No. 503 Registered Charity 271313 **December 2014**

OASI News

The newsletter of the Orwell Astronomical Society

Photo by Kevin Fulcher : Orion Nebula: 2x 20s exposure, ISO 800, Canon 30d camera, Skywatcher Evostar 80ED refractor, EQ5 mount with RA drive. Stacked in Deep Sky Stacker

Trustees: **Mr Roy Adams** **Mr David Brown** **Mr David Payne**

Honorary President: **Dr Allan Chapman D.Phil MA FRAS**

An Astronomy Window

Whilst on a recent bicycle tour around the Norfolk Broads, I came across an interesting oddity: an 'Astronomy Window'. Located in the south nave aisle of St. Mary's Church at South Walsham, it is believed to be part of a set intended for secular use. Anybody know where the rest of the set is?

Alan Smith

From Simon Knot's http://www.norfolkchurches.co.uk/swalshammary/southwalshamstmary.htm

"Most compelling of all is a single pane depicting 'astronomy'. It probably wasn't intended for church use, and may have been part of a set. Amusingly, when barmy Arthur Mee saw it in the 1930s, he misread the inscription, and reported in the *Kings England* series that South Walsham has a window depicting St Romona set among stars. Bless him."

"Ed"

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Society Contact details

Observatory (meeting nights only) 07967 519249

Email queries: info@oasi.org.uk

facebook.com/pages/orwell-astronomical

Twitter: @OASIpswich

Forum: forum.oasi.org.uk/index.php

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 or emailed directly to those who only receive the e-version of the News.

Access into the School Grounds and Observatory Tower

Please use the third gate into the school grounds. If the Black door entrance at the base of the observatory tower is locked, please phone the observatory mobile, 07967 519249 during meeting hours.

The key to the toilets in the school gym is located in the seating area in the Belvedere room.

Access code

As reported last month, ***the gate access code has changed.*** Please contact the Membership Secretary to obtain the new code.

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, rtfd, doc, docx, odt, Pages
Spreadsheets: xls, xlsx, OpenOffice/LibreOffice, Numbers
Images: tiff, png, jpg

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

The Newsletter

We now use an outside printer. The cost of doing so means that only the cover pages can be printed in colour. **The full colour version is now available from the OASI web site.**

Newsletter archive 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 2014

Chairman	David Murton	Chair committee meetings, represent OASI to external bodies
Secretary	Roy Gooding	Respond to enquiries, Press & publicity, Outreach meetings, Open days
Treasurer	Paul Whiting FRAS	Finance, Visits by outside groups, Supervision of applications for grants, Taster evenings, Public appreciation of astronomy.
Committee	James Appleton	Web site
	Bill Barton FRAS	Safety & security
	Martin Cook	Membership, Tomline refractor maintenance
	Tina Hammond	Librarian
	Peter Richards	Lecture meetings, Email distribution lists
	Martin Richmond-Hardy	Newsletter
	John Wainwright	Equipment curator
	Mike Whybray	Workshops
	Mike Norris	Newbourne Observing Group

Society Notices

Welcome to New Members

Alexander Sinclair

Committee Meeting Tuesday 9 December

Venue TBA Time: 20:00 to 22:00

This meeting is open to any member who wishes to come along

Annual General Meeting Saturday 24th January 2015

Venue Museum Street Methodist Church Hall

Time: 20:00

All members are invited to attend the AGM.

2015 Committee

If you would like to stand for the committee for 2015 please send **your name**, and those of your **Proposer** and **Seconder** to Roy Gooding **2 weeks before the AGM**. There about 5/ 6 committee meetings in the year. Every committee member is given responsibility.

Existing members who wish to remain on the committee for 2015 need not reapply

Contacts

A printed list of Committee and other activity contacts is available from the Secretary or the Observatory. Email links are available in the pdf version of this newsletter.

For general enquiries please email info@oasi.org.uk and your enquiry will be forwarded for action.

Society Events Diary

For the latest event details, please see www.oasi.org.uk/Events/Events.shtml

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

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
Discussion Forum http://forum.oasi.org.uk/index.php
Subscribe to the OASI Yahoo group by emailing oasi-subscribe@yahoogroups.com

Diary list

Date and Time	Location	Contact	Event
Weekly, every Wednesday, 20:00	Orwell Park Observatory	Martin Cook, Roy Gooding	General observation (weather permitting) using a variety of telescopes.
Tuesday, 2 December 20:00	Orwell Park Observatory	Paul Whiting, FRAS	**Public access event.** Observatory tour. **Places must be booked.** Further info and book a place.
Monday 8 Dec 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Tuesday 9 Dec 20:00	Shepherd & Dog, Nacton	Roy Gooding	Committee Meeting
Wednesday 10 Dec	Nacton Village Hall	Mike Whybray	Workshop: James Appleton: Rømer Revisited Reprised
Saturday, 13 Dec 14:30	University College London, Christopher Ingold Building, 20 Gordon Street, London, WC1H 0AJ (map)	http://britastro.org/meetings	BAA Ordinary Meeting and BAA Christmas Lecture
Tuesday 16 Dec 20:00	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Wednesday 17 Dec 20:00	Shepherd & Dog, Nacton	Roy Gooding	Christmas meal
Monday 22 Dec 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	NOG & Noggin Christmas Meeting and Astro Bring & Buy.
Monday 29 Dec Time TBD	TBA	James Appleton	Field trip to observe grazing lunar occultation of the magnitude 6.6 star 88 Psc.

