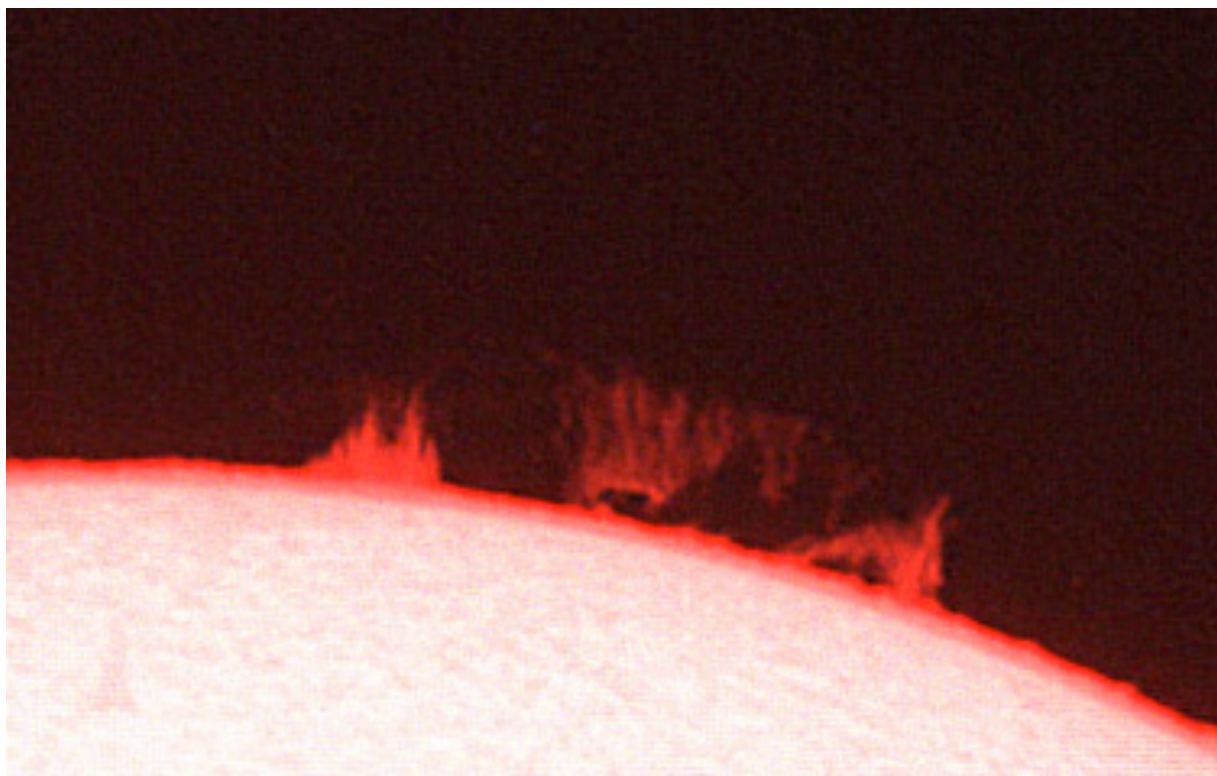




OASI News

The newsletter of the Orwell Astronomical Society



Solar prominences on 20 April 2019

Photo by Martin Cook

Trustees: **Mr Roy Adams** **Mr Neil Morley** **Mr David Payne**
Honorary President: **Dr Allan Chapman D.Phil MA FRAS**

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Society Notices

Society Contact details

Observatory (meeting nights only)

NB new number! 07960 083714

Email queries: info@oasi.org.uk

Facebook: <https://www.facebook.com/groups/445056098989371/>

Twitter: @OASlpswich

The OASI Facebook pages are proving very popular. Several non-members are active contributors.

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

Other contact details will be issued to members on a separate printed list.

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, **07960 083714** during meeting hours.

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. Please send them to

news@oasi.org.uk

The CLOSING date is the 15th day of the month

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](http://www.oasi.org.uk/NL/NL_form.shtml)

Authors, please note that your articles will now 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 2019

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

Signing in and out

Please ensure you sign in and out when visiting the Observatory and/or Newbourne.

This is for fire safety precautions and also provides an historic record.

Next Committee Meeting

Friday 21 June 2019, 8pm at Horley Spiritualist Church, 345 London Rd, Ipswich IP2 0BG

Please note the change of venue.

Planetarium Event at Ipswich Museum

Those of you with children/grandchildren, etcetera, may be interested in an event at Ipswich Museum during the Summer Holidays.

On **Tuesday 30th of July and Wednesday 31st of July** there will be an inflatable planetarium at Ipswich Museum. Sessions, which are suitable for age 4+, are £3.50 and have to be booked online in advance. The event is part of a Summer of Science at the Ipswich museums (Ipswich Museum - on High Street, Christchurch Mansion and Ipswich Art Gallery) during the Summer school holidays. More information can be obtained online at <http://www.cimuseums.org.uk> or by calling 01473 433100 (phone number is the Ipswich Regent theatre through which tickets can be bought).

Now bookable on this site:

<https://apps.ipswich.gov.uk/en-GB/shows/planetarium-%20discover%20the%20solar%20system/events>

OASI and BAA Events

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 or use this address to access this calendar from other calendar applications.



<https://calendar.google.com/calendar/ical/1jhs9db71ncki4sojo7092vfvc%40group.calendar.google.com/public/basic.ics>

For other astronomy news and astro pictures try our

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

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

Subscribe to the OASI Yahoo group by emailing oasi-subscribe@yahoogroups.com

Key:

OASI public events

BAA events

Other events

Date, Time & Location	Contact	Event
Weekly, every Wednesday, 20:15–22:00 Orwell Park Observatory	Martin Cook, Roy Gooding	General observation (weather permitting) using a variety of telescopes. Entry via the third gate left. NOT the main gate
Monday 6 May from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne. 19:45 Workshop: Alan Smith and James Appleton, "Fireballs and How to Catch Them".
Sat 18 May Clements Hall, Nunthorpe Road, York, YO23 1BW	https://www.britastro.org/node/15371	<i>BAA Comet Section meeting</i>
Monday 27 May from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne. 19:30 Sky notes Bookswap
Wed 29 May 17:30 London W1J 0DU	https://www.britastro.org/node/15407	<i>BAA Ordinary Meeting & George Alcock Memorial Lecture</i>
Sat 8 June 10:00 West Berkshire Mencap Centre, Enborne Gate, Newbury, RG14 6AT	https://www.britastro.org/historical2019	<i>BAA Historical Section meeting</i>

