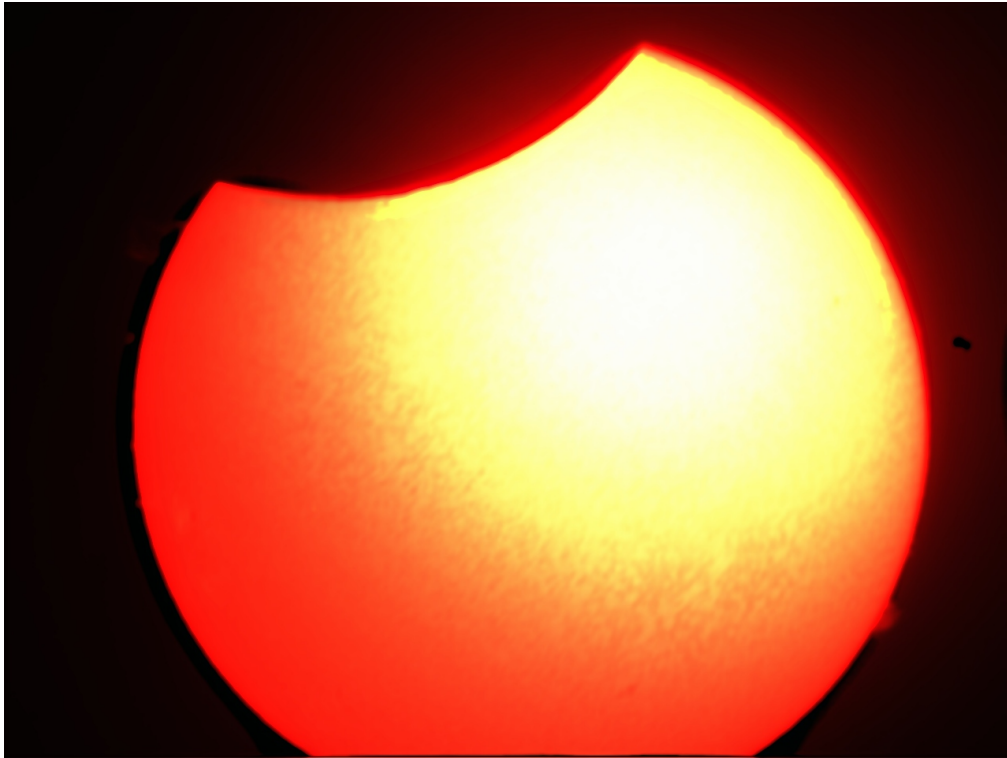
Well, I just about made it this time. Roll on the next partial (visible in Chelmsford at least), 10:00a.m. on the 29th of March 2025...

Camera settings info:
Camera 100D with 18-400mm lens, set at 400mm,
f/6.3, 1/100sec exposure at ISO400.