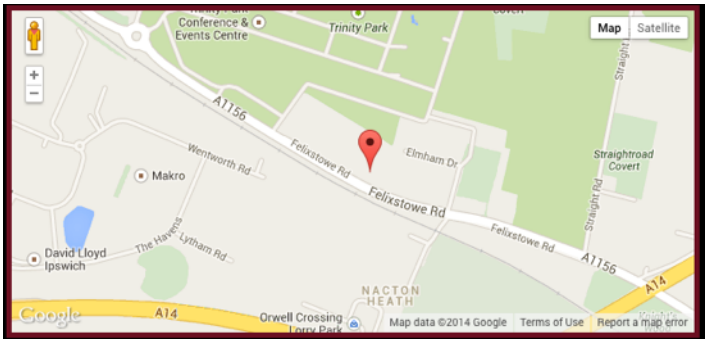
Date and Time	Location	Contact	Event
2015			
Saturday 17 Jan 19:00-21:30	Bentley Village playing field (at the bottom of Case Lane). Map	Roy Gooding	Bentley Star Party TBC
Tuesday 20 Jan 20:00	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Wednesday 21 Jan 18:00	Gainsborough Library, Clapgate Lane, Ipswich	Paul Whiting, FRAS	Public Outreach event Talk 6pm. Telescopes from 7pm.
Saturday 24 January 20:00	Methodist Church Hall, Black Horse Lane, Ipswich	Roy Gooding	The AGM
Saturday, 31 January 14:30	Burlington House Picadilly London W1J 0DU	http://britastro.org/meetings	BAA Ordinary Meeting Dr Joanna Dunkley: The invisible universe Dr Konstantinos Dimopoulos: The Hot Big Bang model Sky Notes: Callum Potter
Friday, 6 Feb and Saturday, 7 Feb	Kensington Conference and Events Centre London	http://europeanastrofest.com	European AstroFest 2015
Wednesday 11-16 Feb	North Norway	Paul Whiting, FRAS	OASI aurora observing field trip to northern Norway, 11-16 February 2015.
Tuesday 17 February 20:00	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Saturday, 7 March 10:00	Shurdington Social Centre, Bishop Road, SHURDINGTON, Cheltenham, Gloucestershire, GL51 4TB	http://britastro.org/meetings	BAA Deep Sky Section Annual meeting
Saturday, 7 March 19:00	Methodist Church Hall, Black Horse Lane, Ipswich	Peter Richards	**Lecture Meeting.** Damian Peach
Tuesday 17 March 20:00	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Friday 20 March 08:00	Outside Isaacs, 7 Wherry Quay, Ipswich IP4 1AS	Roy Gooding	**Public access event:** Partial Eclipse viewing (maximum eclipse at 9.47 am)

Date and Time	Location	Contact	Event
Wednesday, 25 March 17:30	Burlington House Piccadilly London W1J 0DU	http:// britastro.org/ meetings	BAA Special General Meeting and Ordinary Meeting Prof. Jonathan Rawlings (UCL): “Dust formation & novae” Bill Sheehan (USA): “100 years of Pluto" Dr Stewart Moore: “Charles Messier - from Birth to Death” Dominic Ford: Sky Notes
Friday, 27 March Saturday 28 March 19:30	Orwell Park Observatory	Roy Gooding	OASI Open evenings
Sunday 29 March 02:00			**British Summer Time begins**
Tuesday 07 April 20:00	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Friday, 10–12 April	Sparsholt College, Hampshire	http:// britastro.org/ meetings	BAA Winchester Weekend
Saturday, 25 April	Ashford	http:// britastro.org/ meetings	BAA Spring Meeting: "Amateur and Professional collaboration”
16/17 May or 23/24 if cloudy	Christchurch Park	Roy Gooding	Solar Observing event
Wednesday, 27 May 17:30	Burlington House Piccadilly London W1J 0DU	http:// britastro.org/ meetings	BAA Ordinary Meeting and George Alcock Memorial Lecture Denis Buczynski: “George Alcock Memorial Lecture” Title to be confirmed Tony Freeth: “The Antikythera Mechanism - A machine to predict the future” Nick James: Sky Notes
Friday Sept 4 - 19:00 to Sunday Sept 6 - 12:00	Rutherford Appleton Laboratory, near Didcot	http:// britastro.org/ meetings	BAA Autumn Weekend Meeting “Astronomy in Space”

The Diary now includes BAA meetings and other non-local events which may be of interest to members.

The Christmas Meal

Wednesday 17 December 8pm at the Shepherd & Dog, Nacton



www.greatbritishcarvery.co.uk/our-pubs/shepherd-dog

Starter

Prawn cocktail

Pork, chicken liver and real ale pâté

Homemade brocolli and Leicestershire Stilton soup

Breaded Camembert

Mains

The Great British Carvery:

Norfolk Turkey, Saxon Beef, Shoulder of Lamb and Gammon, with all the trimmings

Pan-fried salmon fillet

Root vegetable, apricot and nut bake

Puddings

Belgian chocolate and hazelnut choux buns

Traditional Christmas pudding

Apple and almond strudel tart

Baked vanilla cheesecake

Please let Roy Gooding know if you will be attending and your choice of menu.