Date, Time & Location	Contact	Event
Sat 8 June 12:00 Kirton Recreation Ground, Back Rd, Kirton	Martin Richmond- Hardy newbourne@oasi. org.uk	OASI at Kirton Fete. Public event.
Sun 9 June 09:00 Kirton Recreation Ground, Back Rd, Kirton	Paul Whiting, FRAS treasurer@oasi.org.uk	OASI at East Suffolk Wireless Revival. Public event.
Monday 10 June from 19:00 Newbourne Village Hall	Martin Richmond- Hardy newbourne@oasi. org.uk	OASI @ Newbourne.
Sat 22 June 10:00–18:00 RAL, Didcot OX11 0QX	https:// www.britastro.org /RAL2019	<i>BAA Summer meeting</i>
Monday 24 June from 19:00 Newbourne Village Hall	Martin Richmond- Hardy newbourne@oasi. org.uk	OASI @ Newbourne. 19:30 Sky notes Bookswap
29 June Newbourne Village Hall	Pete Richards lectures@oasi.org.uk	OASI Summer BBQ. Members and their guests.
Monday 8 July from 19:00 Newbourne Village Hall	Martin Richmond- Hardy newbourne@oasi. org.uk	OASI @ Newbourne.
Sat 13 July	Pete Richards lectures@oasi.org.uk	OASI at Nacton Fete
Monday 22 July from 19:00 Newbourne Village Hall	Martin Richmond- Hardy newbourne@oasi. org.uk	OASI @ Newbourne. 19:30 Sky notes 19:45 Workshop: Martin RH “Siding Spring & Parkes observatories” Bookswap
Tues-Wed 30– 31 July	www.cimuseums.org.uk	Planetarium at Christchurch Park (see page 4)

Date, Time & Location	Contact	Event
Monday 12 Aug from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne.
Sat 24 Aug 10:00–17:00 9 Margaret St, Birmingham, B3 3BS	https://www.britastro.org/spectro2019	BAA Spectroscopy Software Training Workshop
Monday 26 Aug		NEAS visit to Newbourne and picnic. From 7pm OASI @ Newbourne
Fri 6 Sept		<i>BAA Autumn Weekend meeting</i>
Monday 9 Sept from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne.
Fri 20 Sept 20:00 St Augustine's Church Hall	Peter Richards lectures@oasi.org.uk	Lecture. "Monsters in the Dark: Searching for the Most Massive Galaxies in the Universe." Dr Matthew Bothwell. University of Cambridge.
Monday 23 Sept from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne. 19:30 Sky notes Bookswap
28-29th Sept	http://las-skycamp.org	<i>Kelling Heath Autumn Star Party</i>
Sat 5 Oct		<i>BAA Back to Basics workshop</i>
Sat 12 October		<i>BAA Observers' Workshop</i>
Monday 14 Oct from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne.
Fri 18 Oct 20:00	Peter Richards lectures@oasi.org.uk	Lecture. "Pulsars and our understanding of the cosmos" Dr Robert Ferdman. University of East Anglia.
Sun 27 Oct	Paul Whiting, FRAS treasurer@oasi.org.uk	Bawdsey Astronomy Day

Date, Time & Location	Contact	Event
Monday 28 Oct from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne. 19:30 Sky notes 19:45 Workshop: 'Observing Transits of Mercury' Bookswap
28 Oct–4 Nov		<i>Haw Wood Autumn Star Party</i>
Wed 30 Oct		<i>BAA AGM</i>
Mon 11 Nov		Transit of Mercury
Monday 11 Nov from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne.
Fri/Sat 15/16 Nov. Stoneleigh Park, Coventry CV8 2LH	https:// www.ukastroshow.com	<i>International Astronomy Show</i>
Fri 15 Nov 20:00 St Augustine's Church Hill	Peter Richards lectures@oasi.org.uk	Lecture. "Neighbours - An Introduction to the Local Group". Dr Nick Hewitt. British Astronomical Association.
Sun 17 Nov, 05:30 TBC	James Appleton info@oasi.org.uk	Field trip to observe graze of ZC1128. More info.
Monday 25 Nov from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne. 19:30 Sky notes Bookswap
Monday 9 Dec from 19:00 Newbourne VH	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne.
Fri 20 Dec 2019, 04:30	James Appleton info@oasi.org.uk	Field trip to observe graze of ZC1840. More info.
Monday 23 Dec from 19:00 Newbourne VH	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne. 19:30 Sky notes Bookswap

OASI @ Newbourne

Martin Richmond-Hardy newbourne@oasi.org.uk

We normally meet at Newbourne Village Hall, Mill Lane, IP12 4NP on the 2nd and 4th Mondays (with a few exceptions, like December and January).

OASI @ Newbourne is a good place to start for beginners. If you are thinking of buying a scope or binoculars, come and try before you buy and talk to owners about the strengths and weaknesses of particular models. If you've already splashed the cash, bring your new scope along to use or for advice on setting-up and adjustment. All welcome, with or without telescopes. We would like visitors to join OASI to enjoy the full benefits of membership.

There are also **Stargazers' Guide (Sky Notes)**, **Astronomy Workshops** and the **Book Swap**.

OASI@Newbourne Meetings

6 May[*]	27 May (S+B+W)	(both Bank Holidays)
* NB 13 May is unavailable due to a Parish Council meeting.		
10 June	24 June (S+B)	
8 July	22 July (S+B+W)	
12 Aug	26 Aug (B/H)	NEAS visit & picnic.
9 Sept	23 Sept (S+B)	
14 Oct	28 Oct (S+B)	
11 Nov	25 Nov (S+B)	
9 Dec	23 Dec (S+B)	

We open up for all meetings at 7pm. Star Guide (S) at 7:30pm and Workshops (W) at 7:45pm.
B = Book Swap night (see below).

Stargazer's Guide

On the last meeting each month Bill Barton FRAS will give a short presentation of what can be viewed in the following 4 weeks.

Astronomy Workshops/Informal talks

Contact Mike Whybray

Location: Newbourne Village Hall IP12 4NP

Doors open at 7:00pm.

Workshops start at 7:45pm

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. They are also a chance to chat with other members over a cup of tea and a biscuit, in a venue rather warmer than the observatory dome on a winter's night!

Given a clear night, we can make use of the field for a workshop or continue afterwards with some observing.

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

6 May Alan Smith and James Appleton, "Fireballs and How to Catch Them".

Members of OASI operated fireball cameras from 1976-86 and from 2018 to date. Alan and James provide an overview of meteors and meteorites and the evolution of OASI's attempts to image them. They show images including many satellites, meteors and, of course, several unexplained phenomena (UFOs?) They explain how images of fireball tracks can be analysed to estimate the trajectory of a fireball and the potential location of the associated meteorite, if there is one.

22 July Martin Richmond-Hardy, "Siding Spring and Parkes observatories".

28 October Bill Barton FRAS, 'Observing Transits of Mercury'

Astronomy Book Swap

Pete Richards

If you are anything like me you'll have a bookcase or two full of astronomy books and no room for any more but you know the next time you are at an astronomy event you'll be tempted again. OASI will be hosting an astronomy book swap event at Newbourne on a Monday evening to help you clear some space – or maybe you can provide a home for someone else's unwanted books?

If you bring any books and they are not taken you will need to take them home again as OASI has no spare storage space for books.

You can take away any books you are interested in but if you have not provided any books yourself you might like to make a small cash donation to OASI.

Any cash donations will help towards running OASI @ Newbourne.

The books can be on any area of astronomy, or space exploration, or related subjects. They can be factual or works of fiction including space related science fiction. As well as books you could bring DVDs on similar subjects, or maybe you have an astronomical jigsaw puzzle you'd like to give away or exchange.