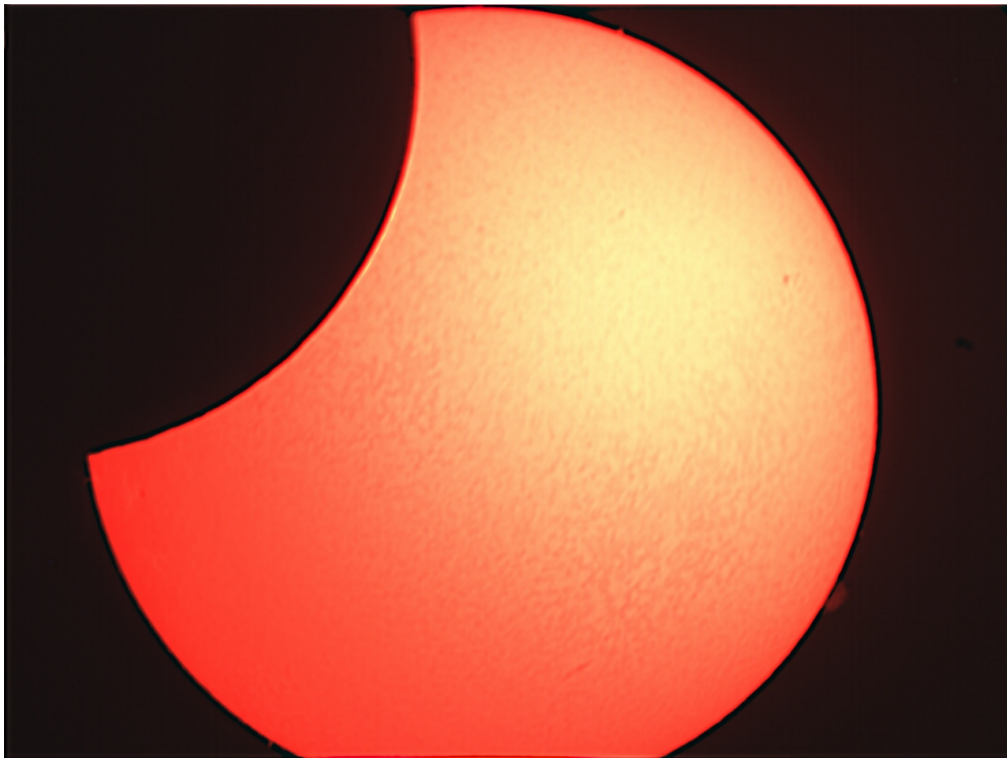


Andy Gibbs

Two efforts from this morning in hydrogen alpha, stacked with minimal processing.



10:28 image: Over-exposed to reveal prominences.



11.04 image: Close to maximum eclipse.

The Andromeda Galaxy M31

Stephen Olley



Andromeda Galaxy (M31)

Imaged over 4 nights last week from Ipswich. First time I have used NINA¹ workflow, having relied on SharpCap previously. Very impressive.

11 hrs integration - 200x90sec, 52x120sec + 55x300 sec using L Enhance filter + Darks/Flats. Processed in Astro Pixel Processor and PS.

Scope – Altair Starwave 102, Mount – Heq5, Camera - Altair 294c — in Ipswich, Suffolk.

¹ <https://daleghent.com/nina-introduction>. [Nighttime Imaging 'N' Astronomy](#) ("NINA").

The Lion Nebula

John Hughes



The Lion Nebula

The faint emission nebula, Sh2-132 (Sharpless 132), aka the Lion Nebula, is located on the border of Cepheus and Lacerta. The nebula is home to the Wolf-Rayet star GP Cep (HD211853, WR153ab).

Towards the centre of the image is an Oiii region represented by a light blue stream of gas that appears to originate from the lion's head. This stream is thought to be an arc of a ring nebula being expelled by the stellar wind generated by GP Cep.

The image shown is formed from frames captured during the period September 2021 to October 2022. William Optics Z103 refractor, ZWO ASI1600mm Pro Cooled camera (gain 139, offset 30), SkyWatcher EQR6-Pro mount, Chroma 1.25" 3nm H α , Oiii and Sii filters. Images as follows: 78x300 s H α , 66x300 s Oiii, 62x300 s Sii; total integration time 17 hours.

Jupiter and Saturn

Andy Gibbs

Another couple of images of Jupiter and Saturn, taken last night (18 October).