Deposit: £5 Full cost: £16.95

As many members hold a Diamond Club card, the final cost may be less than £16.95

Have you let Roy know your menu choices?

Newbourne Observing Group

michael.norris17@btopenworld.com omahony.mike@gmail.com

We meet at The Newbourne Village Hall, Mill Lane, Newbourne, IP12 4NP

The Newbourne Observing Group (The NOGs) 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.

November Meetings are on Monday 8th & 22nd December from 7pm.
All welcome, with or without telescopes.

The meeting on 22nd December is our Christmas meeting Nog & Noggin plus

The OASI Bring & Buy Sale!

Find a new owner for those pre-loved eyepieces and sundry other stuff you've rarely used. Our Treasurer will be happy to assist you in parting with your cash and take a small percentage for club funds.

Small Telescope Observing Nights (STONs)

Contact: Gerry Pilling

These take place at Orwell Park Observatory.

2014	Dec 16			
2015	Jan 20	Feb 17	March 17	Apr 7

Outreach Meetings

Contact: Roy Gooding

Partial Solar Eclipse Event

We are organising a solar eclipse event in a prime Ipswich location on 20th March next year for the best eclipse visible locally for many years. It will be 85%. As it is a Friday morning, members are advised to get it in their diaries now, especially those who have to book leave from work. OASI members who attend will be given a free pair of certified solar glasses to use and keep, plus these will be available for the public to purchase on the day at a very reasonable price.

We are also considering a parallel event at the Observatory as the pupils will not yet have left for half term.

Please contact David Murton if you are able to help on the day at either location.

Partial Solar Eclipse 2015

Bill Barton FRAS

Here are the local circumstances for the partial solar eclipse of March 20, 2015. These days NASA presents this data on a 'Google Map' that you can zoom in on and clip to get the data. Below is for the Waterfront in Ipswich (see the event in the Diary). The clocks will change on Sunday 29 March next year so the times shown need no adjustment.

Lat.:	52.053° N	
Long.:	1.1608° E	Partial Solar Eclipse
Magnitude:	0.867	
Obscuration:	84.28%	

Event	Date	Time (UT)	Alt	Azi
Start of partial eclipse (C1)	2015/03/20	08:26:41.1	21.0°	119.9°
Maximum eclipse	2015/03/20	09:33:03.9	29.0°	135.9°
End of partial eclipse (C4)	2015/03/20	10:43:15.3	35.1°	155.4°

International Sun Day

OASI along with DASH, LYRA and Breckland are organising a large solar event at the Minsmere visitor centre to coincide with International Sun Day on 21st June next year. There will be solar scopes, lectures, a solar video link onto a large screen, displays, etc. Anyone who can help please let David Murton know. Please note that only scopes with propriety solar filters will be allowed, Unfortunately no homemade filters or solar projection will be allowed due to health and safety restrictions.

Provisional dates for 2015

Bentley Star Party

Saturday 17 Jan 19:00–21:30 Bentley Village playing field (at the bottom of Case Lane). Map

Christchurch Park Star Party

Option 1: Saturday 31st January Option 2: Saturday 28th February

Astronomy in the Park

Option 1: Saturday / Sunday 16/17 May Option 2: Saturday / Sunday 23rd / 24th May

Roy is still waiting for confirmation on these dates

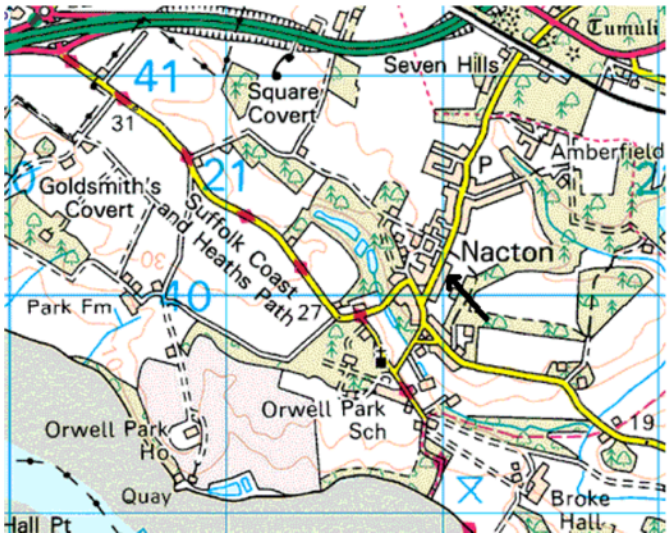
Workshops

Nacton Village Hall IP10 0EU
Contact Mike Whybray

Doors open at 7:30pm.

Workshop starts 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, interactively 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!



Nacton Village Hall is next to the small village school, just below and left of the N in Nacton on the map. Please park on the same side of the road as the hall, but avoid parking on the white lines which mark clear spaces for various driveways and passing places. The police do occasionally check up on this!

Do you have a subject you could workshop? Give Mike Whybray a call! workshops@oasi.org.uk

10 December: James Appleton – Rømer Revisited Reprised

The fourth workshop describing OASI's efforts to estimate the speed of light! For over 2 years, members of OASI and others have observed eclipses of the Galilean satellites of Jupiter. James will provide an update on work to follow the approach of Ole Rømer (1644–1710) to use the observations to estimate the speed of light. A theoretical investigation identifies the factors that limit the accuracy of the method. Finally, Rømer's own observations are re-analysed from a modern perspective. The project was featured as part of NAW 2014.