The book swap will be held at Newbourne Village Hall on Monday Star Guide/Workshop nights (a normal OASI @ Newbourne night).

Lecture Meetings

Contact: Peter Richards lectures@oasi.org.uk

We have an exciting and interesting set of lectures by guest speakers for the Autumn.

There is a new venue for lectures this year which is:

St Augustine's Church Hall
Bucklesham Road
Ipswich IP3 8TH.

The start time for all talks will be 8pm and, as usual, the talks will be held on Friday evenings.



OASI Guest Speaker Lectures

- | | |
|----------------|--|
| 20th September | "Monsters in the Dark: Searching for the Most Massive Galaxies in the Universe." Dr Matthew Bothwell. University of Cambridge. |
| 18th October | "Pulsars and our understanding of the cosmos" Dr Robert Ferdman. University of East Anglia. |
| 15th November | "Neighbours - An Introduction to the Local Group". Dr Nick Hewitt. British Astronomical Association. |

Other local astronomy society meetings

Athaneum Astro Society

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

We meet fortnightly on Thursdays, from 7.30pm, at our dark-sky site in the [Walled Garden](#) at Nowton Park, just outside Bury St Edmunds. If you're planning on joining us for the first time, please [contact us](#) in advance, just to make sure the meeting is going ahead. We recommend that you wear warm clothing (even summer nights can be chilly, especially when the skies are clear!) and bring a flask, or insulated mug, for a warm drink. We have tea and coffee-making facilities on-site. Events are listed here <http://www.3a.org.uk/events.htm>

LYRA Lowestoft & Yarmouth Regional Astronomers

www.lyra-astro.co.uk

LYRA Programme and Local Events 2019 – All talks (unless other wise stated) will commence at 7.30pm in the Coach House Room at Parkhill Hotel, just outside Oulton Village on the B1375 (Oulton Broad to Gt. Yarmouth Road) NR32 5DQ

All Talks £2.50 For Non Members

- May 14 A talk "Hunting Outbursting Young Stars with the HOYS-CAPS Citizen Science Project" by Dr Dirk Froebrich, University of Kent
- May 28 LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7.30pm
- June 11 A talk "The Silver-On-Glass Revolution" by Bob Marriot
- June 25 LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7.30pm
- July 9 A talk "Midsummer madness? – Astronomy versus Pseudoscience, Flying Saucers & Conspiracy Theories" by Mark Shepherd.
- July 23 LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7.30pm
- Aug 13 Summer Social Evening at Parkhill Hotel
- Sept 10 TBA
- Sept 24 LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7:30pm
- Oct 8 A Talk "Variable Stars – being a Professional-Amateur" by Michael Poxon
- Oct 22 LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7:30pm
- Nov 12 TBA
- Nov 26 LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7:30pm

DASH Astro

Darsham And Surrounding Hamlets

<http://dash-astro.co.uk>

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.

May 19th will be the last of this season's meetings at Westleton village Hall. Due to building work to Westleton Village Hall, we will be moving to the New Darsham Village Hall, from September 8th until further notice.

Note these meetings are now on Sundays.

- May 05 Dash Observing Session (Sunset 20:25 Moonset 20.59 0.5% Moon) Late one?
- May 19 Meeting – AGM plus Dave Murton and Linda Gwynn
- May 02 Solar Observing - Location TBA
- June 16 Solar Observing Outreach - Location Sutton Hoo National Trust
- June 23 International SUNDAY - Location Dunwich Heath
- August 10 (Saturday) DASH Summer Social - confirmed. (Members and Guests only)
- Sep 08 Meeting – Dr. Sonali Shukla, Lecturer in Astronomy, Cambridge Univ.
- Sep 21&22 Henham Steam Rally. Solar Observing and Displays
- Sept 29 Dash Observing Session (Sunset 18:35 Moonset 19:24 1.1% Moon)



Oct 13 Meeting – Dr. Manda Banerji, Inst. of Astronomy, Cambridge Univ.
 Oct 23&24 Family Stargazing Evening at Sutton Hoo N.T. Site 6-9pm
 Oct 27 Dash Observing Session (Sunset 16:33 Moonset 16.46 0.9% Moon)
 Nov 10 Meeting – Steve Hubbard, Ian Lomas & David Gwynn, plus “Q & A Panel” Title TBC
 Nov 11 DASH Observing. “Transit of Mercury” start 12:35 ends 16:06 (sunset)
 Nov 24 Dash Observing Session (Sunset 15:49 Moonset 15.10 6.7% Moon)
 Dec 07(Saturday) DASH Christmas Social – confirmed. (Members and Guests only)

The Night Sky in May

Martin RH

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



Moon

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

New Moon	1st Quarter	Full Moon	Last Quarter
04 May 23:46	12 May 02:12	18 May 22:11	26 May 17:34

Sun, Moon and planets

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

Object	Date	Rise	Set	Mag.	Notes
Sun	1 May	05:26	20:19		
	31 May	04:42	21:04		
Moon	1 May	04:44	16:17		
	31 May	03:45	17:28		
Mercury	May 1	05:09	18:09	-0.3	Superior conjunction 21 May Perihelion 24 May
	May 31	05:15	22:10	-1.2	
Venus	May 1	04:51	17:27	-3.8	
	May 31	04:02	18:58	-3.8	
Mars	May 1	07:16	23:56	1.6	
	May 31	06:42	23:23	1.8	
Jupiter	May 1	23:57	07:42	-2.3	
	May 31	21:46	05:32	-2.4	
Saturn	May 1	01:49	09:45	0.5	
	May 31	23:45	07:43	0.3	
Uranus	May 1	05:20	19:24	5.9	
	May 31	03:25	17:35	5.9	
Neptune	May 1	04:06	15:05	7.9	
	May 31	02:09	13:10	7.9	

Paul's Astronomy Podcast for May

Paul Whiting FRAS Podcast, May 2019 www.oasi.org.uk/2019_05_pod.mp3

Occultations during May 2019

James Appleton

The table lists occultations during the month under favourable circumstances. The data relates to Orwell Park Observatory, but will be similar at nearby locations.

The events should be readily visible in small telescopes or binoculars. The first two columns list the date and time (UT) of the occultation. Column three gives the phenomenon: 'D' denotes a disappearance and 'R' a reappearance. The table lists circumstances of disappearances and reappearances as dictated by the visibility of each phenomenon (determined by altitude, lunar phase, etc). Column four details the lunar phase ('+' for waxing and '-' for waning). Columns five and six give the altitude of the Sun and the star, both in degrees. (A negative solar altitude means that the Sun is below the horizon.) Columns seven and eight provide the star's magnitude and catalogue number.

The data relates to Orwell Park Observatory, but will be similar at nearby locations.

Please note that **times are shown in UTC**.