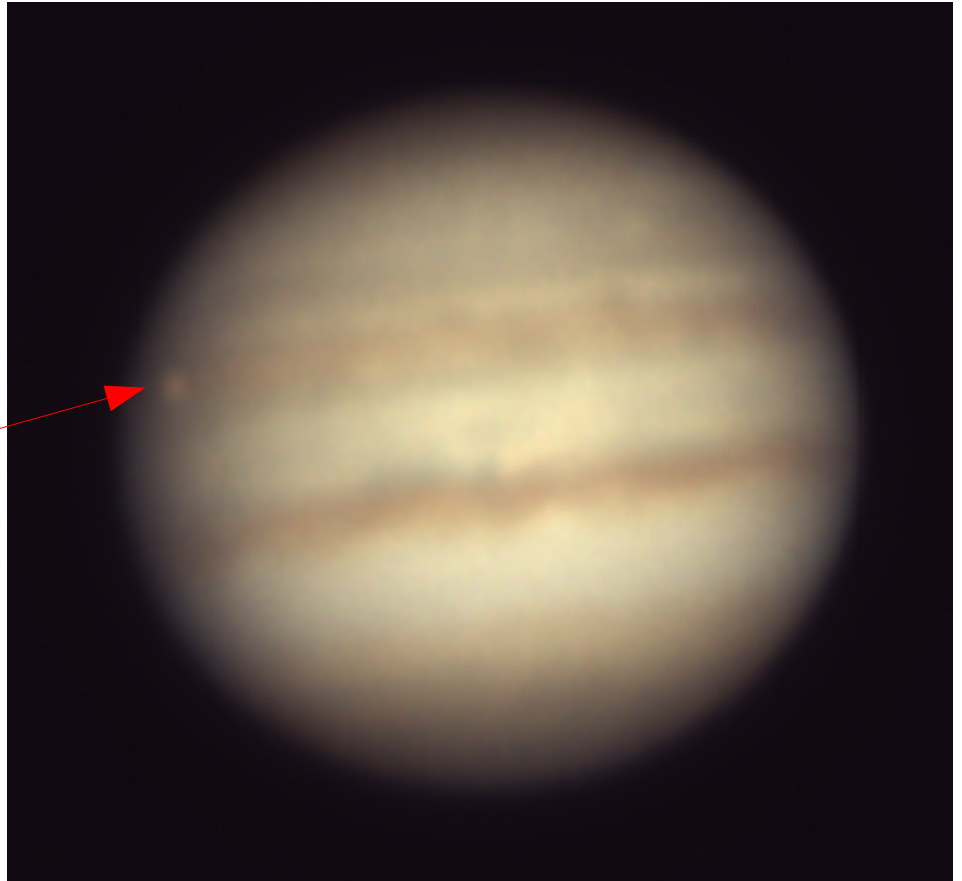
The Jupiter image shows the moon Io transiting the planet.

Equipment used: Meade 200mm LX200 ACF, 2.5x Barlow lens, OASI's ZWO ASI178MC camera.

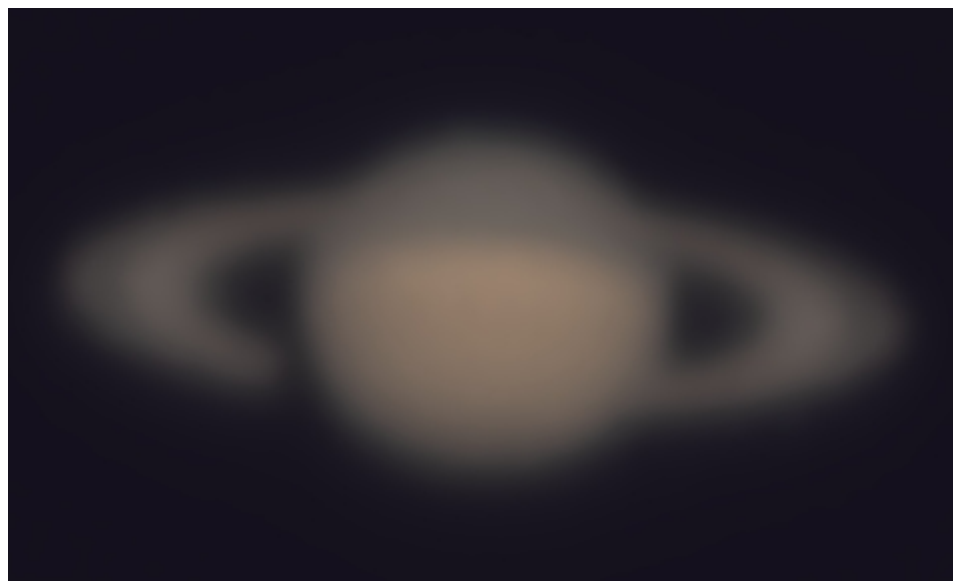
Software used: Sharpcap 4, Autostakkert 3, Registax 6 and Affinity Photo.