28 Jan 2015: Neil Norman – Comets Through The Centuries

A journey through the ages with the heavens' most maverick of visitors; from the ancient Chinese astronomers recording "broom stars" to the landing of a probe on a comet .

Along the way we will see how these objects were feared by the ancients, determined by Newton to assist with his laws of gravity, predicted by Halley to return on repeated perihelia passages and all the way to modern times.

I began my interest in comets when as a 14 yr old I observed Halley's comet in 1986.

In August 2013 I created the Facebook group Comet Watch and also currently provide visual observations for both NASA and ESA as they continue their collective catalogues of cometary data.

I guest blogged for the US magazine "Astronomy" recently on the discovery of comet C / 2014 Q2 Lovejoy, discovered by my good friend Terry Lovejoy in August this year.

I have done also 2 Internet radio shows for Astronomy.Fm's Under British Skies , and also write a monthly piece in my local community magazine about astronomy in general.

Neil Norman

Astronomy.FM http://astronomy.fm/2014/02/16/astronomy-fm-meets-the-comet-experts/

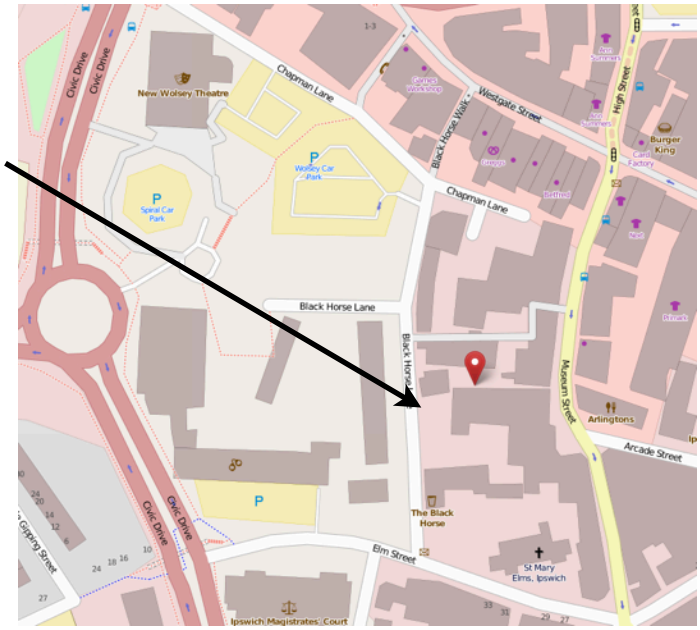
Lecture Meetings

These take place in The Methodist Halls, Upstairs room, Black Horse Lane, Ipswich

Saturday 7th March: Damian Peach

8pm start

Read about planetary photographer, Damian Peach, here:
www.damianpeach.com/about.htm



Dark Skies 1 – Suffolk Coast and Heaths AONB initiative

Paul Whiting, David Gwynn from Darsham society and myself have had a meeting with Simon Amstutz the manager of the Suffolk Coast & Heaths and Stour Valley Area of Outstanding Natural Beauty's with a view to how we can help them to protect our night skies.

It was a very productive meeting and they are very keen to progress various courses of action as the quality of the night sky fits in well with their remit to protect the natural environment.

Possible actions include tackling existing and potential source of light pollution, consulting on planning applications with a consideration to lighting and its effect on sky darkness, publicising the area as a dark sky location, increasing awareness among land owners, local authorities, the public, etc and potentially going for international dark sky status.

These will all involve much work and OASI and DASH will need to give a lot of help and advice to achieve these aims.

If you are willing to help please let me know and I will keep you posted on progress.

This has the potential to be a major development for astronomy in Suffolk. Simon has already agreed to approach Sizewell power station on behalf of Darsham with regard to some light pollution that has arisen recently. The AONB has the status that we lack and the clout to get things done so we must support them in any way we can.

David Murton
Chairman Orwell Astronomical Society (Ipswich)

Dark Skies 2 – Square of Pegasus Survey

Please continue to send in your reports to Paul Whiting.

Location (Town/village, Street and postcode rather than “my back garden”)
Date & Time
Number of stars seen
General conditions
Your name

The Night Sky in December

Martin RH

Moon

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

1st Quarter	Full Moon	Last Quarter	New Moon
28 December 18:31	06 December 12:27	14 December 12:51	22 December 01:36

Times are UTC at Orwell Park Observatory 52.0096°N, 1.2305°E

Sun and planets

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

Object	Date	Rise	Set	Mag.	Notes
Sun	1	07:41	15:47		Winter solstice Dec 21, 23:03
	31	08:03	15:53		
Mercury	1	07:27	15:26	-0.6	
	31	09:11	16:35	-0.7	
Venus	1	08:36	16:09	-3.7	
	31	09:15	16:59		
Mars	1	11:17	19:07	1.1	Mars is visible low down after sunset.
	31	10:16	19:24		
Jupiter	1	21:33	12:13	-2.1	Jupiter is visible late evening.
	31	19:35	10:18	-2.2	
Saturn	1	06:33	15:19	1.3	Saturn is not visible
	31	04:56	13:34		
Uranus	1	13:39	02:25	5.8	Uranus is still visible in the evening
	31	11:44	00:30		
Neptune	1	12:36	22:45	7.9	Neptune is an early evening object
	31	10:43	20:53		

Meteor Showers

Source: BAA Handbook 2014 p95-7

Shower	Limits	Maximum	ZHR	Notes
Puppids-Velids	Nov 27 - Jan	Dec 9 Dec 27	15	Two of several radiants in Pupis, Vela and Carina from November to January. This meteor shower is mostly a treat for observers spending the holiday season in the Southern Hemisphere.
Geminids	Dec 8-17	Dec 14:07	100+	Richest of the annual showers, with slow meteors and a god proportion of bright events. Quite favourable
Ursids	Dec 17-25	Dec 22-23	10?	Under-observed shower which has produced outbursts in 1945, 1982 and 1986. Very favourable.