Date	Time (UT)	D/R	Lunar Phase	Sun Alt(°)	Star Alt(°)	Mag	Star
08 May 2018	02:26:17	D	0.50-	-13	5	4.3	32 Cap, ι Cap
	02:56:17	R		-10	9		
09 May 2018	03:09:45	D	0.40-	-8	7	6.0	39 Aqr
	03:31:35	R		-6	10		
18 May 2018	20:53:50	D	0.15+	-9	17	7.4	Hip 33477
19 May 2018	21:11:15	D	0.25+	-10	23	7.1	ZC 1202
19 May 2018	22:53:13	D	0.25+	-17	8	6.2	ZC 1217
29 May 2018	01:35:49	D	1.00+	-13	16	5.5	49 Lib

Meteor showers

Source: BAA Handbook 2019 p100-101

Shower	Maximum	Normal limits	ZHR at Max	Notes
η Aquarids	May 6–7	Apr 19 – May 28	40	Fine southern shower, poorly seen from the UK. Fast meteors, many with persistent trains. Good in 2013
Daytime Arietids	June 8	May 22 – July 2	30?	Most active of the daytime showers. Good for radio observers [1]. ZHR and radiant location uncertain.

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

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

Martin RH

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

Times are UTC. Predictions are approximate (23 Jan) due to craft adjustments. Check the day before.

Mainly for night owls this month but there are a few evening passes on the 18–22 May.

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
04 May	-2.3	04:08:59	13°	SSW	04:11:21	26°	SSE	04:14:11		
05 May	-1.9	03:19:52	17°	SSE	03:20:37	18°	SE	03:22:56		
06 May	-3.2	04:03:25	15°	SW	04:05:50	43°	SSE	04:09:00		
07 May	-2.7	03:14:11	27°	S	03:15:00	31°	SSE	03:17:58		
08 May	-2	02:24:55	20°	SE	02:24:55	20°	SE	02:26:48		
08 May	-4	03:57:38	14°	WSW	04:00:22	65°	SSE	04:03:39		
09 May	-3.5	03:08:19	33°	SW	03:09:26	50°	SSE	03:12:40		
10 May	-2.9	02:18:58	35°	SE	02:18:58	35°	SE	02:21:37		
10 May	-3.9	03:51:40	11°	W	03:54:55	82°	S	03:58:14		
11 May	-1.5	01:29:34	16°	E	01:29:34	16°	E	01:30:28		
11 May	-3.9	03:02:17	27°	WSW	03:03:55	72°	SSE	03:07:13		
12 May	-3.8	02:12:51	57°	S	02:12:56	58°	SSE	02:16:12		
12 May	-4	03:46:07	10°	W	03:49:26	86°	S	03:52:46		
13 May	-2.3	01:23:23	26°	ESE	01:23:23	26°	ESE	01:25:08		
13 May	-4	02:56:04	18°	W	02:58:24	85°	S	03:01:44		
14 May	-4	02:06:34	48°	WSW	02:07:22	78°	S	02:10:41		
14 May	-3.9	03:40:36	10°	W	03:43:55	75°	S	03:47:13		
15 May	-3	01:16:57	50°	ESE	01:16:57	50°	ESE	01:19:37		
15 May	-3.9	02:49:39	11°	W	02:52:51	84°	S	02:56:10		
16 May	-2	00:27:15	21°	E	00:27:15	21°	E	00:28:32		
16 May	-4	01:59:56	24°	W	02:01:47	86°	S	02:05:06		
16 May	-3.7	03:35:01	10°	W	03:38:16	53°	SSW	03:41:31		
17 May	-4	01:09:57	50°	WSW	01:10:42	82°	S	01:14:01		
17 May	-3.9	02:43:56	10°	W	02:47:14	68°	SSW	02:50:32		
18 May	-4	00:16:19	10°	WSW	00:19:37	72°	SSE	00:22:55		
18 May	-4	01:52:51	10°	W	01:56:10	80°	S	01:59:28		
18 May	-3.1	03:29:29	10°	W	03:32:31	33°	SSW	03:35:31		
18 May	-2	21:50:08	10°	S	21:52:27	18°	SE	21:54:46		
18 May	-3.8	23:25:18	10°	WSW	23:28:33	58°	SSE	23:31:49		
19 May	-3.9	01:01:44	10°	W	01:05:03	86°	S	01:08:23		
19 May	-3.6	02:38:19	10°	W	02:41:30	46°	SSW	02:44:41		

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
19 May	-3.5	22:34:21	10°	SW	22:37:30	43°	SSE	22:40:40		
20 May	-3.9	00:10:37	10°	W	00:13:56	85°	S	00:17:15		
20 May	-3.9	01:47:10	10°	W	01:50:27	61°	SSW	01:53:42		
20 May	-2.4	03:24:08	10°	W	03:26:35	19°	SW	03:29:02		
20 May	-3	21:43:32	10°	SW	21:46:29	31°	SSE	21:49:28		
20 May	-4	23:19:30	10°	WSW	23:22:48	78°	S	23:26:07		
21 May	-4	00:56:02	10°	W	00:59:21	75°	S	01:00:57		
21 May	-1.7	02:32:45	10°	W	02:33:32	15°	W	02:33:32		
21 May	-3.9	22:28:25	10°	WSW	22:31:42	65°	SSE	22:34:59		
22 May	-4	00:04:54	10°	W	00:08:13	84°	S	00:10:31		
22 May	-2.4	01:41:30	10°	W	01:43:11	25°	WSW	01:43:11		
22 May	-3.6	21:37:23	10°	SW	21:40:35	50°	SSE	21:43:49		
22 May	-3.9	23:13:45	10°	W	23:17:04	86°	S	23:20:23		
23 May	-3.7	00:50:18	10°	W	00:53:18	52°	SW	00:53:18		
23 May	-3.9	22:22:35	10°	W	22:25:53	82°	S	22:29:12		

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>

David Murton's Radio Broadcast

On 1st Tuesday of the month, 1.40pm on the Lesley Dolphin show on BBC Radio Suffolk – now digital (channel 10c) and FM 103.9 (Ipswich), 104.6 (west Suffolk), 95.5 (Lowestoft), 95.9 (Aldeburgh) and the internet. <https://www.bbc.co.uk/radiosuffolk>

BAA news

BAA meetings in May

Comet Section Meeting Saturday, 2019, May 18 - 10:00

BAA Ordinary Meeting & George Alcock Memorial Lecture Wednesday, 2019, May 29 - 17:30

BAA meetings in June

Historical Section Annual Meeting Saturday, 2019, June 8 - 10:00, Newbury

Webb Deep-Sky Society Annual Meeting, Cambridge Saturday, 2019, June 15 (All day)

A short AGM followed by a day of talks from amateurs and professionals

BAA Summer Meeting "Astronomy and Space today" Saturday, 2019, June 22 - 10:00, Rutherford Appleton Laboratory

Bentley Star Party

Andy Gibbs

I would like to thank everybody who helped out at last night's Star Party at Bentley.

After a quiet start, we had a steady stream of visitors, who were attending an event in the nearby Case is Altered pub. They enjoyed excellent views of the first quarter Moon through a variety of telescopes.

A photo is attached of OASI members setting-up before the event.



Solar prominence

Martin Cook

Four days of clear skies gave me the opportunity to image a large prominence arising from the edge of the sun.

I think it may be associated with a large sun spot which had recently crossed the face of the sun.

I managed to get at least one image on each day.