**Jupiter: Mag -2.45,
31.5 degrees elevation,
48.8 arc second disc**

Io



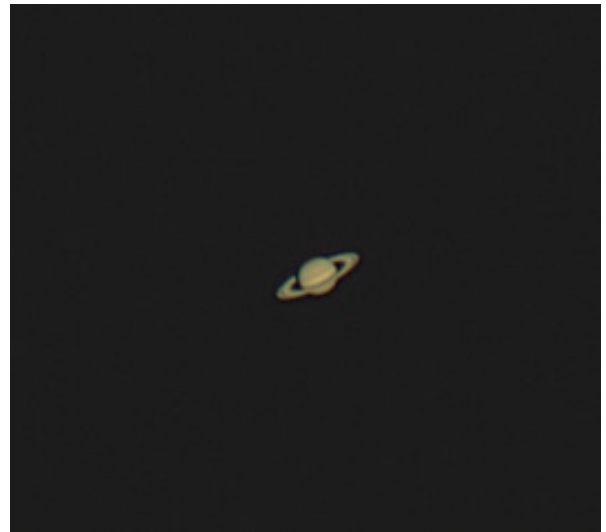
**Saturn: Mag 1.2,
20 degrees elevation,
41 arc second disc, (with rings)**



Mike O'Mahoney

120 mm Skywatcher refractor (f7.5),+ 2.5 x Powermate + QHY5L-II-C camera + Registax6 +Affinity Photo
20/10/2022 @ 20:10 UT

Jupiter with Io and Europa moons



Milky Way over Golden Bay Malta

Alan Buttivant

Took 30 shots all 13 sec @ISO 1000. OM-D E-MI Mark iii on manfrotto mini tripod olympus 12mm f/2.0 lens. Only stacked 8 in affinity photo, as a very laborious job on iPad and blended blue hour shot in PS and LR.All done on iPad. Hopefully get better result when back and able to use DSS and PS/LR on laptop and stack all 30.



Let's Go and Find the Sun with HINODE (means: Sunrise)

Short article from the library

At 0636 hrs on the 23rd of September (Japanese standard time) 2006,(Sept 22 21:36hrs UTC), the Hinode observatory was launched into space from the Uchinoura Space Centre which is situated in Kagoshima Prefecture, located on the Southwest tip of the Japanese island of Kyushu. It had been quite tricky getting a clear window for the lift-off, with two typhoons occurring in the early part of September and one occurring several days after lift-off. The control centre positioned Hinode in a Sun-synchronous orbit around Earth at an altitude of 600km. This type of orbit allows the satellite to pass over the same part of the Earth at approximately the same local time each day, meaning that more time could be spent by the instruments viewing the Sun, and downloads of data are easier to control. The initial mission length was scheduled for three years in order to study our Sun, and was a joint assignment between several space organisations such as Japan, United States, Europe and U.K. It would incorporate exploration of the magnetic fields that occur in the solar atmosphere as well as those found on the surface of the photosphere. Multiple wavelength data from between these points and the corona would be used. It would also study the systems that power the energy necessary for solar eruptions. This type of solar activity can cause havoc on Earth by impeding satellite communications and hampering electrical power networks. On November 14th 2018, the Science Program Committee of ESA confirmed that as well as several other scientific missions by other spacecraft, Hinode was granted a further four years with a review at the two year point. Being able to collaborate with other agencies utilising data from other missions is a great help for scientific endeavour. An example could be Hinode, IRIS and SOHO.



Picture credit:JAXA

Hinode is positioned towards the Sun and has three axis stabilization, with altitude movement being by four reaction wheels. RF communications is conveyed in X-band for science data and S-band.