Visible ISS passes ≥15º max altitude

Martin RH

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

Some nice early evening passes this month.

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
10 Dec	-1.3	17:55:29	10°	SSW	17:57:23	19°	SSE	17:57:23	19°	SSE
11 Dec	-0.9	18:40:50	10°	SW	18:42:05	21°	SW	18:42:05	21°	SW
12 Dec	-2.4	17:50:49	10°	SW	17:53:52	35°	SSE	17:53:55	35°	SSE
13 Dec	-1.7	17:00:56	10°	SSW	17:03:43	25°	SSE	17:05:40	15°	E
13 Dec	-1.3	18:36:42	10°	WSW	18:38:27	28°	WSW	18:38:27	28°	WSW
14 Dec	-3.1	17:46:27	10°	WSW	17:49:43	57°	SSE	17:50:09	51°	SE
15 Dec	-2.5	16:56:16	10°	SW	16:59:25	43°	SSE	17:01:47	16°	E
15 Dec	-1.6	18:32:34	10°	W	18:34:34	34°	W	18:34:34	34°	W
16 Dec	-3.3	17:42:11	10°	WSW	17:45:30	78°	S	17:46:10	53°	E
17 Dec	-3.1	16:51:47	10°	WSW	16:55:05	65°	SSE	16:57:44	15°	E
17 Dec	-1.9	18:28:20	10°	W	18:30:30	38°	W	18:30:30	38°	W
18 Dec	-3.4	17:37:51	10°	W	17:41:10	87°	S	17:42:03	46°	E
19 Dec	-3.3	16:47:21	10°	W	16:50:40	83°	S	16:53:36	13°	E
19 Dec	-2.2	18:23:56	10°	W	18:26:22	44°	W	18:26:22	44°	W
20 Dec	-3.3	17:33:23	10°	W	17:36:43	80°	S	17:37:56	36°	ESE
21 Dec	-3.3	16:42:49	10°	W	16:46:08	86°	S	16:49:27	10°	E
21 Dec	-2.3	18:19:26	10°	W	18:22:19	43°	SW	18:22:19	43°	SW
22 Dec	-2.9	17:28:47	10°	W	17:32:04	59°	SSW	17:33:59	22°	ESE
22 Dec	-0.2	19:05:49	10°	W	19:06:46	15°	WSW	19:06:46	15°	WSW
23 Dec	-3.1	16:38:08	10°	W	16:41:27	73°	SSW	16:44:45	10°	ESE
23 Dec	-1.5	18:14:54	10°	W	18:17:45	27°	SSW	18:18:33	24°	S
24 Dec	-1.9	17:24:05	10°	W	17:27:11	38°	SSW	17:30:17	10°	SE
25 Dec	-2.4	16:33:20	10°	W	16:36:33	51°	SSW	16:39:47	10°	ESE
25 Dec	-0.4	18:10:37	10°	WSW	18:12:37	15°	SW	18:14:35	10°	S
26 Dec	-0.8	17:19:26	10°	W	17:22:04	22°	SSW	17:24:42	10°	SSE
27 Dec	-1.3	16:28:27	10°	W	16:31:26	31°	SSW	16:34:24	10°	SE

There's an app for that: Try ISS Spotter for iPad/iPhone, which alerts you to impending passes of the ISS. For Android-based phones/tablets there's ISS Detector.

If you use Twitter @twisst or @ISS_spotter will send you a tweet when the international space station (ISS) will be visible at your location.

Occultations during December

James Appleton

The table lists lunar occultations which occur during the month under favourable circumstances.

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

Date	Time (UT)	D/R	Lunar Phase	Sun Alt (d)	Star Alt (d)	Mag	Star
02 Dec	17:19:51	D	0.84+	-14	30	6.2	ZC 214
02 Dec	20:07:50	D	0.85+	-39	46	6.3	ZC 226
03 Dec	00:41:00	D	0.86+	-58	26	6.3	ZC 247
03 Dec	00:51:06	D	0.86+	-57	25	7.3	Hip 7883
25 Dec	18:41:28	D	0.18+	-25	14	6.1	ZC 3169
26 Dec	17:06:29	D	0.27+	-11	30	6.9	ZC 3311
27 Dec	18:09:31	D	0.38+	-20	34	6.3	11 Psc
27 Dec	20:53:04	D	0.39+	-45	19	5.9	14 Psc
	21:48:44	R		-52	11		
28 Dec	20:37:23	D	0.50+	-43	30	7.2	ZC 58
29 Dec	21:46:05	D	0.62+	-52	32	7.3	AR Psc
31 Dec	18:25:51	D	0.80+	-22	46	7.4	Hip 14329

On 29 December, the graze track of the magnitude 6.0 star 88 Psc passes within 2 km of Orwell Park observatory at 17:39 UT. Further details can be found on the OASI website: www.oasi.org.uk/Occs/Occs.shtml.