The set of images show the changes in the atmosphere of the sun.

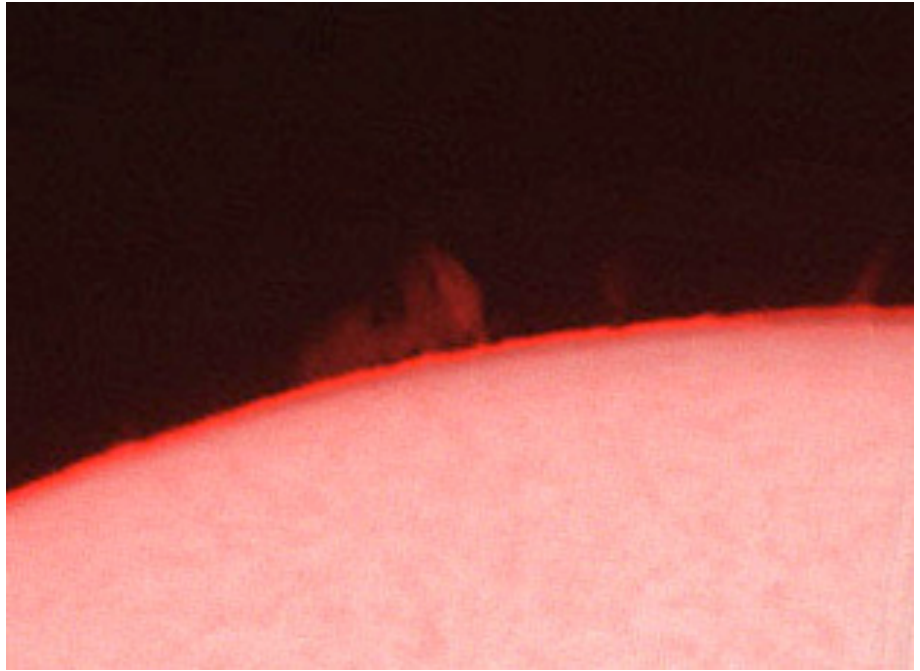
Lunt LS50THa B600PT H-alpha Solar Telescope.

QHY5P-II Colour camera.

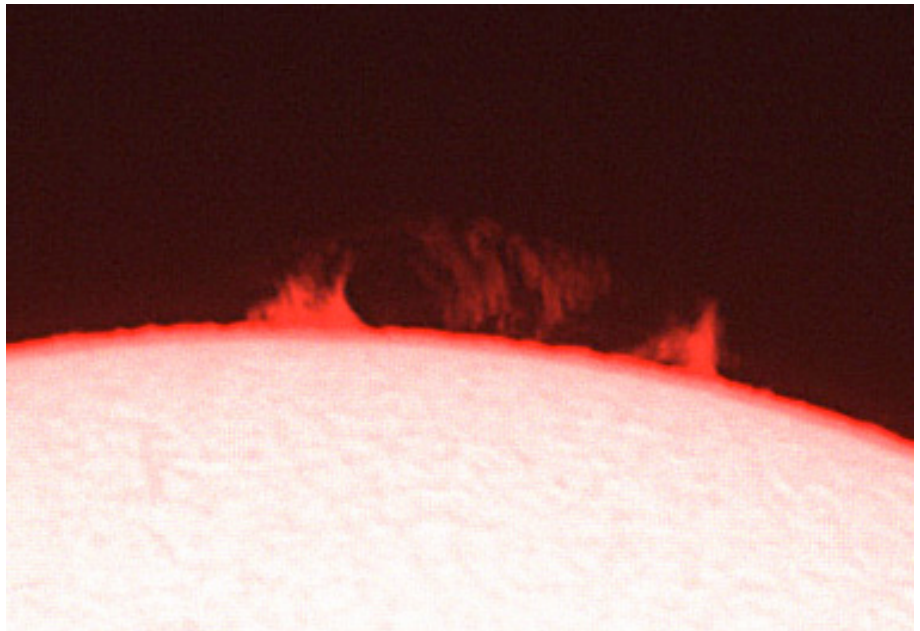
A 40 sec video was taken for each image then stacked/processed in registax 6

Photoshop was used to crop and adjust the contrast of the images.

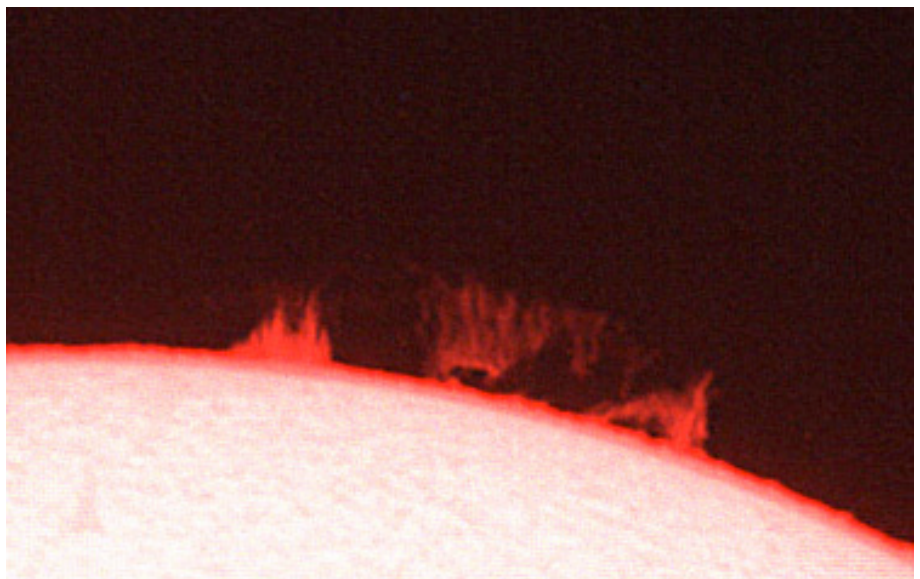
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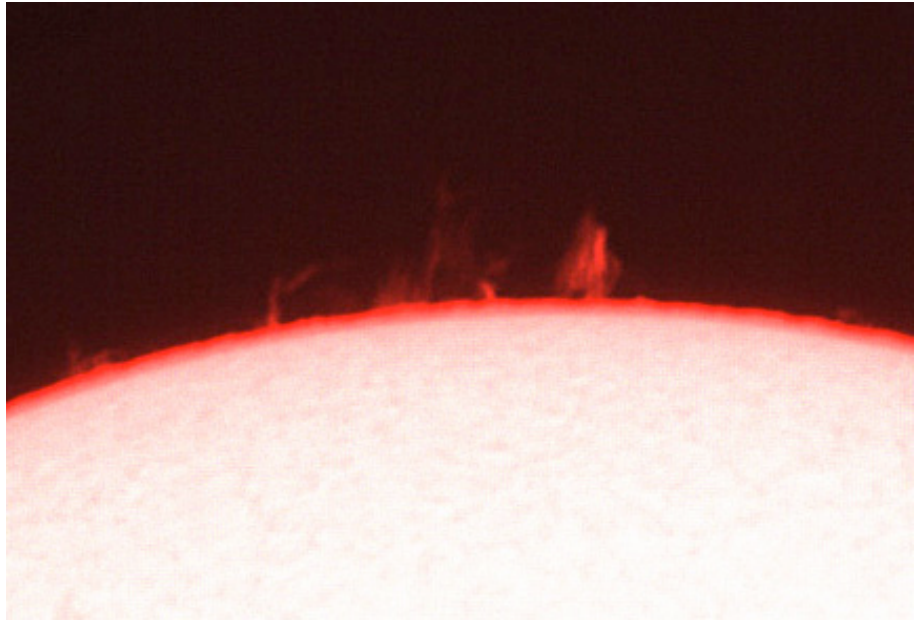
20 4 2019 13:32 Hr