Three instruments are carried on board this 875kg spacecraft, the Solar Optical Telescope(SOT), an Ultraviolet Imaging Spectrometer (EIS) and an X-Ray Telescope (XRT).

The SOT is a diffraction limited Gregorian telescope with an aperture of 0.5m, a distance between primary and secondary apices of 1.5m., and a field of view of approximately $360 * 200 \text{ arcsec}^2$, all within the 380nm to 670nm wavelength band. Measurements can be obtained by the SOT over spatial scales of 150km to 200km providing a large enough field of view for pocket-sized regions demonstrating slight activity. The SOT also comprises filter imagers, both narrow and broad band, the former recording high spatial resolution frames and the later diffraction limited pictures as well as a spectrometer and correlation tracker. The conceptual diffraction limit of the SOT is designed to work over a range of wavelengths from 388nm to 656.3nm. A Gregorian Telescope is a variety of reflecting apparatus first designed in the late 1600's. It consists of two concave mirrors. The first a concave parabola that collects light conveying it to focus just before the second mirror, which is a concave ellipsoid.

The X-ray telescope is a variant of the Wolter I, X-ray type. It is designed to reflect X-rays at very shallow angles (10 arc-min to 2°) and is described as using grazing incidence optics. If the centre of the solar disc is imaged, the telescope can capture the view of the whole sun.

The Extreme-Ultraviolet Imaging Spectrometer (EIS), measures how high speed gases travel in the solar atmosphere. It is constructed of a lightweight carbon material. EIS is an off-axis parabolic design telescope which has a mirror of diameter 150mm and a focal length of 1.9m. It operates in two wavelength bands of 170-210Å and 250-290Å. Monochromatic images of both the transition area and the corona can be obtained.

Over its life Hinode has provided scientists with a plethora of comprehensive research. In 2019 a group of scientists used the EIS to explore how plasma composition is evolved and distributed within two enclosed flares that had been recently spotted in an extremely active area. The basic premise of this research was to gain an insight into the energy flow from the chromospheres to the heliosphere.

Hinode has made an impressive step in acquiring data that gives scientists a perception of why the corona of the Sun is much hotter than the lower photosphere, (Sun's discernible surface). Hinode and NASA's IRIS satellite together recognized resonant absorption signatures, found within filaments of plasma. This is a complex wave activity, in which recurrent waves add energy to plasma. Data analysts then correlated the signatures finding that the resultant was similar to consistent coronal temperatures. For over thirty years scientists had been hypothesizing how these waves heated the plasma. Lead researchers Joten Okamoto of Nagoya University in Japan and Patrick Antolin of the National Astronomical Observatory of Japan published their groups' findings in August 2015.

Solar Energetic Particles or SEP's speed through space in any direction at almost light speed. The problem with them is that they only take a short time to arrive on Earth, at which point they can cause breakdowns in sensitive spacecraft electronic components. Recently scientists have been able to identify where these particles originate. They have specified that SEP action can be separated into two types, the first being *impulsive* that occur after solar flares, with the second being *gradual* that can arrive in massive groups, usually behind coronal mass ejections. The latter stay around for longer and position electronic equipment and astronauts in jeopardy. Hinode's EIS was employed for the purpose of scanning active regions and recognised selected elements from their spectral lines. They then identified areas in the active region that had the specific blend of elements, that also agreed with data obtained from other solar satellites e.g. NASA's WIND spacecraft. Hinode was therefore able to reveal that the strong magnetic loops were the origin of SEP's.

A group of astronomers from the National Astronomical Observatory of Japan, using Hinode for a few days early in February 2018 detected the most powerful magnetic field ever directly quantified from the

surface of the Sun. They collected data for five days and found that it occurred as a result of gas outflow from one sunspot thrusting itself against another.