James Appleton

Paul's Astronomy Podcast for December

Paul Whiting FRAS

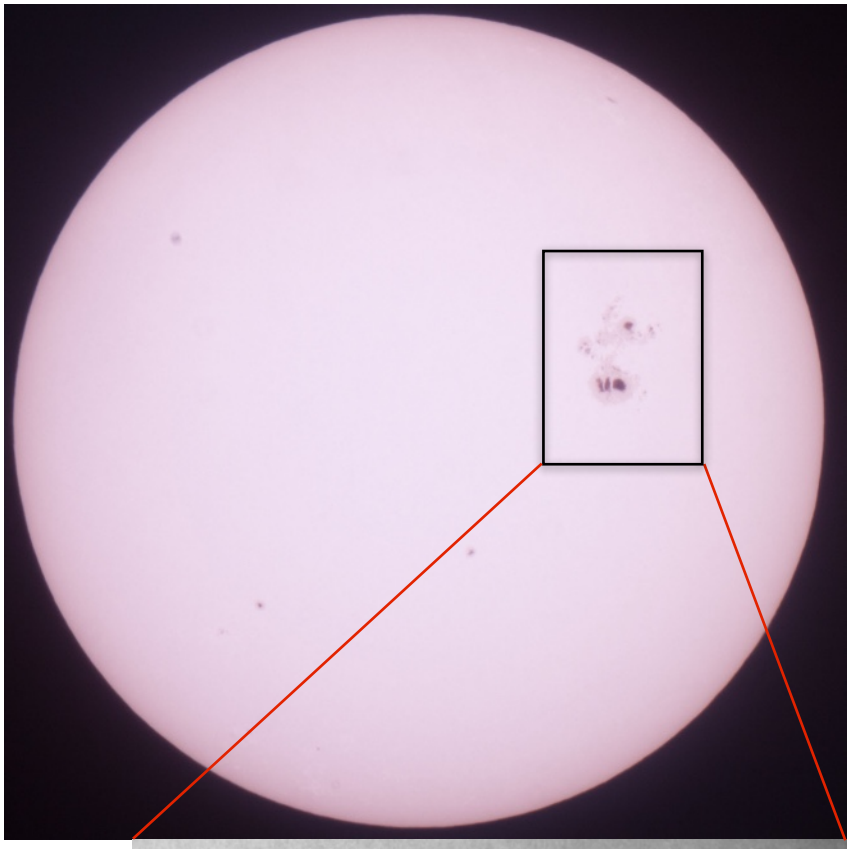
Podcast, December 2014 www.oasi.org.uk/2014_12_pod.mp3

Some Astronomy Guides

The One Minute Astronomer	oneminuteastronomer.com/
Astronomy Know How	www.astronomyknowhow.com
Stargazers lounge	stargazerslounge.com/
Society for Popular Astronomy	www.popastro.com/index.php
UK Astronomy Directory	www.uk-astronomy.co.uk/directory/
Meteor Watch	www.meteorwatch.org/
S.P.A.M. Meteor Detection Group	http://www.merriott-astro.co.uk/About.htm
Meteor Showers Online	http://meteorshowersonline.com/index.html
Heavens Above (satellites, astronomy & time data)	heavens-above.com/
Your Sky	www.fourmilab.ch/yoursky/
Metcheck forecast	uk.metcheck.com
Weatherweb	www.weatherweb.net
Astronomy weather forecast	clearoutside.com/forecast/52.06/1.15
Lightning	www.lightningmaps.org/realtime?lang=en
ISS	www.isstracker.com/
Astronomy.FM	http://astronomy.fm

Giant Sunspot AR2192

Photo by MartinRH: Skywatcher 200 Dobsonian + Bader film filter



DateTimeOriginal: 2014:10:25 13:37:53

ISO: 200

ShutterSpeed: 1/500

Model: Canon EOS 500D

ImageSize: 4752x3168

NB Camera is minus its IR blocking filter, hence the strange colour.

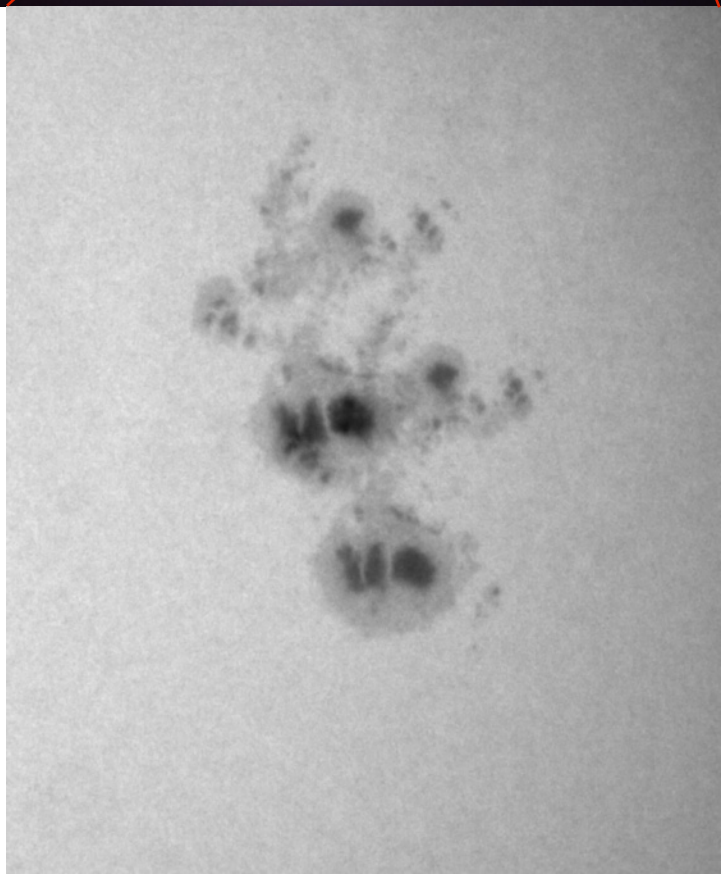
See:

http://www.space.com/27552-giant-sunspot-huge-solar-flares.html

Former AR 2192 has now rotated around sun, back into view. Now AR 2209.

Photo below from

@earthskyscience via Mitchell Spector



Martin Richmond-Hardy

Amnesty Astronomical

This is for the second time of asking...

Have you borrowed anything from the Observatory? Did you return it, or is it still at home on a shelf or in a drawer? There will be a list of missing items in next month's OASI News to jog your memory.

If you wish to borrow eyepieces, etc., on a short term basis, there is a loan book. Please enter your name, a description of the item borrowed and the date you borrowed it.

The Graze of Hipparchus 109637 (In Aquarius)

Alan Smith

A grazing lunar occultation of the star Hipparchus 109637 was predicted for 21:41 UT on the evening of Saturday 01 November 2014. The star is of magnitude 7.1 (plus a secondary of 9.9) and the occultation a south limb event, so the astronomical circumstances were good. The graze track was a little south of Ipswich town centre and through a number of outlying villages.

James Appleton and I performed our usual double act to identify a potential observing site. James calculated the graze track, producing it as a .kml file to be overlaid directly on Google Earth digital maps. Using Google Earth and OS maps I examined the track and identified a shortlist of half a dozen potential observing sites, choosing them to be off-road, away from sources of light pollution and with an unobstructed southern aspect. The sites chosen were just to the north of Ipswich, between Tunstall and Snape. I surveyed the sites a couple of weeks prior to the event, and quickly selected the most promising: the 'Sand Gall' forestry commission picnic site just off the B1069 (Coords of observing site: 638050 255950 (OS); 52.15049°, 1.47825°, h 19m (WGS84).

This had the advantage of having a large car park, secluded by trees and away from any light pollution. A second, backup site was on a field access track.

With a day to go to the graze, the usual cloudy weather was forecast for the early morning, but with clear skies approaching from the west.

Our standard practice for occultation observations is to hold a telephone conference on the evening of the event to make a go/no-go decision. At 6.00pm on Saturday we held the conference, and the decision to continue with the observations was an easy one, as the clear weather window was predicted to arrive in time.

As the event coincided with the society open day (and 'bonfire' night celebrations), Martin Cook had to dash from the conference call to the observatory, open up, set out visitor signs and then back home to collect his telescope, rendezvousing with Mathew Leeks to lend him his 'spare' Dobsonian telescope. All but one of the observers met at the agreed meeting place, a side-road off the B1069, at 2030hrs and continued to the picnic site to set up by 2100hrs; the exception was James who, running behind schedule, in his haste overshot the turnoff and had to retrace his steps, eventually arriving 10 minutes late. On arrival at the observing site, the skies were clear! No clouds, not even the usually ubiquitous vapour trails, the atmosphere was transparent and seeing was good! Visibility remained excellent throughout the observation. The only slight weather-related difficulty was gusts of wind, some of which were strong enough to result in telescope shake.

The 'grazing' star was fairly quickly located and although at mag. 7.1 (usually excluded as being too faint) and fairly low in the sky (23°) was easily visible even in the glare of the 70% sunlit moon. However, none of the observers could see the secondary (separation of 1.3"). Initially we all thought that the trajectory of the star would mean a full occultation, but as usual, James' accurate predictions were proved correct and the 'event' gradually became a reality.

The star slowly approached the moon (obviously it is actually the moon approaching the star, but from a practical point of view it is easier to imagine that the star is moving) and at 21:39:16 it

winked out against the dark limb of the moon, reappearing about 30secs. later. A second disappearance followed at about 21:40:16 (although other observers could still see the star bobbling along a sunlit crater wall) with the star reappearing at about 21:41:46. A third disappearance occurred at about 21:41:52 and lasted almost two minutes before the final reappearance at 21:43:44hrs. At last, a real, multiple (i.e. more than 2) 'winks' graze !

I've been observing 'grazes' for almost 45 years and this was the best yet !