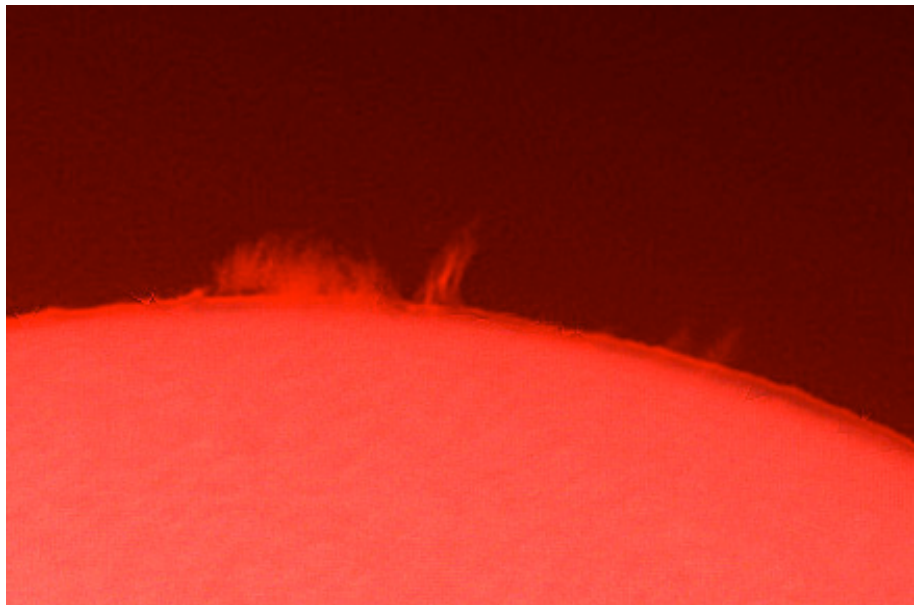
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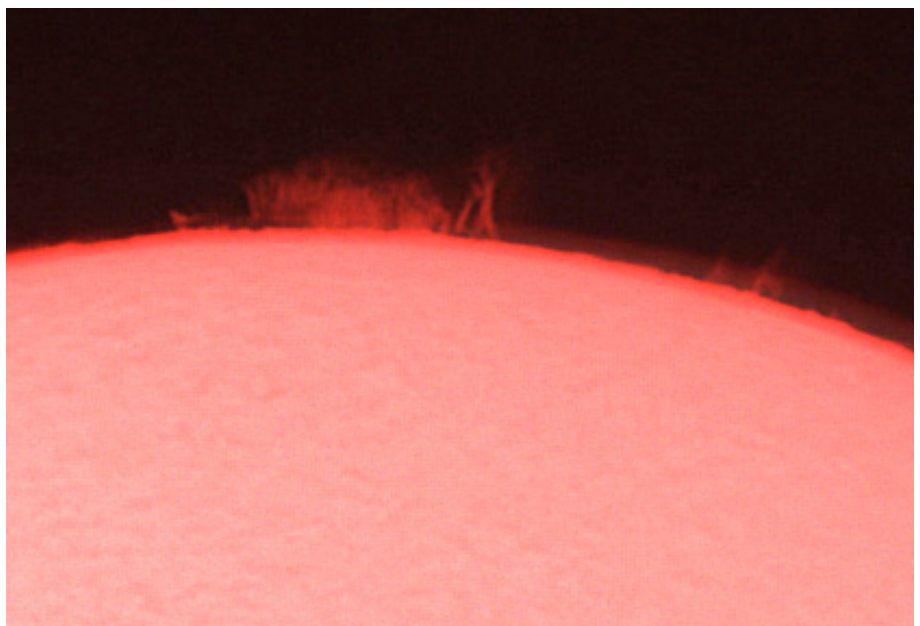
21 4 2019 13:14 Hr



**22 4 2019 9:52 Hr high
cloud**



22 4 2019 12:48 Hr



Notes from the Library

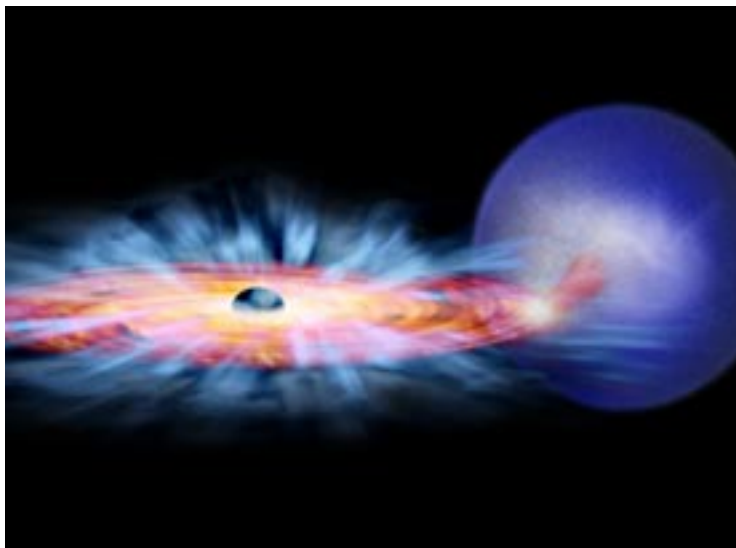
Andy Willshire

Black Hole Activity, Magnetic Fields & MOJAVE.

Understanding the astrophysical rationale of collimated jets is providing confirmation that supermassive black holes are to be found at the centre of most galaxies. The jets in question are able to create a radio emission that can be manipulated to calculate the magnetic field strength adjoining the black hole. They are found inside accretion discs caused by energetic interactions, whose working operations may be found in correlation with black holes, neutron stars and pulsars. It is thought that they could be caused by the magnetic influence of electrical currents pushing out diametrically opposite beams away from its central source.

Prior to this, research teams had accumulated using the VLBA (very long baseline array), radio transmission data from galaxies considered "radio -loud". Maps of this radio data were then constructed at contrastive wavelengths. Transpositions in jet characteristics between disparate maps allowed the researchers to calculate the field force in the black hole area.