Without Hinode and NASA's Heliophysics System Observatory these questions could not be answered, causing scientific research to falter and reducing the safety factor necessary for human space flight. Having to use Earth based telescopes, with its rotation problems and reduced visibility, would not have produced the startling results obtained from Hinode

References:

[Gregorian telescope - Wikipedia](#)

Hinode Solar Optical Telescope Data Analysis Guide [SAGv3.3 \(nasa.gov\)](#)

[SOLAR-B Website - EIS Publications Page \(ucl.ac.uk\)](#)

[Solar ultraviolet bursts in a coordinated observation of IRIS, Hinode and SDO - NASA/ADS \(harvard.edu\)](#)

[Scientists Trace Fastest Solar Particles Back to the Sun | NASA](#)

["Hinode", the chromosphere, magnetic waves, and coronal heating | ISAS \(jaxa.jp\)](#)

The OASI Millennium Telescope

Mike Whybray

Tonight (24 Oct) at Newbourne I decided it was high time we got the Millennium Telescope back in operation. My original intention was to construct it inside our storage container, and then move it out onto the car park area. It was like wrestling an octopus persuading all the 8 truss tubes to slot in place simultaneously, and hampered by the fact that the container is not quite tall enough to allow it to tilt fully vertical. But finally 4 of us working together did it.

Opening both container doors gave a pretty good field of view including very bright Jupiter so we decided to leave it in position inside the container and view from there. With a 50mm eyepiece (thanks for the loan Martin RH!) and finder scope in place but of course misaligned, it took some time scanning to get Jupiter in the eyepiece, and further work to roughly align the finder, but we were able to give the dozen or so members still present a good view of Jupiter and the Galilean Moons. Success!

We've left the scope fully assembled and in position so that it can much more quickly be used on another clear night. It still needs final finder alignment, and most likely collimation. The mirror appeared very dusty so a careful clean, maybe come the summer, is needed.



John Wainwright



Reminds me of the Jumbo Jet called Sofia with a telescope sticking out of a porthole.

Outreach event at Claydon

We held a private event for Suffolk Family Carers on Friday 14 October. The earlier weather forecast wasn't encouraging but, following Paul Whiting's talk, the skies cleared intermittently and we were able to provide good views of Saturn, Jupiter, Albireo double star, and a very faint fuzzy M31.

Bill Barton, Pete & Nicky Richards, Mike O'Mahoney, John Wainwright, Paul Whiting, Roy Gooding, Martin Richmond-Hardy and Andy Gibbs attended with telescopes.