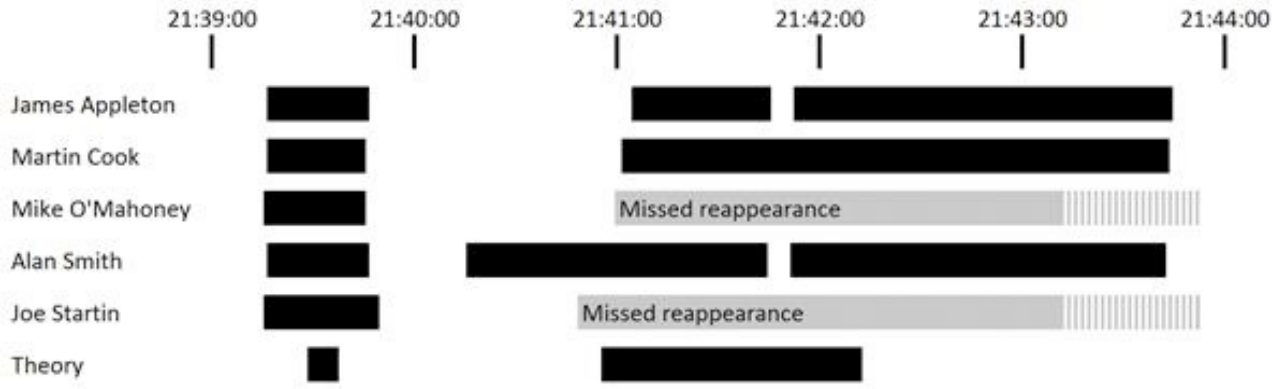
The observers were (in alphabetical order):

James Appleton - 250mm Meade LX200 SCT at about 200 magnification,
Martin Cook - Skywatcher 200P F1000 HEQ5 mount at about 110 magnification,
Kevin Fulcher – Skywatcher Evostar 80ed refractor, EQ5 mount at about 200 magification,
Matthew Leeks – 250mm Newtonian, Dobsonian mount at about 140 magnification,
Mike O'Mahoney – Meade ETX 125 at about 105 magnification,
Alan Smith – 250mm Newtonian, Dobsonian mount at about 150 magnification,
Joe Startin – 150mm Newtonian, at about 110 magnification.

Timings (mostly using audio recordings synced to a radio controlled clock) by the observers were as follows. A grey entry denotes a time that is uncertain or missing.

	D1	R1	D2	R2	D3	R3
James Appleton	21:39:17	21:39:46	21:41:05	21:41:45	21:41:53	21:43:44
Martin Cook	21:39:17	21:39:45	21:41:02			21:43:43
Mike O'Mahoney	21:39:16	21:39:45	21:41:00	Missed		
Alan Smith	21:39:17	21:39:46	21:40:16	21:41:44	21:41:52	21:43:42
Joe Startin	21:39:16	21:39:49	21:40:50	Missed		
Theory	21:39:29	21:39:37	21:40:56	21:42:12		

Black bar = disappearance, white = star visible



In addition, Kevin observed a disappearance lasting for around 27 seconds with a reappearance just south of a large mountain range, and a similar event shortly after, but unfortunately did not record the events times.

The difference between the body of observations and the theoretical prediction of event times is not atypical. The south polar region of the moon is not well mapped, and glare from the bright limb made it difficult to make accurate timings. The glancing angle of a grazing trajectory means that any small errors in the local selenography or the orbital position of the moon can be magnified into considerable differences in event times.

The initial disappearance and reappearance took place against the dark limb of the moon and thus presented a good contrast, resulting in confident timings which were fairly accordant between the observers. At around 21:40:30, the star approached the sunlit cusp and bright limb,

the contrast between the star and lunar limb became much reduced, and it became more difficult to make accurate timings. As the star moved further into the sunlit portion of the moon, it became increasingly difficult to observe events and, indeed, both Mike and Joe were unable to estimate the final reappearance time. The star, after final reappearance on the bright limb, appeared very much fainter than it did on initial disappearance on the dark limb, presumably an effect of contrast against the nearby lunar surface.

The customary "team photo" taken immediately after the observation

The next graze is of the magnitude 6.0 star 88 Psc, on 29 December 2014 at 17:40. I aim to organise an OASI observing trip - anyone interested in attending, please contact me.

Alan Smith

OASI Bring & Buy Sale

In case you missed it in the NOG Report…

The meeting on **22nd December** is our Christmas meeting Nog & Noggin plus – [trumpet fanfare]

The OASI Bring & Buy Sale!

Find a new owner for those pre-loved eyepieces and sundry other stuff you've rarely used. Our Treasurer will be happy to assist you in parting with your cash and take a small percentage for club funds.

Space doesn't like junk. Create some space – or fill it with stuff you'll use.

Season's Greetings & Clear Skies to all our readers

OASI Corporate Clothing

The Society now carries a stock of OASI clothing as shown here.

Order from Mike Norris nog@oasi.org.uk Tel: 01473 726596

Sweatshirt by Russel, Polyester & Cotton. Raglan Sleeve in Grey or Navy with Embroidered OASI Logo in Yellow.

Sizes: Small, Medium, Large & Ex Large. Usually in stock

£18.00 each

Thinsulate Beanie in 100% soft feel fabric Thinsulate lining Non-ribbed turn up in Dark Graphite with OASI embroidered in matching yellow. £8.00 each

Pique Polo Shirt in 100% combed cotton with flat knit collar and taped neck. Embroidered with OASI logo in Yellow

Colours: Black, White, Azure Blue & Sky Blue

Sizes: Small, Medium, Large & Ex.Large

Delivery: About 2 weeks

£15.50 each.

Baseball Cap in Navy Embroidered with OASI logo in yellow. Usually in stock

£8.00 each.

Classic Fleece Jacket 100% Polyester full front zip, two concealed front zip pockets. Elasticated cuffs and hem. Embroidered with OASI logo in yellow.

Sizes: Small, Medium, Large & Ex.Large.

Colour: Navy.

Delivery: About 2 weeks **£22.00 each**