A study of 2014 that looked at supermassive black holes existing around the centres of galaxies established that a large part of the systems dynamics involved magnetic fields. It was set up by the U.S. Department of Energy's Lawrence Berkeley National Laboratory and the Max Plank Institute in Bonn, Germany. The study's lead-author, Mohammad Zamaninasab (formerly at the MPIfR.) considered that they had found radio emissions from a black hole's jets that could be employed to gauge the magnetic field strength close by the black hole. Active galactic nuclei's formation occurs at the point at which matter coalesces around supermassive black holes and is ejected, due to magnetic forces. These magnetic forces could be as powerful as gravity at this point. Looking at the findings from a conceptual angle, complicated computer simulations have been used substantiating evidence to show that gravity is balanced if sufficient magnetic field is produced by the in-falling gas. Intrinsically, actions effect the responses of gas adjacent to the black hole. Contemporary conjecture suggests that the force of the magnetic field in the vicinity of the black hole governs the strength of the jets and its luminosity as they appear at radio wavelengths, and is directly proportional to the jets magnetic field



Growth of black holes by absorbing gas from neighbouring stellar objects into an accretion disc.

Picture credit: NASA/CXC/M.Weiss

A large portion of these measurements became available to the researchers through a separate observing program known as MOJAVE (Monitoring of Jets in Active galactic nuclei with VLBA Experiments), whose task was to monitor hundreds of jets discharged by supermassive black holes. It is an on - going program which will check and

observe radio brightness and polarization modifications in jets allied with active galaxies that can be seen in the Northern sky. During the VLBA 2cm Survey, data was collected during 1994 - 2002 which found that the jets were energised by the accretion of matter onto 109 solar mass black holes, detected in the nuclei of active galaxies. The use of the VLBA at a wavelength of 2cm allows full analysis of light rays moving in different directions with an angular resolution better than 1 milliarcsecond. MOJAVE's program helps to support one of the objectives of the VLBA, which

is to supply regular observation of the movement in AGN jets, and quantify data. It is also straightforward to manage multi-frequency observations of parsec-scale jets concurrently, using VLBA.

It has also been observed that some black holes are extremely active and devour nearby matter and discharge jets at ultra-high rapidity, while others appear to be torpid. In order to elucidate these observations, the Stratospheric Observatory for infrared Astronomy (SOFIA) has been used. A new additive to SOFIA's armoury is the High-resolution airborne wideband camera-+. This is very responsive to the infrared emission from symmetrical dust grains, which allows for magnetic fields to be studied, in the range 42-201 μ m. Near and mid-infrared range cameras are also available.

SOFIA is stored on a Boeing 747SP wide-body carrier, with adaptation to allow a 2.5m effective diameter Cassegrain reflecting telescope with two Nasmyth foci, one for theoretical IR focus and the other for guiding, to be used for infrared astronomy at an altitude of about 41,000 ft.



SOFIA soars over the snow-covered Sierra Nevada mountains with its telescope door open during a test flight. SOFIA is a modified Boeing 747SP aircraft.

Credits: NASA/Jim Ross

Picture credit: <https://www.nasa.gov/sites/default/files/thumbnails/image/sofiaoversierra.jpg>

It is because of these new results, that scientists involved in the theories of magnetic fields and their responses to black holes agree that the need to re-evaluate their interpretation is paramount.

References:

1. <https://www.mpifr-bonn.mpg.de/pressreleases/2014/6>
2. <https://iopscience.iop.org/article/10.1088/0004-6256/147/6/143>
3. https://en.wikipedia.org/wiki/stratospheric_observatory_for_infrared_astronomy

ISS transiting the Sun

Nigel Evans

After waiting for quite a long time to capture the ISS transiting the Sun, an opportunity came around on April 13. The weather today was rather mixed, with clouds, sunny periods and even sleet and hail. Even so I decided to chance it. By good fortune it was clear at the appointed time. 15 minutes later sleet appeared again, by which time I had closed up the observatory.

Focusing on the Sun was made easier with quite a decent-sized sunspot in the centre (yes, I did wonder if it was dirt on the camera!). The resultant video isn't stunning, partly due to the distance to the ISS, over 900km away.



Well, I am pleased with it.

M51 revisited

John Hughes

What started out as a test of my new camera (ZWO ASI294MC Pro Cool) rapidly became a project and has taken up way too much time. Across three nights over Easter I managed to acquire 5 hours of light frames on M51 and a further 100 minutes of Ha 12nm data as well. Couple this with only 12 hours sleep across 3 nights I was a pretty cranky Easter bunny last weekend!

Unfortunately the Ha data seemed to have strange artefacts in it after stacking which I haven't quite figured out yet and as the target is quite small in a 360mm aperture it doesn't really have much of an impact anyways.

Its been frustrating getting to grips with how to combine Ha with a one shot colour camera and even more so to then see it didn't really have much of an effect, but you live and learn. Attached then is the RGB version of 5 hours of lights, darks, bias and flat frames.



Tomline Refractor Training (at the Observatory)

Martin Cook

If you would like training to become an approved user of the Tomline refractor, please contact Martin Cook.



Society Excursion 2019

It has been many years since an OASI excursion has been organised. At present this is just a feasibility study. In previous years we have gone to Herstmonceux, RGO Greenwich, The National Space Centre Leicester, Newton's House, Mullard Radio Observatory Cambridge, Bletchley Park. Attendance will be open to any one and not just members. I am tentatively thinking about organising this for a Saturday in October, but only if I get sufficient response.

We can either hire a coach privately or join an existing excursion. Galloway coaches do a excursion to RGO Greenwich. The price includes a guided tour and a meal, but there are only a few a year. For this one we may have to book for next year now.

If you are interested, please contact me, Roy Gooding at secretary@oasi.org.uk

BAA News

Pete and Paul's Winchester Observing Challenge 2019

This April brought the BAA another excellent Winchester weekend, perfectly organised by Ann Davies and ably assisted by Alan Dowdell and pals. For those of you new to the organisation, this originated as a BAA training weekend for amateur astronomers, instituted by Alfred Curtis and originally held in King Alfred's College in Winchester but now in the wonderful balmy surrounds of Sparsholt Horticultural College just outside of Winchester City and its lights.

Pete Lawrence and Paul Abel laid down a set of challenges for the coming year, in what is now becoming an annual event. You can find the details here with from observations of the Transit of Mercury in November, including viewing Mercury against the Spicule Layer at the beginning of the transit, through to imaging the Moon as it passed M44 earlier in April (this was observed by many members and Len Adam and Graham Winstanley posted some fine images to their BAA Members Pages). With 10 challenges in all, there is plenty to choose from - and a year to complete them.