Photo by Bill Barton

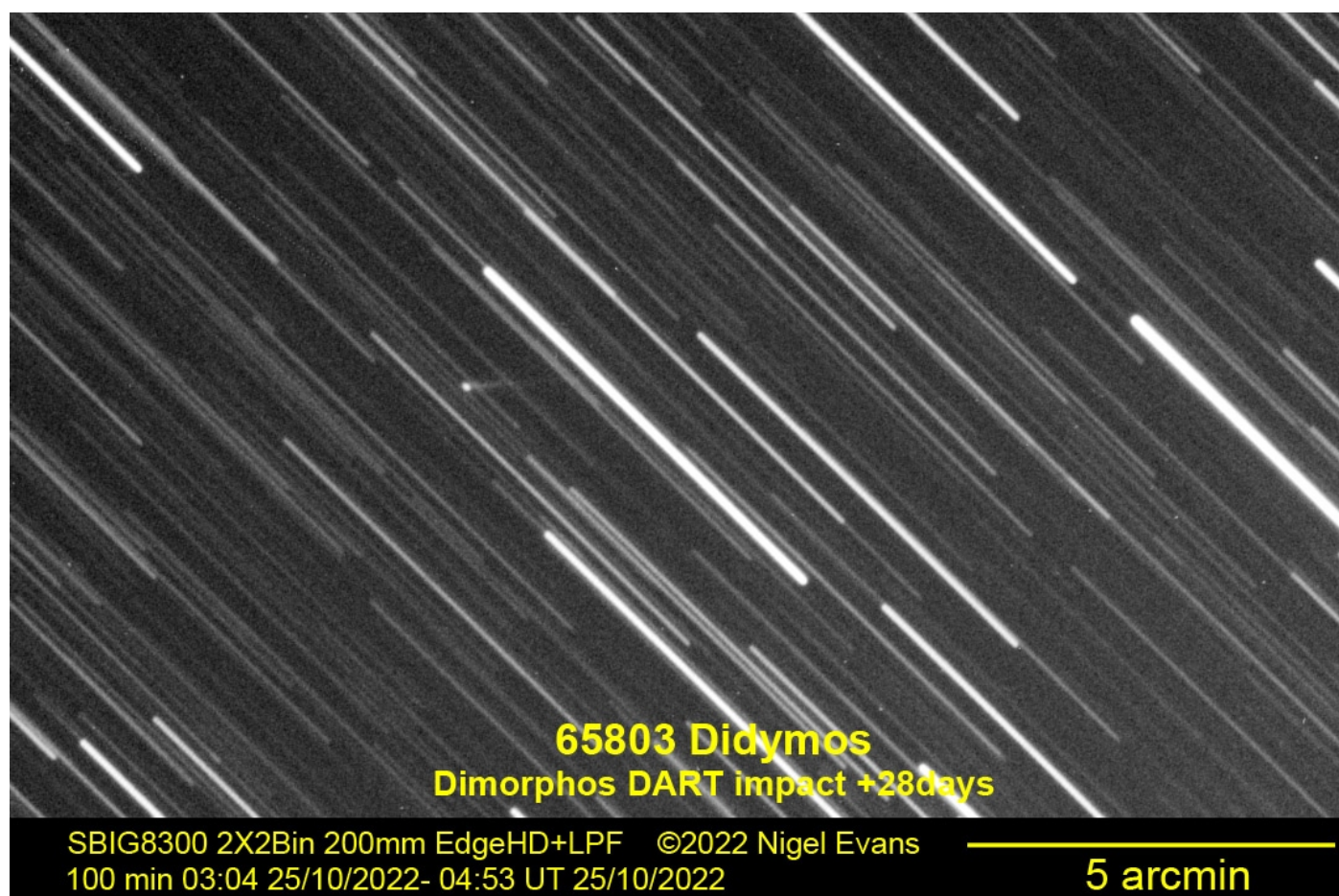
The impact of the DART spacecraft on Dimorphos

Nigel Evans

We were all amazed by the impact of the DART spacecraft on Dimorphos, a satellite to Didymos and the subsequent images taken by large telescopes such as Hubble or JWST. However I spotted this image https://spaceweathergallery.com/indiv_upload.php?upload_id=189328 showing the trail of debris as seen from the UK in an amateur telescope.

This morning I had a go at imaging 65803 Didymos with a smaller scope. I was unsure if there would be anything visible left for me to see, some 4 weeks after the event.

When I saw the stacked still, a combination of 100 1 minute of exposure, all shifted to keep up with Didymos, I was totally stunned. The debris field, looking like a tail, is also readily detectable in much shorter stacks of exposures.



There is also a video (available on the OASI groups.io) which is a combination of tracking the stars, then tracking the asteroid. In the first half there does appear to be a flock of worms flying to the right, the result of hot pixels not all being eliminated. The trail of debris may only about 1 arcminute long, but it is 1 arcminute longer than I thought it would be!

The Open Evening at OPS

Pictures by James Appleton

Long story – short: It was busy!



The car park was full



Telescopes on the lawn



The queues for a view



The Welcome desk with Nicky & Mandy



The observatory tower

And finally – Christmas is coming

Pete Richards

OASI is planning to help provide decorations for a Christmas Tree for the society to display at St Martin's Church Nacton Christmas Tree festival 3rd and 4th December please let a committee member know or email lectures@oasi.org.uk

Space and OASI themed decorations, possibly old damaged eyepieces or small finder scopes would make interesting astronomy things to hang on a tree.