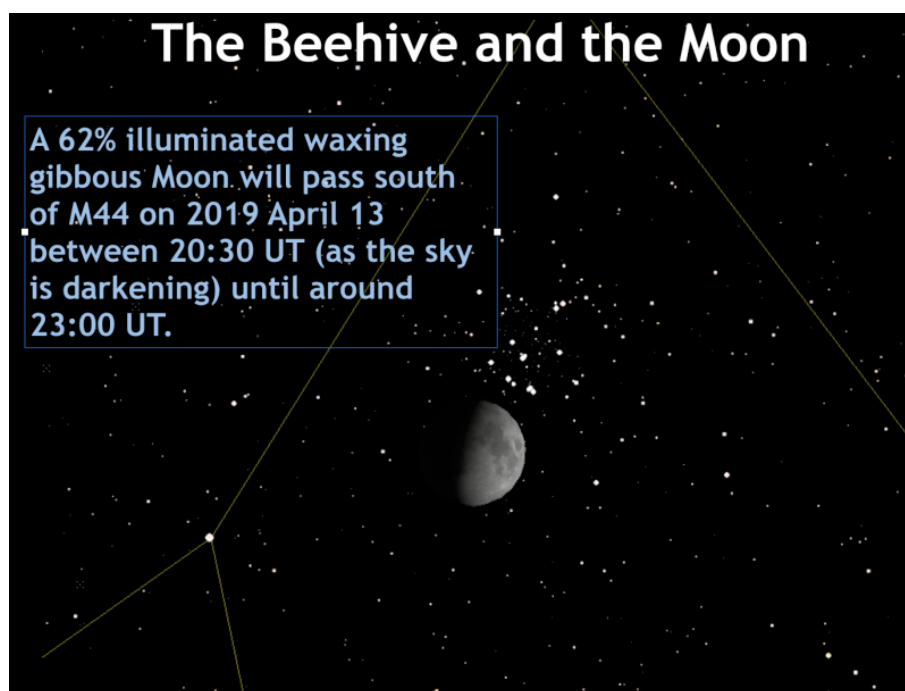
But don't miss out on Jeremy Shears' campaign to observe the old nova HR Lyr, which he posted on the BAA website on 12th April. Jeremy states, "Apart from photometric monitoring, HR Lyr has not received much attention. The aim of this campaign, which will run until the end of 2019, is to deepen our understanding of the photometric behaviour, on a range of timescales, as well as attempting to characterise its spectroscopic properties and variations. It would be wonderful to shed some light on HR Lyr's behaviour some one hundred years after Miss Mackie's discovery!" Johanna Mackie worked as a computer at the Harvard College Observatory 1903-1920, and won a gold medal for her work from the AAVSO. See her in this famous group picture of the Harvard College Computers left above.

Staying with variable stars, there is currently a rare outburst of the dwarf nova, AL Com. You also get the chance to observe the fine spiral galaxy M88 nearby. Have a look at Gary Poyner's comment in the Discussion Forum.

Observer's Challenge – Occultation of M44 the Beehive Cluster by the Moon

Date: 2019 April 13th

Start Time: 2000 UT (2100 BST) to 2300 UT (Midnight BST)



The moon south of the Beehive cluster. Image by Pete Lawrence

On 2019 April 13th, a 62% illuminated waxing gibbous Moon will pass south of the Beehive Cluster (also known as M44) in the constellation of Cancer. From around 2000 UT (as the sky is starting to get darker) to 2300 UT, the Moon will pass in front (i.e. occult) a number of stars in the cluster (see Figure 1)

For those people who attended the Winchester Weekend on 5th-7th April, you will remember that this was one of 'Pete and Paul's Observing challenges'. Even if you weren't at Winchester, this is a lovely event to watch and requires only a pair of binoculars or a small telescope to view.

There are three stars that are in easy range of binoculars or a small telescope to watch out for and these are:

HIP 42327, a mag +6.7 star which will reappear from the bright limb at about 2025UT

HIP 42542, a mag +6.8 star which is occulted at 2040UT and re-appears at 2126UT

TYC-1395-2321-1, a mag +7.8 star which is occulted at 2045UT and re-appears at 2148UT

Figure 2 shows the location of these stars in the Beehive Cluster. The times given here will vary a little depending upon your location in the country. There are a number of free planetarium software now available which you can use to find out the timings of the occultations from your location.

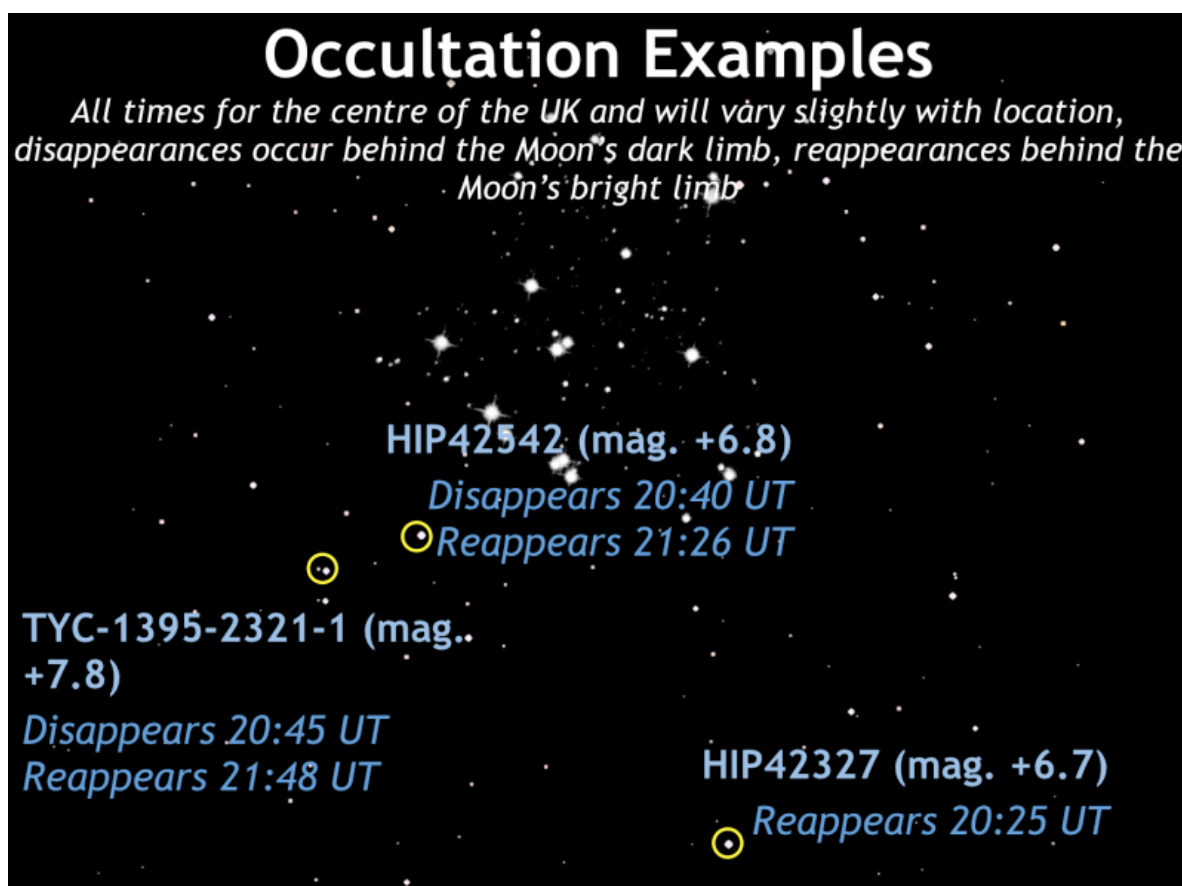


Figure 2: The location of HIP 42327, HIP 42542 and TYC-1395-2321-1 in the Beehive Cluster along with the occultation times. Image by Pete Lawrence.

[Paul G. Abel](#)

M51 revisited